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COUNCIL REGULATION (EU) No 267/2012

of 23 March 2012

concerning restrictive measures against Iran and repealing Regulation (EU) No 961/2010

(OJ L 88, 24.3.2012, p. 1)

Amended by:

		Official Journal		
		No	page	date
►M1	Council Implementing Regulation (EU) No 350/2012 of 23 April 2012	L 110	17	24.4.2012
►M2	Council Regulation (EU) No 708/2012 of 2 August 2012	L 208	1	3.8.2012
►M3	Council Implementing Regulation (EU) No 709/2012 of 2 August 2012	L 208	2	3.8.2012
►M4	Council Implementing Regulation (EU) No 945/2012 of 15 October 2012	L 282	16	16.10.2012
►M5	Council Implementing Regulation (EU) No 1016/2012 of 6 November 2012	L 307	5	7.11.2012
►M6	Council Regulation (EU) No 1067/2012 of 14 November 2012	L 318	1	15.11.2012
►M7	Council Regulation (EU) No 1263/2012 of 21 December 2012	L 356	34	22.12.2012
►M8	Council Implementing Regulation (EU) No 1264/2012 of 21 December 2012	L 356	55	22.12.2012
►M9	Council Implementing Regulation (EU) No 522/2013 of 6 June 2013	L 156	3	8.6.2013
►M10	Council Regulation (EU) No 517/2013 of 13 May 2013	L 158	1	10.6.2013
►M11	Council Regulation (EU) No 971/2013 of 10 October 2013	L 272	1	12.10.2013
►M12	Council Implementing Regulation (EU) No 1154/2013 of 15 November 2013	L 306	3	16.11.2013
►M13	Council Implementing Regulation (EU) No 1203/2013 of 26 November 2013	L 316	1	27.11.2013
►M14	Council Implementing Regulation (EU) No 1361/2013 of 17 December 2013	L 343	7	19.12.2013
►M15	Council Regulation (EU) No 42/2014 of 20 January 2014	L 15	18	20.1.2014
►M16	Council Implementing Regulation (EU) No 397/2014 of 16 April 2014	L 119	1	23.4.2014
►M17	Council Implementing Regulation (EU) No 1202/2014 of 7 November 2014	L 325	3	8.11.2014

►**M18**	Council Regulation (EU) 2015/229 of 12 February 2015	L 39	1	14.2.2015
►**M19**	Council Implementing Regulation (EU) 2015/230 of 12 February 2015	L 39	3	14.2.2015
►**M20**	Council Implementing Regulation (EU) 2015/549 of 7 April 2015	L 92	12	8.4.2015
►**M21**	Council Implementing Regulation (EU) 2015/1001 of 25 June 2015	L 161	1	26.6.2015
►**M22**	Council Regulation (EU) 2015/1327 of 31 July 2015	L 206	18	1.8.2015
►**M23**	Council Regulation (EU) 2015/1328 of 31 July 2015	L 206	20	1.8.2015
►**M24**	Council Regulation (EU) 2015/1861 of 18 October 2015	L 274	1	18.10.2015
►**M25**	Council Implementing Regulation (EU) 2015/1862 of 18 October 2015	L 274	161	18.10.2015
►**M26**	Council Implementing Regulation (EU) 2015/2204 of 30 November 2015	L 314	10	1.12.2015
►**M27**	Council Regulation (EU) 2016/31 of 14 January 2016	L 10	1	15.1.2016
►**M28**	Council Implementing Regulation (EU) 2016/74 of 22 January 2016	L 16	6	23.1.2016
►**M29**	Council Implementing Regulation (EU) 2016/603 of 18 April 2016	L 104	8	20.4.2016
►**M30**	Commission Implementing Regulation (EU) 2016/1375 of 29 July 2016	L 221	1	16.8.2016
►**M31**	Council Implementing Regulation (EU) 2017/77 of 16 January 2017	L 12	24	17.1.2017
►**M32**	Council Regulation (EU) 2017/964 of 8 June 2017	L 146	1	9.6.2017
►**M33**	Council Implementing Regulation (EU) 2017/1124 of 23 June 2017	L 163	4	24.6.2017
►**M34**	Council Implementing Regulation (EU) 2018/827 of 4 June 2018	L 140	3	6.6.2018
►**M35**	Council Implementing Regulation (EU) 2019/855 of 27 May 2019	L 140	1	28.5.2019
►**M36**	Commission Implementing Regulation (EU) 2019/1163 of 5 July 2019	L 182	33	8.7.2019
►**M37**	Council Implementing Regulation (EU) 2020/847 of 18 June 2020	L 196	1	19.6.2020
►**M38**	Council Implementing Regulation (EU) 2020/1695 of 12 November 2020	L 381	6	13.11.2020
►**M39**	Council Implementing Regulation (EU) 2021/1242 of 29 July 2021	L 272	4	30.7.2021
►**M40**	Commission Implementing Regulation (EU) 2022/595 of 11 April 2022	L 114	60	12.4.2022
►**M41**	Council Implementing Regulation (EU) 2022/1010 of 27 June 2022	L 170	17	28.6.2022
►**M42**	Council Regulation (EU) 2023/720 of 31 March 2023	L 94	1	3.4.2023
►**M43**	Council Implementing Regulation (EU) 2023/853 of 24 April 2023	L 110	25	25.4.2023

►**M44**	Council Implementing Regulation (EU) 2023/2121 of 9 October 2023	L 2121	1	10.10.2023
►**M45**	Council Implementing Regulation (EU) 2023/2196 of 16 October 2023	L 2196	1	17.10.2023
►**M46**	Council Implementing Regulation (EU) 2024/2074 of 26 July 2024	L 2074	1	29.7.2024
►**M47**	Commission Implementing Regulation (EU) 2024/2465 of 10 September 2024	L 2465	1	12.9.2024
►**M48**	Council Implementing Regulation (EU) 2025/1559 of 25 July 2025	L 1559	1	28.7.2025
►**M49**	Council Regulation (EU) 2025/1975 of 29 September 2025	L 1975	1	29.9.2025
►**M50**	Council Implementing Regulation (EU) 2025/1980 of 29 September 2025	L 1980	1	29.9.2025
►**M51**	Council Implementing Regulation (EU) 2025/1982 of 29 September 2025	L 1982	1	29.9.2025
►**M52**	Council Regulation (EU) 2026/759 of 30 March 2026	L 759	1	31.3.2026
►**M53**	Council Implementing Regulation (EU) 2026/775 of 30 March 2026	L 775	1	31.3.2026
►**M54**	Council Implementing Regulation (EU) 2026/1838 of 24 July 2026	L 1838	1	27.7.2026
►**M55**	Council Implementing Regulation (EU) 2026/1883 of 30 July 2026	L 1883	1	30.7.2026
►**M56**	Council Regulation (EU) 2026/1867 of 30 July 2026	L 1867	1	31.7.2026

Corrected by:

►**C1** Corrigendum, OJ L 332, 4.12.2012, p. 31 (267/2012)
►**C2** Corrigendum, OJ L 41, 12.2.2013, p. 14 (709/2012)
►**C3** Corrigendum, OJ L 268, 10.10.2013, p. 18 (1264/2012)
►**C4** Corrigendum, OJ L 93, 28.3.2014, p. 85 (267/2012)
►**C5** Corrigendum, OJ L 297, 18.11.2019, p. 8 (267/2012)
►**C6** Corrigendum, OJ L 91046, 19.12.2025, p. 1 (2025/1982)
►**C7** Corrigendum, OJ L 90062, 2.2.2026, p. 1 (2025/1980)
►**C8** Corrigendum, OJ L 90314, 23.4.2026, p. 1 (2026/759)

The presentation of this consolidated text takes into account judgments of the EU Courts concerning entries in the list of designated persons and entities.

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COUNCIL REGULATION (EU) No 267/2012

of 23 March 2012

concerning restrictive measures against Iran and repealing Regulation (EU) No 961/2010

CHAPTER I

DEFINITIONS

Article 1

For the purposes of this Regulation the following definitions shall apply:

(a) 'branch' of a financial or credit institution means a place of business which forms a legally dependent part of a financial or credit institution and which carries out directly all or some of the transactions inherent in the business of financial or credit institutions;

(b) 'brokering services' means:

(i) the negotiation or arrangement of transactions for the purchase, sale or supply of goods and technology or of financial and technical services, including from a third country to any other third country, or

(ii) the selling or buying of goods and technology or of financial and technical services, including where they are located in third countries for their transfer to another third country;

(c) 'claim' means any claim, whether asserted by legal proceedings or not, made before or after the date of entry into force of this Regulation, under or in connection with a contract or transaction, and includes in particular:

(i) a claim for performance of any obligation arising under or in connection with a contract or transaction;

(ii) a claim for extension or payment of a bond, financial guarantee or indemnity of whatever form;

(iii) a claim for compensation in respect of a contract or transaction;

(iv) a counterclaim;

(v) a claim for the recognition or enforcement, including by the procedure of *exequatur*, of a judgment, an arbitration award or an equivalent decision, wherever made or given;

(d) 'contract or transaction' means any transaction of whatever form and whatever the applicable law, whether comprising one or more contracts or similar obligations made between the same or different parties; for this purpose 'contract' includes a bond, guarantee or indemnity, particularly a financial guarantee or financial indemnity, and credit, whether legally independent or not, as well as any related provision arising under, or in connection with, the transaction;

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(e) 'competent authorities' refers to the competent authorities of the Member States as identified on the websites listed in Annex X;

(f) 'credit institution' means a credit institution as defined in Article 4(1) of Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions ([1]), including its branches inside or outside the Union;

(g) 'customs territory of the Union' means the territory as defined in Article 3 of Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code ([2]) and in Commission Regulation (EEC) No 2454/93 of 2 July 1993 laying down provisions for the implementation of Regulation (EEC) No 2913/92 ([3]);

(h) 'economic resources' means assets of every kind, whether tangible or intangible, movable or immovable, which are not funds, but which may be used to obtain funds, goods or services;

(i) 'financial institution' means

(i) an undertaking, other than a credit institution, which carries out one or more of the operations included in points 2 to 12 and points 14 and 15 of Annex I to Directive 2006/48/EC, including the activities of currency exchange offices (*bureaux de change*);

(ii) an insurance company duly authorised in accordance with Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) ([4]), in so far as it carries out activities covered by that Directive;

(iii) an investment firm as defined in point 1 of Article 4(1) of Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments ([5]);

(iv) a collective investment undertaking marketing its units or shares; or

(v) an insurance intermediary as defined in Article 2(5) of Directive 2002/92/EC of the European Parliament and of the Council of 9 December 2002 on insurance mediation ([6]), with the exception of intermediaries referred to in Article 2(7) of that Directive, when they act in respect of life insurance and other investment related services;

including its branches inside or outside the Union;

([1]) OJ L 177, 30.6.2006, p. 1.
([2]) OJ L 302, 19.10.1992, p. 1.
([3]) OJ L 253, 11.10.1993, p. 1.
([4]) OJ L 335, 17.12.2009, p. 1.
([5]) OJ L 145, 30.4.2004, p. 1.
([6]) OJ L 9, 15.1.2003, p. 3.

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(j) 'freezing of economic resources' means preventing the use of economic resources to obtain funds, goods or services in any way, including, but not limited to, by selling, hiring or mortgaging them;

(k) 'freezing of funds' means preventing any move, transfer, alteration, use of, access to, or dealing with funds in any way that would result in any change in their volume, amount, location, ownership, possession, character, destination or other change that would enable the funds to be used, including portfolio management;

(l) 'funds' means financial assets and benefits of every kind, including, but not limited to:

(i) cash, cheques, claims on money, drafts, money orders and other payment instruments;

(ii) deposits with financial institutions or other entities, balances on accounts, debts and debt obligations;

(iii) publicly-and privately-traded securities and debt instruments, including stocks and shares, certificates representing securities, bonds, notes, warrants, debentures and derivatives contracts;

(iv) interest, dividends or other income on or value accruing from or generated by assets;

(v) credit, right of set-off, guarantees, performance bonds or other financial commitments;

(vi) letters of credit, bills of lading, bills of sale; and

(vii) documents showing evidence of an interest in funds or financial resources;

(m) 'goods' includes items, materials and equipment;

(n) 'insurance' means an undertaking or commitment whereby one or more natural or legal persons is or are obliged, in return for a payment, to provide one or more other persons, in the event of materialisation of a risk, with an indemnity or a benefit as determined by the undertaking or commitment;

(o) 'Iranian person, entity or body' means:

(i) the State of Iran or any public authority thereof;

(ii) any natural person in, or resident in, Iran;

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(iii) any legal person, entity or body having its registered office in Iran;

(iv) any legal person, entity or body, inside or outside Iran, owned or controlled directly or indirectly by one or more of the above mentioned persons or bodies;

(p) 'reinsurance' means the activity consisting in accepting risks ceded by an insurance undertaking or by another reinsurance undertaking or, in the case of the association of underwriters known as Lloyd's, the activity consisting in accepting risks, ceded by any member of Lloyd's, by an insurance or reinsurance undertaking other than the association of underwriters known as Lloyd's;

(q) 'Sanctions Committee' means the Committee of the United Nations Security Council which was established pursuant to paragraph 18 of United Nations Security Council Resolution ("UNSCR") 1737 (2006);

(r) 'technical assistance' means any technical support related to repairs, development, manufacture, assembly, testing, maintenance, or any other technical service, and may take forms such as instruction, advice, training, transmission of working knowledge or skills or consulting services; including verbal forms of assistance;

(s) 'territory of the Union' means the territories of the Member States to which the Treaty is applicable, under the conditions laid down in the Treaty, including their airspace;

▼M49

(t) ‘transfer of funds’ means:

(i) any transaction carried out on behalf of a payer through a payment service provider by electronic means, with a view to making funds available to a payee at a payment service provider, irrespective of whether the payer and the payee are the same person. The terms payer, payee and payment service provider have the same meaning as in Directive 2007/64/EC of the European Parliament and of the Council ([1]);

(ii) any transaction by non-electronic means such as in cash, cheques or accountancy orders, with a view to making funds available to a payee irrespective of whether the payer and the payee are the same person.

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([1]) Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC (OJ L 319, 5.12.2007, p. 1, ELI: http://data.europa.eu/eli/dir/2007/64/oj).

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CHAPTER II

EXPORT AND IMPORT RESTRICTIONS

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Article 2

1. It shall be prohibited to sell, supply, transfer or export, directly or indirectly, the goods and technology listed in Annex I or II, whether or not originating in the Union, to any Iranian person, entity or body or for use in Iran.

▼M52
▼C8

2. Annex I shall include goods and technology, including software, which are dual-use items as defined in Regulation (EU) 2021/821 of the European Parliament and of the Council ([1]), except for certain goods and technology as specified in part A of Annex I to this Regulation.

3. The Member State concerned shall inform the other Member States and the Commission, within four weeks, of authorisations granted in accordance with Regulation (EU) 2021/821, in respect of the goods and technology as specified in part A of Annex I to this Regulation.

▼M49

4. Annex II shall include other goods and technology which could contribute to Iran's enrichment-related, reprocessing or heavy-water-related activities, to the development of nuclear weapon delivery systems, or to the pursuit of activities related to other topics about which the International Atomic Energy Agency (IAEA) has expressed concerns or has identified as outstanding, including those determined by the UN Security Council or by the Sanctions Committee.

5. Annexes I and II shall not include goods and technology included in the Common Military List of the European Union ([2]) (the 'Common Military List').

Article 3

1. A prior authorisation shall be required for the sale, supply, transfer or export, directly or indirectly, of the goods and technology listed in Annex IIA, whether or not originating in the Union, to any Iranian person, entity or body or for use in Iran.

▼M52
▼C8

2. For all exports for which an authorisation is required under this Article, such authorisation shall be granted by the competent authorities of the Member State where the exporter is established and shall be in accordance with the detailed rules laid down in Article 14 of Regulation (EU) 2021/821. The authorisation shall be valid throughout the Union.

([1]) Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (OJ L 206, 11.6.2021, p. 1, ELI: http://data.europa.eu/eli/reg/2021/821/oj).

([2]) Latest version published in OJ C, C/2025/1499, 6.3.2025, ELI: http://data.europa.eu/eli/C/2025/1499/oj.

▼**M49**

3. Annex IIA shall include any goods and technology, other than those included in Annexes I and II, which could contribute to enrichment-related, reprocessing or heavy water-related activities, to the development of nuclear weapon delivery systems, or to the pursuit of activities related to other topics about which the IAEA has expressed concerns or has identified as outstanding.

4. Exporters shall supply the competent authorities with all relevant information required for their application for an export authorisation.

5. The competent authorities shall not grant any authorisation for any sale, supply, transfer or export of the goods or technology included in Annex IIA, if they have reasonable grounds to determine that the sale, supply, transfer or export of the goods and technology is or may be intended for use in connection with one of the following activities:

(a) Iran's enrichment-related, reprocessing or heavy water-related activities;

(b) the development of nuclear weapon delivery systems by Iran; or

(c) the pursuit by Iran of activities related to other topics about which the IAEA has expressed concerns or has identified as outstanding.

6. Under the conditions set out in paragraph 5, the competent authorities may annul, suspend, modify or revoke an export authorisation which they have granted.

7. Where a competent authority refuses to grant an authorisation, or annuls, suspends, substantially limits or revokes an authorisation in accordance with paragraph 5 or 6, the Member State concerned shall notify the other Member States and the Commission thereof and share the relevant information with them, while complying with the provisions concerning the confidentiality of such information in Council Regulation (EC) No 515/97 ([1]).

8. Before a Member State grants an authorisation in accordance with paragraph 5 for a transaction which is essentially identical to a transaction which is the subject of a still valid denial issued by another Member State or by other Member States under paragraphs 6 and 7, it shall first consult the Member State or States which issued the denial. If, following such consultations, the Member State concerned decides to grant an authorisation, it shall inform the other Member States and the Commission thereof, providing all relevant information to explain the decision.

Article 4

It shall be prohibited to purchase, import or transport from Iran, directly or indirectly, the goods and technology listed in Annex I or II whether the item concerned originates in Iran or not.;

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([1]) Council Regulation (EC) No 515/97 of 13 March 1997 on mutual assistance between the administrative authorities of the Member States and cooperation between the latter and the Commission to ensure the correct application of the law on customs and agricultural matters (OJ L 82, 22.3.1997, p. 1, ELI: http://data.europa.eu/eli/reg/1997/515/oj).

▼**M24**

Article 4a

1. It shall be prohibited to sell, supply, transfer or export, directly or indirectly, the goods and technology listed in Annex III or any other item that the Member State determines could contribute to the development of nuclear weapon delivery systems, whether or not originating in the Union, to any Iranian person, entity or body or for use in Iran.

2. Annex III shall list the items, including goods and technology, contained in the Missile Technology Control Regime list.

Article 4b

It shall be prohibited:

(a) to provide, directly or indirectly, technical assistance or brokering services related to the goods and technology listed in Annex III, or related to the provision, manufacture, maintenance and use of goods listed in Annex III, to any Iranian person, entity or body or for use in Iran;

(b) to provide financing or financial assistance related to the goods and technology listed in Annex III, including in particular grants, loans and export credit insurance for any sale, supply, transfer or export of such items, or for any provision of related technical assistance or brokering services, directly or indirectly, to any Iranian person, entity or body, or for use in Iran;

(c) to enter into any arrangement with an Iranian person, entity or body, or any person or entity acting on their behalf or at their direction, including the acceptance of loans or credit made by such person, entity or body, that would enable such person, entity or body to participate in or increase its participation, be that independently or as part of a joint venture or other partnership, in commercial activities involving technologies listed in Annex III.

Article 4c

It shall be prohibited to purchase, import or transport from Iran, directly or indirectly, the goods and technology listed in Annex III whether the item concerned originates in Iran or not.

▼**M49**

Article 5

1. It shall be prohibited:

(a) to provide, directly or indirectly, technical assistance related to the goods and technology listed in the Common Military List, or related to the provision, manufacture, maintenance and use of goods included in that list, to any Iranian person, entity or body or for use in Iran;

▼M49

(b) to provide, directly or indirectly, technical assistance or brokering services related to the goods and technology listed in Annex I or II, or related to the provision, manufacture, maintenance and use of goods listed in Annex I or II, to any Iranian person, entity or body or for use in Iran; and

(c) to provide, directly or indirectly, financing or financial assistance related to the goods and technology listed in the Common Military List or in Annex I or II, including in particular grants, loans and export credit insurance, for any sale, supply, transfer or export of such items, or for any provision of related technical assistance to any Iranian person, entity or body or for use in Iran.

2. The provision of the following shall be subject to an authorisation from the competent authority concerned:

(a) technical assistance or brokering services related to goods and technology listed in Annex IIA and to the provision, manufacture, maintenance and use of those items, directly or indirectly to any Iranian person, entity or body or for use in Iran;

(b) financing or financial assistance related to goods and technology referred to in Annex IIA, including in particular grants, loans and export credit insurance, for any sale, supply, transfer or export of those items, or for any provision of related technical assistance, directly or indirectly, to any Iranian person, entity or body or for use in Iran.

3. The competent authorities shall not grant any authorisation for the transactions referred to in paragraph 2, if they have reasonable grounds to determine that the action is or may be intended to contribute to one of the following activities:

(a) Iran's enrichment-related, reprocessing or heavy water-related activities;

(b) the development of nuclear weapon delivery systems by Iran; or

(c) the pursuit by Iran of activities related to other topics about which the IAEA has expressed concerns or has identified as outstanding.

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Article 6

Article 2(1) and Article 5(1) shall not apply to:

(a) the direct or indirect transfer of goods falling within Part B of Annex I, through the territories of Member States when those goods are sold, supplied, transferred or exported to, or for use in, Iran for a light water reactor in Iran the construction of which has begun before December 2006;

(b) transactions mandated by the IAEA technical cooperation programme;

(c) goods supplied or transferred to, or for use in, Iran due to obligations of State Parties under the Paris Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction of 13 January 1993;

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(d) the execution, until 1 January 2026, of contracts concluded before 30 September 2025 for the sale, supply, transfer or export of goods and technology as specified in Part C of Annex I to this Regulation or ancillary contracts necessary for the execution of such contracts; or

(e) the execution, until 1 January 2026, of contracts concluded before 30 September 2025 for the provision of technical assistance or financing or financial assistance related to goods and technology as specified in Part C of Annex I to this Regulation.

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Article 7

1. Without prejudice to Article 1b of Regulation (EU) No 359/2011, the competent authorities may grant, under such terms and conditions as they deem appropriate, an authorisation for a transaction referred to in Article 2(1) or assistance or brokering services referred to in Article 5(1) of this Regulation, provided that the goods and technology, assistance or brokering services are:

(a) for food, agricultural, medical or other humanitarian purposes; or

(b) concerning dual-use goods and technology as listed in Annex I or the provision of technical or financial assistance related to the goods and technology listed in Annex I, necessary for official purposes of diplomatic representations of the Union and Member States, including delegations, embassies and missions, in Iran.

1a. A derogation under paragraph 1 may be granted only:

(a) if, in those cases where the transaction concerns goods or technology contained in the Nuclear Suppliers Group or Missile Technology Control Regime lists, the Sanctions Committee has determined in advance and on a case-by-case basis that the transaction would clearly not contribute to the development of technologies in support of Iran's proliferation-sensitive nuclear activities, or to the development of nuclear weapon development delivery systems; and

(b) in respect of dual use goods and technology covered by Regulation (EU) 2021/821, without prejudice to the authorisation requirements set out in that Regulation.

2. The Member State concerned shall inform the other Member States and the Commission, within four weeks, of any authorisation granted pursuant to this Article.

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Article 8

1. It shall be prohibited to sell, supply, transfer or export key equipment or technology listed in Annexes VI and VIA, directly or indirectly, to any Iranian person, entity or body, or for use in Iran.

2. Annexes VI and VIA shall include key equipment and technology for the following key sectors of the oil and gas industry in Iran:

(a) exploration of crude oil and natural gas;

(b) production of crude oil and natural gas;

(c) refining;

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(d) liquefaction of natural gas.

3. Annexes VI and VIA shall also include key equipment and technology for the petrochemical industry in Iran.

4. Annexes VI and VIA shall not include items included in the Common Military List, or in Annex I, II or IIA.

Article 9

It shall be prohibited:

(a) to provide, directly or indirectly, technical assistance or brokering services related to the key equipment and technology listed in Annexes VI and VIA, or related to the provision, manufacture, maintenance and use of goods listed in Annexes VI and VIA, to any Iranian person, entity or body, or for use in Iran;

(b) to provide, directly or indirectly, financing or financial assistance related to the key equipment and technology listed in Annexes VI and VIA, to any Iranian person, entity or body, or for use in Iran.

Article 10

1. The prohibitions in Articles 8 and 9 shall not apply to:

(a) the execution, until 1 January 2026, of transactions required by a trade contract concerning key equipment or technology in the exploration of crude oil and natural gas, production of crude oil and natural gas, refining, liquefaction of natural gas as listed in Annex VI concluded before 30 September 2025, or ancillary contracts necessary for the execution of such contracts, or by a contract or agreement concluded before 30 September 2025 and relating to an investment in Iran made before 30 September 2025, nor shall they prevent the execution of an obligation arising therefrom;

(b) the execution, until 1 January 2026, of transactions required by a trade contract concerning key equipment or technology for the petrochemical industry as listed in Annex VI concluded before 30 September 2025, or of ancillary contracts necessary for the execution of such contracts, or by a contract or agreement concluded before 30 September 2025 and relating to an investment in Iran made before 30 September 2025, nor shall they prevent the execution of an obligation arising therefrom;

(c) the execution, until 1 January 2026, of transactions required by a trade contract concerning key equipment or technology in the exploration of crude oil and natural gas, production of crude oil and natural gas, refining, liquefaction of natural gas and for the petrochemical industry as listed in Annex VIA concluded before 30 September 2025 and relating to an investment in Iran in the exploration of crude oil and natural gas, production of crude oil and natural gas, and the refining, liquefaction of natural gas made before 30 September 2025, or relating to an investment in Iran in the petrochemical industry made before 30 September 2025, nor shall they prevent the execution of an obligation arising therefrom; or

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(d) the provision of technical assistance intended solely for the installation of equipment or technology delivered in accordance with points (a), (b) and (c),

provided that the natural or legal person, entity or body seeking to engage in such transactions, or to provide assistance to such transactions, has notified, at least 20 working days in advance, the transaction or assistance to the competent authority of the Member State in which it is established.

2. The prohibitions set out in Articles 8 and 9 shall be without prejudice to the execution of obligations arising from contracts referred to in Article 12(1), point (b), and Article 14(1), point (b), provided that those obligations arise from service contracts or ancillary contracts necessary for their execution and provided that the execution of those obligations has been authorised in advance by the competent authority concerned and the Member State concerned has informed the other Member States and the Commission of its intention to grant an authorisation.

Article 10a

1. It shall be prohibited to sell, supply, transfer or export key naval equipment or technology listed in Annex VIB, directly or indirectly, to any Iranian person, entity or body, or for use in Iran.

2. Annex VIB shall include key naval equipment or technology for ship building, maintenance or refit, including equipment or technology used in the construction of oil tankers.

Article 10b

It shall be prohibited:

(a) to provide, directly or indirectly, technical assistance or brokering services related to the key equipment and technology listed in Annex VIB, or related to the provision, manufacture, maintenance and use of goods listed in Annex VIB, to any Iranian person, entity or body, or for use in Iran;

(b) to provide, directly or indirectly, financing or financial assistance related to the key equipment and technology listed in Annex VIB, to any Iranian person, entity or body, or for use in Iran.

Article 10c

1. The prohibitions in Articles 10a and 10b shall be without prejudice to the supply of key naval equipment and technology to a vessel which is not owned or controlled by an Iranian person, entity or body and which has been forced into a port in Iran, or into Iranian territorial waters, under force majeure.

2. The prohibitions in Articles 10a and 10b shall not apply to the execution, until 1 January 2026, of contracts concluded before 30 September 2025 or ancillary contracts necessary for the execution of such contracts.

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Article 10d

1. It shall be prohibited to sell, supply, transfer or export software as listed in Annex VIIA, directly or indirectly, to any Iranian person, entity or body, or for use in Iran.

2. Annex VIIA shall include software for integrating industrial processes which is relevant to industries controlled directly or indirectly by the Islamic Revolutionary Guard Corps or which is relevant to Iran's nuclear, military or ballistic missile programme.

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Article 10e

It shall be prohibited:

(a) to provide, directly or indirectly, technical assistance or brokering services related to the software listed in Annex VIIA, or related to the provision, manufacture, maintenance and use of goods listed in Annex VIIA, to any Iranian person, entity or body, or for use in Iran;

(b) to provide, directly or indirectly, financing or financial assistance related to the software listed in Annex VIIA, to any Iranian person, entity or body, or for use in Iran.

Article 10f

The prohibitions in Articles 10d and 10e shall not apply to the execution, until 1 January 2026, of contracts concluded before 30 September 2025 or ancillary contracts necessary for the execution of such contracts.

Article 11

1. It shall be prohibited:

(a) to import crude oil or petroleum products into the Union if they:

(i) originate in Iran; or

(ii) have been exported from Iran;

(b) to purchase crude oil or petroleum products which are located in or which originated in Iran;

(c) to transport crude oil or petroleum products if they originate in Iran, or are being exported from Iran to any other country; and

(d) to provide, directly or indirectly, financing or financial assistance, including financial derivatives, as well as insurance and re-insurance related to the import, purchase or transport of crude oil and petroleum products of Iranian origin or that have been imported from Iran.

2. Crude oil and petroleum products means the products listed in Annex IV.

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Article 12

1. The prohibitions in Article 11 shall not apply to:

(a) the execution until 1 January 2026, of trade contracts concluded before 30 September 2025, or of ancillary contracts necessary for the execution of such contracts;

(b) the execution of contracts concluded before 30 September 2025, or of ancillary contracts, necessary for the execution of such contracts, where such a contract specifically provides that the supply of Iranian crude oil and petroleum products or the proceeds derived from their supply are for the reimbursement of outstanding amounts to persons, entities or bodies under the jurisdiction of Member States;

(c) crude oil or petroleum products, which had been exported from Iran prior to 30 September 2025, or where the export was made pursuant to point (a) on or prior to 30 September 2025; or where the export was made pursuant to point (b);

(d) the purchase of bunker oil produced and supplied by a third country other than Iran, intended for the propulsion of the engines of vessels;

(e) the purchase of bunker oil for the propulsion of the engines of a vessel which has been forced into a port in Iran, or into Iranian territorial waters, under force majeure,

provided that the person, entity or body seeking to perform the contract referred to in points (a), (b) and (c) has notified, at least 20 working days in advance, the activity or transaction to the competent authority of the Member State in which it is established.

2. The prohibition in Article 11(1), point (d), shall not apply to the provision, until 1 January 2026, directly or indirectly, of third party liability insurance and environmental liability insurance and reinsurance.

Article 13

1. It shall be prohibited

(a) to import petrochemical products into the Union if they:

(i) originate in Iran; or

(ii) have been exported from Iran;

(b) to purchase petrochemical products which are located in or which originated in Iran;

(c) to transport petrochemical products if they originate in Iran, or are being exported from Iran to any other country; and

(d) to provide, directly or indirectly, financing or financial assistance, including financial derivatives, as well as insurance and re-insurance related to the import, purchase or transport of petrochemical products of Iranian origin or that have been imported from Iran.

2. For the purposes of this Article, ‘petrochemical products’ means the products listed in Annex V.

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Article 14

1. The prohibitions in Article 13 shall not apply to:

(a) the execution until 1 January 2026, of trade contracts concluded before 30 September 2025, or of ancillary contracts necessary for the execution of such contracts;

(b) the execution of contracts concluded before 30 September 2025, or of ancillary contracts, including transport or insurance contracts, necessary for the execution of such contracts, where a contract specifically provides that the supply of Iranian petrochemical products or the proceeds derived from their supply are for the reimbursement of outstanding amounts to persons, entities or bodies under the jurisdiction of Member States;

(c) petrochemical products which had been exported from Iran prior to 30 September 2025, or where the export was made pursuant to point (a) on or prior to 30 September 2025, or where the export was made pursuant to point (b),

provided that the person, entity or body seeking to perform the contract concerned has notified, at least 20 working days in advance, the activity or transaction to the competent authority of the Member State in which it is established.

2. The prohibition in Article 13(1), point (d), shall not apply to the provision, until 1 January 2026, directly or indirectly, of third party liability insurance and environmental liability insurance and reinsurance.

Article 14a

1. It shall be prohibited:

(a) to purchase, transport, or import into the Union natural gas which originates in Iran or has been exported from Iran;

(b) to swap natural gas which originates in Iran or has been exported from Iran;

(c) to provide, directly or indirectly, brokering services, financing or financial assistance, including financial derivatives, as well as insurance and re-insurance and brokering services relating to insurance and re-insurance, in respect of the activities in points (a) or (b).

2. The prohibitions in paragraph 1 shall not apply to:

(a) natural gas that has been exported from a State other than Iran when the exported gas has been combined with gas originating from Iran within the infrastructure of a State other than Iran;

(b) the purchase of natural gas within Iran by nationals of Member States for civilian purposes, including residential heating or power, or for the maintenance of diplomatic missions; or

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(c) the execution of contracts for the delivery of natural gas originating in a State other than Iran into the Union.

3. For the purposes of this Article, ‘natural gas’ means the products listed in Annex IVA.

4. For the purposes of paragraph 1, ‘to swap’ means to exchange natural gas streams of different origins.

Article 15

1. It shall be prohibited:

(a) to sell, supply, transfer or export, directly or indirectly, gold, precious metals and diamonds, as listed in Annex VII, whether or not originating in the Union, to the Government of Iran, its public bodies, corporations and agencies, any person, entity or body acting on their behalf or at their direction, or any entity or body owned or controlled by them;

(b) to purchase, import or transport, directly or indirectly, gold, precious metals and diamonds, as listed in Annex VII, whether the item concerned originates in Iran or not, from the Government of Iran, its public bodies, corporations and agencies and any person, entity or body acting on their behalf or at their direction, or any entity or body owned or controlled by them; and

(c) to provide, directly or indirectly, technical assistance or brokering services, financing or financial assistance, related to the goods referred to in points (a) and (b), to the Government of Iran, its public bodies, corporations and agencies and any person, entity or body acting on their behalf or at their direction, or any entity or body owned or controlled by them.

2. Annex VII shall include gold, precious metals and diamonds subject to the prohibitions referred to in paragraph 1.

Article 15a

1. It shall be prohibited to sell, supply, transfer or export graphite and raw or semi-finished metals as listed in Annex VIIB, directly or indirectly, to any Iranian person, entity or body, or for use in Iran.

2. Annex VIIB shall include graphite and raw or semi-finished metals, such as aluminium and steel, which are relevant to industries controlled directly or indirectly by the Islamic Revolutionary Guard Corps or which are relevant to Iran's nuclear, military or ballistic missile programme.

3. The prohibition in paragraph 1 shall not apply to the goods listed in Annexes I, II and IIA.

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Article 15b

1. It shall be prohibited:

(a) to provide, directly or indirectly, technical assistance or brokering services related to the goods as listed in Annex VIIB, or related to the provision, manufacture, maintenance and use of goods listed in Annex VIIB, to any Iranian person, entity or body, or for use in Iran;

(b) to provide, directly or indirectly, financing or financial assistance related to the goods listed Annex VIIB, to any Iranian person, entity or body, or for use in Iran.

2. The prohibitions in paragraph 1 shall not apply in relation to the goods listed in Annexes I, II and IIA.

Article 15c

The prohibitions in Article 15a shall not apply to the execution, until 1 January 2026, of contracts concluded before 30 September 2025 or ancillary contracts necessary for the execution of such contracts.

Article 16

It shall be prohibited to sell, supply, transfer or export, directly or indirectly, newly printed or unissued Iranian denominated banknotes and minted coinage, to, or for the benefit of the Central Bank of Iran.

CHAPTER III

RESTRICTIONS ON FINANCING OF CERTAIN ENTREPRISES

Article 17

1. The following shall be prohibited:

(a) the granting of any financial loan or credit to any Iranian person, entity or body referred to in paragraph 2;

(b) the acquisition or extension of a participation in any Iranian person, entity or body referred to in paragraph 2;

(c) the creation of any joint venture with any Iranian person, entity or body referred to in paragraph 2.

2. The prohibition in paragraph 1 shall apply to any Iranian person, entity or body engaged:

(a) in the manufacture of goods or technology listed in the Common Military List or in Annex I or II;

(b) in the exploration or production of crude oil and natural gas, the refining of fuels or the liquefaction of natural gas; or

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(c) in the petrochemical industry.

3. For the purposes of paragraph 2, points (b) and (c), the following definitions apply:

(a) ‘exploration of crude oil and natural gas’ includes the exploration for, prospection of and management of crude oil and natural gas reserves, as well as the provision of geological services in relation to such reserves;

(b) ‘production of crude oil and natural gas’ includes bulk gas transmission services for the purpose of transit or delivery to directly interconnected grids;

(c) ‘refining’ means the processing, conditioning or preparation for the ultimately final sale of fuels;

(d) ‘petrochemical industry’ means production plants for the manufacturing of items in Annex V.

4. It shall be prohibited to establish cooperation with an Iranian person, entity or body engaged in the transmission of natural gas as referred to in paragraph 3, point (b).

5. For the purposes of paragraph 4, ‘cooperation’ means:

(a) the sharing of investment costs in an integrated or managed supply chain for the receipt or delivery of natural gas directly from or to the territory of Iran; and

(b) direct cooperation for the purpose of investing in liquefied natural gas facilities within the territory of Iran or in liquefied natural gas facilities directly connected thereto.

Article 18

1. The making of an investment through transactions referred to in Article 17(1) in an Iranian person, entity or body engaged in the manufacture of goods or technology listed in Annex IIA shall be subject to an authorisation from the competent authority concerned.

2. The competent authorities shall not grant any authorisation for the transactions referred to in paragraph 1, if they have reasonable grounds to determine that the action would contribute to one of the following activities:

(a) Iran’s enrichment-related, reprocessing or heavy water-related activities;

(b) the development of nuclear weapon delivery systems by Iran; or

(c) the pursuit by Iran of activities related to other topics about which the IAEA has expressed concerns or has identified as outstanding.

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Article 19

1. By way of derogation from Article 17(2), point (a), the competent authorities may grant, under such terms and conditions as they deem appropriate, an authorisation to make an investment through transactions referred to in Article 17(1), if the following conditions are met:

(a) the investment is for food, agricultural, medical or other humanitarian purposes; and

(b) in those cases where the investment is made in an Iranian person, entity or body engaged in the manufacture of goods or technology contained in the Nuclear Suppliers Group and Missile Technology Control Regime lists, the Sanctions Committee has determined in advance and on a case-by-case basis that the transaction would clearly not contribute to the development of technologies in support of Iran's proliferation-sensitive nuclear activities, or to the development of nuclear weapon development delivery systems.

2. The Member State concerned shall inform the other Member States and the Commission, within four weeks, of authorisations granted under this Article.

Article 20

Article 17(2), point (b), shall not apply to the granting of a financial loan or credit or to the acquisition or extension of a participation, if the following conditions are met:

(a) the transaction is required by an agreement or contract concluded before 30 September 2025; and

(b) the competent authority has been informed at least 20 working days in advance of that agreement or contract.

Article 21

Article 17(2), point (c), shall not apply to the granting of a financial loan or credit or to the acquisition or extension of a participation, if the following conditions are met:

(a) the transaction is required by an agreement or contract concluded before 30 September 2025; and

(b) the competent authority has been informed at least 20 working days in advance of that agreement or contract.

Article 22

It shall be prohibited to accept or approve, by concluding an agreement or by any other means, that the granting of any financial loan or credit, or the acquisition or extension of a participation, or the creation of any joint venture be made by one or more Iranian persons, entities or bodies, in an enterprise engaged in any of the following activities:

(a) uranium mining,

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(b) uranium enrichment and reprocessing of uranium;

(c) the manufacture of goods or technology included in the Nuclear Suppliers Group or Missile Technology Control Regime lists.

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CHAPTER IV

FREEZING OF FUNDS AND ECONOMIC RESOURCES

Article 23

1. All funds and economic resources belonging to, owned, held or controlled by the persons, entities and bodies listed in Annex VIII shall be frozen. Annex VIII includes the persons, entities and bodies designated by the United Nations Security Council or by the Sanctions Committee in accordance with paragraph 12 of UNSCR 1737 (2006), paragraph 7 of UNSCR 1803 (2008) or paragraph 11, 12 or 19 of UNSCR 1929 (2010).

2. All funds and economic resources belonging to, owned, held or controlled by the persons, entities and bodies listed in Annex IX shall be frozen. Annex IX shall include the natural and legal persons, entities and bodies who, in accordance with Article 20(1)(b) and (c) of Council Decision 2010/413/CFSP, have been identified as:

(a) being engaged in, directly associated with, or providing support for Iran's proliferation-sensitive nuclear activities or the development of nuclear weapon delivery systems by Iran, including through involvement in the procurement of prohibited goods and technology, or being owned or controlled by such a person, entity or body, including through illicit means, or acting on their behalf or at their direction;

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(b) being a natural or legal person, entity or body that has evaded or violated, or assisted a listed person, entity or body to evade or violate, the provisions of this Regulation, Council Decision 2010/413/CFSP or UNSCR 1737 (2006), UNSCR 1747 (2007), UNSCR 1803 (2008) and UNSCR 1929 (2010);

(c) being a member of the Islamic Revolutionary Guard Corps (IRGC) or a legal person, entity or body owned or controlled by the IRGC or by one or more of its members, or a natural or legal person, entity or body acting on their behalf, or a natural or legal person, entity or body providing insurance or other essential services to IRGC, or to entities owned or controlled by them or acting on their behalf;

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(d) being other persons, entities or bodies that provide support, such as material, logistical or financial support, to the Government of Iran and entities owned or controlled by them, or persons and entities associated with them;

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(e) being a legal person, entity or body owned or controlled by the Islamic Republic of Iran Shipping Lines (IRISL), or a natural or legal person, entity or body acting on its behalf, or a natural or legal person, entity or body providing insurance or other essential services to IRISL, or to entities owned or controlled by it or acting on its behalf.

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Pursuant to the obligation to freeze the funds and economic resources of IRISL and of designated entities owned or controlled by IRISL, it shall be prohibited to load and unload cargoes on and from vessels owned or chartered by IRISL or by such entities in ports of Member States.

The obligation to freeze the funds and economic resources of IRISL and of designated entities owned or controlled by IRISL shall not require the impounding or detention of vessels owned by such entities or the cargoes carried by them insofar as such cargoes belong to third parties, nor does it require the detention of the crew contracted by them.

3. No funds or economic resources shall be made available, directly or indirectly, to or for the benefit of the natural or legal persons, entities or bodies listed in Annexes VIII and IX or.

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4. Without prejudice to the derogations provided for in Articles 24, 25, 26, 27, 28, 28a or 29, it shall be prohibited to supply specialised financial messaging services, which are used to exchange financial data to the natural or legal persons, entities or bodies listed in Annexes VIII and IX.

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5. Annexes VIII and IX shall include the grounds for listing of listed persons, entities and bodies, as provided by the Security Council or by the Sanctions Committee.

6. Annexes VIII and IX shall also include, where available, information necessary to identify the natural or legal persons, entities and bodies concerned, as provided by the Security Council or by the Sanctions Committee. With regard to natural persons, such information may include names including aliases, date and place of birth, nationality, passport and ID card numbers, gender, adress, if known, and function or profession. With regard to legal persons, entities and bodies, such information may include names, place and date of registration, registration number and place of business. With regard to airlines and shipping companies, Annexes VIII and IX shall also include, where available, information necessary to identify each vessel or aircraft belonging to a listed company such as the original registration number or name. Annexes VIII and IX shall also include the date of designation.

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7. Paragraphs 1, 2 and 3 shall not apply to the making available of funds or economic resources necessary to ensure the timely delivery of humanitarian assistance or to support other activities that support basic human needs where such assistance and other activities are carried out by:

(a) the United Nations, including its programmes, funds and other entities and bodies, as well as its specialised agencies and related organisations;

(b) international organisations;

(c) humanitarian organisations having observer status with the United Nations General Assembly and members of those humanitarian organisations;

(d) bilaterally or multilaterally funded non-governmental organisations participating in the United Nations Humanitarian Response Plans, Refugee Response Plans, other United Nations appeals or humanitarian clusters coordinated by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA);

(e) the employees, grantees, subsidiaries, or implementing partners of the entities mentioned in points (a) to (d) while and to the extent that they are acting in those capacities; or by,

(f) appropriate other actors as determined by the Sanctions Committee as regards Annex VIII, and by the Council as regards Annex IX.

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Article 24

By way of derogation from Article 23, the competent authorities may authorise the release of certain frozen funds or economic resources, if the following conditions are met:

(a) the funds or economic resources are the subject of a judicial, administrative or arbitral lien established before the date on which the person, entity or body referred to in Article 23 has been designated by the Sanctions Committee, the Security Council or the Council or of a judicial, administrative or arbitral judgment rendered prior to that date;

(b) the funds or economic resources will be used exclusively to satisfy claims secured by such a lien or recognised as valid in such a judgment, within the limits set by applicable laws and regulations governing the rights of persons having such claims;

(c) the lien or judgment is not for the benefit of a person, entity or body listed in Annex VIII or IX;

(d) recognising the lien or judgment is not contrary to public policy in the Member State concerned; and

(e) where Article 23(1) applies, the Sanctions Committee has been notified by the Member State of the lien or judgment.

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Article 25

By way of derogation from Article 23, and provided that a payment by a person, entity or body listed in Annex VIII or IX is due under a contract or agreement that was concluded by, or an obligation that arose for the person, entity or body concerned, before the date on which that person, entity or body had been designated by the Sanctions Committee, the Security Council or by the Council, the competent authorities may authorise, under such conditions as they deem appropriate, the release of certain frozen funds or economic resources, if the following conditions are met:

(a) the competent authority concerned has determined that:

(i) the funds or economic resources shall be used for a payment by a person, entity or body listed in Annex VIII or IX;

(ii) the payment will not contribute to an activity prohibited under this Regulation; if the payment serves as consideration for a trade activity that has already been performed and the competent authority of another Member State had given prior confirmation that the activity was not prohibited at the time it was performed, it shall be deemed, prima facie, that the payment will not contribute to a prohibited activity;

(iii) the payment is not in breach of Article 23(3); and

(b) where Article 23(1) applies, the Member State concerned has notified the Sanctions Committee of that determination and its intention to grant an authorisation, and the Sanctions Committee has not objected to that course of action within ten working days of notification.

Article 26

1. By way of derogation from Article 23, the competent authorities may authorise, under such conditions as they deem appropriate, the release of certain frozen funds or economic resources, or the making available of certain funds or economic resources, provided that the following conditions are met:

(a) the competent authority concerned has determined that the funds or economic resources are:

(i) necessary to satisfy the basic needs of persons listed in Annex VIII or IX and their dependent family members, including payments for foodstuffs, rent or mortgage, medicines and medical treatment, taxes, insurance premiums, and public utility charges;

(ii) intended exclusively for payment of reasonable professional fees and reimbursement of incurred expenses associated with the provision of legal services;

(iii) intended exclusively for payment of fees or service charges for routine holding or maintenance of frozen funds or economic resources; or

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(iv) intended exclusively for the payment of fees due in connection with the de-flagging of vessels; and

(b) where the authorisation concerns a person, entity or body listed in Annex VIII, the Member State concerned has notified the Sanctions Committee of the determination referred to in point (a) and its intention to grant an authorisation, and the Sanctions Committee has not objected to that course of action within five working days of notification.

2. By way of derogation from Article 23, the competent authorities may authorise the release of certain frozen funds or economic resources or the making available of certain funds or economic resources, after having determined that the funds or economic resources are necessary for extraordinary expenses or for payment for or transfer of goods when procured for a light water reactor in Iran the construction of which has begun before 30 September 2025, or for any goods for the purposes referred to in Article 6, points (b) and (c), provided that where the authorisation concerns a person, entity or body listed in Annex VIII, the Sanctions Committee has been notified of that determination by the Member State concerned and the determination has been approved by that Committee.

Article 27

By way of derogation from Article 23(2) and (3), the competent authorities may authorise, under such conditions as they deem appropriate, the release of certain frozen funds or economic resources or the making available of certain funds or economic resources, after having determined that the funds or economic resources are necessary for official purposes of diplomatic or consular missions or international organisations enjoying immunities in accordance with international law.

Article 28

By way of derogation from Article 23(2), the competent authorities may also authorise, under such conditions as they deem appropriate:

(a) the release of certain frozen funds or economic resources of the Central Bank of Iran, after having determined that the funds or economic resources are necessary for the purpose of providing credit or financial institutions with liquidity for the financing of trade, or the servicing of trade loans; or

(b) the release of certain frozen funds or economic resources held by the Central Bank of Iran, after having determined that the funds or economic resources are necessary for the reimbursement of a claim due under a contract or agreement concluded by an Iranian person, entity or body before 30 September 2025 where such a contract or agreement provides for the reimbursement of outstanding amounts to persons, entities or bodies under the jurisdiction of Member States;

provided that the Member State concerned has notified the other Member States and the Commission of its intention to grant an authorisation at least ten working days prior to the authorisation.

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Article 28a

The prohibitions in Article 23(2) and (3) shall not apply to acts and transactions carried out with regard to entities listed in Annex IX:

(a) which hold rights derived from an original award before 30 September 2025, by a sovereign Government other than Iran, of a production sharing agreement as referred to in Article 39, in so far as such acts and transactions relate to those entities' participation in that agreement;

(b) in so far as necessary for the execution, until 1 January 2026, of the obligations arising from contracts referred to in Article 12(1), point (b), provided that those acts and transactions have been authorised in advance, on a case-by-case basis, by the competent authority concerned and that the Member State concerned has informed the other Member States and the Commission of its intention to grant an authorisation.

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Article 29

1. Article 23(3) shall not prevent financial or credit institutions from crediting frozen accounts where they receive funds transferred onto the account of a listed natural or legal person, entity or body, provided that any additions to such accounts shall also be frozen. The financial or credit institution shall inform the competent authorities about such transactions without delay.

2. Article 23(3) shall not apply to the addition to frozen accounts of:

(a) interest or other earnings on those accounts; or

(b) payments due under contracts, agreements or obligations that were concluded or arose before the date on which the person, entity or body referred to in Article 23 has been designated by the Sanctions Committee, the Security Council or by the Council;

provided that any such interest or other earnings and payments are frozen in accordance with Article 23(1) or (2).

3. This Article shall not be construed as authorising transfers of funds referred to in Article 30.

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CHAPTER V

RESTRICTIONS ON TRANSFERS OF FUNDS AND ON FINANCIAL SERVICES

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Article 30

1. It shall be prohibited to transfer funds between, on the one hand, financial and credit institutions falling within the scope of this Regulation as defined in Article 49, and, on the other hand:

(a) credit and financial institutions and bureaux de change domiciled in Iran;

(b) branches and subsidiaries, where they fall within the scope of this Regulation, of credit and financial institutions and bureaux de change domiciled in Iran;

(c) branches and subsidiaries, where they do not fall within the scope of this Regulation, of credit and financial institutions and bureaux de change domiciled in Iran; and

(d) credit and financial institutions and bureaux de change that are not domiciled in Iran but are controlled by persons, entities or bodies domiciled in Iran,

unless such transfers fall within the scope of paragraph 2 and have been processed in accordance with paragraph 3.

2. The following transfers may be authorised in accordance with paragraph 3:

(a) transfers regarding foodstuffs, healthcare, medical equipment, or for agricultural or humanitarian purposes;

(b) transfers regarding personal remittances;

(c) transfers in connection with a specific trade contract provided that such transfer is not prohibited under this Regulation;

(d) transfers regarding diplomatic missions or consular posts or international organisations enjoying immunities in accordance with international law, insofar as such transfers are intended to be used for official purposes of the diplomatic missions or consular posts or organisations enjoying immunities in accordance with international law;

(e) transfers regarding payment to satisfy claims by or against an Iranian person, entity or body, or transfers of similar nature provided that they do not contribute to the activities prohibited under this Regulation, on a case-by-case basis, if the Member State concerned has notified the other Members States and the Commission at least ten days in advance of its intention to grant an authorisation;

(f) transfers necessary for the execution of the obligations arising from contracts referred to in Article 12(1), point (b).

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3. Transfers of funds which may be authorised under paragraph 2 shall be processed as follows:

(a) transfers due on transactions regarding foodstuffs, healthcare, medical equipment, or for agricultural or humanitarian purposes, below EUR 100 000 or equivalent, and transfers due on transactions regarding personal remittances, below EUR 40 000 or equivalent, shall be carried out without any prior authorisation.

The transfer shall be notified in advance in writing to the competent authority of the Member State concerned if equal to or above EUR 10 000 or equivalent;

(b) transfers due on transactions regarding foodstuffs, healthcare, medical equipment, or for agricultural or humanitarian purposes, equal to or above EUR 100 000 or equivalent, and transfers due on transactions regarding personal remittances, equal to or above EUR 40 000 or equivalent, shall require prior authorisation of the competent authority of the Member State concerned pursuant to paragraph 2.

Member States shall inform each other of any authorisation granted at three-monthly intervals;

(c) any other transfer equal to or above EUR 10 000 or equivalent shall require prior authorisation of the competent authority of the Member State concerned pursuant to paragraph 2.

Member States shall inform each other of any authorisation granted at three-monthly intervals.

4. Transfers of funds below EUR 10 000 or equivalent shall not require any prior authorisation or notification.

5. Notifications and requests for authorisations relating to the transfer of funds to an entity falling within the scope of paragraph 1, points (a) to (d), shall be addressed by or on behalf of the payment service provider of the payer to the competent authorities of the Member States where the payment service provider is established.

Notifications and requests for authorisations relating to the transfer of funds from an entity falling within the scope of paragraph 1, points (a) to (d), shall be addressed by or on behalf of the payment service provider of the payee to the competent authorities of the Member States where the payment service provider is established.

If the payment service provider of the payer or of the payee does not fall under the scope of this Regulation, notifications and requests for authorisation shall be addressed, in the case of a transfer to an entity falling within the scope of paragraph 1, points (a) to (d), by the payer, and in the case of a transfer from an entity falling within the scope of paragraph 1, points (a) to (d), by the payee, to the competent authorities of the Member State in which, respectively, the payer or payee is resident.

6. Credit and financial institutions falling within the scope of this Regulation shall, in their activities with entities referred to in paragraph 1, points (a) to (d), and in order to prevent infringements of the provisions of this Regulation, conduct enhanced vigilance as follows:

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(a) exercise continuous vigilance over account activity, particularly through their programmes on customer due diligence;

(b) require that in payment instructions all information fields which relate to the originator and beneficiary of the transaction in question be completed and if that information is not supplied, refuse the transaction;

(c) maintain all records of transactions for a period of five years and make them available to national authorities on request;

(d) if they have reasonable grounds to suspect that activities with credit and financial institutions may be in breach of the provisions of this Regulation, report without delay their suspicions to the financial intelligence unit (FIU) or to another competent authority designated by the Member State concerned, without prejudice to Articles 5 and 23. The FIU or such other competent authority will serve as a national centre for receiving and analysing suspicious transaction reports regarding potential breaches of this Regulation. The FIU or such other competent authority shall have access, directly or indirectly, on a timely basis to the financial, administrative and law enforcement information that it requires to properly undertake this function, including the analysis of suspicious transaction reports.

Article 30a

1. Transfers of funds to and from an Iranian person, entity or body which do not fall within the scope of Article 30(1) shall be processed as follows:

(a) transfers due on transactions regarding foodstuffs, healthcare, medical equipment, or for agricultural or humanitarian purposes shall be carried out without any prior authorisation.

The transfer shall be notified in advance in writing to the competent authority of the Member State concerned if equal to or above EUR 10 000 or equivalent;

(b) any other transfer below EUR 40 000 or equivalent shall be carried out without any prior authorisation.

The transfer shall be notified in advance in writing to the competent authority of the Member State concerned if equal to or above EUR 10 000 or equivalent;

(c) any other transfer equal to or above EUR 40 000 or equivalent shall require a prior authorisation of the competent authority of the Member State concerned.

Member States shall inform each other of any authorisation rejected at three-monthly intervals.

2. Transfers of funds below EUR 10 000 or equivalent shall not require any prior authorisation or notification.

3. Notifications and requests for authorisation relating to the transfer of funds shall be processed as follows:

(a) in the case of electronic transfers of funds processed by credit or financial institutions:

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(i) notifications and requests for authorisation relating to the transfer of funds to an Iranian person, entity or body which is located outside the Union, shall be addressed by or on behalf of the payment service provider of the payer to the competent authorities of the Member State in which the payment service provider is established;

(ii) notifications and requests for authorisation relating to the transfer of funds from an Iranian person, entity or body which is located outside the Union, shall be addressed by or on behalf of the payment service provider of the payee to the competent authorities of the Member State in which the payment service provider is established;

(iii) if, in the cases referred to in points (i) and (ii), the payment service provider of the payer or of the payee does not fall under the scope of this Regulation, notifications and requests for authorisation shall be addressed, in the case of a transfer to an Iranian person, entity or body, by the payer, and in the case of a transfer from an Iranian person, entity or body by the payee to the competent authorities of the Member State in which, respectively, the payer or payee is resident;

(iv) notifications and requests for authorisation relating to the transfer of funds to an Iranian person, entity or body which is located within the Union, shall be addressed by or on behalf of the payment service provider of the payee to the competent authorities of the Member States in which the payment service provider is established;

(v) notifications and requests for authorisation relating to the transfer of funds from an Iranian person, entity or body which is located within the Union, shall be addressed by or on behalf of the payment service provider of the payer to the competent authorities of the Member States in which the payment service provider is established;

(vi) if, in the cases referred to in points (iv) and (v), the payment service provider of the payer or of the payee does not fall under the scope of this Regulation, notifications and requests for authorisation shall be addressed, in the case of a transfer to an Iranian person, entity or body, by the payer, and in the case of a transfer from an Iranian person, entity or body by the payee to the competent authorities of the Member State in which, respectively, the payee or payer is resident;

(vii) in relation to a transfer of funds to or from an Iranian person, entity or body where neither the payer nor the payee, nor their respective payment service providers, fall under the scope of this Regulation but a payment service provider which does fall under the scope of this Regulation acts as an intermediary, then that payment service provider must comply with the obligation to notify or seek authorisation, as applicable, if it knows or has reasonable cause to suspect that the transfer is to or from an Iranian person, entity or body. Where there is more than one payment service provider acting as an intermediary, only the first payment service provider to process the transfer is required to comply with the obligation to notify or seek authorisation, as applicable. Any notification or request for authorisation must be addressed to the competent authorities of the Member State in which the payment service provider is established;

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(viii) where there is more than one payment service provider involved in a series of linked transfers of funds, transfers within the Union shall include a reference to the authorisation granted under this Article;

(b) in the case of transfers of funds which are made by non-electronic means, notifications and requests for authorisation relating to the transfer of funds shall be processed as follows:

(i) notifications and requests for authorisation relating to transfers to an Iranian person, entity or body shall be addressed by the payer to the competent authorities of the Member State where the payer is resident;

(ii) notifications and requests for authorisation relating to the transfers from an Iranian person, entity or body shall be addressed by the payee to the competent authorities of the Member State in which the payee is resident.

Article 30b

1. Where an authorisation has been granted in accordance with Articles 24, 25, 26, 27, 28 or 28a, Articles 30 and 30a shall not apply.

The requirement for prior authorisation of transfers of funds as provided for in Articles 30(3), points (b) and (c), shall be without prejudice to the execution of transfers of funds notified to or authorised by the competent authority in advance before 30 September 2025. Such transfers of funds shall be executed before 1 January 2026.

Articles 30 and 30a shall not apply with regard to transfers of funds provided for in Article 29.

2. Articles 30(3) and 30a(1) shall apply regardless of whether the transfer of funds is executed in a single operation or in several operations which appear to be linked.

For the purposes of this Regulation, ‘operations which appear to be linked’ includes:

(a) a series of consecutive transfers from or to the same financial or credit institutions within the scope of Article 30(1), points (a) to (d), or from or to the same Iranian person, entity or body which are made in connection with a single obligation to a transfer of funds, where each individual transfer falls below the relevant threshold set out in Articles 30 and 30a but which, in the aggregate, meet the criteria for notification or authorisation; or

(b) a chain of transfers involving different payment service providers or natural or legal persons which effects a single obligation to make a transfer of funds.

3. For the purposes of Article 30(3), points (b) and (c), and Article 30a(1), point (c), the competent authorities shall grant the authorisation, under such terms and conditions as they deem appropriate, unless they have reasonable grounds to determine that the transfer of funds for which the authorisation is requested could be in breach of any of the prohibitions or obligations in this Regulation.

A competent authority may charge a fee for the assessment of requests for authorisation.

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4. For the purposes of Article 30a(1), point (c), an authorisation shall be deemed granted if a competent authority has received a request in writing for authorisation and, within four weeks, the competent authority has not objected in writing to the transfer of funds. If the objection is raised because an investigation is pending, the competent authority shall state this and communicate its decision without delay. The competent authorities shall have access, directly or indirectly, on a timely basis to the financial, administrative and law enforcement related information necessary for carrying out the investigation.

5. The following persons, entities or bodies do not fall within the scope of Articles 30 and 30a:

(a) persons, entities or bodies who merely convert paper documents into electronic data and are acting under a contract with a credit institution or a financial institution;

(b) persons, entities or bodies who provide credit or financial institutions solely with a message or other support system for transmitting funds; or

(c) persons, entities or bodies who provide credit or financial institutions solely with clearing and settlement systems.

Article 31

1. Branches and subsidiaries, falling within the scope of this Regulation as defined in Article 49, of credit and financial institutions domiciled in Iran shall notify the competent authority of the Member State where they are established of all transfers of funds carried out or received by them, the names of the parties and the amount and the date of the transaction, within five working days after carrying out or receiving the transfer of funds concerned. If the information is available, the notification must specify the nature of the transaction and, where appropriate, the nature of the goods covered by the transaction and must, in particular, state whether the goods are covered by Annexes I, II, IIA, III, IV, IVA, V, VI, VIA, VIB, VII, VIIA or VIIB of this Regulation and, if their export is subject to authorisation, indicate the number of the licence granted.

2. Subject to and in accordance with the information-sharing arrangements, the notified competent authorities shall without delay transmit the information on notifications referred to in paragraph 1, as necessary, in order to prevent any transaction that could contribute to proliferation-sensitive nuclear activities or to the development of nuclear weapons delivery systems, to the competent authorities of other Member States where the counterparts to such transactions are established.

Article 33

1. It shall be prohibited for credit and financial institutions falling within the scope of Article 49 to do any of the following:

(a) to open a new bank account with a credit or financial institution domiciled in Iran or with any credit or financial institution referred to in Article 30(1);

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(b) to establish a new correspondent banking relationship with a credit or financial institution domiciled in Iran or with any credit or financial institution referred to in Article 30(1);

(c) to open a new representative office in Iran or to establish a new branch or subsidiary in Iran;

(d) to establish a new joint venture with a credit or financial institution domiciled in Iran or with any credit or financial institution referred to in Article 30(1).

2. It shall be prohibited:

(a) to authorise the opening of a representative office or the establishment of a branch or subsidiary in the Union of a credit or financial institution domiciled in Iran or of any credit or financial institution referred to in Article 30(1);

(b) to conclude agreements for, or on behalf of, a credit or financial institution domiciled in Iran or for, or on behalf of, any credit or financial institution referred to in Article 30(1) pertaining to the opening of a representative office or the establishment of a branch or subsidiary in the Union;

(c) to grant an authorisation for taking up and pursuing the business of credit institution or for any other business requiring prior authorisation, by a representative office, branch or subsidiary of a credit or financial institution domiciled in Iran or of any credit or financial institution referred to in Article 30(1), if the representative office, branch or subsidiary was not operational before 30 September 2025;

(d) to acquire or to extend a participation, or to acquire any other ownership interest, in a credit or financial institution falling within the scope of Article 49 by any credit or financial institution referred to in Article 30(1).

Article 34

It shall be prohibited:

(a) to sell or purchase public or public-guaranteed bonds issued after 30 September 2025, directly or indirectly, to or from any of the following:

(i) Iran or its Government, and its public bodies, corporations and agencies;

(ii) a credit or financial institution domiciled in Iran or any credit or financial institution referred to in Article 30(1);

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(iii) a natural person or a legal person, entity or body acting on behalf or at the direction of a legal person, entity or body referred to in point (i) or (ii);

(iv) a legal person, entity or body owned or controlled by a person, entity or body referred to in point (i), (ii) or (iii);

(b) to provide brokering services with regard to public or public-guaranteed bonds issued after 30 September 2025 to a person, entity or body referred to in point (a);

(c) to assist a person, entity or body referred to in point (a) in order to issue public or public-guaranteed bonds, by providing brokering services, advertising or any other service with regard to such bonds.

Article 35

1. It shall be prohibited to provide insurance or re-insurance, or to broker the provision of insurance or reinsurance, to:

(a) Iran or its Government, and its public bodies, corporations and agencies;

(b) an Iranian person, entity or body other than a natural person; or

(c) a natural person or a legal person, entity or body when acting on behalf or at the direction of a legal person, entity or body referred to in points (a) or (b).

2. Paragraph 1, points (a) and (b), shall not apply to the provision or brokering of compulsory or third party liability insurance or reinsurance to Iranian persons, entities and bodies based in the Union, nor to the provision of insurance for Iranian diplomatic or consular missions in the Union.

3. Paragraph 1, point (c), shall not apply to the provision of insurance or brokering of insurance, including health and travel insurance or reinsurance, to individuals acting in their private capacity, except for persons listed in Annexes VIII and IX.

Paragraph 1, point (c), shall not prevent the provision of insurance or re-insurance or brokering of insurance to the owner of a vessel, aircraft or vehicle chartered by a person, entity or body referred to in paragraph 1, point (a) or (b).

For the purposes of paragraph 1, point (c), a person, entity or body shall not be considered to act at the direction of a person, entity or body referred to in paragraph 1, points (a) and (b), where that direction is for the purposes of docking, loading, unloading or safe transit of a vessel or aircraft temporarily in Iranian waters or airspace.

4. This Article prohibits the extension or renewal of insurance and re-insurance agreements concluded before 30 September 2025, but, without prejudice to Article 23(3), it does not prohibit compliance with agreements concluded before that date.

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CHAPTER VI

RESTRICTIONS ON TRANSPORT

Article 36

1. To prevent the transfer of goods and technology which are covered by the Common Military List or the supply, sale, transfer, export or import of which is prohibited by this Regulation, and in addition to the obligation to provide the competent customs authorities with the pre-arrival and pre-departure information as determined in the relevant provisions concerning entry and exit summary declarations as well as customs declarations in Council Regulation (EEC) No 2913/92 ([1]) and in Commission Regulation (EEC) No 2454/93 ([2]), the person who provides the information referred to in paragraph 2 of this Article, shall declare whether the goods are covered by the Common Military List or by this Regulation and, where their export is subject to authorisation, specify the particulars of the export licence granted.

2. The required additional elements referred to in this Article shall be submitted either in written form or using a customs declaration as appropriate.

Article 37

1. The provision of bunkering or ship supply services, or any other servicing of vessels, to vessels owned or controlled, directly or indirectly, by an Iranian person, entity or body shall be prohibited where the providers of the service have information, including from the competent customs authorities on the basis of the pre-arrival and pre-departure information referred to in Article 36, that provides reasonable grounds to determine that the vessels carry goods covered by the Common Military List or goods whose supply, sale, transfer or export is prohibited under this Regulation, unless the provision of such services is necessary for humanitarian and safety purposes.

2. The provision of engineering and maintenance services to cargo aircraft owned or controlled, directly or indirectly, by an Iranian person, entity or body shall be prohibited, where the providers of the service have information, including from the competent customs authorities on the basis of the pre-arrival and pre-departure information referred to in Article 36, that provides reasonable grounds to determine that the cargo aircraft carry goods covered by the Common Military List or goods the supply, sale, transfer or export of which is prohibited under this Regulation, unless the provision of such services is necessary for humanitarian and safety purposes.

3. The prohibitions in paragraphs 1 and 2 of this Article shall apply until the cargo has been inspected and, if necessary, seized or disposed of, as the case may be.

([1]) Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code (OJ L 302, 19.10.1992, p. 1, ELI: http://data.europa.eu/eli/reg/1992/2913/oj).

([2]) Commission Regulation (EEC) No 2454/93 of 2 July 1993 laying down provisions for the implementation of Council Regulation (EEC) No 2913/92 establishing the Community Customs Code (OJ L 253, 11.10.1993, p. 1, ELI: http://data.europa.eu/eli/reg/1993/2454/oj).

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Any seizure and disposal may, in accordance with national legislation or the decision of a competent authority, be carried out at the expense of the importer or be recovered from any other person or entity responsible for the attempted illicit supply, sale, transfer or export.

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Article 37a

1. The provision of the following services in respect of oil tankers and cargo vessels flying the flag of the Islamic Republic of Iran or owned, chartered, or operated, directly or indirectly, by an Iranian person, entity or body shall be prohibited:

(a) the provision of classification services of any kind, including but not limited to:

(i) the production and application of classification rules or technical specifications concerning the design, construction, equipment and maintenance of ships, as well as shipboard management systems;

(ii) the carrying out of surveys and inspections in accordance with classification rules and procedures;

(iii) the assignment of a class notation and the delivery, endorsement or renewal of certificates of compliance with classification rules or specifications;

(b) the supervision of and participation in the design, construction and repair of ships and their parts including blocks, elements, machinery, electrical installations and control installation, as well as related technical assistance, financing or financial assistance;

(c) the inspection, testing and certification of marine equipment, materials and components as well as the supervision of the installation on board and the supervision of system integration;

(d) the carrying out of surveys, inspections, audits and visits and the issuance, renewal or endorsement of the relevant certificates and documents of compliance, on behalf of the flag State administration, in accordance with the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 1974) and its 1988 Protocol; the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL 73/78); the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG 1972); the International Convention on Load Lines, 1966 (LL 1966) and its 1988 Protocol; the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW); and the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 1969).

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2. The prohibition in paragraph 1 shall apply from 1 January 2026.

Article 37b

1. It shall be prohibited to make available vessels designed for the transport or storage of oil and petrochemical products:

(a) to any Iranian person, entity or body; or

(b) to any other person, entity or body, unless the providers of vessels have taken appropriate action to prevent the vessel from being used to carry or store oil or petrochemical products that originate in Iran or have been exported from Iran.

2. The prohibition in paragraph 1 shall be without prejudice to the execution of obligations arising from contracts and ancillary contracts referred to in Article 12(1), points (b) and (c), and in Article 14(1), points (b) and (c), provided that the import and transport of Iranian crude oil, petroleum or petrochemical products have been notified to the competent authority pursuant to Article 12(1) or 14(1).

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CHAPTER VII

GENERAL AND FINAL PROVISIONS

Article 38

1. No claims in connection with any contract or transaction the performance of which has been affected, directly or indirectly, in whole or in part, by the measures imposed under this Regulation, including claims for indemnity or any other claim of this type, such as a claim for compensation or a claim under a guarantee, notably a claim for extension or payment of a bond, guarantee or indemnity, particularly a financial guarantee or financial indemnity, of whatever form, shall be satisfied, if they are made by:

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(a) designated persons, entities or bodies listed in Annexes VIII and IX;

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(b) any other Iranian person, entity or body, including the Iranian government;

(c) any person, entity or body acting through or on behalf of one of the persons, entities or bodies referred to in points (a) and (b).

2. The performance of a contract or transaction shall be regarded as having been affected by the measures imposed under this Regulation where the existence or content of the claim results directly or indirectly from those measures.

3. In any proceedings for the enforcement of a claim, the onus of proving that satisfying the claim is not prohibited by paragraph 1 shall be on the person seeking the enforcement of that claim.

4. This Article is without prejudice to the right of the persons, entities and bodies referred to in paragraph 1 to judicial review of the legality of the non-performance of contractual obligations in accordance with this Regulation.

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Article 39

For the purposes of Articles 8 and 9, Article 17(2), point (b), and Articles 30 and 35, any body, entity or holder of rights derived from an original award before 30 September 2025 by a sovereign Government other than Iran, of a production sharing agreement shall not be considered an Iranian person, entity or body. In such cases and in relation to Article 8, the competent authority of the Member State may require appropriate end-user guarantees from any body or entity for any sale, supply, transfer or export of any key equipment or technology listed in Annex VI.

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Article 40

1. Without prejudice to the applicable rules concerning reporting, confidentiality and professional secrecy, natural and legal persons, entities and bodies shall:

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(a) supply immediately any information which would facilitate compliance with this Regulation, such as information on accounts and amounts frozen in accordance with Article 23, to the competent authorities of the Member States where they are resident or located, and shall transmit such information, directly or through the Member States, to the Commission;

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(b) cooperate with the competent authorities in any verification of this information.

2. Any additional information received directly by the Commission shall be made available to the Member State concerned.

3. Any information provided or received in accordance with this Article shall be used only for the purposes for which it was provided or received.

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Article 41

It shall be prohibited to participate, knowingly and intentionally, in activities the object or effect of which is to circumvent the measures in Article 2, 4a, 4b, 5(1), 8, 9, 10a, 10b, 10d, 10e, 11, 13, 14a, 15a, 15b, 17, 22, 23, 30, 30a, 34, 35, 37a or 37b.

▼B

Article 42

1. The freezing of funds and economic resources or the refusal to make funds or economic resources available, carried out in good faith on the basis that such action is in accordance with this Regulation, shall not give rise to liability of any kind on the part of the natural or legal person, entity or body implementing it, or its directors or employees, unless it is proved that the funds and economic resources were frozen or withheld as a result of negligence.

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2. The measures set out in the present Regulation shall not give rise to liability of any kind on the part of the natural or legal persons, entities or bodies concerned, if they did not know, and had no reasonable cause to suspect, that their actions would infringe these prohibitions.

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3. The disclosure in good faith, as provided for in Articles 30 and 31 by a person, entity or body covered by this Regulation or an employee or director of such person, entity or body, of the information referred to in Articles 30 and 31 shall not give rise to liability of any kind on the part of the institution or person or its directors or employees.

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Article 43

1. A Member State may take all action it deems necessary to ensure that relevant international, Union or national legal obligations concerning the health and safety of workers and environmental protection are respected where cooperation with an Iranian person, entity or body may be affected by the implementation of this Regulation.

2. For the purpose of action taken pursuant to paragraph 1, the prohibitions in Articles 8 and 9, Article 17(2), point (b), Article 23(2), and Articles 30 and 35 shall not apply.

3. The Member State concerned shall notify the other Member States and the Commission of the determination referred to in paragraph 1 and its intention to grant an authorisation at least ten working days prior to the authorisation. In the event of a threat to the environment and/or to the health and safety of workers in the Union requiring urgent action, the Member State concerned may grant an authorisation without prior notification and shall notify the other Member States and the Commission within three working days after having granted the authorisation.

Article 43a

1. By way of derogation from Articles 8, 9, Article 17(1) as regards an Iranian person, entity or body referred to in Article 17(2), point (b), Articles 23(2) and (3) insofar as they refer to persons, entities and bodies listed in Annex IX, and Articles 30 and 35, the competent authorities of a Member State may authorise, under such conditions as they deem appropriate, activities related to the exploration for, or exploitation of, hydrocarbons within the Union undertaken pursuant to a licence for such exploration or exploitation issued by a Member State to a person, entity or body listed in Annex IX, if the following conditions are met:

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(a) the licence for the exploration for, or exploitation of, hydrocarbons within the Union was issued prior to the date on which the person, entity or body listed in Annex IX was designated; and

(b) the authorisation is necessary to avoid or remediate environmental damage in the Union or to prevent permanent destruction of the licence's value, including by securing the pipeline and infrastructure used in connection with the licensed activity, on a temporary basis. Such authorisation may include measures taken under national legislation.

2. The derogation provided for in paragraph 1 shall only be granted for such period as necessary and its validity shall not exceed the validity of the licence issued to the person, entity or body listed in Annex IX. In case the competent authority considers that subrogation to contracts or the provision of indemnities is necessary, the period of validity of the derogation shall not exceed five years.

3. The Member State concerned shall notify the other Member States and the Commission of its intention to grant an authorisation at least ten working days prior to the authorisation. In the event of a threat to the environment in the Union requiring urgent action to prevent damage to the environment, the Member State concerned may grant an authorisation without prior notification and shall notify the other Member States and the Commission within three working days after having granted the authorisation.

▼B

Article 44

1. The Commission and Member States shall inform each other of the measures taken under this Regulation and share any other relevant information at their disposal in connection with this Regulation at three-monthly intervals, in particular information

▼M49

(a) in respect of funds frozen under Article 23 and authorisations granted under Articles 24, 25, 26 and 27;

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(b) in respect of violations and enforcement problems and judgments issued by national courts.

2. The Member States shall immediately inform each other and the Commission of any other relevant information at their disposal which might affect the effective implementation of this Regulation.

▼M49

Article 45

The Commission shall:

(a) amend Annex II on the basis of determinations made by either the United Nations Security Council or the Sanctions Committee or on the basis of information supplied by Member States;

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(b) amend Annexes IIA, III, IV, IVA, V, VI, VIA, VIB, VII, VIIA, VIIB and X on the basis of information supplied by Member States.

Article 46

1. Where the United Nations Security Council or the Sanctions Committee lists a natural or legal person, entity or body, the Council shall include such natural or legal person, entity or body in Annex VIII.

2. Where the Council decides to subject a natural or legal person, entity or body to the measures referred to in Article 23(2) and (3), it shall amend Annex IX accordingly.

3. The Council shall communicate its decision, including the grounds for listing, to the natural or legal person, entity or body referred to in paragraph 1 or 2, either directly, if the address is known, or through the publication of a notice, providing such natural or legal person, entity or body with an opportunity to present observations.

4. Where observations are submitted, or where substantial new evidence is presented, the Council shall review its decision and inform the natural or legal person, entity or body accordingly.

5. Where the United Nations decides to delist a natural or legal person, entity or body, or to amend the identifying data of a listed natural or legal person, entity or body, the Council shall amend Annex VIII accordingly.

6. The list in Annex IX shall be reviewed in regular intervals and at least every 12 months.

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Article 47

1. Member States shall lay down the rules on penalties applicable to infringements of this Regulation and shall take all measures necessary to ensure that they are implemented. The penalties provided for shall be effective, proportionate and dissuasive.

2. Member States shall notify the Commission of those rules without delay after the entry into force of this Regulation and shall notify it of any subsequent amendment.

Article 48

1. Member States shall designate the competent authorities referred to in this Regulation and identify them on the websites listed in Annex X. Member States shall notify the Commission of any changes in the addresses of their websites listed in Annex X.

2. Member States shall notify the Commission of their competent authorities, including the contact details of those competent authorities, without delay after the entry into force of this Regulation, and shall notify it of any subsequent amendment.

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3. Where this Regulation sets out a requirement to notify, inform or otherwise communicate with the Commission, the address and other contact details to be used for such communication shall be those indicated in Annex X.

Article 49

This Regulation shall apply:

(a) within the territory of the Union, including its airspace;

(b) on board any aircraft or any vessel under the jurisdiction of a Member State;

(c) to any person inside or outside the territory of the Union who is a national of a Member State;

(d) to any legal person, entity or body, inside or outside the territory of the Union, which is incorporated or constituted under the law of a Member State;

(e) to any legal person, entity or body in respect of any business done in whole or in part within the Union.

Article 50

Regulation (EU) No 961/2010 is hereby repealed. References to the repealed regulation shall be construed as references to this Regulation.

Article 51

This Regulation shall enter into force on the day of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

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ANNEX I

Goods and technology referred to in Article 2(1), (2) and (4), Article 3(3), Article 5(1), Article 6, Article 8(4), Article 17(2) and Article 31(1)

This Annex comprises all goods and technology listed in Annex I to Regulation (EU) 2021/821, as defined therein, with the exception of those specified in Part A. The relevant prohibitions shall not apply to the execution until 1 January 2026 of contracts related to goods and technology specified in Part C concluded before 30 September 2025.

PART A

	Description
1.	"Information security" systems and equipment for final use for public telecommunication services and internet service providing or for the protection by the network operator of these services, including components necessary for operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing services related to those systems and equipment as follows: a. Systems, equipment, application specific "electronic assemblies", modules and integrated circuits for "information security" related to networks such as wifi, 2G, 3G, 4G or fixed networks (classical, ADSL or optic fibre), as follows, and components therefor specially designed for "information security": *N.B.: For the control of Global Navigation Satellite Systems (GNSS) receiving equipment containing or employing decryption (i.e., GPS or GLONASS), see 7A005 of Annex I to Regulation (EU) 2021/821.* 1. Designed or modified to use "cryptography" employing digital techniques performing any cryptographic function other than authentication or digital signature and having any of the following: *Technical Notes:* *1. Authentication and digital signature functions include their associated key management function.* *2. Authentication includes all aspects of access control where there is no encryption of files or text except as directly related to the protection of passwords, Personal Identification Numbers (PINs) or similar data to prevent unauthorised access.* *3. "Cryptography" does not include "fixed" data compression or coding techniques.* *Note 1.a.1. includes equipment designed or modified to use "cryptography" employing analogue principles when implemented with digital techniques.* a. A "symmetric algorithm" employing a key length in excess of 56 bits; or b. An "asymmetric algorithm" where the security of the algorithm is based on any of the following: 1. Factorisation of integers in excess of 512 bits (e.g., RSA); 2. Computation of discrete logarithms in a multiplicative group of a finite field of size greater than 512 bits (e.g., Diffie-Hellman over Z/pZ); or 3. Discrete logarithms in a group other than mentioned in 1.a.1.b.2. in excess of 112 bits (e.g., Diffie-Hellman over an elliptic curve);

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	Description
2.	“Software” as follows, for final use for public telecommunication services, internet service providing or for the protection by the network operator of these services: a. “Software” specially designed or modified for the “use” of equipment specified in 1.a.1 or “software” specified in 2.b.1; b. Specific “software”, as follows: 1. “Software” having the characteristics, or performing or simulating the functions of the equipment, specified in 5A002.a.1;
3.	“Technology” according to the General Technology Note for the “use” of equipment specified in 1.a.1 or “software” specified in 2.a. or 2.b.1 of this list, for final use for public telecommunication services and internet service providing or for the protection by the network operator of these services.

PART B

Article 6 applies to the following goods:

Item from Annex I to Regulation (EU) 2021/821	Description
0A001	“Nuclear reactors” and specially designed or prepared equipment and components therefor, as follows: a. “Nuclear reactors”; b. Metal vessels, or major shop-fabricated parts therefor, including the reactor vessel head for a reactor pressure vessel, specially designed or prepared to contain the core of a “nuclear reactor”; c. Manipulative equipment specially designed or prepared for inserting or removing fuel in a “nuclear reactor”; d. Control rods specially designed or prepared for the control of the fission process in a “nuclear reactor”, support or suspension structures therefor, rod drive mechanisms and rod guide tubes; e. Pressure tubes specially designed or prepared to contain both fuel elements and the primary coolant in a “nuclear reactor”; f. Zirconium metal tubes or zirconium alloy tubes (or assembles of tubes) specially designed or prepared for use as fuel cladding in a “nuclear reactor”, and in quantities exceeding 10 kg; *N.B. For zirconium pressure tubes see 0A001.e. and for calandria tubes see 0A001.h.* g. Coolant pumps specially designed or prepared for circulating the primary coolant of “nuclear reactors”; h. “Nuclear reactor internals” specially designed or prepared for use in a “nuclear reactor”, including support columns for the core, fuel channels, thermal shields, baffles, core grid plates, and diffuser plates; *Note: In 0A001.h. “nuclear reactor internals” means any major structure within a reactor vessel which has one or more functions such as supporting the core, maintaining fuel alignment, directing primary coolant flow, providing radiation shields for the reactor vessel, and guiding in-core instrumentation.* i. Heat exchangers as follows:

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Item from Annex I to Regulation (EU) 2021/821	Description
	1. Steam generators specially designed or prepared for the primary, or intermediate, coolant circuit of a “nuclear reactor”; 2. Other heat exchangers specially designed or prepared for use in the primary coolant circuit of a “nuclear reactor”; *Note: 0A001.i. does not control heat exchangers for the supporting systems of the reactor, e.g., the emergency cooling system or the decay heat cooling system.* j. Neutron detectors specially designed or prepared for determining neutron flux levels within the core of a “nuclear reactor”; or k. “External thermal shields” specially designed or prepared for use in a “nuclear reactor” for the reduction of heat loss and also for the containment vessel protection. *Technical Note:* *In 0A001.k. “external thermal shields” means major structures placed over the reactor vessel which reduce heat loss from the reactor and reduce temperature within the containment vessel.*
0C002	Low enriched uranium covered by 0C002 when it is incorporated in assembled nuclear fuels elements.

PART C

Item from Annex I to Regulation (EC) No 428/2009	Description
5A002	“Information security” systems, equipment and components therefor, as follows: a. Systems, equipment, application specific “electronic assemblies”, modules and integrated circuits for “information security”, as follows and other specially designed components therefor: *N.B.: For the control of Global Navigation Satellite Systems (GNSS) receiving equipment containing or employing decryption (i.e., GPS or GLONASS), see 7A005.* 1. Designed or modified to use “cryptography” employing digital techniques performing any cryptographic function other than authentication or digital signature and having any of the following: *Technical Notes:* *1. Authentication and digital signature functions include their associated key management function.* *2. Authentication includes all aspects of access control where there is no encryption of files or text except as directly related to the protection of passwords, Personal Identification Numbers (PINs) or similar data to prevent unauthorised access.* *3. “Cryptography” does not include “fixed” data compression or coding techniques.* *Note: 5A002.a.1. includes equipment designed or modified to use “cryptography” employing analogue principles when implemented with digital techniques.* a. A “symmetric algorithm” employing a key length in excess of 56 bits; or b. An “asymmetric algorithm” where the security of the algorithm is based on any of the following:

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Item from Annex I to Regulation (EC) No 428/2009	Description
	1. Factorisation of integers in excess of 512 bits (e.g., RSA); 2. Computation of discrete logarithms in a multiplicative group of a finite field of size greater than 512 bits (e.g., Diffie-Hellman over Z/pZ); or 3. Discrete logarithms in a group other than mentioned in 5A002.a.1.b.2. in excess of 112 bits (e.g., Diffie-Hellman over an elliptic curve);
5D002	"Software" as follows: a. "Software" specially designed or modified for the "use" of equipment specified in 5A002.a.1 or "software" specified in 5D002.c.1; c. Specific "software", as follows: 1. "Software" having the characteristics, or performing or simulating the functions of the equipment, specified in 5A002.a.1; *Note: 5D002 does not control "software" as follows:* *a. "Software" required for the "use" of equipment excluded from control by the Note to 5A002;* *b. "Software" providing any of the functions of equipment excluded from control by the Note to 5A002.*
5E002	"Technology" according to the General Technology Note for the "use" of equipment specified in 5A002.a.1 or "software" specified in 5D002.a. or 5D002.c.1 of this list.

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ANNEX II

Goods and technology referred to in Article 2(1), Article 2(2) and 2(4), Article 3(3), Article 5(1), Article 8(4), Article 17(2), Article 31(1) and Article 45

INTRODUCTORY NOTES

1. Unless otherwise stated, reference numbers used in the column entitled "Description" refer to the descriptions of dual-use items and technology set out in Annex I to Regulation (EU) 2021/821.

2. A reference number in the column entitled "Related item from Annex I to Regulation (EU) 2021/821" means that the characteristics of the item described in the column "Description" lie outside the parameters set out in the description of the dual-use entry referred to.

3. Definitions of terms between 'single quotation marks' are given in a technical note to the relevant item.

4. Definitions of terms between "double quotation marks" can be found in Annex I to Regulation (EU) 2021/821.

GENERAL NOTES

1. The object of the prohibitions contained in this Annex should not be defeated by the export of any non-prohibited goods (including plant) containing one or more prohibited components when the prohibited component or components are the principal element of the goods and can feasibly be removed or used for other purposes.

N.B.: In judging whether the prohibited component or components are to be considered the principal element, it is necessary to weigh the factors of quantity, value and technological know-how involved and other special circumstances which might establish the prohibited component or components as the principal element of the goods being procured.

2. The goods specified in this Annex include both new and used goods.

GENERAL TECHNOLOGY NOTE (GTN)

1. The sale, supply, transfer or export of "technology" which is "required" for the "development", "production" or "use" of goods the sale, supply, transfer or export of which is prohibited in Part A (Goods) below, is prohibited in accordance with the provisions of Section II.B.

2. The sale, supply, transfer or export of "technology" which is "required" for the "development" or "production" of goods the sale, supply, transfer or export of which is controlled in Part A (Goods) of Annex IIa, is prohibited in accordance with the provisions of Section II.B.

3. The "technology" "required" for the "development", "production" or "use" of prohibited goods remains under prohibition even when applicable to non-prohibited goods.

4. Prohibitions do not apply to that "technology" which is the minimum necessary for the installation, operation, maintenance (checking) and repair of those goods which are not prohibited or the export of which has been authorised in accordance with Regulation (EC) No 423/2007, Regulation (EU) No 961/2010 or this Regulation.

5. Prohibitions on "technology" transfer do not apply to information "in the public domain", to "basic scientific research" or to the minimum necessary information for patent applications.

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II.A. GOODS

A0. Nuclear Materials, Facilities, and Equipment		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A0.001	Hollow cathode lamps as follows: a. Iodine hollow cathode lamps with windows in pure silicon or quartz; or b. Uranium hollow cathode lamps.	—
II.A0.002	Faraday isolators in the wavelength range 500 nm – 650 nm.	—
II.A0.003	Optical gratings in the wavelength range 500 nm – 650 nm.	—
II.A0.004	Optical fibres in the wavelength range 500 nm – 650 nm coated with anti-reflecting layers in the wavelength range 500 nm – 650 nm and having a core diameter greater than 0,4 mm but not exceeding 2 mm	—
II.A0.005	Nuclear reactor vessel components and testing equipment, other than those specified in 0A001, as follows: a. Seals; b. Internal components; or c. Sealing, testing and measurement equipment.	0A001
II.A0.006	Nuclear detection systems for detection, identification or quantification of radioactive materials and radiation of nuclear origin and specially designed components thereof other than those specified in 0A001.j. or 1A004.c.	0A001.j 1A004.c
II.A0.007	Bellows-sealed valves made of aluminium alloy or stainless steel type 304, 304L or 316L. *Note: This item does not cover bellow valves defined in 0B001.c.6 and 2A226.*	0B001.c.6 2A226
II.A0.008	Laser mirrors, other than those specified in 6A005.e, consisting of substrates having a thermal expansion coefficient of $10^{-6}K^{-1}$ or less at 20 °C (e.g. fused silica or sapphire). *Note: This item does not cover optical systems specially designed for astronomical applications, except if the mirrors contain fused silica.*	0B001.g.5, 6A005.e
II.A0.009	Laser lenses, other than those specified in 6A005.e.2, consisting of substrates having a thermal expansion coefficient of $10^{-6}K^{-1}$ or less at 20 °C (e.g. fused silica).	0B001.g, 6A005.e.2
II.A0.010	Pipes, piping, flanges, fittings made of, or lined with, nickel or nickel alloy containing more than 40 % nickel by weight, other than those specified in 2B350.h.1.	2B350
II.A0.011	Vacuum pumps other than those specified in 0B002.f.2 or 2B231, as follows: a. Turbomolecular pumps having a flowrate equal to or greater than 400 l/s; b. Roots type vacuum roughing pumps having a volumetric aspiration flowrate greater than 200 m^3/h; or c. Bellows-sealed, scroll, dry compressor, and bellows-sealed, scroll, dry vacuum pumps.	0B002.f.2, 2B231

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A0. Nuclear Materials, Facilities, and Equipment		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A0.012	Shielded enclosures for the manipulation, storage and handling of radioactive substances (Hot cells).	0B006
II.A0.013	“Natural uranium” or “depleted uranium” or thorium in the form of metal, alloy, chemical compound or concentrate and any other material containing one or more of the foregoing, other than those specified in 0C001.	0C001
II.A0.014	Detonation chambers having a capacity of explosion absorption of more than 2,5 kg TNT equivalent.	—

A1. Materials, chemicals, ‘microorganisms’ and ‘toxins’		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A1.001	Bis (2-ethylhexyl) phosphoric acid (HDEHP or D2HPA) (CAS 298-07-7) solvent in any quantity, with a purity greater than 90 %.	—
II.A1.002	Fluorine gas (CAS 7782-41-4), with a purity of at least 95 %.	—
II.A1.005	Electrolytic cells for fluorine production with an output capacity greater than 100 g of fluorine per hour. *Note: This item does not cover electrolytic cells defined in item 1B225.*	1B225
II.A1.006	Catalysts, other than those prohibited by 1A225, containing platinum, palladium or rhodium, usable for promoting the hydrogen isotope exchange reaction between hydrogen and water for the recovery of tritium from heavy water or for the production of heavy water.	1B231, 1A225
II.A1.007	Aluminium and its alloys, other than those specified in 1C002.b.4 or 1C202.a, in crude or semi-fabricated form having either of the following characteristics: a. Capable of an ultimate tensile strength of 460 MPa or more at 293 K (20 °C); or b. Having a tensile strength of 415 MPa or more at 298 K (25 °C).	1C002.b.4, 1C202.a
II.A1.008	Magnetic metals, of all types and of whatever form, having an initial relative permeability of 120 000 or more and a thickness between 0,05 and 0,1 mm.	1C003.a
II.A1.009	‘Fibrous or filamentary materials’ or prepregs, as follows: *N.B. see also II.A1.019.a.* a. Carbon or aramid ‘fibrous or filamentary materials’ having either of the following characteristics: 1. A ‘specific modulus’ exceeding 10×10^6 m; or 2. A ‘specific tensile strength’ exceeding 17×10^4 m; b. Glass ‘fibrous or filamentary materials’ having either of the following characteristics: 1. A ‘specific modulus’ exceeding $3{,}18 \times 10^6$ m; or 2. A ‘specific tensile strength’ exceeding $76{,}2 \times 10^3$ m;	1C010.a 1C010.b 1C210.a 1C210.b

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A1. Materials, chemicals, ‘microorganisms’ and ‘toxins’		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
	c. Thermoset resin-impregnated continuous “yarns”, “rovings”, “tows” or ‘tapes’ with a width of 15 mm or less (once prepregs), made from carbon or glass ‘fibrous or filamentary materials’ other than those specified in II.A1.010.a. or b. *Note: This item does not cover ‘fibrous or filamentary materials’ defined in items 1C010.a, 1C010.b, 1C210.a and 1C210.b.*	
II.A1.010	Resin-impregnated or pitch-impregnated fibres (prepregs), metal or carbon-coated fibres (preforms) or ‘carbon fibre preforms’, as follows: a. Made from ‘fibrous or filamentary materials’ specified in II.A1.009 above; b. Epoxy resin ‘matrix’ impregnated carbon ‘fibrous or filamentary materials’ (prepregs), specified in 1C010.a, 1C010.b or 1C010.c, for the repair of aircraft structures or laminates, of which the size of individual sheets does not exceed 50 cm × 90 cm; c. Prepregs specified in 1C010.a, 1C010.b or 1C010.c, when impregnated with phenolic or epoxy resins having a glass transition temperature (Tg) less than 433 K (160 °C) and a cure temperature lower than the glass transition temperature. *Note: This item does not cover ‘fibrous or filamentary materials’ defined in item 1C010.e.*	1C010.e. 1C210
II.A1.011	Reinforced silicon carbide ceramic composites usable for nose tips, re-entry vehicles, nozzle flaps, usable in “missiles”, other than those specified in 1C107.	1C107
II.A1.012	Maraging steels, other than those specified in 1C116 or 1C216, ‘capable of’ an ultimate tensile strength of 2 050 MPa or more, at 293 K (20 °C). *Technical Note:* *The phrase ‘maraging steel capable of’ encompasses maraging steel before or after heat treatment.*	1C216
II.A1.013	Tungsten, tantalum, tungsten carbide, tantalum carbide and alloys, having both of the following characteristics: a. In forms having a hollow cylindrical or spherical symmetry (including cylinder segments) with an inside diameter between 50 mm and 300 mm; and b. A mass greater than 5 kg. *Note: This item does not cover tungsten, tungsten carbide and alloys defined in item 1C226.*	1C226
II.A1.014	Elemental powders of cobalt, neodymium or samarium or alloys or mixtures thereof containing at least 20 % by weight of cobalt, neodymium or samarium, with a particle size less than 200 μm.	—
II.A1.015	Pure tributyl phosphate (TBP) (CAS No 126-73-8) or any mixture having a TBP content of more than 5 % by weight.	—

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A1. Materials, chemicals, ‘microorganisms’ and ‘toxins’		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A1.016	‘Maraging steel’, other than those prohibited by 1C116, 1C216 or II.A1.012 *Technical Note:* *‘Maraging steels’ are iron alloys generally characterised by high nickel, very low carbon content and the use of substitutional elements or precipitates to produce strengthening and age-hardening of the alloy.*	—
II.A1.017	Metals, metal powders and material as follows: a. Tungsten and tungsten alloys, other than those prohibited by 1C117, in the form of uniform spherical or atomized particles of 500 μm diameter or less with a tungsten content of 97 % by weight or more; b. Molybdenum and molybdenum alloys, other than those prohibited by 1C117, in the form of uniform spherical or atomized particles of 500 μm diameter or less with a molybdenum content of 97 % by weight or more; or c. Tungsten materials in the solid form, other than those prohibited by 1C226, or II.A1.013 having material compositions as follows: 1. Tungsten and alloys containing 97 % by weight or more of tungsten; 2. Copper infiltrated tungsten containing 80 % by weight or more of tungsten; or 3. Silver infiltrated tungsten containing 80 % by weight or more of tungsten.	—
II.A1.018	Soft magnetic alloys having a chemical composition as follows: a. Iron content between 30 % and 60 %; or b. Cobalt content between 40 % and 60 %.	—
II.A1.019	“Fibrous or filamentary materials” or prepregs, not prohibited by Annex I or by Annex II (under II.A1.009, II.A1.010) of this Regulation, or not specified by Annex I of Regulation (EU) 2021/821, as follows: a. Carbon “fibrous or filamentary materials”; *Note: II.A1.019a. does not cover fabrics.* b. Thermoset resin-impregnated continuous “yarns”, “rovings”, “tows”, or “tapes”, made from carbon “fibrous or filamentary materials”; or c. Polyacrylonitrile (PAN) continuous “yarns”, “rovings”, “tows” or “tapes”	—

▼C8

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A2.001	Vibration test systems, equipment and components thereof, other than those specified in 2B116: a. Vibration test systems employing feedback or closed loop techniques and incorporating a digital controller, capable of vibrating a system at an acceleration equal to or greater than 0,1 g rms between 0,1 Hz and 2 kHz and imparting forces equal to or greater than 50 kN, measured ‘bare table’; *Technical Note:* *‘Vibration test systems incorporating a digital controller’ are those systems, the functions of which are, partly or entirely, automatically controlled by stored and digitally coded electrical signals.* b. Digital controllers, combined with specially designed vibration test ‘software’, with a real-time bandwidth greater than 5 kHz designed for use with vibration test systems specified in 2B116.a.; *Technical Note:* *‘Real-time control bandwidth’ means the maximum rate at which a controller can execute complete cycles of sampling, processing data and transmitting control signals.* c. Vibration thrusters (shaker units), with or without associated amplifiers, capable of imparting a force equal to or greater than 50 kN, measured ‘bare table’, and usable in vibration test systems specified in 2B116.a.; or d. Test piece support structures and electronic units designed to combine multiple shaker units in a system capable of providing an effective combined force equal to or greater than 50 kN, measured ‘bare table’, and usable in vibration systems specified in 2B116.a. *Technical Note:* *‘Bare table’ means a flat table, or surface, with no fixture or fittings.*	2B116
II.A2.002	Machine tools and components and numerical controls for machine tools, as follows: a. Machine tools for grinding having positioning accuracies with “all compensations available” equal to or less (better) than 15 μm according to ISO 230/2 (1988) or national equivalents along any linear axis; *Note: This item does not cover machine tools for grinding defined in items 2B201.b and 2B001.c.* b. Components and numerical controls, specially designed for machine tools specified in 2B001, 2B201, or under a.	2B201.b 2B001.c
II.A2.003	Balancing machines and related equipment as follows: a. Balancing machines, designed or modified for dental or other medical equipment, having all the following characteristics: 1. Not capable of balancing rotors/assemblies having a mass greater than 3 kg; 2. Capable of balancing rotors/assemblies at speeds greater than 12 500 rpm; 3. Capable of correcting imbalance in two planes or more; and 4. Capable of balancing to a residual specific imbalance of 0,2 g × mm per kg of rotor mass; *Note: II.A2.003 does not control balancing machines designed or modified for dental or other medical equipment.* b. ‘Indicator heads’ designed or modified for use with machines specified in 2B119.a. above. *Technical Note:* *‘Indicator heads’ are sometimes known as balancing instrumentation.*	2B119

▼C8

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A2.004	Remote manipulators that can be used to provide remote actions in radiochemical separation operations or hot cells, other than those specified in 2B225, having either of the following characteristics: a. A capability of penetrating a hot cell wall of 0,3 m or more (through the wall operation); or b. A capability of bridging over the top of a hot cell wall with a thickness of 0,3 m or more (over the wall operation).	2B225
II.A2.006	Furnaces capable of operation at temperatures above 400 °C as follows: a. Oxidation furnaces b. Controlled atmosphere heat treatment furnaces *Note: This item does not cover tunnel kilns with roller or car conveyance, tunnel kilns with conveyor belt, pusher type kilns or shuttle kilns, specially designed for the production of glass, tableware ceramics or structural ceramics.*	2B226 2B227
II.A2.007	"Pressure transducers", other than those defined in 2B230, capable of measuring absolute pressures at any point in the range 0 to 200 kPa and having both of the following characteristics: a. Pressure sensing elements made of or protected by "Materials resistant to corrosion by uranium hexafluoride (UF_6)", and b. Having either of the following characteristics: 1. A full scale of less than 200 kPa and an "accuracy" of better than ± 1 % of full scale; or 2. A full scale of 200 kPa or greater and an "accuracy" of better than 2 kPa.	2B230
II.A2.011	Centrifugal separators, capable of continuous separation without the propagation of aerosols and manufactured from: a. Alloys with more than 25 % nickel and 20 % chromium by weight; b. Fluoropolymers; c. Glass (including vitrified or enamelled coating or glass lining); d. Nickel or alloys with more than 40 % nickel by weight; e. Tantalum or tantalum alloys; f. Titanium or titanium alloys; or g. Zirconium or zirconium alloys. *Note: This item does not cover centrifugal separators defined in item 2B352.c.*	2B352.c

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A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A2.012	Sintered metal filters made of nickel or nickel alloy with more than 40 % nickel by weight. *Note: This item does not cover filters defined in item 2B352.d.*	2B352.d
II.A2.013	Spin-forming machines and flow-forming machines, other than those controlled by 2B009, 2B109 or 2B209, having a roller force of more than 60 kN and specially designed components therefor. *Technical Note:* *For the purpose of II.A2.013, machines combining the functions of spin-forming and flow-forming are regarded as flow-forming machines.*	—
II.A2.014	Liquid-liquid contacting equipment (mixer-settlers, pulsed columns, centrifugal contactors); and liquid distributors, vapour distributors or liquid collectors designed for such equipment where all surfaces that come in direct contact with the chemical(s) being processed are any of the following: *N.B. see also III.A2.008.* a. Made from any of the following materials: 1. Alloys with more than 25 % nickel and 20 % chromium by weight; 2. Fluoropolymers; 3. Glass (including vitrified or enamelled coating or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; or 9. Niobium (columbium) or niobium alloys; or b. Made from both stainless steel and one or more of the materials specified in II.A2.014.a. *Technical Note:* *'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.*	2B350.e
II.A2.015	Industrial equipment and components, other than those specified in 2B350.d, as follows: *N.B. see also III.A2.009.* Heat exchangers or condensers with a heat transfer surface area greater than 0,05 m^2, and less than 30 m^2; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are any of the following: a. Made from any of the following materials:	2B350.d

▼C8

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
	1. Alloys with more than 25 % nickel and 20 % chromium by weight; 2. Fluoropolymers; 3. Glass (including vitrified or enamelled coating or glass lining); 4. Graphite or ‘carbon graphite’; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Niobium (columbium) or niobium alloys; or b. Made from both stainless steel and one or more of the materials specified in II.A2.015.a. *Note: This item does not cover vehicle radiators.* *Technical Note:* *The materials used for gaskets and seals and other implementation of sealing functions do not determine the status of control of the heat exchanger.*	
II.A2.016	Multiple-seal, and seal-less pumps, other than those specified in 2B350.i, suitable for corrosive fluids, with manufacturer’s specified maximum flow-rate greater than 0,6 m^3/hour, or vacuum pumps with manufacturer’s specified maximum flow-rate greater than 5 m^3/hour [measured under standard temperature (273 K or 0 ^oC) and pressure (101,3 kPa) conditions]; and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are any of the following: *NB. see also III.A2.010.* a. Made from any of the following materials: 1. Alloys with more than 25 % nickel and 20 % chromium by weight; 2. Ceramics; 3. Ferrosilicon; 4. Fluoropolymers; 5. Glass (including vitrified or enamelled coatings or glass lining); 6. Graphite or ‘carbon graphite’ 7. Nickel or alloys with more than 40 % nickel by weight; 8. Tantalum or tantalum alloys; 9. Titanium or titanium alloys; 10. Zirconium or zirconium alloys; 11. Niobium (columbium) or niobium alloys; or 12. Aluminium alloys; or	2B350.i

▼C8

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
	b. Made from both stainless steel and one or more of the materials specified in II.A2.016.a. *Technical Note:* *The materials used for gaskets and seals and other implementation of sealing functions do not determine the status of control of the pump.*	

A3. Electronics		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A3.001	High voltage direct current power supplies having both of the following characteristics: a. Capable of continuously producing, over a time period of eight hours, 10 kV or more, with output power of 5 kW or more with or without sweeping; and b. Current or voltage stability better than 0,1 % over a time period of four hours. *Note: This item does not cover power supplies defined in items 0B001.j.5 and 3A227.*	3A227
II.A3.002	Mass spectrometers, other than those specified in 3A233 or 0B002.g, capable of measuring ions of 200 atomic mass units or more and having a resolution of better than 2 parts in 200, as follows, and ion sources thereof: a. Inductively coupled plasma mass spectrometers (ICP/MS); b. Glow discharge mass spectrometers (GDMS); c. Thermal ionisation mass spectrometers (TIMS); d. Electron bombardment mass spectrometers having both of the following features: 1. A molecular beam inlet system that injects a collimated beam of analyte molecules into a region of the ion source where the molecules are ionised by an electron beam; and 2. One or more 'cold traps' that can be cooled to a temperature of 193 K (– 80 °C); e. Not used f. Mass spectrometers equipped with a microfluorination ion source designed for actinides or actinide fluorides. *Technical Notes:* *1. Electron bombardment mass spectrometers in II.A3.002.d. are also known as electron impact mass spectrometers or electron ionisation mass spectrometers.* *2. In II.A3.002.d.2., a 'cold trap' is a device that traps gas molecules by condensing or freezing them on cold surfaces. For the purposes of II.A3.002.d.2., a closed-loop gaseous helium cryogenic vacuum pump is not a 'cold trap'.*	3A233

▼C8

A3. Electronics		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A3.004	Frequency changers or generators, other than those specified in 0B001.b.13., usable as a variable or fixed frequency motor drive, having all of the following characteristics: a. Multiphase output providing a power of 40 VA or greater; b. Operating at a frequency of 600 Hz or more; and c. Frequency control better (less) than 0,2 %. *Technical Notes:* *1. Frequency changers in II.A3.004 are also known as converters or inverters.* *2. Frequency changers in II.A3.004 may be marketed as Generators, Electronic Test Equipment, AC Power Supplies, Variable Speed Motors Drives, Variable Speed Drives (VSDs), Variable Frequency Drives (VFDs), Adjustable Frequency Drives (AFDs), or Adjustable Speed Drives (ASDs).*	3A225 0B001.b.13

A6. Sensors and Lasers		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A6.001	Yttrium aluminium garnet (YAG) rods	—
II.A6.002	Optical equipment and components, other than those specified in 6A002, 6A004.b as follows: Infrared optics in the wavelength range 9 000 nm – 17 000 nm and components thereof, including cadmium telluride (CdTe) components.	6A002 6A004.b
II.A6.003	Wave front corrector systems for use with a laser beam having a diameter exceeding 4 mm, and specially designed components thereof, including control systems, phase front sensors and ‘deformable mirrors’ including bimorph mirrors. *Note: This item does not cover mirrors defined in 6A004.a, 6A005.e and 6A005.f.*	6A003
II.A6.004	Argon ion “lasers” having an average output power equal to or greater than 5 W. *Note: This item does not cover argon ion “lasers” defined in items 0B001.g.5, 6A005 and 6A205.a.*	6A005.a.6 6A205.a
II.A6.005	Semiconductor “lasers” and components thereof, as follows: a. Individual semiconductor “lasers” with an output power greater than 200 mW each, in quantities larger than 100; or b. Semiconductor “laser” arrays having an output power greater than 20 W. *Notes:* *1. Semiconductor “lasers” are commonly called “laser” diodes.* *2. This item does not cover “lasers” defined in items 0B001.g.5, 0B001.h.6 and 6A005.b.* *3. This item does not cover “laser” diodes with a wavelength in the range 1 200 nm – 2 000 nm.*	6A005.b

▼C8

A6. Sensors and Lasers		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A6.006	"Tunable" semiconductor "lasers" and "tunable" semiconductor "laser" arrays, of a wavelength between 9 μm and 17 μm, as well as array stacks of semiconductor "lasers" containing at least one "tunable" semiconductor "laser" array of such wavelength. *Notes:* *1. Semiconductor "lasers" are commonly called "laser" diodes.* *2. This item does not cover semiconductor "lasers" defined in items 0B001.h.6 and 6A005.b*	6A005.b
II.A6.007	Solid state "tunable" "lasers" and specially designed components thereof as follows: a. Titanium-sapphire "lasers"; or b. Alexandrite "lasers". *Note: This item does not cover titanium-sapphire and alexandrite "lasers" defined in items 0B001.g.5, 0B001.h.6 and 6A005.c.1.*	6A005.c.1
II.A6.008	Neodymium-doped (other than glass) "lasers", having an output wavelength greater than 1 000 nm but not exceeding 1 100 nm and output energy exceeding 10 J per pulse. *Note: This item does not cover neodymium-doped (other than glass) "lasers" defined in item 6A005.c.2.b.*	6A005.c.2
II.A6.009	Components of acousto-optics, as follows: a. Framing tubes and solid-state imaging devices having a recurrence frequency equal to or exceeding 1 kHz; b. Recurrence frequency supplies; or c. Pockels cells.	6A203.b.4.c
II.A6.010	Radiation-hardened cameras, or lenses thereof, other than those specified in 6A203.c., specially designed, or rated as radiation-hardened, to withstand a total radiation dose greater than 50×10^3 Gy (silicon) (5×10^6 rad (silicon)) without operational degradation. *Technical Note:* *The term Gy(silicon) refers to the energy in Joules per kilogram absorbed by an unshielded silicon sample when exposed to ionising radiation.*	6A203.c
II.A6.011	"Tunable" pulsed dye laser amplifiers and oscillators, having all of the following characteristics: a. Operating at wavelengths between 300 nm and 800 nm; b. An average output power greater than 10 W but not exceeding 30 W; c. A repetition rate greater than 1 kHz; and d. Pulse width less than 100 ns. *Notes:* *1. This item does not cover single mode oscillators.* *2. This item does not cover "tunable" pulsed dye "laser" amplifiers and oscillators defined in item 6A205.c, 0B001.g.5 and 6A005.*	6A205.c

▼C8

A6. Sensors and Lasers		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A6.012	Pulsed carbon dioxide “lasers” having all of the following characteristics: 1. Operating at wavelengths between 9 000 nm and 11 000 nm; 2. A repetition rate greater than 250 Hz; 3. An average output power greater than 100 W but not exceeding 500 W; and 4. Pulse width less than 200 ns. *Note: This item does not cover pulsed carbon dioxide “laser” amplifiers and oscillators defined in item 6A205.d., 0B001.h.6. and 6A005.d.*	6A205.d
II.A6.013	Copper vapour “lasers” having both of the following characteristics: 1. Operating at wavelengths between 500 and 600 nm; and 2. An average output power equal to or greater than 15 W.	6A005.b
II.A6.014	Pulsed carbon monoxide “lasers” having all of the following characteristics: 1. Operating at wavelengths between 5 000 and 6 000 nm; 2. A repetition rate greater than 250 Hz; 3. An average output power greater than 100 W; and 4. Pulse width of less than 200 ns. *Note: This item does not control the higher power (typically 1 to 5 kW) industrial carbon monoxide “lasers” used in applications such as cutting and welding, as these latter “lasers” are either continuous wave or are pulsed with a pulse width greater than 200 ns.*	

A7. Navigation and Avionics		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A7.001	Inertial navigation systems and specially designed components thereof, as follows: I. Inertial navigation systems which are certified for use on “civil aircraft” by civil authorities of a State participating in the Wassenaar Arrangement, and specially designed components thereof, as follows: a. Inertial navigation systems (INSs) (gimballed or strapdown) and inertial equipment designed for “aircraft”, land vehicle, vessels (surface or underwater) or ‘spacecraft’ for attitude, guidance or control, having any of the following characteristics, and specially designed components thereof: 1. Navigation error (free inertial) subsequent to normal alignment of 0,8 nautical mile per hour (nm/hr) “Circular Error Probable” “(CEP)” or less (better); or 2. Specified to function at linear acceleration levels exceeding 10 g;	7A003 7A103

▼C8

A7. Navigation and Avionics		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
	b. Hybrid Inertial Navigation Systems embedded with Global Navigation Satellite Systems(s) (GNSS) or with "Data-Based Referenced Navigation" ("DBRN") System(s) for attitude, guidance or control, subsequent to normal alignment, having an INS navigation position accuracy, after loss of GNSS or "DBRN" for a period of up to four minutes, of less (better) than 10 metres "CEP"; c. Inertial Equipment for Azimuth, Heading, or North Pointing having any of the following characteristics, and specially designed components thereof: 1. Designed to have an Azimuth, Heading, or North Pointing accuracy equal to, or less (better) than 6 arc/ minutes RMS at 45 degrees latitude; or 2. Designed to have a non-operating shock level of at least 900 g at a duration of at least 1 msec. *Note: The parameters of I.a. and I.b. are applicable with any of the following environmental conditions:* *1. Input random vibration with an overall magnitude of 7,7 g rms in the first half hour and a total test duration of one and a half hours per axis in each of the three perpendicular axes, when the random vibration meets the following:* *a. A constant power spectral density (PSD) value of 0,04 g^2/Hz over a frequency interval of 15 to 1 000 Hz; and* *b. The PSD attenuates with a frequency from 0,04 g^2/Hz to 0,01 g^2/Hz over a frequency interval from 1 000 to 2 000 Hz;* *2. A roll and yaw rate equal to or greater than +2,62 radian/s (150 deg/s); or* *3. According to national standards equivalent to 1. or 2. above.* *Technical Note:* *I.b. refers to systems in which an INS and other independent navigation aids are built into a single unit (embedded) in order to achieve improved performance.* II. Theodolite systems incorporating inertial equipment specially designed for civil surveying purposes and designed to have an Azimuth, Heading, or North Pointing accuracy equal to, or less (better) than 6 arc minutes RMS at 45 degrees latitude, and specially designed components thereof. III. Inertial or other equipment using accelerometers specified in 7A001 or 7A101, where such accelerometers are specially designed and developed as MWD (Measurement While Drilling) sensors for use in downhole well services operations.	

▼C8

A9. Aerospace and Propulsion		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.A9.001	Explosive bolts.	—

II.B. TECHNOLOGY

No	Description	Related item from Annex I to Regulation (EU) 2021/821
II.B.001	Technology required for the development, production, or use of the items in Part II.A. (Goods) above. *Technical Note:* *The term 'technology' includes software.*	—

▼M52
▼C8

ANNEX IIa

Goods and technology referred to in Article 3(1), 3(3) and 3(5), Article 5(2), Article 8(4), Article 18(1), Article 31(1) and Article 45

INTRODUCTORY NOTES

1. Unless otherwise stated, reference numbers used in the column below entitled “Description” refer to the descriptions of dual use items and technology set out in Annex I to Regulation (EU) 2021/821.

2. A reference number in the column below entitled “Related item from Annex I to Regulation (EU) 2021/821” means that the characteristics of the item described in the “Description” column lie outside the parameters set out in the description of the dual use entry referred to.

3. Definitions of terms between ‘single quotation marks’ are given in a technical note to the relevant item.

4. Definitions of terms between “double quotation marks” can be found in Annex I to Regulation (EU) 2021/821.

GENERAL NOTES

1. The object of the controls contained in this Annex should not be defeated by the export of any non-controlled goods (including plant) containing one or more controlled components when the controlled component or components is/are the principal element of the goods and can feasibly be removed or used for other purposes.

N.B.: In judging whether the controlled component or components is/are to be considered the principal element, it is necessary to weigh the factors of quantity, value and technological know-how involved and other special circumstances which might establish the controlled component or components as the principal element of the goods being procured.

2. The goods specified in this Annex include both new and used goods.

GENERAL TECHNOLOGY NOTE (GTN)

1. The sale, supply, transfer or export of “technology” which is “required” for the “use” of goods the sale, supply, transfer or export of which is controlled in Part A (Goods) below, is controlled in accordance with the provisions of Section III.B.

2. The sale, supply, transfer or export of “technology” which is “required” for the “development” or “production” of goods the sale, supply, transfer or export of which is controlled in Part A (Goods) below, is prohibited in accordance with the provisions of Annex II, Section II.B.

3. The “technology” “required” for the “use” of goods under control remains under control even when it is applicable to non-controlled goods.

4. Controls do not apply to that “technology” which is the minimum necessary for the installation, operation, maintenance (checking) and repair of those goods which are not controlled or the export of which has been authorised in accordance with Regulation (EC) No 423/2007, Regulation (EU) No 961/2010 or this Regulation.

5. Controls on “technology” transfer do not apply to information “in the public domain”, to “basic scientific research” or to the minimum necessary information for patent applications.

▼C8

III.A. GOODS

A0. Nuclear Materials, Facilities, and Equipment		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A0.015	‘Glove Boxes’, specially designed for radioactive isotopes, radioactive sources or radionuclides. *Technical Note:* *‘Glove Boxes’ means equipment providing protection to the user, from hazardous vapour, particles or radiation, from materials inside the equipment being handled or processed by a person outside the equipment, by means of manipulators or gloves integrated into the equipment.*	0B006
III.A0.016	Toxic gas monitoring systems designed for continuous operation and detection of hydrogen sSulphide, and specially designed detectors therefore.	0A001 0B001.c
III.A0.017	Helium leak detectors.	0A001 0B001.c

A1. Materials, chemicals, ‘micro-organisms’ and ‘toxins’		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A1.003	Ring-shaped seals and gaskets, having an inner diameter of 650 mm or less, made of any of the following materials: a. Copolymers of vinylidene fluoride having 75 % or more beta crystalline structure without stretching; b. Fluorinated polyimides containing 10 % by weight or more of combined fluorine; c. Fluorinated phosphazene elastomers containing 30 % by weight or more of combined fluorine; d. Polychlorotrifluoroethylene (PCTFE, e.g. Kel-F ®); e. Fluoro-elastomers (e.g., Viton ®, Tecnoflon ®); f. Polytetrafluoroethylene (PTFE).	
III.A1.004	Personal equipment for detecting radiation of nuclear origin, including personal dosimeters. *Note: This item does not cover nuclear detection systems defined in item 1A004.c.*	1A004.c
III.A1.020	Steel alloys in sheet or plate form, having any of the following characteristics: (a) Steel alloys ‘capable of’ ultimate tensile strength of 1 200 MPa or more, at 293 K (20 °C); or (b) Nitrogen-stabilised duplex stainless steel. *Note: The phrase alloys ‘capable of’ encompasses alloys before or after heat treatment.* *Technical Note:* *‘Nitrogen-stabilised duplex stainless steel’ has a two-phase microstructure consisting of grains of ferritic and austenitic steel with the addition of nitrogen to stabilise the microstructure.*	1C116 1C216

▼C8

A1. Materials, chemicals, 'micro-organisms' and 'toxins'		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A1.021	Carbon-Carbon composite material.	1A002.b.1
III.A1.022	Nickel alloys in crude or semi-fabricated form, containing 60 % by weight or more nickel.	1C002.c.1.a
III.A1.023	Titanium alloys in sheet or plate form 'capable of' an ultimate tensile strength of 900 MPa or more at 293 K (20 °C). *Note: The phrase alloys 'capable of' encompasses alloys before or after heat treatment.*	1C002.b.3
III.A1.024	Propellants and constituent chemicals for propellants as follows: a. Toluene Diisocyanate (TDI); b. Methyl Diphenyl Diisocyanate (MDI); c. Isophorone Diiscocyanate (IPDI); d. Sodium perchlorate; e. Xylidine; f. Hydroxy Terminated Polyether (HTPE); or g. Hydroxy Terminated Caprolactone Ether (HTCE). *Technical Note:* *This item refers to pure substance and any mixture containing at least 50 % of one of the chemicals mentioned above.*	1C111
III.A1.025	'Lubricating materials' containing, as their principal ingredients, any of the following: a. Perfluoroalkylether, (CAS 60164-51-4); b. Perfluoropolyalkylether, PFPE, (CAS 6991-67-9). *Technical Note:* *'Lubricating materials' means oils and fluids.*	1C006
III.A1.026	Beryllium-copper or copper-beryllium alloys in plate, sheet, strip or rolled bar form, having a composition comprising copper as the major element by weight and other elements including less than 2 % by weight beryllium.	1C002.b

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A2.008	Liquid-liquid contacting equipment (mixer-settlers, pulsed columns, centrifugal contactors); and liquid distributors, vapour distributors or liquid collectors designed for such equipment, where all surfaces that come in direct contact with the chemical(s) being processed are made from stainless steel. *N.B. see also II.A2.014.* *Note: for stainless steel with more than 25 % nickel and 20 % chromium by weight see entry II.A2.014.a*	2B350.e

▼C8

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A2.009	Industrial equipment and components, other than those specified in 2B350.d, as follows: *N.B. see also II.A2.015.* Heat exchangers or condensers with a heat transfer surface area greater than 0,05 m^2, and less than 30 m^2; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from stainless steel. *Note 1: For stainless steel with more than 25 % nickel and 20 % chromium by weight see entry II.A2.015a.* *Note 2: This item does not cover vehicle radiators.* *Technical Note:* *The materials used for gaskets and seals and other implementation of sealing functions do not determine the status of control of the heat exchanger.*	2B350.d
III.A2.010	Multiple-seal, and seal-less pumps, other than those specified in 2B350.i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m^3/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m^3/hour [measured under standard temperature (273 K or 0 °C) and pressure (101,3 kPa) conditions]; and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from stainless steel. *N.B. see also II.A2.016.* *Note: for stainless steel with more than 25 % nickel and 20 % chromium by weight see entry II.A2.016a.* *Technical Note:* *The materials used for gaskets and seals and other implementation of sealing functions do not determine the status of control of the pump.*	2B350.i
III.A2.017	Electrical Discharge Machine (EDM) tools for removing or cutting metals, ceramics or "composites", as follows, and specially designed ram, sinker or wire electrodes therefor: a. Ram or sinker electrode Electrical Discharge Machines; b. Wire electrode Electrical Discharge Machines. *Note: Electrical Discharge Machines are also known as Spark Erosion Machines or Wire Erosion Machines.*	2B001.d
III.A2.018	Computer controlled or "numerically controlled" co-ordinate measuring machines (CMM), or dimensional inspection machines, having a three dimensional (volumetric) maximum permissible error of indication (MPP_E) at any point in the operating range of the machine (i.e. within the length axes) equal to or less (better) than (3 + L/1 000) µm (L is the measured length in mm), tested according to ISO 10360-2 (2001), and measurement probes designed therefor.	2B006.a 2B206.a
III.A2.019	Computer controlled or "numerically controlled" Electron Beam Welding Machines, and specially designed components therefor.	2B001.e.1.b

▼C8

A2. Materials Processing		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A2.020	Computer controlled or “numerically controlled” Laser Welding and Laser Cutting Machines, and specially designed components therefor.	2B001.e.1.c
III.A2.021	Computer controlled or “numerically controlled” Plasma Cutting Machines, and specially designed components therefor.	2B001.e.1
III.A2.022	Vibration Monitoring Equipment specially designed for rotors or rotating equipment and machinery, capable of measuring any frequency in the range 600-2 000 Hz.	2B116
III.A2.023	Liquid ring vacuum pumps, and specially designed components therefore.	2B231 2B350.i
III.A2.024	Rotary vane vacuum pumps, and specially designed components therefore. *Note 1: III.A2.024 does not control rotary vane vacuum pumps that are specially designed for specific other equipment.* *Note 2: The control status of rotary vane vacuum pumps that are specially designed for specific other equipment is determined by the control status of the other equipment.*	2B231 2B235.i 0B002.f
III.A2.025	Air filters, as follows, having one or more physical size dimension exceeding 1 000 mm: a. High Efficiency Particulate Air (HEPA) filters; b. Ultra-Low Penetration Air (ULPA) filters. *Note: III.A2.025 does not control air filters specially designed for medical equipment.*	2B352.d

A3. Electronics		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A3.004	Spectrometers and diffractometers, designed for the indicative test or quantitative analysis of the elemental composition of metals or alloys without chemical decomposition of the material.	
III.A3.005	‘Frequency changers’, frequency generators and variable speed electrical drives, having all the following characteristics: a. Multiphase output power of 10 W or greater; b. Capable of operating at a frequency of 600 Hz or more; and c. Frequency control better (less) than 0,2 %. *Technical Note:* *‘Frequency Changers’ includes frequency converters and frequency inverters.* *Notes:* *1. Item III.A3.005 does not control frequency changers that include communication protocols or interfaces designed for specific industrial machinery (such as machine tools, spinning machines, printed circuit board machines) so that the frequency changers cannot be used for other purposes while meeting the performance characteristics above.* *2. Item III.A3.005 does not control frequency changers specially designed for vehicles and which operate with a control sequence that is mutually communicated between the frequency changer and the vehicle control unit.*	3A225 0B001.b.13

▼C8

A6. Sensors and Lasers		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A6.012	'Vacuum pressure gauges', being electrically powered and having measurement accuracy of 5 % or less (better). *Technical Note:* *'Vacuum pressure gauges' include Pirani Gauges, Penning Gauges and Capacitance Manometers.*	0B001.b
III.A6.013	Microscopes and related equipment and detectors, as follows: a. Scanning Electron Microscopes; b. Scanning Auger Microscopes; c. Transmission Electron Microscopes; d. Atomic Force Microscopes; e. Scanning Force Microscopes; f. Equipment and detectors, specially designed for use with the microscopes specified in III.A6.013 a) to e) above, employing any of the following materials analysis techniques: 1. X-ray Photo Spectroscopy (XPS); 2. Energy-dispersive X-ray Spectroscopy (EDX, EDS); or 3. Electron Spectroscopy for Chemical Analysis (ESCA).	6B

A7. Navigation and Avionics		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A7.002	Accelerometers containing piezoelectric ceramic transducer element, having a sensitivity of 1 000 mV/g or better (higher)	7A001

A9. Aerospace and Propulsion		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A9.002	'Load Cells' capable of measuring rocket motor thrust having a capacity exceeding 30 kN. *Technical Note:* *'Load Cells' means devices and transducers for the measurement of force in both tension and in compression.* *Note: III.A9.002 does not include equipment, devices or transducers, specially designed for the measurement of the weight of vehicles, e.g. weigh bridges.*	9B117

▼C8

A9. Aerospace and Propulsion		
No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.A9.003	Electrical power generation gas turbines, components and related equipment as follows: a. Gas turbines specially designed for electrical power generation, having an output exceeding 200 MW; b. Vanes, stators, combustion chambers and fuel injection nozzles, specially designed for electrical power generation gas turbines specified in III.A9.003.a; c. Equipment specially designed for the “development” and “production” of electrical power generation gas turbines specified in III. A9.003.a.	9A001 9A002 9A003 9B001 9B003 9B004

III.B. TECHNOLOGY

No	Description	Related item from Annex I to Regulation (EU) 2021/821
III.B.001	‘Technology’ required for the use of the items in Part III.A. (Goods) above. *Technical Note:* *The term ‘technology’ includes software.*	

▼M30

ANNEX III

CATEGORY 1 — SPECIAL MATERIALS AND RELATED EQUIPMENT

1A Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
1A002	"Composite" structures or laminates, having any of the following: a. Consisting of an organic "matrix" and materials specified in 1C010.c., 1C010.d. or 1C010.e.; or b. Consisting of a metal or carbon "matrix", and any of the following: 1. Carbon "fibrous or filamentary materials" having all of the following: a. A "specific modulus" exceeding $10{,}15 \times 10^6$ m; and b. A "specific tensile strength" exceeding $17{,}7 \times 10^4$ m; or 2. Materials specified in 1C010.c. *Note 1: 1A002 does not control composite structures or laminates made from epoxy resin impregnated carbon "fibrous or filamentary materials" for the repair of "civil aircraft" structures or laminates, having all of the following:* *a. An area not exceeding 1 m^2;* *b. A length not exceeding 2,5 m; and* *c. A width exceeding 15 mm.* *Note 2: 1A002 does not control semi-finished items, specially designed for purely civilian applications as follows:* *a. Sporting goods;* *b. Automotive industry;* *c. Machine tool industry;* *d. Medical applications.*	M6A1	Composite structures, laminates, and manufactures thereof, specially designed for use in the systems specified in 1.A., 19.A.1. or 19.A.2. and the subsystems specified in 2.A. or 20.A.

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▼M30

	Note 3: *1A002.b.1. does not control semi-finished items containing a maximum of two dimensions of interwoven filaments and specially designed for applications as follows:* *a. Metal heat-treatment furnaces for tempering metals;* *b. Silicon boule production equipment.* *Note 4:* *1A002 does not control finished items specially designed for a specific application.*		
1A102	Resaturated pyrolized carbon-carbon components designed for space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M6A2	Resaturated pyrolised (i.e. carbon-carbon) components having all of the following: a. Designed for rocket systems; and b. Usable in the systems specified in 1.A. or 19.A.1.

1B Test, Inspection and Production Equipment

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
1B001	Equipment for the production or inspection of “composite” structures or laminates specified in 1A002 or “fibrous or filamentary materials” specified in 1C010, as follows, and specially designed components and accessories therefor: **N.B.: SEE ALSO 1B101 AND 1B201.**		
	a. Filament winding machines, of which the motions for positioning, wrapping and winding fibres are coordinated and programmed in three or more ‘primary servo positioning’ axes, specially designed for the manufacture of “composite” structures or laminates, from “fibrous or filamentary materials”;	M6B1a	Filament winding machines or ‘fibre/tow-placement machines’, of which the motions for positioning, wrapping and winding fibres can be coordinated and programmed in three or more axes, designed to fabricate composite structures or laminates from fibrous or filamentary materials, and co-ordinating and programming controls
	b. ‘Tape-laying machines’, of which the motions for positioning and laying tape are coordinated and programmed in five or more ‘primary servo positioning’ axes, specially designed for the manufacture of “composite” airframe or ‘missile’ structures;	M6B1b	‘Tape-laying machines’ of which the motions for positioning and laying tape can be co-ordinated and programmed in two or more axes, designed for the manufacture of composite airframes and missile structures;

Note: In 1B001.b., 'missile' means complete rocket systems and unmanned aerial vehicle systems. *Technical Note:* *For the purposes of 1B001.b., 'tape-laying machines' have the ability to lay one or more 'filament bands' limited to widths greater than 25 mm and less than or equal to 305 mm, and to cut and restart individual 'filament band' courses during the laying process.*		*Note: For the purposes of 6.B.1.a. and 6.B.1.b., the following definitions apply:* *1. A 'filament band' is a single continuous width of fully or partially resinimpregnated tape, tow, or fibre. Fully or partially resin-impregnated 'filament bands' include those coated with dry powder that tacks upon heating.* *2. 'Fibre/tow-placement machines' and 'tape-laying machines' are machines that perform similar processes that use computer-guided heads to lay one or several 'filament bands' onto a mold to create a part or a structure. These machines have the ability to cut and restart individual 'filament band' courses during the laying process.* *3. 'Fibre/tow-placement machines' have the ability to place one or more 'filament bands' having widths less than or equal to 25,4 mm. This refers to the minimum width of material the machine can place, regardless of the upper capability of the machine.* *4. 'Tape-laying machines' have the ability to place one or more 'filament bands' having widths less than or equal to 304,8 mm, but cannot place 'filaments bands' with a width equal to or less than 25,4 mm. This refers to the minimum width of material the machine can place, regardless of the upper capability of the machine.*
c. Multidirectional, multidimensional weaving machines or interlacing machines, including adapters and modification kits, specially designed or modified for weaving, interlacing or braiding fibres, for "composite" structures; *Technical Note:* *For the purposes of 1B001.c., the technique of interlacing includes knitting.*	M6B1c	Multi-directional, multi-dimensional weaving machines or interlacing machines, including adapters and modification kits for weaving, interlacing or braiding fibres to manufacture composite structures; *Note: 6.B.1.c. does not control textile machinery not modified for the end-uses stated.*
d. Equipment specially designed or adapted for the production of reinforcement fibres, as follows:		Equipment designed or modified for the production of fibrous or filamentary materials as follows:
1. Equipment for converting polymeric fibres (such as polyacrylonitrile, rayon, pitch or polycarbosilane) into carbon fibres or silicon carbide fibres, including special equipment to strain the fibre during heating;	M6B1d1	1. Equipment for converting polymeric fibres (such as polyacrylonitrile, rayon, or polycarbosilane) including special provision to strain the fibre during heating;

	2. Equipment for the chemical vapour deposition of elements or compounds, on heated filamentary substrates, to manufacture silicon carbide fibres;	M6B1d2	2. Equipment for the vapour deposition of elements or compounds on heated filament substrates;
	3. Equipment for the wet-spinning of refractory ceramics (such as aluminium oxide);	M6B1d3	3. Equipment for the wet-spinning of refractory ceramics (such as aluminium oxide)
	4. Equipment for converting aluminium containing precursor fibres into alumina fibres by heat treatment;	M6B1e	Equipment designed or modified for special fibre surface treatment or for producing prepregs and preforms, including rollers, tension stretchers, coating equipment, cutting equipment and clicker dies.
	e. Equipment for producing prepregs specified in 1C010.e. by the hot melt method;		
	f. Non-destructive inspection equipment specially designed for “composite” materials, as follows:		Note: *Examples of components and accessories for the machines specified in 6.B.1. are moulds, mandrels, dies, fixtures and tooling for the preform pressing, curing, casting, sintering or bonding of composite structures, laminates and manufactures thereof*
	1. X-ray tomography systems for three dimensional defect inspection;		
	2. Numerically controlled ultrasonic testing machines of which the motions for positioning transmitters or receivers are simultaneously coordinated and programmed in four or more axes to follow the three dimensional contours of the component under inspection;		
	g. ‘Tow-placement machines’, of which the motions for positioning and laying tows are coordinated and programmed in two or more ‘primary servo positioning’ axes, specially designed for the manufacture of “composite” airframe or ‘missile’ structures.		
	Technical Note:		
	For the purposes of 1B001.g., ‘tow-placement machines’ have the ability to place one or more ‘filament bands’ having widths less than or equal to 25 mm, and to cut and restart individual ‘filament band’ courses during the placement process.		
	Technical Note:		
	1. For the purpose of 1B001, ‘primary servo positioning’ axes control, under computer program direction, the position of the end effector (i.e., head) in space relative to the work piece at the correct orientation and direction to achieve the desired process.		
	2. For the purposes of 1B001., a ‘filament band’ is a single continuous width of fully or partially resin-impregnated tape, tow or fibre.		

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1B002	Equipment for producing metal alloys, metal alloy powder or alloyed materials, specially designed to avoid contamination and specially designed for use in one of the processes specified in 1C002.c.2. **N.B.: SEE ALSO 1B102.**	M4B3d	Metal powder “production equipment” usable for the “production”, in a controlled environment, of spherical, spheroidal or atomised materials specified in 4.C.2.c., 4.C.2.d. or 4.C.2.e. Note: 4.B.3.d. includes: a. Plasma generators (high frequency arc-jet) usable for obtaining sputtered or spherical metallic powders with organization of the process in an argon-water environment; b. Electroburst equipment usable for obtaining sputtered or spherical metallic powders with organization of the process in an argon-water environment; c. Equipment usable for the “production” of spherical aluminium powders by powdering a melt in an inert medium (e.g. nitrogen). Notes: 1. The only batch mixers, continuous mixers, usable for solid propellants or propellants constituents specified in 4.C., and fluid energy mills specified in 4.B., are those specified in 4.B.3. 2. Forms of metal powder “production equipment” not specified in 4.B.3.d. are to be evaluated in accordance with 4.B.2.
1B101	Equipment, other than that specified in 1B001, for the “production” of structural composites as follows; and specially designed components and accessories therefor: **N.B.: SEE ALSO 1B201.** Note: Components and accessories specified in 1B101 include moulds, mandrels, dies, fixtures and tooling for the preform pressing, curing, casting, sintering or bonding of composite structures, laminates and manufactures thereof.		
	a. Filament winding machines or fibre placement machines, of which the motions for positioning, wrapping and winding fibres can be coordinated and programmed in three or more axes, designed to fabricate composite structures or laminates from fibrous or filamentary materials, and coordinating and programming controls;	M6B1a	Filament winding machines or ‘fibre/tow-placement machines’, of which the motions for positioning, wrapping and winding fibres can be coordinated and programmed in three or more axes, designed to fabricate composite structures or laminates from fibrous or filamentary materials, and co-ordinating and programming controls;

b. Tape-laying machines of which the motions for positioning and laying tape and sheets can be coordinated and programmed in two or more axes, designed for the manufacture of composite airframe and “missile” structures;	M6B1b	‘Tape-laying machines’ of which the motions for positioning and laying tape can be co-ordinated and programmed in two or more axes, designed for the manufacture of composite airframes and missile structures; *Note:* *For the purposes of 6.B.1.a. and 6.B.1.b., the following definitions apply:* *1. A ‘filament band’ is a single continuous width of fully or partially resinimpregnated tape, tow, or fibre. Fully or partially resin-impregnated ‘filament bands’ include those coated with dry powder that tacks upon heating.* *2. ‘Fibre/tow-placement machines’ and ‘tape-laying machines’ are machines that perform similar processes that use computer-guided heads to lay one or several ‘filament bands’ onto a mold to create a part or a structure. These machines have the ability to cut and restart individual ‘filament band’ courses during the laying process.* *3. ‘Fibre/tow-placement machines’ have the ability to place one or more ‘filament bands’ having widths less than or equal to 25,4 mm. This refers to the minimum width of material the machine can place, regardless of the upper capability of the machine.* *4. ‘Tape-laying machines’ have the ability to place one or more ‘filament bands’ having widths less than or equal to 304,8 mm, but cannot place ‘filaments bands’ with a width equal to or less than 25,4 mm. This refers to the minimum width of material the machine can place, regardless of the upper capability of the machine.*
c. Equipment designed or modified for the “production” of “fibrous or filamentary materials” as follows: 1. Equipment for converting polymeric fibres (such as polyacrylonitrile, rayon or polycarbosilane) including special provision to strain the fibre during heating; 2. Equipment for the vapour deposition of elements or compounds on heated filament substrates; 3. Equipment for the wet-spinning of refractory ceramics (such as aluminium oxide);	M6B1d	Equipment designed or modified for the production of fibrous or filamentary materials as follows: 1. Equipment for converting polymeric fibres (such as polyacrylonitrile, rayon, or polycarbosilane) including special provision to strain the fibre during heating; 2. Equipment for the vapour deposition of elements or compounds on heated filament substrates; 3. Equipment for the wet-spinning of refractory ceramics (such as aluminium oxide);

	d. Equipment designed or modified for special fibre surface treatment or for producing prepregs and preforms specified in entry 9C110. Note: *1B101.d. includes rollers, tension stretchers, coating equipment, cutting equipment and clicker dies.*	M6B1e	Equipment designed or modified for special fibre surface treatment or for producing prepregs and preforms, including rollers, tension stretchers, coating equipment, cutting equipment and clicker dies. Note: *Examples of components and accessories for the machines specified in 6.B.1. are moulds, mandrels, dies, fixtures and tooling for the preform pressing, curing, casting, sintering or bonding of composite structures, laminates and manufactures thereof*
1B102	Metal powder “production equipment”, other than that specified in 1B002, and components as follows: **N.B.: SEE ALSO 1B115.b.** a. Metal powder “production equipment” usable for the “production”, in a controlled environment, of spherical, spheroidal or atomised materials specified in 1C011.a., 1C011.b., 1C111.a.1., 1C111.a.2. or in the Military Goods Controls. b. Specially designed components for “production equipment” specified in 1B002 or 1B102.a. Note: *1B102 includes:* *a. Plasma generators (high frequency arc-jet) usable for obtaining sputtered or spherical metallic powders with organization of the process in an argon-water environment;* *b. Electroburst equipment usable for obtaining sputtered or spherical metallic powders with organization of the process in an argon-water environment;* *c. Equipment usable for the “production” of spherical aluminium powders by powdering a melt in an inert medium (e.g. nitrogen).*	M4B3d	Metal powder “production equipment” usable for the “production”, in a controlled environment, of spherical, spheroidal or atomised materials specified in 4.C.2.c., 4.C.2.d. or 4.C.2.e. Note: *4.B.3.d. includes:* *a. Plasma generators (high frequency arc-jet) usable for obtaining sputtered or spherical metallic powders with organization of the process in an argon-water environment;* *b. Electroburst equipment usable for obtaining sputtered or spherical metallic powders with organization of the process in an argon-water environment;* *c. Equipment usable for the “production” of spherical aluminium powders by powdering a melt in an inert medium (e.g. nitrogen).* Notes: *1. The only batch mixers, continuous mixers, usable for solid propellants or propellants constituents specified in 4.C., and fluid energy mills specified in 4.B., are those specified in 4.B.3.* *2. Forms of metal powder “production equipment” not specified in 4.B.3.d. are to be evaluated in accordance with 4.B.2.*

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1B115	Equipment, other than that specified in 1B002 or 1B102, for the production of propellant and propellant constituents, as follows, and specially designed components therefor:		
	a. “Production equipment” for the “production”, handling or acceptance testing of liquid propellants or propellant constituents specified in 1C011.a., 1C011.b., 1C111 or in the Military Goods Controls;	M4B1	“Production equipment”, and specially designed components therefor, for the “production”, handling or acceptance testing of liquid propellants or propellant constituents specified in 4.C.
	b. “Production equipment” for the “production”, handling, mixing, curing, casting, pressing, machining, extruding or acceptance testing of solid propellants or propellant constituents specified in 1C011.a., 1C011.b., 1C111 or in the Military Goods Controls. *Note: 1B115.b. does not control batch mixers, continuous mixers or fluid energy mills. For the control of batch mixers, continuous mixers and fluid energy mills see 1B117, 1B118 and 1B119.* *Note 1: For equipment specially designed for the production of military goods, see the Military Goods Controls.* *Note 2: 1B115 does not control equipment for the “production”, handling and acceptance testing of boron carbide.*	M4B2	“Production equipment”, other than that described in 4.B.3., and specially designed components therefor, for the production, handling, mixing, curing, casting, pressing, machining, extruding or acceptance testing of solid propellants or propellant constituents specified in 4.C.
1B116	Specially designed nozzles for producing pyrolitically derived materials formed on a mould, mandrel or other substrate from precursor gases which decompose in the 1 573 K (1 300 °C) to 3 173 K (2 900 °C) temperature range at pressures of 130 Pa to 20 kPa.	M6B2	Nozzles specially designed for the processes referred to in 6.E.3.
1B117	Batch mixers with provision for mixing under vacuum in the range of zero to 13,326 kPa and with temperature control capability of the mixing chamber and having all of the following, and specially designed components therefor: a. A total volumetric capacity of 110 litres or more; and b. At least one ‘mixing/kneading shaft’ mounted off centre. *Note: In 1B117.b. the term ‘mixing/kneading shaft’ does not refer to deagglomerators or knife-spindles.*	M4B3a	Batch mixers with provision for mixing under vacuum in the range of zero to 13,326 kPa and with temperature control capability of the mixing chamber and having all of the following: 1. A total volumetric capacity of 110 litres or more; and 2. At least one ‘mixing/kneading shaft’ mounted off centre; *Note: In Item 4.B.3.a.2. the term ‘mixing/kneading shaft’ does not refer to deagglomerators or knife-spindles.*

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1B118	Continuous mixers with provision for mixing under vacuum in the range of zero to 13,326 kPa and with a temperature control capability of the mixing chamber having any of the following, and specially designed components therefor: a. Two or more mixing/kneading shafts; or b. A single rotating shaft which oscillates and having kneading teeth/pins on the shaft as well as inside the casing of the mixing chamber.	M4B3b	Continuous mixers with provision for mixing under vacuum in the range of zero to 13,326 kPa and with a temperature control capability of the mixing chamber having any of the following: 1. Two or more mixing/kneading shafts; or 2. A single rotating shaft which oscillates and having kneading teeth/pins on the shaft as well as inside the casing of the mixing chamber;
1B119	Fluid energy mills usable for grinding or milling substances specified in 1C011.a., 1C011.b., 1C111 or in the Military Goods Controls, and specially designed components therefor.	M4B3c	Fluid energy mills usable for grinding or milling substances specified in 4.C

1C Materials

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
1C001	Materials specially designed for use as absorbers of electromagnetic waves, or intrinsically conductive polymers, as follows: N.B.: SEE ALSO 1C101. a. Materials for absorbing frequencies exceeding 2×10^8 Hz but less than 3×10^{12} Hz; *Note 1: 1C001.a. does not control:* *a. Hair type absorbers, constructed of natural or synthetic fibres, with non-magnetic loading to provide absorption;* *b. Absorbers having no magnetic loss and whose incident surface is non-planar in shape, including pyramids, cones, wedges and convoluted surfaces;* *c. Planar absorbers, having all of the following:* *1. Made from any of the following:* *a. Plastic foam materials (flexible or non-flexible) with carbon-loading, or organic materials, including binders, providing more than 5 % echo compared with metal over a bandwidth*	M17C1	Materials for reduced observables such as radar reflectivity, ultraviolet/infrared signatures and acoustic signatures (i.e. stealth technology), for applications usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. *Notes:* *1. 17.C.1. includes structural materials and coatings (including paints), specially designed for reduced or tailored reflectivity or emissivity in the microwave, infrared or ultraviolet spectra.* *2. 17.C.1. does not control coatings (including paints) when specially used for thermal control of satellites.*

exceeding ± 15 % of the centre frequency of the incident energy, and not capable of withstanding temperatures exceeding 450 K (177 °C); or

b. Ceramic materials providing more than 20 % echo compared with metal over a bandwidth exceeding ± 15 % of the centre frequency of the incident energy, and not capable of withstanding temperatures exceeding 800 K (527 °C);

Technical Note:

Absorption test samples for 1C001.a. Note: 1.c.1. should be a square at least 5 wavelengths of the centre frequency on a side and positioned in the far field of the radiating element.

2. Tensile strength less than 7 × 10^6 N/m^2; and

3. Compressive strength less than 14 × 10^6 N/m^2;

d. Planar absorbers made of sintered ferrite, having all of the following:

1. A specific gravity exceeding 4,4; and

2. A maximum operating temperature of 548 K (275 °C).

Note 2: Nothing in Note 1 to 1C001.a. releases magnetic materials to provide absorption when contained in paint.

b. Materials for absorbing frequencies exceeding 1,5 × 10^{14} Hz but less than 13,7 × 10^{14} Hz and not transparent to visible light;

Note: 1C001.b. does not control materials, specially designed or formulated for any of the following applications:

a. Laser marking of polymers; or

b. Laser welding of polymers.

c. Intrinsically conductive polymeric materials with a 'bulk electrical conductivity' exceeding 10 000 S/m (Siemens per metre) or a 'sheet (surface) resistivity' of less than 100 ohms/square, based on any of the following polymers:

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	1. Polyaniline; 2. Polypyrrole; 3. Polythiophene; 4. Poly phenylene-vinylene; or 5. Poly thienylene-vinylene. *Note: 1C001.c. does not control materials in a liquid form.* *Technical Note:* *'Bulk electrical conductivity' and 'sheet (surface) resistivity' should be determined using ASTM D-257 or national equivalents.*		
1C007	Ceramic powders, non-"composite" ceramic materials, ceramic-"matrix" "composite" materials and precursor materials, as follows: **N.B.: SEE ALSO 1C107.** a. Ceramic powders of single or complex borides of titanium, having total metallic impurities, excluding intentional additions, of less than 5 000 ppm, an average particle size equal to or less than 5 μm and no more than 10 % of the particles larger than 10 μm; b. Non-"composite" ceramic materials in crude or semi-fabricated form, composed of borides of titanium with a density of 98 % or more of the theoretical density; *Note: 1C007.b. does not control abrasives.* c. Ceramic-ceramic "composite" materials with a glass or oxide-"matrix" and reinforced with fibres having all of the following: 1. Made from any of the following materials: a. Si-N; b. Si-C; c. Si-Al-O-N; or d. Si-O-N; and 2. Having a "specific tensile strength" exceeding $12,7 \times 10^3$m;	M6C5 M6C6	Ceramic composite materials (dielectric constant less than 6 at any frequency from 100 MHz to 100 GHz) for use in missile radomes usable in systems specified in 1.A. or 19.A.1. Silicon-carbide materials as follows: a. Bulk machinable silicon-carbide reinforced unfired ceramic usable for nose tips usable in systems specified in 1.A. or 19.A.1.; Reinforced silicon-carbide ceramic composites usable for nose tips, re-entry vehicles, nozzle flaps, usable in systems specified in 1.A. or 19.A.1.

	d. Ceramic-ceramic “composite” materials, with or without a continuous metallic phase, incorporating particles, whiskers or fibres, where carbides or nitrides of silicon, zirconium or boron form the “matrix”; e. Precursor materials (i.e., special purpose polymeric or metallo-organic materials) for producing any phase or phases of the materials specified in 1C007.c., as follows: 1. Polydiorganosilanes (for producing silicon carbide); 2. Polysilazanes (for producing silicon nitride); 3. Polycarbosilazanes (for producing ceramics with silicon, carbon and nitrogen components); f. Ceramic-ceramic “composite” materials with an oxide or glass “matrix” reinforced with continuous fibres from any of the following systems: 1. Al_2O_3 (CAS 1344-28-1); or 2. Si-C-N. *Note: 1C007.f. does not control “composites” containing fibres from these systems with a fibre tensile strength of less than 700 MPa at 1 273 K (1 000 °C) or fibre tensile creep resistance of more than 1 % creep strain at 100 MPa load and 1 273 K (1 000 °C) for 100 hours.*		
1C010	“Fibrous or filamentary materials”, as follows: **N.B.: SEE ALSO 1C210 AND 9C110.** a. Organic “fibrous or filamentary materials”, having all of the following: 1. “Specific modulus” exceeding $12{,}7 \times 10^6$ m; and 2. “Specific tensile strength” exceeding $23{,}5 \times 10^4$ m; *Note: 1C010.a. does not control polyethylene.*		

b. Carbon “fibrous or filamentary materials”, having all of the following:

1. “Specific modulus” exceeding $14{,}65 \times 10^6$ m; and
2. “Specific tensile strength” exceeding $26{,}82 \times 10^4$ m;

Note: 1C010.b. does not control:

a. “Fibrous or filamentary materials”, for the repair of “civil aircraft” structures or laminates, having all of the following:

1. An area not exceeding 1 m^2;

2. A length not exceeding 2,5 m; and

3. A width exceeding 15 mm.

b. Mechanically chopped, milled or cut carbon “fibrous or filamentary materials” 25,0 mm or less in length.

c. Inorganic “fibrous or filamentary materials”, having all of the following:

1. “Specific modulus” exceeding $2{,}54 \times 10^6$ m; and
2. Melting, softening, decomposition or sublimation point exceeding 1 922 K (1 649 °C) in an inert environment;

Note: 1C010.c. does not control:

a. Discontinuous, multiphase, polycrystalline alumina fibres in chopped fibre or random mat form, containing 3 % by weight or more silica, with a “specific modulus” of less than 10×10^6 m;

b. Molybdenum and molybdenum alloy fibres;

c. Boron fibres;

d. Discontinuous ceramic fibres with a melting, softening, decomposition or sublimation point lower than 2 043 K (1 770 °C) in an inert environment.

Technical Notes:

1. For the purpose of calculating “specific tensile strength”, “specific modulus” or specific weight of “fibrous or filamentary materials” in 1C010.a., 1C010.b. or 1C010.c., the tensile strength and modulus should be determined by using Method A described in ISO 10618 (2004) or national equivalents.

2. Assessing the "specific tensile strength", "specific modulus" or specific weight of non-unidirectional "fibrous or filamentary materials" (e.g., fabrics, random mats or braids) in 1C010. is to be based on the mechanical properties of the constituent unidirectional monofilaments (e.g., monofilaments, yarns, rovings or tows) prior to processing into the non-unidirectional "fibrous or filamentary materials".		
d. "Fibrous or filamentary materials", having any of the following:		
1. Composed of any of the following:		
a. Polyetherimides specified in 1C008.a.; or		
b. Materials specified in 1C008.b. to 1C008.f.; or		
2. Composed of materials specified in 1C010.d.1.a. or 1C010.d.1.b. and "commingled" with other fibres specified in 1C010.a., 1C010.b. or 1C010.c.;		
e. Fully or partially resin-impregnated or pitch-impregnated "fibrous or filamentary materials" (prepregs), metal or carbon-coated "fibrous or filamentary materials" (preforms) or "carbon fibre preforms", having all of the following:	M6C1	Resin impregnated fibre prepregs and metal coated fibre preforms, for the goods specified in 6.A.1., made either with organic matrix or metal matrix utilising fibrous or filamentary reinforcements having a specific tensile strength greater than 7,62 × 104 m and a specific modulus greater than 3,18 × 106 m. *Note: The only resin impregnated fibre prepregs specified in 6.C.1. are those using resins with a glass transition temperature (Tg), after cure, exceeding 145 °C as determined by ASTM D4065 or national equivalents.* *Technical Notes:* *1. In Item 6.C.1. 'specific tensile strength' is the ultimate tensile strength in N/m^2 divided by the specific weight in N/m^3, measured at a temperature of (296 ± 2)K ((23 ± 2)°C) and a relative humidity of (50 ± 5)%.* *2. In Item 6.C.1. 'specific modulus' is the Young's modulus in N/m^2 divided by the specific weight in N/m^3, measured at a temperature of (296 ± 2)K ((23 ± 2)°C) and a relative humidity of (50 ± 5)%.*
1. Having any of the following:		
a. Inorganic "fibrous or filamentary materials" specified in 1C010.c.; or		
b. Organic or carbon "fibrous or filamentary materials", having all of the following:		
1. "Specific modulus" exceeding $10{,}15 \times 10^6$ m; and		
2. "Specific tensile strength" exceeding $17{,}7 \times 10^4$ m; and		
2. Having any of the following:		
a. Resin or pitch, specified in 1C008 or 1C009.b.;		
b. 'Dynamic Mechanical Analysis glass transition temperature (DMA Tg)' equal to or exceeding 453 K (180 °C) and having a phenolic resin; or		

	c. 'Dynamic Mechanical Analysis glass transition temperature (DMA Tg)' equal to or exceeding 505 K (232 °C) and having a resin or pitch, not specified in 1C008 or 1C009.b., and not being a phenolic resin; *Note 1:* *Metal or carbon-coated "fibrous or filamentary materials" (preforms) or "carbon fibre preforms", not impregnated with resin or pitch, are specified by "fibrous or filamentary materials" in 1C010.a., 1C010.b. or 1C010.c.* *Note 2:* *1C010.e. does not control:* *a. Epoxy resin "matrix" impregnated carbon "fibrous or filamentary materials" (prepregs) for the repair of "civil aircraft" structures or laminates, having all the following;* *1. An area not exceeding 1 m^2;* *2. A length not exceeding 2,5 m; and* *3. A width exceeding 15 mm.* *b. Fully or partially resin-impregnated or pitch-impregnated mechanically chopped, milled or cut carbon "fibrous or filamentary materials" 25,0 mm or less in length when using a resin or pitch other than those specified by 1C008 or 1C009.b.* *Technical Note:* *The 'Dynamic Mechanical Analysis glass transition temperature (DMA T_g)' for materials specified by 1C010.e. is determined using the method described in ASTM D 7028-07, or equivalent national standard, on a dry test specimen. In the case of thermoset materials, degree of cure of a dry test specimen shall be a minimum of 90 % as defined by ASTM E 2160-04 or equivalent national standard.*		
1C011	Metals and compounds, as follows: **N.B.: SEE ALSO 1C111.**		
	a. Metals in particle sizes of less than 60 µm whether spherical, atomised, spheroidal, flaked or ground, manufactured from material consisting of 99 % or more of zirconium, magnesium and alloys thereof;	M4C2d	Metal powders of any of the following: zirconium (CAS 7440-67-7), beryllium (CAS 7440-41-7), magnesium (CAS 7439-95-4) or alloys of these, if at least 90 % of the total particles by particle volume or weight are made up of particles of less than 60 µm (determined by measurement techniques such as

	Technical Note: *The natural content of hafnium in the zirconium (typically 2 % to 7 %) is counted with the zirconium.* *Note: The metals or alloys specified in 1C011.a. are controlled whether or not the metals or alloys are encapsulated in aluminium, magnesium, zirconium or beryllium.*		using a sieve, laser diffraction or optical scanning), whether spherical, atomised, spheroidal, flaked or ground, consisting of 97 % by weight or more of any of the above mentioned metals; *Note: In a multimodal particle distribution (e.g. mixtures of different grain sizes) in which one or more modes are controlled, the entire powder mixture is controlled.* *Technical Note:* *The natural content of hafnium (CAS 7440-58-6) in the zirconium (typically 2 % to 7 %) is counted with the zirconium.*
	b. Boron or boron alloys, with a particle size of 60 μm or less, as follows: 1. Boron with a purity of 85 % by weight or more; 2. Boron alloys with a boron content of 85 % by weight or more; *Note: The metals or alloys specified in 1C011.b. are controlled whether or not the metals or alloys are encapsulated in aluminium, magnesium, zirconium or beryllium.* c. Guanidine nitrate (CAS 506-93-4); d. Nitroguanidine (NQ) (CAS 556-88-7). *N.B.: See also Military Goods Controls for metal powders mixed with other substances to form a mixture formulated for military purposes.*	M4C2e	Metal powders of either boron (CAS 7440-42-8) or boron alloys with a boron content of 85 % or more by weight, if at least 90 % of the total particles by particle volume or weight are made up of particles of less than 60 μm (determined by measurement techniques such as using a sieve, laser diffraction or optical scanning), whether spherical, atomised, spheroidal, flaked or ground; *Note: In a multimodal particle distribution (e.g. mixtures of different grain sizes) in which one or more modes are controlled, the entire powder mixture is controlled.*
1C101	Materials and devices for reduced observables such as radar reflectivity, ultraviolet/infrared signatures and acoustic signatures, other than those specified in 1C001, usable in 'missiles', "missile" subsystems or unmanned aerial vehicles specified in 9A012 or 9A112.a. *Note 1: 1C101 includes:* *a. Structural materials and coatings specially designed for reduced radar reflectivity;* *b. Coatings, including paints, specially designed for reduced or tailored reflectivity or emissivity in the microwave, infrared or ultraviolet regions of the electromagnetic spectrum.*	M17A1 M17C1	Devices for reduced observables such as radar reflectivity, ultraviolet/infrared signatures and acoustic signatures (i.e. stealth technology), for applications usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. or 20.A. Materials for reduced observables such as radar reflectivity, ultraviolet/infrared signatures and acoustic signatures (i.e. stealth technology), for applications usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. *Notes:* *1. 17.C.1. includes structural materials and coatings (including paints), specially designed for reduced or tailored reflectivity or emissivity in the microwave, infrared or ultraviolet spectra.*

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	Note 2: 1C101 does not include coatings when specially used for the thermal control of satellites. *Technical Note:* *In 1C101 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*		*2. 17.C.1. does not control coatings (including paints) when specially used for thermal control of satellites.*
1C102	Resaturated pyrolized carbon-carbon materials designed for space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M6C2	Resaturated pyrolised (i.e. carbon-carbon) materials having all of the following: a. Designed for rocket systems; and b. Usable in the systems specified in 1.A. or 19.A.1.
1C107	Graphite and ceramic materials, other than those specified in 1C007, as follows:		
	a. Fine grain graphites with a bulk density of 1,72 g/cm^3 or greater, measured at 288 K (15 °C), and having a grain size of 100 µm or less, usable for rocket nozzles and re-entry vehicle nose tips, which can be machined to any of the following products:	M6C3	Fine grain graphites with a bulk density of at least 1,72 g/cc measured at 15 °C and having a grain size of 100×10^{-6} m (100 µm) or less, usable for rocket nozzles and re-entry vehicle nose tips, which can be machined to any of the following products:
	1. Cylinders having a diameter of 120 mm or greater and a length of 50 mm or greater;		a. Cylinders having a diameter of 120 mm or greater and a length of 50 mm or greater;
	2. Tubes having an inner diameter of 65 mm or greater and a wall thickness of 25 mm or greater and a length of 50 mm or greater; or		b. Tubes having an inner diameter of 65 mm or greater and a wall thickness of 25 mm or greater and a length of 50 mm or greater; or
	3. Blocks having a size of 120 mm × 120 mm × 50 mm or greater; *N.B.: See also 0C004*		c. Blocks having a size of 120 mm × 120 mm × 50 mm or greater
	b. Pyrolytic or fibrous reinforced graphites, usable for rocket nozzles and reentry vehicle nose tips usable in "missiles", space launch vehicles specified in 9A004 or sounding rockets specified in 9A104; *N.B.: See also 0C004*	M6C4	Pyrolytic or fibrous reinforced graphites usable for rocket nozzles and reentry vehicle nose tips usable in systems specified in 1.A. or 19.A.1.
	c. Ceramic composite materials (dielectric constant less than 6 at any frequency from 100 MHz to 100 GHz) for use in radomes usable in "missiles", space launch vehicles specified in 9A004 or sounding rockets specified in 9A104;	M6C5	Ceramic composite materials (dielectric constant less than 6 at any frequency from 100 MHz to 100 GHz) for use in missile radomes usable in systems specified in 1.A. or 19.A.1.

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	d. Bulk machinable silicon-carbide reinforced unfired ceramic, usable for nose tips usable in “missiles”, space launch vehicles specified in 9A004 or sounding rockets specified in 9A104;	M6C6a	Bulk machinable silicon-carbide reinforced unfired ceramic usable for nose tips usable in systems specified in 1.A. or 19.A.1.;
	e. Reinforced silicon-carbide ceramic composites, usable for nose tips, reentry vehicles and nozzle flaps usable in “missiles”, space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M6C6b	Reinforced silicon-carbide ceramic composites usable for nose tips, re-entry vehicles, nozzle flaps, usable in systems specified in 1.A. or 19.A.1.
1C111	Propellants and constituent chemicals for propellants, other than those specified in 1C011, as follows:		
	a. Propulsive substances:		
	1. Spherical or spheroidal aluminium powder other than that specified in the Military Goods Controls, in particle size of less than 200 μm and an aluminium content of 97 % by weight or more, if at least 10 % of the total weight is made up of particles of less than 63 μm, according to ISO 2591-1:1988 or national equivalents;	M4C2c	Spherical or spheroidal aluminium powder (CAS 7429-90-5) in particle size of less than 200×10^{-6} m (200 μm) and an aluminium content of 97 % by weight or more, if at least 10 % of the total weight is made up of particles of less than 63 μm, according to ISO 2591-1:1988 or national equivalents;
	Technical Note: *A particle size of 63 μm (ISO R-565) corresponds to 250 mesh (Tyler) or 230 mesh (ASTM standard E-11).*		*Technical Note:* *A particle size of 63 μm (ISO R-565) corresponds to 250 mesh (Tyler) or 230 mesh (ASTM standard E-11).*
	2. Metal powders, other than that specified in the Military Goods Controls, as follows:		
	a. Metal powders of zirconium, beryllium or magnesium, or alloys of these metals, if at least 90 % of the total particles by particle volume or weight are made up of particles of less than 60 μm (determined by measurement techniques such as using a sieve, laser diffraction or optical scanning), whether spherical, atomized, spheroidal, flaked or ground, consisting 97 % by weight or more of any of the following:	M4C2d	Metal powders of any of the following: zirconium (CAS 7440-67-7), beryllium (CAS 7440-41-7), magnesium (CAS 7439-95-4) or alloys of these, if at least 90 % of the total particles by particle volume or weight are made up of particles of less than 60 μm (determined by measurement techniques such as using a sieve, laser diffraction or optical scanning), whether spherical, atomised, spheroidal, flaked or ground, consisting of 97 % by weight or more of any of the above mentioned metals;
	1. Zirconium;		
	2. Beryllium; or		
	3. Magnesium;		*Note: In a multimodal particle distribution (e.g. mixtures of different grain sizes) in which one or more modes are controlled, the entire powder mixture is controlled.*

Technical Note: *The natural content of hafnium in the zirconium (typically 2 % to 7 %) is counted with the zirconium.*		*Technical Note:* *The natural content of hafnium (CAS 7440-58-6) in the zirconium (typically 2 % to 7 %) is counted with the zirconium.*
b. Metal powders of either boron or boron alloys with a boron content of 85 % or more by weight, if at least 90 % of the total particles by particle volume or weight are made up of particles of less than 60 μm (determined by measurement techniques such as using a sieve, laser diffraction or optical scanning), whether spherical, atomised, spheroidal, flaked or ground; *Note: 1C111a.2.a. and 1C111a.2.b. controls powder mixtures with a multimodal particle distribution (e.g. mixtures of different grain sizes) if one or more modes are controlled.*	M4C2e	Metal powders of either boron (CAS 7440-42-8) or boron alloys with a boron content of 85 % or more by weight, if at least 90 % of the total particles by particle volume or weight are made up of particles of less than 60 μm (determined by measurement techniques such as using a sieve, laser diffraction or optical scanning), whether spherical, atomised, spheroidal, flaked or ground *Note: In a multimodal particle distribution (e.g. mixtures of different grain sizes) in which one or more modes are controlled, the entire powder mixture is controlled.*
3. Oxidiser substances usable in liquid propellant rocket engines as follows: a. Dinitrogen trioxide (CAS 10544-73-7); b. Nitrogen dioxide (CAS 10102-44-0)/dinitrogen tetroxide (CAS 10544-72-6); c. Dinitrogen pentoxide (CAS 10102-03-1); d. Mixed Oxides of Nitrogen (MON); *Technical Note:* *Mixed Oxides of Nitrogen (MON) are solutions of Nitric Oxide (NO) in Dinitrogen Tetroxide/Nitrogen Dioxide (N_2O_4/NO_2) that can be used in missile systems. There are a range of compositions that can be denoted as MONi or MONij, where i and j are integers representing the percentage of Nitric Oxide in the mixture (e.g., MON3 contains 3 % Nitric Oxide, MON25 25 % Nitric Oxide. An upper limit is MON40, 40 % by weight).*	M4C4a	Oxidiser substances usable in liquid propellant rocket engines as follows: 1. Dinitrogen trioxide (CAS 10544-73-7) 2. Nitrogen dioxide (CAS 10102-44-0) / dinitrogen tetroxide (CAS 10544-72-6); 3. Dinitrogen pentoxide (CAS 10102-03-1); 4. Mixed Oxides of Nitrogen (MON); Technical Note: Mixed Oxides of Nitrogen (MON) are solutions of Nitric Oxide (NO) in Dinitrogen Tetroxide/Nitrogen Dioxide (N_2O_4/NO_2) that can be used in missile systems. There are a range of compositions that can be denoted as MONi or MONij where i and j are integers representing the percentage of Nitric Oxide in the mixture (e.g. MON3 contains 3 % Nitric Oxide, MON25 25 % Nitric Oxide. An upper limit is MON40, 40 % by weight).

e. SEE MILITARY GOODS CONTROLS FOR Inhibited Red Fuming Nitric Acid (IRFNA); f. SEE MILITARY GOODS CONTROLS AND 1C238 FOR Compounds composed of fluorine and one or more of other halogens, oxygen or nitrogen;		5. Inhibited Red Fuming Nitric Acid (IRFNA) (CAS 8007-58-7); 6. Compounds composed of fluorine and one or more of other halogens, oxygen or nitrogen; Note: *Item 4.C.4.a.6. does not control Nitrogen Trifluoride (NF3) (CAS 7783-54- 2) in a gaseous state as it is not usable for missile applications.*
4. Hydrazine derivatives as follows: *N.B.: SEE ALSO MILITARY GOODS CONTROLS.* a. Trimethylhydrazine (CAS 1741-01-1); b. Tetramethylhydrazine (CAS 6415-12-9); c. N,N diallylhydrazine (CAS 5164-11-4); d. Allylhydrazine (CAS 7422-78-8); e. Ethylene dihydrazine; f. Monomethylhydrazine dinitrate; g. Unsymmetrical dimethylhydrazine nitrate; h. Hydrazinium azide (CAS 14546-44-2); i. Dimethylhydrazinium azide; j. Hydrazinium dinitrate (CAS 13464-98-7); k. Diimido oxalic acid dihydrazine (CAS 3457-37-2); l. 2-hydroxyethylhydrazine nitrate (HEHN); m. See Military Goods Controls for Hydrazinium perchlorate; n. Hydrazinium diperchlorate (CAS 13812-39-0); o. Methylhydrazine nitrate (MHN) (CAS 29674-96-2);	M4C2b	Hydrazine derivatives as follows: 1. Monomethylhydrazine (MMH) (CAS 60-34-4); 2. Unsymmetrical dimethylhydrazine (UDMH) (CAS 57-14-7); 3. Hydrazine mononitrate (CAS 13464-97-6); 4. Trimethylhydrazine (CAS 1741-01-1); 5. Tetramethylhydrazine (CAS 6415-12-9); 6. N,N diallylhydrazine (CAS 5164-11-4); 7. Allylhydrazine (CAS 7422-78-8); 8. Ethylene dihydrazine (CAS 6068-98-0); 9. Monomethylhydrazine dinitrate; 10. Unsymmetrical dimethylhydrazine nitrate; 11. Hydrazinium azide (CAS 14546-44-2); 12. 1,1-Dimethylhydrazinium azide (CAS 227955-52-4) / 1,2-Dimethylhydrazinium azide (CAS 299177-50-7); 13. Hydrazinium dinitrate (CAS 13464-98-7); 14. Diimido oxalic acid dihydrazine (CAS 3457-37-2); 15. 2-hydroxyethylhydrazine nitrate (HEHN); 16. Hydrazinium perchlorate (CAS 27978-54-7);

p. Diethylhydrazine nitrate (DEHN); q. 3,6-dihydrazino tetrazine nitrate (1,4-dihydrazine nitrate) (DHTN);		17. Hydrazinium diperchlorate (CAS 13812-39-0); 18. Methylhydrazine nitrate (MHN) (CAS 29674-96-2); 19. 1,1-Diethylhydrazine nitrate (DEHN) / 1,2-Diethylhydrazine nitrate (DEHN) (CAS 363453-17-2); 20. 3,6-dihydrazino tetrazine nitrate (DHTN); *Technical note:* *3,6-dihydrazino tetrazine nitrate is also referred to as 1,4-dihydrazine nitrate.*
5. High energy density materials, other than that specified in the Military Goods Controls, usable in 'missiles' or unmanned aerial vehicles specified in 9A012 or 9A112.a.; a. Mixed fuel that incorporate both solid and liquid fuels, such as boron slurry, having a mass-based energy density of 40×10^6 J/kg or greater; b. Other high energy density fuels and fuel additives (e.g., cubane, ionic solutions, JP-10) having a volume-based energy density of $37{,}5 \times 10^9$ J/m^3 or greater, measured at 20 °C and one atmosphere (101,325 kPa) pressure; *Note: 1C111.a.5.b. does not control fossil refined fuels and biofuels produced from vegetables, including fuels for engines certified for use in civil aviation, unless specially formulated for 'missiles' or unmanned aerial vehicles specified in 9A012 or 9A112.a..* *Technical Note:* *In 1C111.a.5. 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M4C2f	High energy density materials, usable in the systems specified in 1.A. or 19.A., as follows: 1. Mixed fuels that incorporate both solid and liquid fuels, such as boron slurry, having a mass- based energy density of 40×10^6 J/kg or greater; 2. Other high energy density fuels and fuel additives (e.g., cubane, ionic solutions, JP-10) having a volume-based energy density of $37{,}5 \times 10^9$ J/m^3 or greater, measured at 20 °C and one atmosphere (101,325 kPa) pressure. *Note: Item 4.C.2.f.2. does not control fossil refined fuels and biofuels produced from vegetables, including fuels for engines certified for use in civil aviation, unless specifically formulated for systems specified in 1.A. or 19.A.*
6. Hydrazine replacement fuels as follows: a. 2-Dimethylaminoethylazide (DMAZ) (CAS 86147-04-8);	M4C2g	Hydrazine replacement fuels as follows: 1. 2-Dimethylaminoethylazide (DMAZ) (CAS 86147-04-8).

b. Polymeric substances: 1. Carboxy-terminated polybutadiene (including carboxyl-terminated polybutadiene) (CTPB); 2. Hydroxy-terminated polybutadiene (including hydroxyl-terminated polybutadiene) (HTPB), other than that specified in the Military Goods Controls; 3. Polybutadiene-acrylic acid (PBAA); 4. Polybutadiene-acrylic acid-acrylonitrile (PBAN); 5. Polytetrahydrofuran polyethylene glycol (TPEG); *Technical Note:* *Polytetrahydrofuran polyethylene glycol (TPEG) is a block co-polymer of poly 1,4-Butanediol (CAS 110-63-4) and polyethylene glycol (PEG) (CAS 25322-68-3).* 6. Polyglycidyl nitrate (PGN or poly-GLYN) (CAS 27814-48-8).	M4C5	Polymeric substances, as follows: a. Carboxy — terminated polybutadiene (including carboxyl — terminated polybutadiene) (CTPB); b. Hydroxy — terminated polybutadiene (including hydroxyl — terminated polybutadiene) (HTPB); c. Glycidyl azide polymer (GAP); d. Polybutadiene — Acrylic Acid (PBAA); e. Polybutadiene — Acrylic Acid — Acrylonitrile (PBAN) (CAS 25265-19-4 / CAS 68891-50-9); f. Polytetrahydrofuran polyethylene glycol (TPEG). Technical Note: Polytetrahydrofuran polyethylene glycol (TPEG) is a block co-polymer of poly 1,4-Butanediol (CAS 110-63-4) and polyethylene glycol (PEG) (CAS 25322-68-3). g. Polyglycidyl nitrate (PGN or poly-GLYN) (CAS 27814-48-8)
c. Other propellant additives and agents:		
1. **SEE MILITARY GOODS CONTROLS FOR Carboranes, decaboranes, pentaboranes and derivatives thereof;**	M4C6c1	Carboranes, decaboranes, pentaboranes and derivatives thereof
2. Triethylene glycol dinitrate (TEGDN) (CAS 111-22-8);	M4C6d1	Triethylene glycol dinitrate (TEGDN) (CAS 111-22-8);
3. 2-Nitrodiphenylamine (CAS 119-75-5);	M4C6e1	2-Nitrodiphenylamine (CAS 119-75-5);
4. Trimethylolethane trinitrate (TMETN) (CAS 3032-55-1);	M4C6d2	Trimethylolethane trinitrate (TMETN) (CAS 3032-55-1);
5. Diethylene glycol dinitrate (DEGDN) (CAS 693-21-0);	M4C6d4	Diethylene glycol dinitrate (DEGDN) (CAS 693-21-0)
6. Ferrocene derivatives as follows: a. See Military Goods Controls for catocene; b. See Military Goods Controls for Ethyl ferrocene; c. See Military Goods Controls for Propyl ferrocene; d. See Military Goods Controls for n-butyl ferrocene; e. See Military Goods Controls for Pentyl ferrocene;	M4C6c2	Ferrocene derivatives, as follows: a. Catocene (CAS 37206-42-1); b. Ethyl ferrocene (CAS 1273-89-8); c. Propyl ferrocene; d. n-Butyl ferrocene (CAS 31904-29-7); e. Pentyl ferrocene (CAS 1274-00-6);

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	f. See Military Goods Controls for Dicyclopentyl ferrocene; g. See Military Goods Controls for Dicyclohexyl ferrocene; h. See Military Goods Controls for Diethyl ferrocene; i. See Military Goods Controls for Dipropyl ferrocene; j. See Military Goods Controls for Dibutyl ferrocene; k. See Military Goods Controls for Dihexyl ferrocene; l. See Military Goods Controls for Acetyl ferrocene / 1,1′-diacetyl ferrocene; m. See Military Goods Controls for ferrocene carboxylic acids; n. See Military Goods Controls for butacene; o. Other ferrocene derivatives usable as rocket propellant burning rate modifiers, other than those specified in the Military Goods Controls. *Note: 1C111.c.6.o. does not control ferrocene derivatives that contain a six carbon aromatic functional group attached to the ferrocene molecule.*		f. Dicyclopentyl ferrocene (CAS 125861-17-8); g. Dicyclohexyl ferrocene; h. Diethyl ferrocene (CAS 1273-97-8); i. Dipropyl ferrocene; j. Dibutyl ferrocene (CAS 1274-08-4); k. Dihexyl ferrocene (CAS 93894-59-8); l. Acetyl ferrocene (CAS 1271-55-2) / 1,1′-diacetyl ferrocene (CAS 1273-94-5); m. Ferrocene carboxylic acid (CAS 1271-42-7) / 1,1′- Ferrocenedicarboxylic acid (CAS 1293-87-4); n. Butacene (CAS 125856-62-4); o. Other ferrocene derivatives usable as rocket propellant burning rate modifiers; *Note: Item 4.C.6.c.2.o does not control ferrocene derivatives that contain a six carbon aromatic functional group attached to the ferrocene molecule.*
	7. 4,5 diazidomethyl-2-methyl-1,2,3-triazole (iso- DAMTR), other than that specified in the Military Goods Controls. *Note: For propellants and constituent chemicals for propellants not specified in 1C111, see the Military Goods Controls.*	M4C6d5	4,5 diazidomethyl-2-methyl-1,2,3-triazole (iso- DAMTR);
1C116	Maraging steels, useable in ‘missiles’, having all of the following: *N.B.: SEE ALSO 1C216.*	M6C8	Maraging steels, usable in the systems specified in 1.A. or 19.A.1., having all of the following: a. Having an ultimate tensile strength, measured at 20 °C, equal to or greater than: 1. 0,9 GPa in the solution annealed stage; or 2. 1,5 GPa in the precipitation hardened stage; and b. Any of the following forms: 1. Sheet, plate or tubing with a wall or plate thickness equal to or less than 5,0 mm; or

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			2. Tubular forms with a wall thickness equal to or less than 50 mm and having an inner diameter equal to or greater than 270 mm. *Technical Note:* *Maraging steels are iron alloys:* *a. Generally characterised by high nickel, very low carbon content and use substitutional elements or precipitates to produce strengthening and agehardening of the alloy; and* *b. Subjected to heat treatment cycles to facilitate the martensitic transformation process (solution annealed stage) and subsequently age hardened (precipitation hardened stage).*
1C117	Materials for the fabrication of 'missiles' components as follows: a. Tungsten and alloys in particulate form with a tungsten content of 97 % by weight or more and a particle size of 50×10^{-6} m (50 μm) or less; b. Molybdenum and alloys in particulate form with a molybdenum content of 97 % by weight or more and a particle size of 50×10^{-6} m (50 μm) or less; c. Tungsten materials in solid form having all of the following: 1. Any of the following material compositions: a. Tungsten and alloys containing 97 % by weight or more of tungsten; b. Copper infiltrated tungsten containing 80 % by weight or more of tungsten; or c. Silver infiltrated tungsten containing 80 % by weight ot more of tungsten; and 2. Able to be machined to any of the following products: a. Cylinders having a diameter of 120 mm or greater and a length of 50 mm or greater; b. Tubes having an inner diameter of 65 mm or greater and a wall thickness of 25 mm or greater and a length of 50 mm or greater; or c. Blocks having a size of 120 mm by 120 mm by 50 mm or greater. *Technical Note:* *In 1C117 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M6C7	Materials for the fabrication of missile components in the systems specified in 1.A., 19.A.1. or 19.A.2, as follows:. a. Tungsten and alloys in particulate form with a tungsten content of 97 % by weight or more and a particle size of 50×10^{-6} m (50 μm) or less; b. Molybdenum and alloys in particulate form with a molybdenum content of 97 % by weight or more and a particle size of 50×10^{-6} m (50 μm) or less; c. Tungsten materials in the solid form having all of the following: 1. Any of the following material compositions: i. Tungsten and alloys containing 97 % by weight or more of tungsten; ii. Copper infiltrated tungsten containing 80 % by weight or more of tungsten; or iii. Silver infiltrated tungsten containing 80 % by weight or more of tungsten; and 2. Able to be machined to any of the following products: i. Cylinders having a diameter of 120 mm or greater and a length of 50 mm or greater; ii. Tubes having an inner diameter of 65 mm or greater and a wall thickness of 25 mm or greater and a length of 50 mm or greater; or iii. Blocks having a size of 120 mm × 120 mm × 50 mm or greater

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1C118	Titanium-stabilised duplex stainless steel (Ti-DSS) having all of the following: a. Having all of the following characteristics: 1. Containing 17,0 – 23,0 weight percent chromium and 4,5 – 7,0 weight percent nickel; 2. Having a titanium content of greater than 0,10 weight percent; and 3. A ferritic-austenitic microstructure (also referred to as a two-phase microstructure) of which at least 10 percent is austenite by volume (according to ASTM E-1181-87 or national equivalents); and b. Having any of the following forms: 1. Ingots or bars having a size of 100 mm or more in each dimension; 2. Sheets having a width of 600 mm or more and a thickness of 3 mm or less; or 3. Tubes having an outer diameter of 600 mm or more and a wall thickness of 3 mm or less.	M6C9	Titanium-stabilized duplex stainless steel (Ti-DSS) usable in the systems specified in 1.A. or 19.A.1. and having all of the following: a. Having all of the following characteristics: 1. Containing 17,0 – 23,0 weight percent chromium and 4,5 – 7,0 weight percent nickel; 2. Having a titanium content of greater than 0,10 weight percent; and 3. A ferritic-austenitic microstructure (also referred to as a two-phase microstructure) of which at least 10 % is austenite by volume (according to ASTM E-1181-87 or national equivalents); and b. Any of the following forms: 1. Ingots or bars having a size of 100 mm or more in each dimension; 2. Sheets having a width of 600 mm or more and a thickness of 3 mm or less; or 3. Tubes having an outer diameter of 600 mm or more and a wall thickness of 3 mm or less.
1C238	Chlorine trifluoride (ClF_3).	M4C4a6	Compounds composed of fluorine and one or more of other halogens, oxygen or nitrogen; Note: Item 4.C.4.a.6. does not control Nitrogen Trifluoride (NF_3) (CAS 7783-54-2) in a gaseous state as it is not usable for missile applications.

1D Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
1D001	“Software” specially designed or modified for the “development”, “production” or “use” of equipment specified in 1B001 to 1B003.	M6D1	“Software” specially designed or modified for the operation or maintenance of equipment specified in 6.B.1.
1D101	“Software” specially designed or modified for the operation or maintenance of goods specified in1B101, 1B102, 1B115, 1B117, 1B118 or 1B119.	M4D1	“Software” specially designed or modified for the operation or maintenance of equipment specified in 4.B. for the “production” and handling of materials specified in 4.C.
		M6D1	“Software” specially designed or modified for the operation or maintenance of equipment specified in 6.B.1.

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1D103	“Software” specially designed for analysis of reduced observables such as radar reflectivity, ultraviolet/infrared signatures and acoustic signatures.	M17D1	“Software” specially designed for reduced observables such as radar reflectivity, ultraviolet/infrared signatures and acoustic signatures (i.e. stealth technology), for applications usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. Note: 17.D.1. includes “software” specially designed for analysis of signature reduction.

1E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
1E001	“Technology” according to the General Technology Note for the “development” or “production” of equipment or materials specified in 1A001.b., 1A001.c., 1A002 to 1A005, 1A006.b., 1A007, 1B or 1C.	M	“Technology”, in accordance with the General Technology Note, for the “development”, “production” or “use” of equipment or “software” specified in 1.A., 1.B., or 1.D.
1E101	“Technology” according to the General Technology Note for the “use” of goods specified in 1A102, 1B001, 1B101, 1B102, 1B115 to 1B119, 1C001, 1C101, 1C107, 1C111 to 1C118, 1D101 or 1D103.	M	“Technology”, in accordance with the General Technology Note, for the “development”, “production” or “use” of equipment or “software” specified in 1.A., 1.B., or 1.D.
1E102	“Technology” according to the General Technology Note for the “development” of “software” specified in 1D001, 1D101 or 1D103.	M6E1	“Technology”, in accordance with the General Technology Note, for the “development”, “production” or “use” of equipment, materials or “software” specified in 6.A., 6.B., 6.C. or 6.D.
		M17E1	“Technology”, in accordance with the General Technology Note, for the “development”, “production” or “use” of equipment, materials or “software” specified in 17.A., 17.B., 17.C. or 17.D. Note: 17.E.1. includes databases specially designed for analysis of signature reduction
1E103	[M6E2]“Technology” for the regulation of temperature, pressure or atmosphere in autoclaves or hydroclaves, when used for the “production” of “composites” or partially processed “composites”.	M6E2	“Technical data” (including processing conditions) and procedures for the regulation of temperature, pressures or atmosphere in autoclaves or hydroclaves when used for the production of composites or partially processed composites, usable for equipment or materials specified in 6.A. or 6.C

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1E104	"Technology" relating to the "production" of pyrolytically derived materials formed on a mould, mandrel or other substrate from precursor gases which decompose in the 1 573 K (1 300 °C) to 3 173 K (2 900 °C) temperature range at pressures of 130 Pa to 20 kPa. *Note: 1E104 includes "technology" for the composition of precursor gases, flow-rates and process control schedules and parameters.*	M6E1	

CATEGORY 2 — MATERRIALS PROCESSING

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
2A001	Anti-friction bearings and bearing systems, as follows, and components therefor: **N.B.: SEE ALSO 2A101.** *Note: 2A001 does not control balls with tolerances specified by the manufacturer in accordance with ISO 3290 as grade 5 or worse.* a. Ball bearings and solid roller bearings, having all tolerances specified by the manufacturer in accordance with ISO 492 Tolerance Class 4 (or national equivalents), or better, and having both rings and rolling elements (ISO 5593), made from monel or beryllium; *Note: 2A001.a. does not control tapered roller bearings.* b. Not used; c. Active magnetic bearing systems using any of the following: 1. Materials with flux densities of 2,0 T or greater and yield strengths greater than 414 MPa; 2. All-electromagnetic 3D homopolar bias designs for actuators; or 3. High temperature (450 K (177 °C) and above) position sensors.	M3A7	Radial ball bearings having all tolerances specified in accordance with ISO 492 Tolerance Class 2 (or ANSI/ABMA Std 20 Tolerance Class ABEC-9 or other national equivalents), or better and having all the following characteristics: a) An inner ring bore diameter between 12 and 50 mm; b) An outer ring outside diameter between 25 and 100 mm; and c) A width between 10 and 20 mm.

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2A101	Radial ball bearings, other than those specified in 2A001, having all tolerances specified in accordance with ISO 492 Tolerance Class 2 (or ANSI/ABMA Std 20 Tolerance Class ABEC-9 or other national equivalents), or better and having all the following characteristics: a. An inner ring bore diameter between 12 mm and 50 mm; b. An outer ring outside diameter between 25 mm and 100 mm; and c. A width between 10 mm and 20 mm.	M3A7	Radial ball bearings having all tolerances specified in accordance with ISO 492 Tolerance Class 2 (or ANSI/ABMA Std 20 Tolerance Class ABEC-9 or other national equivalents), or better and having all the following characteristics: a) An inner ring bore diameter between 12 and 50 mm; b) An outer ring outside diameter between 25 and 100 mm; and c) A width between 10 and 20 mm.
2B004	Hot “isostatic presses” having all of the following, and specially designed components and accessories therefor: **N.B.: SEE ALSO 2B104 and 2B204.** a. A controlled thermal environment within the closed cavity and a chamber cavity with an inside diameter of 406 mm or more; and b. Having any of the following: 1. A maximum working pressure exceeding 207 MPa; 2. A controlled thermal environment exceeding 1 773 K (1 500 °C); or 3. A facility for hydrocarbon impregnation and removal of resultant gaseous degradation products. *Technical Note:* *The inside chamber dimension is that of the chamber in which both the working temperature and the working pressure are achieved and does not include fixtures. That dimension will be the smaller of either the inside diameter of the pressure chamber or the inside diameter of the insulated furnace chamber, depending on which of the two chambers is located inside the other.* *N.B.: For specially designed dies, moulds and tooling see 1B003, 9B009 and the Military Goods Controls.*	M6B3	Isostatic presses having all of the following characteristics: a) Maximum working pressure equal to or greater than 69 MPa; b) Designed to achieve and maintain a controlled thermal environment of 600 °C or greater; and c) Possessing a chamber cavity with an inside diameter of 254 mm or greater.
2B009	Spin-forming machines and flow-forming machines, which, according to the manufacturer's technical specification, can be equipped with “numerical control” units or a computer control and having all of the following: **N.B.: SEE ALSO 2B109 AND 2B209.**	M3B3	Flow-forming machines, and specially designed components therefor, which: a) According to the manufacturers technical specification can be equipped with numerical control units or a computer control, even when not equipped with such units at delivery; and

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	a. Three or more axes which can be coordinated simultaneously for “contouring control”; and b. A roller force more than 60 kN. *Technical Note:* *For the purpose of 2B009, machines combining the function of spin-forming and flow-forming are regarded as flow-forming machines.*		b) Have more than two axes which can be co-ordinated simultaneously for contouring control. *Note: This item does not include machines that are not usable in the “production” of propulsion components and equipment (e.g. motor cases) for systems specified in 1.A.* *Technical Note:* *Machines combining the function of spin-forming and flow-forming are, for the purpose of this item, regarded as flow-forming machines.*
2B104	“Isostatic presses”, other than those specified in 2B004, having all of the following: **N.B.: SEE ALSO 2B204.** a. Maximum working pressure of 69 MPa or greater; b. Designed to achieve and maintain a controlled thermal environment of 873 K (600 °C) or greater; and c. Possessing a chamber cavity with an inside diameter of 254 mm or greater.	M6B3	Isostatic presses having all of the following characteristics: a) Maximum working pressure equal to or greater than 69 MPa; b) Designed to achieve and maintain a controlled thermal environment of 600 °C or greater; and c) Possessing a chamber cavity with an inside diameter of 254 mm or greater.
2B105	Chemical vapour deposition (CVD) furnaces, other than those specified in 2B005.a., designed or modified for the densification of carbon-carbon composites.	M6B4	Chemical vapour deposition furnaces designed or modified for the densification of carbon-carbon composites.
2B109	Flow-forming machines, other than those specified in 2B009, and specially designed components as follows: N.B.: SEE ALSO 2B209. a. Flow-forming machines having all of the following: 1. According to the manufacturer's technical specification, can be equipped with “numerical control” units or a computer control, even when not equipped with such units; and 2. With more than two axes which can be coordinated simultaneously for “contouring control”. b. Specially designed components for flow-forming machines specified in 2B009 or 2B109.a.	M3B3	Flow-forming machines, and specially designed components therefor, which: a) According to the manufacturers technical specification can be equipped with numerical control units or a computer control, even when not equipped with such units at delivery; and b) Have more than two axes which can be co-ordinated simultaneously for contouring control. *Note: This item does not include machines that are not usable in the “production” of propulsion components and equipment (e.g. motor cases) for systems specified in 1.A.*

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	Note: 2B109 does not control machines that are not usable in the production of propulsion components and equipment (e.g. motor cases) for systems specified in 9A005, 9A007.a. or 9A105.a. *Technical Note:* *Machines combining the function of spin-forming and flow-forming are for the purpose of 2B109 regarded as flow-forming machines.*		*Technical Note:* *Machines combining the function of spin-forming and flow-forming are, for the purpose of this item, regarded as flow-forming machines.*
2B116	Vibration test systems, equipment and components therefor, as follows: a. Vibration test systems employing feedback or closed loop techniques and incorporating a digital controller, capable of vibrating a system at an acceleration equal to or greater than 10 g rms between 20 Hz and 2 kHz while imparting forces equal to or greater than 50 kN, measured 'bare table'; b. Digital controllers, combined with specially designed vibration test software, with a 'real-time control bandwidth' greater than 5 kHz designed for use with vibration test systems specified in 2B116.a.; *Technical Note:* *In 2B116.b., 'real-time control bandwidth' means the maximum rate at which a controller can execute complete cycles of sampling, processing data and transmitting control signals.* c. Vibration thrusters (shaker units), with or without associated amplifiers, capable of imparting a force equal to or greater than 50 kN, measured 'bare table', and usable in vibration test systems specified in 2B116.a.; d. Test piece support structures and electronic units designed to combine multiple shaker units in a system capable of providing an effective combined force equal to or greater than 50 kN, measured 'bare table', and usable in vibration systems specified in 2B116.a.	M15B1	Vibration test equipment, usable for the systems specified in 1.A., 19.A.1. or 19.A.2. or the subsystems specified in 2.A. or 20.A., and components therefor, as follows: a) Vibration test systems employing feedback or closed loop techniques and incorporating a digital controller, capable of vibrating a system at an acceleration equal to or greater than 10 g rms between 20 Hz and 2 kHz while imparting forces equal to or greater than 50 kN, measured 'bare table'; b) Digital controllers, combined with specially designed vibration test "software", with a 'real-time control bandwidth' greater than 5 kHz and designed for use with vibration test systems specified in 15.B.1.a.; *Technical Note:* *'Real-time control bandwidth' is defined as the maximum rate at which a controller can execute complete cycles of sampling, processing data and transmitting control signals.* c) Vibration thrusters (shaker units), with or without associated amplifiers, capable of imparting a force equal to or greater than 50 kN, measured 'bare table', and usable in vibration test systems specified in 15.B.1.a.; d) Test piece support structures and electronic units designed to combine multiple shaker units into a complete shaker system capable of providing an effective combined force equal to or greater than 50 kN, measured 'bare table', and usable in vibration test systems specified in 15.B.1.a.

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	Technical Note: *In 2B116, 'bare table' means a flat table, or surface, with no fixture or fittings.*		*Technical Note:* *Vibration test systems incorporating a digital controller are those systems, the functions of which are, partly or entirely, automatically controlled by stored and digitally coded electrical signals.*
2B117	Equipment and process controls, other than those specified in 2B004, 2B005.a., 2B104 or 2B105, designed or modified for densification and pyrolysis of structural composite rocket nozzles and reentry vehicle nose tips.	M6B5	Equipment and process controls, other than those specified in 6.B.3. or 6.B.4., designed or modified for densification and pyrolysis of structural composite rocket nozzles and re-entry vehicle nose tips.
2B119	Balancing machines and related equipment, as follows: **N.B.: SEE ALSO 2B219** a. Balancing machines having all the following characteristics: 1. Not capable of balancing rotors/assemblies having a mass greater than 3 kg; 2. Capable of balancing rotors/assemblies at speeds greater than 12 500 rpm; 3. Capable of correcting unbalance in two planes or more; and 4. Capable of balancing to a residual specific unbalance of 0,2 g mm per kg of rotor mass; *Note: 2B119.a. does not control balancing machines designed or modified for dental or other medical equipment.*	M9B2a	Equipment as follows: 1. Balancing machines having all the following characteristics: 1. Not capable of balancing rotors/assemblies having a mass greater than 3 kg; 2. Capable of balancing rotors/assemblies at speeds greater than 12 500 rpm; 3. Capable of correcting unbalance in two planes or more; and 4. Capable of balancing to a residual specific unbalance of 0,2 g mm per kg of rotor mass;
	b. Indicator heads designed or modified for use with machines specified in 2B119.a. *Technical Note:* *Indicator heads are sometimes known as balancing instrumentation.*	M9B2b	Indicator heads (sometimes known as balancing instrumentation) designed or modified for use with machines specified in 9.B.2.a.;
2B120	Motion simulators or rate tables having all of the following characteristics: a. Two axes or more; b. Designed or modified to incorporate slip rings or integrated non-contact devices capable of transferring electrical power, signal information, or both; and	M9B2c	Motion simulators/rate tables (equipment capable of simulating motion) having all of the following characteristics: 1. Two axes or more;

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	c. Having any of the following characteristics: 1. For any single axis having all of the following: a. Capable of rates of 400 degrees/s or more, or 30 degrees/s or less; and b. A rate resolution equal to or less than 6 degrees/s and an accuracy equal to or less than 0,6 degrees/s; 2. Having a worst-case rate stability equal to or better (less) than plus or minus 0,05 % averaged over 10 degrees or more; or 3. A positioning "accuracy" equal to or less (better) than 5 arc second. *Note 1: 2B120 does not control rotary tables designed or modified for machine tools or for medical equipment. For controls on machine tool rotary tables see 2B008.* *Note 2: Motion simulators or rate tables specified in 2B120 remain controlled whether or not slip rings or integrated non-contact devices are fitted at time of export.*		2. Designed or modified to incorporate sliprings or integrated non-contact devices capable of transferring electrical power, signal information, or both; and 3. Having any of the following characteristics: a. For any single axis having all of the following: 1. Capable of rates of 400 degrees/s or more, or 30 degrees/s or less; and 2. A rate resolution equal to or less than 6 degrees/s and an accuracy equal to or less than 0,6 degrees/s; b. Having a worst-case rate stability equal to or better (less) than plus or minus 0,05 % averaged over 10 degrees or more; or c. A positioning "accuracy" equal to or less (better) than 5 arc second.
2B121	Positioning tables (equipment capable of precise rotary positioning in any axes), other than those specified in 2B120, having all the following characteristics: a. Two axes or more; and b. A positioning "accuracy" equal to or less (better) than 5 arc second. *Note: 2B121 does not control rotary tables designed or modified for machine tools or for medical equipment. For controls on machine tool rotary tables see 2B008*	M9B2d	Positioning tables (equipment capable of precise rotary positioning in any axes) having the following characteristics: 1. Two axes or more; and 2. A positioning "accuracy" equal to or less (better) than 5 arc second;
2B122	Centrifuges capable of imparting accelerations above 100 g and designed or modified to incorporate slip rings or integrated non-contact devices capable of transferring electrical power, signal information, or both. *Note: Centrifuges specified in 2B122 remain controlled whether or not slip rings or integrated non-contact devices are fitted at time of export*	M9B2e	Centrifuges capable of imparting accelerations above 100 g and designed or modified to incorporate sliprings or integrated non-contact devices capable of transferring electrical power, signal information, or both

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2D Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
2D001	"Software", other than that specified in 2D002, as follows: a. "Software" specially designed or modified for the "development" or "production" of equipment specified in 2A001 or 2B001 b. "Software" specially designed or modified for the "use" of equipment specified in 2A001.c., 2B001 or 2B003 to 2B009. *Note: 2D001 does not control part programming "software" that generates "numerical control" codes for machining various parts.*	M3D	SOFTWARE
2D101	"Software" specially designed or modified for the "use" of equipment specified in 2B104, 2B105, 2B109, 2B116, 2B117 or 2B119 to 2B122. **N.B.: SEE ALSO 9D004.**	M3D1	"Software" specially designed or modified for the "use" of "production facilities" and flow-forming machines specified in 3.B.1. or 3.B.3.
		M6D2	"Software" specially designed or modified for the equipment specified in 6.B.3., 6.B.4. or 6.B.5.
		M15D1	"Software" specially designed or modified for the "use" of equipment specified in 15.B. usable for testing systems specified in 1.A., 19.A.1. or 19.A.2. or subsystems specified in 2.A. or 20.A.

2E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
2E001	"Technology" according to the General Technology Note for the "development" of equipment or "software" specified in 2A, 2B or 2D. *Note: 2E001 includes "technology" for the integration of probe systems into coordinate measurement machines specified in 2B006.a.*	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".

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2E002	"Technology" according to the General Technology Note for the "production" of equipment specified in 2A or 2B.	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".
2E101	"Technology" according to the General Technology Note for the "use" of equipment or "software" specified in 2B004, 2B009, 2B104, 2B109, 2B116, 2B119 to 2B122 or 2D101.	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".

CATEGORY 3 — ELECTRONICS

3A Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
3A001	Electronic components and specially designed components therefor, as follows: a. General purpose integrated circuits, as follows: Note 1: *The control status of wafers (finished or unfinished), in which the function has been determined, is to be evaluated against the parameters of 3A001.a.* Note 2: *Integrated circuits include the following types:* — *"Monolithic integrated circuits";* — *"Hybrid integrated circuits";* — *"Multichip integrated circuits";* — *"Film type integrated circuits", including silicon-on-sapphire integrated circuits;* — *"Optical integrated circuits";* — *"Three dimensional integrated circuits".*		

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	1. Integrated circuits designed or rated as radiation hardened to withstand any of the following: a. A total dose of 5×10^3 Gy (silicon) or higher; b. A dose rate upset of 5×10^6 Gy (silicon)/s or higher; or c. A fluence (integrated flux) of neutrons (1 MeV equivalent) of 5×10^{13} n/cm^2 or higher on silicon, or its equivalent for other materials; *Note: 3A001.a.1.c. does not control Metal Insulator Semiconductors (MIS).*	M18A1	"Radiation Hardened" "microcircuits" usable in protecting rocket systems and unmanned aerial vehicles against nuclear effects (e.g. Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects), and usable for the systems specified in 1.A.
		M18A2	'Detectors' specially designed or modified to protect rocket systems and unmanned aerial vehicles against nuclear effects (e.g. Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects), and usable for the systems specified in 1.A. *Technical Note:* *A 'detector' is defined as a mechanical, electrical, optical or chemical device that automatically identifies and records, or registers a stimulus such as an environmental change in pressure or temperature, an electrical or electromagnetic signal or radiation from a radioactive material. This includes devices that sense by one time operation or failure.*
3A101	Electronic equipment, devices and components, other than those specified in 3A001, as follows: a. Analogue-to-digital converters, usable in "missiles", designed to meet military specifications for ruggedized equipment;	M14A1	Analogue-to-digital converters, usable in the systems specified in 1.A., having any of the following characteristics: a) Designed to meet military specifications for ruggedised equipment; or b) Designed or modified for military use and being any of the following types:
		M14A1b1	1. Analogue-to-digital converter "microcircuits", which are "radiation hardened" or have all of the following characteristics: a. Rated for operation in the temperature range from below –54 °C to above +125 °C; and b. Hermetically sealed; or

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		M14A1b2	2. Electrical input type analogue-to-digital converter printed circuit boards or modules, having all of the following characteristics: a. Rated for operation in the temperature range from below –45 °C to above +80 °C; and b. Incorporating “microcircuits” specified in 14.A.1.b.1.
	b. Accelerators capable of delivering electromagnetic radiation produced by bremsstrahlung from accelerated electrons of 2 MeV or greater, and systems containing those accelerators. *Note: 3A101.b. above does not specify equipment specially designed for medical purposes.*	M15B5	Accelerators capable of delivering electromagnetic radiation produced by bremsstrahlung from accelerated electrons of 2 MeV or greater, and equipment containing those accelerators, usable for the systems specified in 1.A., 19.A.1. or 19.A.2. or the subsystems specified in 2.A. or 20.A. *Note: 15.B.5. does not control equipment specially designed for medical purposes.* *Technical Note:* *In Item 15.B. ‘bare table’ means a flat table, or surface, with no fixture or fittings.*
3A102	‘Thermal batteries’ designed or modified for ‘missiles’. *Technical Notes:* *1. In 3A102 ‘thermal batteries’ are single use batteries that contain a solid non-conducting inorganic salt as the electrolyte. These batteries incorporate a pyrolytic material that, when ignited, melts the electrolyte and activates the battery.* *2. In 3A102 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M12A6	Thermal batteries designed or modified for the systems specified in 1.A., 19.A.1. or 19.A.2. *Note: Item 12.A.6. does not control thermal batteries specially designed for rocket systems or unmanned aerial vehicles that are not capable of a “range” equal to or greater than 300 km.* *Technical Note:* *Thermal batteries are single use batteries that contain a solid non-conducting inorganic salt as the electrolyte. These batteries incorporate a pyrolytic material that, when ignited, melts the electrolyte and activates the battery.*

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3D Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
3D101	"Software" specially designed or modified for the "use" of equipment specified in 3A101.b.	M15D1	"Software" specially designed or modified for the "use" of equipment specified in 3A101.b.

3E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
3E001	"Technology" according to the General Technology Note for the "development" or "production" of equipment or materials specified in 3A, 3B or 3C; *Note 1: 3E001 does not control "technology" for the "production" of equipment or components controlled by 3A003.* *Note 2: 3E001 does not control "technology" for the "development" or "production" of integrated circuits specified in 3A001.a.3. to 3A001.a.12., having all of the following:* *a. Using "technology" at or above 0,130 μm; and* *b. Incorporating multi-layer structures with three or fewer metal layers.*	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".
3E101	"Technology" according to the General Technology Note for the "use" of equipment or "software" specified in 3A001.a.1. or 2., 3A101, 3A102 or 3D101.	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".
3E102	"Technology" according to the General Technology Note for the "development" of "software" specified in 3D101.	M15E1	"Technology", in accordance with the General Technology Note, for the "development", "production" or "use" of equipment or "software" specified in 15.B. or 15.D.

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CATEGORY 4 — COMPUTERS

4A Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
4A001	Electronic computers and related equipment, having any of the following and "electronic assemblies" and specially designed components therefor: **N.B.: SEE ALSO 4A101.** a. Specially designed to have any of the following: 1. Rated for operation at an ambient temperature below 228 K (–45 °C) or above 358 K (85 °C); or *Note: 4A001.a.1. does not control computers specially designed for civil automobile, railway train or "civil aircraft" applications.* 2. Radiation hardened to exceed any of the following specifications: a. Total Dose 5×10^3 Gy (silicon); b. Dose Rate Upset 5×10^6 Gy (silicon)/s; or c. Single Event Upset 1×10^{-8} Error/bit/day; *Note: 4A001.a.2. does not control computers specially designed for "civil aircraft" applications.* b. Not used.	M13A1	Analogue computers, digital computers or digital differential analysers, designed or modified for use in the systems specified in 1.A., having any of the following characteristics: a) Rated for continuous operation at temperatures from below –45 °C to above +55 °C; or b) Designed as ruggedised or "radiation hardened".
4A003	"Digital computers", "electronic assemblies", and related equipment therefor, as follows and specially designed components therefor: *Note 1: 4A003 includes the following:* *— 'Vector processors';* *— Array processors;* *— Digital signal processors;*		

	— *Logic processors;* — *Equipment designed for "image enhancement";* — *Equipment designed for "signal processing".* *Note 2: The control status of the "digital computers" and related equipment described in 4A003 is determined by the control status of other equipment or systems provided:* *a. The "digital computers" or related equipment are essential for the operation of the other equipment or systems;* *b. The "digital computers" or related equipment are not a "principal element" of the other equipment or systems; and* *N.B. 1: The control status of "signal processing" or "image enhancement" equipment specially designed for other equipment with functions limited to those required for the other equipment is determined by the control status of the other equipment even if it exceeds the "principal element" criterion.* *N.B. 2: For the control status of "digital computers" or related equipment for telecommunications equipment, see Category 5, Part 1 (Telecommunications).* *c. The "technology" for the "digital computers" and related equipment is determined by 4E.* d. Not used		
	e. Equipment performing analogue-to-digital conversions exceeding the limits specified in 3A001.a.5.;	M14A1b2	Electrical input type analogue-to-digital converter printed circuit boards or modules, having all of the following characteristics: a) Rated for operation in the temperature range from below –45 °C to above +80 °C; and b) Incorporating "microcircuits" specified in 14.A.1.b.1.
4A101	Analogue computers, "digital computers" or digital differential analysers, other than those specified in 4A001.a.1., which are ruggedized and designed or modified for use in space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M13A1b	Designed as ruggedised or "radiation hardened".

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4A102	"Hybrid computers" specially designed for modelling, simulation or design integration of space launch vehicles specified in 9A004 or sounding rockets specified in 9A104. *Note: This control only applies when the equipment is supplied with "software" specified in 7D103 or 9D103.*	M16A1	Specially designed hybrid (combined analogue/digital) computers for modelling, simulation or design integration of systems specified in 1.A. or the subsystems specified in 2.A. *Note:* This control only applies when the equipment is supplied with "software" specified in 16.D.1.

4E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
4E001	a. "Technology" according to the General Technology Note, for the "development", "production" or "use" of equipment or "software" specified in 4A or 4D. b. "Technology", other than that specified in 4E001.a., specially designed or modified for the "development" or "production" of equipment as follows: 1. "Digital computers" having an "Adjusted Peak Performance" ("APP") exceeding 1,0 Weighted TeraFLOPS (WT); 2. "Electronic assemblies" specially designed or modified for enhancing performance by aggregation of processors so that the "APP" of the aggregation exceeds the limit in 4E001.b.1. c. "Technology" for the "development" of "intrusion software".	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".

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CATEGORY 5 — TELECOMMUNICATIONS AND "INFORMATION SECURITY"

Part 1 — Telecommunications

5A1 Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
5A101	Telemetry and telecontrol equipment, including ground equipment, designed or modified for 'missiles'. *Technical Note:* *In 5A101 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.* *Note: 5A101 does not control:* *a. Equipment designed or modified for manned aircraft or satellites;* *b. Ground based equipment designed or modified for terrestrial or marine applications;* *c. Equipment designed for commercial, civil or 'Safety of Life' (e.g. data integrity, flight safety) GNSS services;*	M12A4	Telemetry and telecontrol equipment, including ground equipment, designed or modified for systems specified in 1.A., 19.A.1. or 19.A.2. Notes: 1. 12.A.4. does not control equipment designed or modified for manned aircraft or satellites. 2. 12.A.4. does not control ground based equipment designed or modified for terrestrial or marine applications. 3. 12.A.4. does not control equipment designed for commercial, civil or 'Safety of Life' (e.g. data integrity, flight safety) GNSS services.

5D1 Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
5D101	"Software" specially designed or modified for the "use" of equipment specified in 5A101.	M12D3	"Software" specially designed or modified for the "use" of equipment specified in 12.A.4. or 12.A.5., usable for systems specified in 1.A., 19.A.1. or 19.A.2.

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5E1 Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
5E101	"Technology" according to the General Technology Note for the "development", "production" or "use" of equipment specified in 5A101.	M12E1	"Technology", in accordance with the General Technology Note, for the "development", "production" or "use" of equipment or "software" specified in 12.A. or 12.D.

CATEGORY 6 — SENSORS AND LASERS

6A Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
6A002	Optical sensors or equipment and components therefor, as follows: **N.B.: SEE ALSO 6A102.** a. Optical detectors as follows: 1. "Space-qualified" solid-state detectors as follows: *Note: For the purpose of 6A002.a.1., solid-state detectors include "focal plane arrays".* a. "Space-qualified" solid-state detectors having all of the following: 1. A peak response in the wavelength range exceeding 10 nm but not exceeding 300 nm; and 2. A response of less than 0,1 % relative to the peak response at a wavelength exceeding 400 nm;	M18A2	'Detectors' specially designed or modified to protect rocket systems and unmanned aerial vehicles against nuclear effects (e.g. Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects), and usable for the systems specified in 1.A. *Technical Note:* *A 'detector' is defined as a mechanical, electrical, optical or chemical device that automatically identifies and records, or registers a stimulus such as an environmental change in pressure or temperature, an electrical or electromagnetic signal or radiation from a radioactive material. This includes devices that sense by one time operation or failure*

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	b. “Space-qualified” solid-state detectors having all of the following: 1. A peak response in the wavelength range exceeding 900 nm but not exceeding 1 200 nm; and 2. A response “time constant” of 95 ns or less; c. “Space-qualified” solid-state detectors having a peak response in the wavelength range exceeding 1 200 nm but not exceeding 30 000 nm; d. “Space-qualified” “focal plane arrays” having more than 2 048 elements per array and having a peak response in the wavelength range exceeding 300 nm but not exceeding 900 nm.	M11A2	Passive sensors for determining bearings to specific electromagnetic sources (direction finding equipment) or terrain characteristics, designed or modified for use in the systems specified in 1.A.
6A006	“Magnetometers”, “magnetic gradiometers”, “intrinsic magnetic gradiometers”, underwater electric field sensors, “compensation systems”, and specially designed components therefor, as follows: **N.B.: SEE ALSO 7A103.d.** *Note: 6A006 does not control instruments specially designed for fishery applications or biomagnetic measurements for medical diagnostics.* a. “Magnetometers” and subsystems as follows: 1. “Magnetometers” using “superconductive” (SQUID) “technology” and having any of the following: a. SQUID systems designed for stationary operation, without specially designed subsystems designed to reduce in-motion noise, and having a ‘sensitivity’ equal to or lower (better) than 50 fT (rms) per square root Hz at a frequency of 1 Hz; or b. SQUID systems having an in-motion-magnetometer ‘sensitivity’ lower (better) than 20 pT (rms) per square root Hz at a frequency of 1 Hz and specially designed to reduce in-motion noise;	M9A8	Three axis magnetic heading sensors having all of the following characteristics, and specially designed components therefor: a) Internal tilt compensation in pitch (+/– 90 degrees) and having roll (+/– 180 degrees) axes. b) Capable of providing azimuthal accuracy better (less) than 0,5 degrees rms at latitudes of +/– 80 degrees, referenced to local magnetic field; and c) Designed or modified to be integrated with flight control and navigation systems. Note: Flight control and navigation systems in Item 9.A.8. include gyro-stabilisers, automatic pilots and inertial navigation systems.

	2. “Magnetometers” using optically pumped or nuclear precession (proton/ Overhauser) “technology” having a ‘sensitivity’ lower (better) than 20 pT (rms) per square root Hz at a frequency of 1 Hz; 3. “Magnetometers” using fluxgate “technology” having a ‘sensitivity’ equal to or lower (better) than 10 pT (rms) per square root Hz at a frequency of 1 Hz; 4. Induction coil “magnetometers” having a ‘sensitivity’ lower (better) than any of the following: a. 0,05 nT (rms) per square root Hz at frequencies of less than 1 Hz; b. 1×10^{-3} nT (rms) per square root Hz at frequencies of 1 Hz or more but not exceeding 10 Hz; or c. 1×10^{-4} nT (rms) per square root Hz at frequencies exceeding 10 Hz; 5. Fibre optic “magnetometers” having a ‘sensitivity’ lower (better) than 1 nT (rms) per square root Hz; b. Underwater electric field sensors having a ‘sensitivity’ lower (better) than 8 nanovolt per metre per square root Hz when measured at 1 Hz; c. “Magnetic gradiometers” as follows: 1. “Magnetic gradiometers” using multiple “magnetometers” specified in 6A006.a.; 2. Fibre optic “intrinsic magnetic gradiometers” having a magnetic gradient field ‘sensitivity’ lower (better) than 0,3 nT/m rms per square root Hz; 3. “Intrinsic magnetic gradiometers”, using “technology” other than fibre-optic “technology”, having a magnetic gradient field ‘sensitivity’ lower (better) than 0,015 nT/m rms per square root Hz; d. “Compensation systems” for magnetic or underwater electric field sensors resulting in a performance equal to or better than the specified parameters of 6A006.a., 6A006.b. or 6A006.c.;		
6A007	Gravity meters (gravimeters) and gravity gradiometers, as follows: **N.B.: SEE ALSO 6A107.** a. Gravity meters designed or modified for ground use and having a static accuracy of less (better) than 10 μGal;	M12A3	Gravity meters (gravimeters) or gravity gradiometers, designed or modified for airborne or marine use, usable for systems specified in 1.A., as follows, and specially designed components therefor: a) Gravity meters having all the following: 1. A static or operational accuracy equal to or less (better) than 0,7 milligal (mgal); and

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	Note: *6A007.a. does not control ground gravity meters of the quartz element (Worden) type.* b. Gravity meters designed for mobile platforms and having all of the following: 1. A static accuracy of less (better) than 0,7 mGal; and 2. An in-service (operational) accuracy of less (better) than 0,7 mGal having a 'time-to-steady-state registration' of less than 2 minutes under any combination of attendant corrective compensations and motional influences; *Technical Note:* *For the purposes of 6A007.b., 'time-to-steady-state registration' (also referred to as the gravimeter's response time) is the time over which the disturbing effects of platform induced accelerations (high frequency noise) are reduced.* c. Gravity gradiometers.		2. A time to steady-state registration of two minutes or less; b) Gravity gradiometers.
6A008	Radar systems, equipment and assemblies, having any of the following, and specially designed components therefor: **N.B.: SEE ALSO 6A108.** *Note:* *6A008 does not control:* — *Secondary surveillance radar (SSR);* — *Civil Automotive Radar;* — *Displays or monitors used for air traffic control (ATC);* — *Meteorological (weather) radar;* — *Precision approach radar (PAR) equipment conforming to ICAO standards and employing electronically steerable linear (1-dimensional) arrays or mechanically positioned passive antennae.*	M11A1	Radar and laser radar systems, including altimeters, designed or modified for use in the systems specified in 1.A. *Technical Note:* *Laser radar systems embody specialised transmission, scanning, receiving and signal processing techniques for utilisation of lasers for echo ranging, direction finding and discrimination of targets by location, radial speed and body reflection characteristics.*

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	a. Operating at frequencies from 40 GHz to 230 GHz and having any of the following: 1. An average output power exceeding 100 mW; or 2. Locating accuracy of 1 m or less (better) in range and 0,2 degree or less (better) in azimuth; b. A tunable bandwidth exceeding ± 6,25 % of the 'centre operating frequency'; *Technical Note:* *The 'centre operating frequency' equals one half of the sum of the highest plus the lowest specified operating frequencies.* c. Capable of operating simultaneously on more than two carrier frequencies;	M12A5b	Range instrumentation radars including associated optical/infrared trackers with all of the following capabilities: 1. Angular resolution better than 1,5 mrad; 2. Range of 30 km or greater with a range resolution better than 10 m rms; and 3. Velocity resolution better than 3 m/s.
6A102	Radiation hardened 'detectors', other than those specified in 6A002, specially designed modified for protecting against nuclear effects (e.g. electromagnetic pulse (EMP), X-rays, combined blast and thermal effects) and usable for "missiles", designed or rated to withstand radiation levels which meet or exceed a total irradiation dose of 5×10^5 rads (silicon). *Technical Note:* *In 6A102, a 'detector' is defined as a mechanical, electrical, optical or chemical device that automatically identifies and records, or registers a stimulus such as an environmental change in pressure or temperature, an electrical or electromagnetic signal or radiation from a radioactive material. This includes devices that sense by one time operation or failure.*	M18A2	'Detectors' specially designed or modified to protect rocket systems and unmanned aerial vehicles against nuclear effects (e.g. Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects), and usable for the systems specified in 1.A. *Technical Note:* *A 'detector' is defined as a mechanical, electrical, optical or chemical device that automatically identifies and records, or registers a stimulus such as an environmental change in pressure or temperature, an electrical or electromagnetic signal or radiation from a radioactive material. This includes devices that sense by one time operation or failure.*
6A107	Gravity meters (gravimeters) and components for gravity meters and gravity gradiometers, as follows: a. Gravity meters, other than those specified in 6A007.b, designed or modified for airborne or marine use, and having a static or operational accuracy equal to or less (better) than 0,7 milligal (mgal), and having a time-to-steady-state registration of two minutes or less; b. Specially designed components for gravity meters specified in 6A007.b or 6A107.a. and gravity gradiometers specified in 6A007.c.	M12A3	Gravity meters (gravimeters) or gravity gradiometers, designed or modified for airborne or marine use, usable for systems specified in 1.A., as follows, and specially designed components therefor: a) Gravity meters having all the following: 1. A static or operational accuracy equal to or less (better) than 0,7 milligal (mgal); and 2. A time to steady-state registration of two minutes or less; b) Gravity gradiometers.

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6A108	Radar systems and tracking systems, other than those specified in entry 6A008, as follows: a. Radar and laser radar systems designed or modified for use in space launch vehicles specified in 9A004 or sounding rockets specified in 9A104; *Note: 6A108.a. includes the following:* *a. Terrain contour mapping equipment;* *b. Imaging sensor equipment;* *c. Scene mapping and correlation (both digital and analogue) equipment;* *d. Doppler navigation radar equipment.*	M11A1	Radar and laser radar systems, including altimeters, designed or modified for use in the systems specified in 1.A. *Technical Note:* *Laser radar systems embody specialised transmission, scanning, receiving and signal processing techniques for utilisation of lasers for echo ranging, direction finding and discrimination of targets by location, radial speed and body reflection characteristics.*
	b. Precision tracking systems, usable for 'missiles', as follows: 1. Tracking systems which use a code translator in conjunction with either surface or airborne references or navigation satellite systems to provide real-time measurements of in-flight position and velocity; 2. Range instrumentation radars including associated optical/infrared trackers with all of the following capabilities: a. Angular resolution better than 1,5 milliradians; b. Range of 30 km or greater with a range resolution better than 10 m rms; c. Velocity resolution better than 3 m/s. *Technical Note:* *In 6A108.b. 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M12A5	Precision tracking systems, usable for systems specified in 1.A., 19.A.1. or 19.A.2. as follows: a. Tracking systems which use a code translator installed on the rocket or unmanned aerial vehicle in conjunction with either surface or airborne references or navigation satellite systems to provide real-time measurements of inflight position and velocity; b. Range instrumentation radars including associated optical/infrared trackers with all of the following capabilities: 1. Angular resolution better than 1,5 mrad; 2. Range of 30 km or greater with a range resolution better than 10 m rms; and 3. Velocity resolution better than 3 m/s.

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6B Test, Inspection and Production Equipment

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
6B008	Pulse radar cross-section measurement systems having transmit pulse widths of 100 ns or less, and specially designed components therefor. **N.B.: SEE ALSO 6B108.**	M17B1	Systems, specially designed for radar cross section measurement, usable for the systems specified in 1.A., 19.A.1. or 19.A.2. or the subsystems specified in 2.A
6B108	Systems, other than those specified in 6B008, specially designed for radar cross section measurement usable for 'missiles' and their subsystems. *Technical Note:* *In 6B108 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M17B1	Systems, specially designed for radar cross section measurement, usable for the systems specified in 1.A., 19.A.1. or 19.A.2. or the subsystems specified in 2.A

6D Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
6D002	"Software" specially designed for the "use" of equipment specified in 6A002.b., 6A008 or 6B008.	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".
6D102	"Software" specially designed or modified for the "use" of goods specified in 6A108.	M11D1	"Software" specially designed or modified for the "use" of equipment specified in 11.A.1., 11.A.2. or 11.A.4.
		M12D3	"Software" specially designed or modified for the "use" of equipment specified in 12.A.4. or 12.A.5., usable for systems specified in 1.A., 19.A.1. or 19.A.2.

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6D103	“Software” which processes post-flight, recorded data, enabling determination of vehicle position throughout its flight path, specially designed or modified for ‘missiles’. *Technical Note:* *In 6D103 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M12D2	“Software” which processes post-flight, recorded data, enabling determination of vehicle position throughout its flight path, specially designed or modified for systems specified in 1.A., 19.A.1. or 19.A.2.

6E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
6E001	“Technology” according to the General Technology Note for the “development” of equipment, materials or “software” specified in 6A, 6B, 6C or 6D.	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.
6E002	“Technology” according to the General Technology Note for the “production” of equipment or materials specified in 6A, 6B or 6C.	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.
6E101	“Technology” according to the General Technology Note for the “use” of equipment or “software” specified in 6A002, 6A007.b. and c., 6A008, 6A102, 6A107, 6A108, 6B108, 6D102 or 6D103. *Note: 6E101 only specifies “technology” for equipment specified in 6A008 when it is designed for airborne applications and is usable in “missiles”.*	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.

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CATEGORY 7 — NAVIGATION AND AVIONICS

7A Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
7A001	Accelerometers as follows and specially designed components therefor: **N.B.: SEE ALSO 7A101.** *N.B.: For angular or rotational accelerometers, see 7A001.b.* a. Linear accelerometers having any of the following: 1. Specified to function at linear acceleration levels less than or equal to 15 g and having any of the following: a. A "bias" "stability" of less (better) than 130 micro g with respect to a fixed calibration value over a period of one year; or b. A "scale factor" "stability" of less (better) than 130 ppm with respect to a fixed calibration value over a period of one year; 2. Specified to function at linear acceleration levels exceeding 15 g but less than or equal to 100 g and having all of the following: a. A "bias" "repeatability" of less (better) than 1 250 micro g over a period of one year; and b. A "scale factor" "repeatability" of less (better) than 1 250 ppm over a period of one year; or 3. Designed for use in inertial navigation or guidance systems and specified to function at linear acceleration levels exceeding 100 g; *Note: 7A001.a.1. and 7A001.a.2. do not control accelerometers limited to measurement of only vibration or shock.*	M9A3	Linear accelerometers, designed for use in inertial navigation systems or in guidance systems of all types, usable in the systems specified in 1.A., 19.A.1. or 19.A.2., having all of the following characteristics, and specially designed components therefor: a. 'Scale factor' 'repeatability' less (better) than 1 250 ppm; and b. 'Bias' 'repeatability' less (better) than 1 250 micro g. *Note: Item 9.A.3. does not control accelerometers specially designed and developed as Measurement While Drilling (MWD) sensors for use in downhole well service operations.* *Technical Notes:* *1. 'Bias' is defined as the accelerometer output when no acceleration is applied.* *2. 'Scale factor' is defined as the ratio of change in output to a change in the input.* *3. The measurement of 'bias' and 'scale factor' refers to one sigma standard deviation with respect to a fixed calibration over a period of one year.* *4. 'Repeatability' is defined according to IEEE Standard for Inertial Sensor Terminology 528-2001 in the Definitions section paragraph 2.214 titled repeatability (gyro, accelerometer) as follows: 'The closeness of agreement among repeated measurements of the same variable under the same operating conditions when changes in conditions or non-operating periods occur between measurements'.*

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	b. Angular or rotational accelerometers, specified to function at linear acceleration levels exceeding 100 g.	M9A5	Accelerometers or gyros of any type, designed for use in inertial navigation systems or in guidance systems of all types, specified to function at acceleration levels greater than 100 g, and specially designed components therefor. Note: *9.A.5. does not include accelerometers that are designed to measure vibration or shock.*
7A002	Gyros or angular rate sensors, having any of the following and specially designed components therefor: **N.B.: SEE ALSO 7A102.** N.B.: *For angular or rotational accelerometers, see 7A001.b.* a. Specified to function at linear acceleration levels less than or equal to 100 g and having any of the following: 1. A rate range of less than 500 degrees per second and having any of the following: a. A “bias” “stability” of less (better) than 0,5 degree per hour, when measured in a 1 g environment over a period of one month, and with respect to a fixed calibration value; or b. An “angle random walk” of less (better) than or equal to 0,0035 degree per square root hour; or Note: *7A002.a.1.b. does not control “spinning mass gyros”.* 2. A rate range greater than or equal to 500 degrees per second and having any of the following: a. A “bias” “stability” of less (better) than 4 degrees per hour, when measured in a 1 g environment over a period of three minutes, and with respect to a fixed calibration value; or b. An “angle random walk” of less (better) than or equal to 0,1 degree per square root hour; or Note: *7A002.a.2.b. does not control “spinning mass gyros”.*	M9A4	All types of gyros usable in the systems specified in 1.A., 19.A.1 or 19.A.2., with a rated ‘drift rate’ ‘stability’ of less than 0,5 degrees (1 sigma or rms) per hour in a 1 g environment, and specially designed components therefor. *Technical Notes:* *1. ‘Drift rate’ is defined as the component of gyro output that is functionally independent of input rotation and is expressed as an angular rate. (IEEE STD 528-2001 paragraph 2.56)* *2. ‘Stability’ is defined as a measure of the ability of a specific mechanism or performance coefficient to remain invariant when continuously exposed to a fixed operating condition. (This definition does not refer to dynamic or servo stability.) (IEEE STD 528-2001 paragraph 2.247)*

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	b. Specified to function at linear acceleration levels exceeding 100 g.	M9A5	Accelerometers or gyros of any type, designed for use in inertial navigation systems or in guidance systems of all types, specified to function at acceleration levels greater than 100 g, and specially designed components therefor. Note: *9.A.5. does not include accelerometers that are designed to measure vibration or shock.*
7A003	'Inertial measurement equipment or systems', having any of the following: **N.B.: SEE ALSO 7A103.** Note 1: *'Inertial measurement equipment or systems' incorporate accelerometers or gyroscopes to measure changes in velocity and orientation in order to determine or maintain heading or position without requiring an external reference once aligned. 'Inertial measurement equipment or systems' include:* — *Attitude and Heading Reference Systems (AHRSs);* — *Gyrocompasses;* — *Inertial Measurement Units (IMUs);* — *Inertial Navigation Systems (INSs);* — *Inertial Reference Systems (IRSs);* — *Inertial Reference Units (IRUs).* Note 2: *7A003 does not control 'inertial measurement equipment or systems' which are certified for use on "civil aircraft" by civil aviation authorities of one or more "participating states".* Technical Notes: *1. 'Positional aiding references' independently provide position, and include:* *a. Global Navigation Satellite Systems (GNSS);*	M2A1d	'Guidance sets', usable in the systems specified in 1.A., capable of achieving system accuracy of 3,33 % or less of the "range" (e.g. a 'CEP' of 10 km or less at a "range" of 300 km), except as provided in the Note below 2.A.1. for those designed for missiles with a "range" under 300 km or manned aircraft; M9A6 Inertial or other equipment using accelerometers specified in 9.A.3. or 9.A.5. or gyros specified in 9.A.4. or 9.A.5., and systems incorporating such equipment, and specially designed components therefor. M9A8 Three axis magnetic heading sensors having all of the following characteristics, and specially designed components therefor: a. Internal tilt compensation in pitch (+/– 90 degrees) and having roll (+/– 180 degrees) axes. b. Capable of providing azimuthal accuracy better (less) than 0,5 degrees rms at latitudes of +/– 80 degrees, referenced to local magnetic field; and c. Designed or modified to be integrated with flight control and navigation systems. Note: *Flight control and navigation systems in Item 9.A.8. include gyro-stabilisers, automatic pilots and inertial navigation systems.*

b. "Data-Based Referenced Navigation" ("DBRN").

2. 'Circular Error Probable' ('CEP') — In a circular normal distribution, the radius of the circle containing 50 % of the individual measurements being made, or the radius of the circle within which there is a 50 % probability of being located.

a. Designed for "aircraft", land vehicles or vessels, providing position without the use of 'positional aiding references', and having any of the following accuracies subsequent to normal alignment:

1. 0,8 nautical miles per hour (nm/hr) 'Circular Error Probable' ('CEP') rate or less (better);

2. 0,5 % distanced travelled 'CEP' or less (better); or

3. Total drift of 1 nautical mile 'CEP' or less (better) in a 24 hr period;

Technical Note:

The performance parameters in 7A003.a.1., 7A003.a.2. and 7A003.a.3. typically apply to 'inertial measurement equipment or systems' designed for "aircraft", vehicles and vessels, respectively. These parameters result from the utilisation of specialised non-positional aiding references (e.g., altimeter, odometer, velocity log). As a consequence, the specified performance values cannot be readily converted between these parameters. Equipment designed for multiple platforms are evaluated against each applicable entry 7A003.a.1., 7A003.a.2., or 7A003.a.3.

b. Designed for "aircraft", land vehicles or vessels, with an embedded 'positional aiding reference' and providing position after loss of all 'positional aiding references' for a period of up to 4 minutes, having an accuracy of less (better) than 10 meters 'CEP';

Technical Note:

7A003.b. refers to systems in which 'inertial measurement equipment or systems' and other independent 'positional aiding references' are built into a single unit (i.e., embedded) in order to achieve improved performance.

	c. Designed for “aircraft”, land vehicles or vessels, providing heading or True North determination and having any of the following: 1. A maximum operating angular rate less (lower) than 500 deg/s and a heading accuracy without the use of ‘positional aiding references’ equal to or less (better) than 0,07 deg sec(Lat) (equivalent to 6 arc minutes rms at 45 degrees latitude); or 2. A maximum operating angular rate equal to or greater (higher) than 500 deg/s and a heading accuracy without the use of ‘positional aiding references’ equal to or less (better) than 0,2 deg sec(Lat) (equivalent to 17 arc minutes rms at 45 degrees latitude); or d. Providing acceleration measurements or angular rate measurements, in more than one dimension, and having any of the following: 1. Performance specified by 7A001 or 7A002 along any axis, without the use of any aiding references; or 2. Being “space-qualified” and providing angular rate measurements having an “angle random walk” along any axis of less (better) than or equal to 0,1 degree per square root hour. *Note: 7A003.d.2. does not control ‘inertial measurement equipment or systems’ that contain “spinning mass gyros” as the only type of gyro.*		
7A004	‘Star trackers’ and components therefor, as follows: **N.B.: SEE ALSO 7A104.** a. ‘Star trackers’ with a specified azimuth accuracy of equal to or less (better) than 20 seconds of arc throughout the specified lifetime of the equipment; b. Components specially designed for equipment specified in 7A004.a. as follows: 1. Optical heads or baffles; 2. Data processing units. *Technical Note:* *‘Star trackers’ are also referred to as stellar attitude sensors or gyro-astro compasses.*	M9A2	Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestial bodies or satellites, and specially designed components therefor.

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7A005	Global Navigation Satellite Systems (GNSS) receiving equipment having any of the following and specially designed components therefor: **N.B.: SEE ALSO 7A105.** N.B.: *For equipment specially designed for military use, see Military Goods Controls.* a. Employing a decryption algorithm specially designed or modified for government use to access the ranging code for position and time; or b. Employing 'adaptive antenna systems'. *Note: 7A005.b. does not control GNSS receiving equipment that only uses components designed to filter, switch, or combine signals from multiple omni-directional antennae that do not implement adaptive antenna techniques.* *Technical Note:* *For the purposes of 7A005.b 'adaptive antenna systems' dynamically generate one or more spatial nulls in an antenna array pattern by signal processing in the time domain or frequency domain.*	M11A3	Receiving equipment for Global Navigation Satellite Systems (GNSS; e.g. GPS, GLONASS or Galileo), having any of the following characteristics, and specially designed components therefor: a. Designed or modified for use in systems specified in 1.A.; or b. Designed or modified for airborne applications and having any of the following: 1. Capable of providing navigation information at speeds in excess of 600 m/s; 2. Employing decryption, designed or modified for military or governmental services, to gain access to GNSS secure signal/data; or 3. Being specially designed to employ anti-jam features (e.g. null steering antenna or electronically steerable antenna) to function in an environment of active or passive countermeasures. *Note: 11.A.3.b.2. and 11.A.3.b.3. do not control equipment designed for commercial, civil or 'Safety of Life' (e.g. data integrity, flight safety) GNSS services.*
7A006	Airborne altimeters operating at frequencies other than 4,2 to 4,4 GHz inclusive and having any of the following: **N.B.: SEE ALSO 7A106.** a. "Power management"; or b. Using phase shift key modulation.	M11A1	Radar and laser radar systems, including altimeters, designed or modified for use in the systems specified in 1.A. *Technical Note:* *Laser radar systems embody specialised transmission, scanning, receiving and signal processing techniques for utilisation of lasers for echo ranging, direction finding and discrimination of targets by location, radial speed and body reflection characteristics.*
7A101	Linear accelerometers, other than those specified in 7A001, designed for use in inertial navigation systems or in guidance systems of all types, usable in 'missiles', having all the following characteristics, and specially designed components therefor: a. A "bias" "repeatability" of less (better) than 1 250 micro g; and	M9A3	Linear accelerometers, designed for use in inertial navigation systems or in guidance systems of all types, usable in the systems specified in 1.A., 19.A.1. or 19.A.2., having all of the following characteristics, and specially designed components therefor: a. 'Scale factor' 'repeatability' less (better) than 1 250 ppm; and

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	b. A “scale factor” “repeatability” of less (better) than 1 250 ppm; *Note: 7A101 does not control accelerometers specially designed and developed as Measurement While Drilling (MWD) Sensors for use in downhole well service operations.* *Technical Notes:* *1. In 7A101 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km;* *2. In 7A101 the measurement of “bias” and “scale factor” refers to a one sigma standard deviation with respect to a fixed calibration over a period of one year;*		b. ‘Bias’ ‘repeatability’ less (better) than 1 250 micro g. Note: Item 9.A.3. does not control accelerometers specially designed and developed as Measurement While Drilling (MWD) sensors for use in downhole well service operations. *Technical Notes:* *1. ‘Bias’ is defined as the accelerometer output when no acceleration is applied.* *2. ‘Scale factor’ is defined as the ratio of change in output to a change in the input.* *3. The measurement of ‘bias’ and ‘scale factor’ refers to one sigma standard deviation with respect to a fixed calibration over a period of one year.* *4. ‘Repeatability’ is defined according to IEEE Standard for Inertial Sensor Terminology 528-2001 in the Definitions section paragraph 2.214 titled repeatability (gyro, accelerometer) as follows: ‘The closeness of agreement among repeated measurements of the same variable under the same operating conditions when changes in conditions or non-operating periods occur between measurements’.*
7A102	All types of gyros, other than those specified in 7A002, usable in ‘missiles’, with a rated “drift rate” ‘stability’ of less than 0,5° (1 sigma or rms) per hour in a 1 g environment and specially designed components therefor. *Technical Notes:* *1. In 7A102 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.* *2. In 7A102 ‘stability’ is defined as a measure of the ability of a specific mechanism or performance coefficient to remain invariant when continuously exposed to a fixed operating condition (IEEE STD 528-2001 paragraph 2.247).*	M9A4	All types of gyros usable in the systems specified in 1.A., 19.A.1 or 19.A.2., with a rated ‘drift rate’ ‘stability’ of less than 0,5 degrees (1 sigma or rms) per hour in a 1 g environment, and specially designed components therefor. *Technical Notes:* *1. ‘Drift rate’ is defined as the component of gyro output that is functionally independent of input rotation and is expressed as an angular rate. (IEEE STD 528-2001 paragraph 2.56)* *2. ‘Stability’ is defined as a measure of the ability of a specific mechanism or performance coefficient to remain invariant when continuously exposed to a fixed operating condition. (This definition does not refer to dynamic or servo stability.) (IEEE STD 528-2001 paragraph 2.247)*

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7A103	Instrumentation, navigation equipment and systems, other than those specified in 7A003, as follows; and specially designed components therefor:	M9A6	Inertial or other equipment using accelerometers specified in 9.A.3. or 9.A.5. or gyros specified in 9.A.4. or 9.A.5., and systems incorporating such equipment, and specially designed components therefor.
	a. Inertial or other equipment, using accelerometers or gyros as follows, and systems incorporating such equipment: 1. Accelerometers specified in 7A001.a.3., 7A001.b. or 7A101 or gyros specified in 7A002 or 7A102; or 2. Accelerometers specified in 7A001.a.1. or 7A001.a.2., designed for use in inertial navigation systems or in guidance systems of all types, and usable in 'missiles'; *Note: 7A103.a. does not specify equipment containing accelerometers specified in 7A001 where such accelerometers are specially designed and developed as MWD (Measurement While Drilling) sensors for use in down-hole well services operations.*		
	b. Integrated flight instrument systems which include gyrostabilisers or automatic pilots, designed or modified for use in 'missiles';	M9A1	Integrated flight instrument systems which include gyrostabilisers or automatic pilots, designed or modified for use in the systems specified in 1.A., or 19.A.1. or 19.A.2. and specially designed components therefor.
	c. 'Integrated navigation systems', designed or modified for 'missiles' and capable of providing a navigational accuracy of 200 m Circle of Equal Probability (CEP) or less; *Technical Note:* *An 'integrated navigation system' typically incorporates the following components:* *1. An inertial measurement device (e.g., an attitude and heading reference system, inertial reference unit, or inertial navigation system);* *2. One or more external sensors used to update the position and/or velocity, either periodically or continuously throughout the flight (e.g., satellite navigation receiver, radar altimeter, and/or Doppler radar); and*	M9A7	'Integrated navigation systems', designed or modified for the systems specified in 1.A., 19.A.1. or 19.A.2. and capable of providing a navigational accuracy of 200 m CEP or less. *Technical Note:* *An 'integrated navigation system' typically incorporates all of the following components:* *a. An inertial measurement device (e.g. an attitude and heading reference system, inertial reference unit, or inertial navigation system);* *b. One or more external sensors used to update the position and/or velocity, either periodically or continuously throughout the flight (e.g. satellite navigation receiver, radar altimeter, and/or Doppler radar); and*

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	3. Integration hardware and software;		*c. Integration hardware and software.* N.B. For integration “software”, see Item 9.D.4.
	d. Three axis magnetic heading sensors, designed or modified to be integrated with flight control and navigation systems, other than those specified in 6A006, having all the following characteristics, and specially designed components therefor; 1. Internal tilt compensation in pitch (± 90 degrees) and roll (± 180 degrees) axes; 2. Capable of providing azimuthal accuracy better (less) than 0,5 degrees rms at latitude of ± 80 degrees, reference to local magnetic field. *Note: Flight control and navigation systems in 7A103.d. include gyrostabilizers, automatic pilots and inertial navigation systems.* *Technical Note:* *In 7A103 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M9A8	Three axis magnetic heading sensors having all of the following characteristics, and specially designed components therefor: a. Internal tilt compensation in pitch (+/– 90 degrees) and having roll (+/– 180 degrees) axes. b. Capable of providing azimuthal accuracy better (less) than 0,5 degrees rms at latitudes of +/– 80 degrees, referenced to local magnetic field; and c. Designed or modified to be integrated with flight control and navigation systems. *Note: Flight control and navigation systems in Item 9.A.8. include gyrostabilisers, automatic pilots and inertial navigation systems.*
7A104	Gyro-astro compasses and other devices, other than those specified in 7A004, which derive position or orientation by means of automatically tracking celestial bodies or satellites and specially designed components therefor.	M9A2	Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestial bodies or satellites, and specially designed components therefor.
7A105	Receiving equipment for Global Navigation Satellite Systems (GNSS; e.g. GPS, GLONASS, or Galileo), other than those specified in 7A005, having any of the following characteristics, and specially designed components therefor: a. Designed or modified for use in space launch vehicles specified in 9A004, sounding rockets specified in 9A104 or unmanned aerial vehicles specified in 9A012 or 9A112.a.; or	M11A3	Receiving equipment for Global Navigation Satellite Systems (GNSS; e.g. GPS, GLONASS or Galileo), having any of the following characteristics, and specially designed components therefor: a. Designed or modified for use in systems specified in 1.A.; or b. Designed or modified for airborne applications and having any of the following:

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	b. Designed or modified for airborne applications and having any of the following: 1. Capable of providing navigation information at speeds in excess of 600 m/s; 2. Employing decryption, designed or modified for military or governmental services, to gain access to GNSS secured signal/data; or 3. Being specially designed to employ anti-jam features (e.g. null steering antenna or electronically steerable antenna) to function in an environment of active or passive countermeasures. Note: *7A105.b.2. and 7A105.b.3. do not control equipment designed for commercial, civil or 'Safety of Life' (e.g., data integrity, flight safety) GNSS services.*		1. Capable of providing navigation information at speeds in excess of 600 m/s; 2. Employing decryption, designed or modified for military or governmental services, to gain access to GNSS secure signal/data; or 3. Being specially designed to employ anti-jam features (e.g. null steering antenna or electronically steerable antenna) to function in an environment of active or passive countermeasures. Note: *11.A.3.b.2. and 11.A.3.b.3. do not control equipment designed for commercial, civil or 'Safety of Life' (e.g. data integrity, flight safety) GNSS services.*
7A106	Altimeters, other than those specified in 7A006, of radar or laser radar type, designed or modified for use in space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M11A1	Radar and laser radar systems, including altimeters, designed or modified for use in the systems specified in 1.A. *Technical Note:* *Laser radar systems embody specialised transmission, scanning, receiving and signal processing techniques for utilisation of lasers for echo ranging, direction finding and discrimination of targets by location, radial speed and body reflection characteristics.*
7A115	Passive sensors for determining bearing to specific electromagnetic source (direction finding equipment) or terrain characteristics, designed or modified for use in space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M11A2	Passive sensors for determining bearings to specific electromagnetic sources (direction finding equipment) or terrain characteristics, designed or modified for use in the systems specified in 1.A.

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	Note: 7A115 includes sensors for the following equipment: *a. Terrain contour mapping equipment;* *b. Imaging sensor equipment (both active and passive);* *c. Passive interferometer equipment*		
7A116	Flight control systems and servo valves, as follows; designed or modified for use in space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M10A1	Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire and fly-by-light systems) designed or modified for the systems specified in 1.A.
	a. Hydraulic, mechanical, electro-optical, or electro-mechanical flight control systems (including fly-by-wire types);		
	b. Attitude control equipment;	M10A2	Attitude control equipment designed or modified for the systems specified in 1.A.
	c. Flight control servo valves designed or modified for the systems specified in 7A116.a. or 7A116.b., and designed or modified to operate in a vibration environment greater than 10 g rms between 20 Hz and 2 kHz.	M10A3	Flight control servo valves designed or modified for the systems in 10.A.1. or 10.A.2., and designed or modified to operate in a vibration environment greater than 10 g rms between 20 Hz and 2 kHz. *Note: Systems, equipment or valves specified in 10.A. may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.*
7A117	“Guidance sets”, usable in “missiles” capable of achieving system accuracy of 3,33 % or less of the range (e.g., a “CEP” of 10 km or less at a range of 300 km).	M2A1d	‘Guidance sets’, usable in the systems specified in 1.A., capable of achieving system accuracy of 3,33 % or less of the “range” (e.g. a ‘CEP’ of 10 km or less at a “range” of 300 km), except as provided in the Note below 2.A.1. for those designed for missiles with a “range” under 300 km or manned aircraft;

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7B Test, Inspection and Production Equipment

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
7B001	Test, calibration or alignment equipment, specially designed for equipment specified in 7A. *Note: 7B001 does not control test, calibration or alignment equipment for 'Maintenance Level I' or 'Maintenance Level II'.* *Technical Notes:* *1. 'Maintenance Level I'* *The failure of an inertial navigation unit is detected on the aircraft by indications from the Control and Display Unit (CDU) or by the status message from the corresponding sub-system. By following the manufacturer's manual, the cause of the failure may be localised at the level of the malfunctioning Line Replaceable Unit (LRU). The operator then removes the LRU and replaces it with a spare.* *2. 'Maintenance Level II'* *The defective LRU is sent to the maintenance workshop (the manufacturer's or that of the operator responsible for level II maintenance). At the maintenance workshop, the malfunctioning LRU is tested by various appropriate means to verify and localise the defective Shop Replaceable Assembly (SRA) module responsible for the failure. This SRA is removed and replaced by an operative spare. The defective SRA (or possibly the complete LRU) is then shipped to the manufacturer. 'Maintenance Level II' does not include the disassembly or repair of controlled accelerometers or gyro sensors.*	M2B2	"Production equipment" specially designed for the subsystems specified in 2.A.
		M9B1	"Production equipment", and other test, calibration and alignment equipment, other than that described in 9.B.2., designed or modified to be used with equipment specified in 9.A. *Note: Equipment specified in 9.B.1. includes the following:* *a. For laser gyro equipment, the following equipment used to characterise mirrors, having the threshold accuracy shown or better:* *1. Scatterometer (10 ppm);* *2. Reflectometer (50 ppm);* *3. Profilometer (5 Angstroms);* *b. For other inertial equipment:* *1. Inertial Measurement Unit (IMU) Module Tester;* *2. IMU Platform Tester;* *3. IMU Stable Element Handling Fixture;* *4. IMU Platform Balance Fixture;* *5. Gyro Tuning Test Station;* *6. Gyro Dynamic Balance Station;* *7. Gyro Run-In/Motor Test Station;* *8. Gyro Evacuation and Filling Station;* *9. Centrifuge Fixture for Gyro Bearings;* *10. Accelerometer Axis Align Station;* *11. Accelerometer Test Station;* *12. Fibre Optic Gyro Coil Winding Machines*
		M10B1	Test, calibration, and alignment equipment specially designed for equipment specified in 10.A.

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7B002	Equipment specially designed to characterize mirrors for ring “laser” gyros, as follows: **N.B.: SEE ALSO 7B102.** a. Scatterometers having a measurement accuracy of 10 ppm or less (better); b. Profilometers having a measurement accuracy of 0,5 nm (5 angstrom) or less (better).	M9B1	“Production equipment”, and other test, calibration and alignment equipment, other than that described in 9.B.2., designed or modified to be used with equipment specified in 9.A. *Note: Equipment specified in 9.B.1. includes the following:* *a. For laser gyro equipment, the following equipment used to characterise mirrors, having the threshold accuracy shown or better:* *1. Scatterometer (10 ppm);* *2. Reflectometer (50 ppm);* *3. Profilometer (5 Angstroms);* *b. For other inertial equipment:* *1. Inertial Measurement Unit (IMU) Module Tester;* *2. IMU Platform Tester;* *3. IMU Stable Element Handling Fixture;* *4. IMU Platform Balance Fixture;* *5. Gyro Tuning Test Station;* *6. Gyro Dynamic Balance Station;* *7. Gyro Run-In/Motor Test Station;* *8. Gyro Evacuation and Filling Station;* *9. Centrifuge Fixture for Gyro Bearings;* *10. Accelerometer Axis Align Station;* *11. Accelerometer Test Station;* *12. Fibre Optic Gyro Coil Winding Machines.*

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7B003	Equipment specially designed for the “production” of equipment specified in 7A. *Note:* *7B003 includes:* — *Gyro tuning test stations;* — *Gyro dynamic balance stations;* — *Gyro run-in/motor test stations;* — *Gyro evacuation and fill stations;* — *Centrifuge fixtures for gyro bearings;* — *Accelerometer axis align stations;* — *Fibre optic gyro coil winding machines.*	M2B2	“Production equipment” specially designed for the subsystems specified in 2.A.
		M9B1	“Production equipment”, and other test, calibration and alignment equipment, other than that described in 9.B.2., designed or modified to be used with equipment specified in 9.A. *Note:* *Equipment specified in 9.B.1. includes the following:* *a. For laser gyro equipment, the following equipment used to characterise mirrors, having the threshold accuracy shown or better:* *1. Scatterometer (10 ppm);* *2. Reflectometer (50 ppm);* *3. Profilometer (5 Angstroms);* *b. For other inertial equipment:* *1. Inertial Measurement Unit (IMU) Module Tester;* *2. IMU Platform Tester;* *3. IMU Stable Element Handling Fixture;* *4. IMU Platform Balance Fixture;* *5. Gyro Tuning Test Station;* *6. Gyro Dynamic Balance Station;* *7. Gyro Run-In/Motor Test Station;* *8. Gyro Evacuation and Filling Station;* *9. Centrifuge Fixture for Gyro Bearings;* *10. Accelerometer Axis Align Station;* *11. Accelerometer Test Station;* *12. Fibre Optic Gyro Coil Winding Machines.*

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7B102	Reflectometers specially designed to characterise mirrors, for “laser” gyros, having a measurement accuracy of 50 ppm or less (better).	M9B1	“Production equipment”, and other test, calibration and alignment equipment, other than that described in 9.B.2., designed or modified to be used with equipment specified in 9.A. *Note: Equipment specified in 9.B.1. includes the following:* *a. For laser gyro equipment, the following equipment used to characterise mirrors, having the threshold accuracy shown or better:* *1. Scatterometer (10 ppm);* *2. Reflectometer (50 ppm);* *3. Profilometer (5 Angstroms);* *b. For other inertial equipment:* *1. Inertial Measurement Unit (IMU) Module Tester;* *2. IMU Platform Tester;* *3. IMU Stable Element Handling Fixture;* *4. IMU Platform Balance Fixture;* *5. Gyro Tuning Test Station;* *6. Gyro Dynamic Balance Station;* *7. Gyro Run-In/Motor Test Station;* *8. Gyro Evacuation and Filling Station;* *9. Centrifuge Fixture for Gyro Bearings;* *10. Accelerometer Axis Align Station;* *11. Accelerometer Test Station;* *12. Fibre Optic Gyro Coil Winding Machines.*

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7B103	“Production facilities” and “production equipment” as follows:		
	a. “Production facilities” specially designed for equipment specified in 7A117;	M2B1	“Production facilities” specially designed for the subsystems specified in 2.A
	b. “Production equipment”, and other test, calibration and alignment equipment, other than that specified in 7B001 to 7B003, designed or modified to be used with equipment specified in 7A.	M2B2*	“Production equipment” specially designed for the subsystems specified in 2.A.
		M9B1	“Production equipment”, and other test, calibration and alignment equipment, other than that described in 9.B.2., designed or modified to be used with equipment specified in 9.A. *Note: Equipment specified in 9.B.1. includes the following:* *a. For laser gyro equipment, the following equipment used to characterise mirrors, having the threshold accuracy shown or better:* *1. Scatterometer (10 ppm);* *2. Reflectometer (50 ppm);* *3. Profilometer (5 Angstroms);* *b. For other inertial equipment:* *1. Inertial Measurement Unit (IMU) Module Tester;* *2. IMU Platform Tester;* *3. IMU Stable Element Handling Fixture;* *4. IMU Platform Balance Fixture;* *5. Gyro Tuning Test Station;* *6. Gyro Dynamic Balance Station;* *7. Gyro Run-In/Motor Test Station;* *8. Gyro Evacuation and Filling Station;* *9. Centrifuge Fixture for Gyro Bearings;* *10. Accelerometer Axis Align Station;* *11. Accelerometer Test Station;* *12. Fibre Optic Gyro Coil Winding Machines.*

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7D Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
7D002	"Source code" for the operation or maintenance of any inertial navigation equipment, including inertial equipment not specified in 7A003 or 7A004, or Attitude and Heading Reference Systems ('AHRS'). *Note: 7D002 does not control "source code" for the "use" of gimballed 'AHRS'.* *Technical Note:* *'AHRS' generally differ from Inertial Navigation Systems (INS) in that an 'AHRS' provides attitude and heading information and normally does not provide the acceleration, velocity and position information associated with an INS.*	M2D3	"Software", specially designed or modified for the operation or maintenance of 'guidance sets' specified in 2.A.1.d. *Note: 2.D.3. includes "software", specially designed or modified to enhance the performance of 'guidance sets' to achieve or exceed the accuracy specified in 2.A.1.d.*
		M9D1	"Software" specially designed or modified for the "use" of equipment specified in 9.A. or 9.B.
7D101	"Software" specially designed or modified for the "use" of equipment specified in 7A001 to 7A006, 7A101 to 7A106, 7A115, 7A116.a., 7A116.b., 7B001, 7B002, 7B003, 7B102 or 7B103.	M2D	"Software" specially designed or modified for the "use" of "production facilities" specified in 2.B.1.
		M9D1	"Software" specially designed or modified for the "use" of equipment specified in 9.A. or 9.B.
		M10D1	"Software" specially designed or modified for the "use" of equipment specified in 10.A. or 10.B. *Note: "Software" specified in 10.D.1. may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.*
		M11D1&2	"Software" specially designed or modified for the "use" of equipment specified in 11.A.1., 11.A.2. or 11.A.4. "Software" specially designed for the "use" of equipment specified in 11.A.3.

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7D102	Integration “software” as follows: a. Integration “software” for the equipment specified in 7A103.b.;	M9D2	Integration “software” for the equipment specified in 9.A.1.
	b. Integration “software” specially designed for the equipment specified in 7A003 or 7A103.a.	M9D3*	Integration “software” specially designed for the equipment specified in 9.A.6.
	c. Integration “software” designed or modified for the equipment specified in 7A103.c. *Note: A common form of integration “software” employs Kalman filtering.*	M9D4	Integration “software”, designed or modified for the ‘integrated navigation systems’ specified in 9.A.7. *Note: A common form of integration “software” employs Kalman filtering.*
7D103	“Software” specially designed for modelling or simulation of the “guidance sets” specified in 7A117 or for their design integration with the space launch vehicles specified in 9A004 or sounding rockets specified in 9A104. *Note: “Software” specified in 7D103 remains controlled when combined with specially designed hardware specified in 4A102.*	M16D1	“Software” specially designed for modelling, simulation, or design integration of the systems specified in 1.A. or the subsystems specified in 2.A or 20.A. *Technical Note: The modelling includes in particular the aerodynamic and thermodynamic analysis of the systems.*

7E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
7E001	“Technology” according to the General Technology Note for the “development” of equipment or “software”, specified in 7A, 7B, 7D001, 7D002, 7D003, 7D005 and 7D101 to 7D103. *Note: 7E001 includes key management “technology” exclusively for equipment specified in 7A005.a.*	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.

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7E002	“Technology” according to the General Technology Note for the “production” of equipment specified in 7A or 7B.	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.
7E003	“Technology” according to the General Technology Note for the repair, refurbishing or overhaul of equipment specified in 7A001 to 7A004. *Note: 7E003 does not control maintenance “technology” directly associated with calibration, removal or replacement of damaged or unserviceable LRUs and SRAs of a “civil aircraft” as described in ‘Maintenance Level I’ or ‘Maintenance Level II’.* *N.B.: See Technical Notes to 7B001.*	M2E1	“Technology”, in accordance with the General Technology Note, for the “development”, “production” or “use” of equipment or “software” specified in 2.A., 2.B. or 2.D.
		M9E1	“Technology”, in accordance with the General Technology Note, for the “development”, “production” or “use” of equipment or “software” specified in 9.A., 9.B. or 9.D. *Note: Equipment or “software” specified in 9.A. or 9.D. may be exported as part of a manned aircraft, satellite, land vehicle, marine/submarine vessel or geophysical survey equipment or in quantities appropriate for replacement parts for such applications.*
7E004	Other “technology” as follows: a. “Technology” for the “development” or “production” of any of the following: 1. Not used; 2. Air data systems based on surface static data only, i.e., which dispense with conventional air data probes; 3. Three dimensional displays for “aircraft”; 4. Not used; 5. Electric actuators (i.e., electromechanical, electrohydrostatic and integrated actuator package) specially designed for “primary flight control”; 6. “Flight control optical sensor array” specially designed for implementing “active flight control systems”; or 7. “DBRN” systems designed to navigate underwater, using sonar or gravity databases, that provide a positioning accuracy equal to or less (better) than 0,4 nautical miles;		

b. "Development" "technology", as follows, for "active flight control systems" (including "fly-by-wire systems" or "fly-by-light systems"):		
1. Photonic-based "technology" for sensing aircraft or flight control component state, transferring flight control data, or commanding actuator movement, "required" for "fly-by-light systems" "active flight control systems";		
2. Not used;		
3. Real-time algorithms to analyze component sensor information to predict and preemptively mitigate impending degradation and failures of components within an "active flight control system";		
Note: 7E004.b.3. does not control algorithms for purpose of off-line maintenance.		
4. Real-time algorithms to identify component failures and reconfigure force and moment controls to mitigate "active flight control system" degradations and failures;		
Note: 7E004.b.4. does not control algorithms for the elimination of fault effects through comparison of redundant data sources, or off-line pre-planned responses to anticipated failures.		
5. Integration of digital flight control, navigation and propulsion control data, into a digital flight management system for "total control of flight";		
Note: 7E004.b.5. does not control:	M10E1	Design "technology" for integration of air vehicle fuselage, propulsion system and lifting control surfaces, designed or modified for the systems specified in 1.A. or 19.A.2., to optimise aerodynamic performance throughout the flight regime of an unmanned aerial vehicle.
a. "Development" "technology" for integration of digital flight control, navigation and propulsion control data, into a digital flight management system for "flight path optimisation";		

b. "Development" "technology" for "aircraft" flight instrument systems integrated solely for VOR, DME, ILS or MLS navigation or approaches.

6. Not used;

7. "Technology" "required" for deriving the functional requirements for "fly-by-wire systems" having all of the following:

   a. 'Inner-loop' airframe stability controls requiring loop closure rates of 40 Hz or greater; and

      Technical Note:

      'Inner-loop' refers to functions of "active flight control systems" that automate airframe stability controls.

   b. Having any of the following:

      1. Corrects an aerodynamically unstable airframe, measured at any point in the design flight envelope, that would lose recoverable control if not corrected within 0,5 seconds;

      2. Couples controls in two or more axes while compensating for 'abnormal changes in aircraft state';

         Technical Note:

         'Abnormal changes in aircraft state' include in-flight structural damage, loss of engine thrust, disabled control surface, or destabilizing shifts in cargo load.

      3. Preforms the functions specified in 7E004.b.5.; or

         Note: 7E004.b.7.b.3. does not control autopilots.

      4. Enables aircraft to have stable controlled flight, other than during take-off or landing, at greater than 18 degrees angle of attack, 15 degrees side slip, 15 degrees/second pitch or yaw rate, or 90 degrees/second roll rate;

	8. "Technology" "required" for deriving the functional requirements for "fly-by-wire systems" to achieve all of the following: a. No loss of control of the aircraft in the event of a consecutive sequence of any two individual faults within the "fly-by-wire system"; and b. Probability of loss of control of the aircraft being less (better) than 1×10^{-9} failures per flight hour; *Note: 7E004.b. does not control technology associated with common computer elements and utilities (e.g., input signal acquisition, output signal transmission, computer program and data loading, built-in test, task scheduling mechanisms) not providing a specific flight control system function.* c. "Technology" for the "development" of helicopter systems, as follows: 1. Multi-axis fly-by-wire or fly-by-light controllers, which combine the functions of at least two of the following into one controlling element: a. Collective controls; b. Cyclic controls; c. Yaw controls; 2. "Circulation-controlled anti-torque or circulation-controlled directional control systems"; 3. Rotor blades incorporating "variable geometry airfoils", for use in systems using individual blade control.		
7E101	"Technology" according to the General Technology Note for the "use" of equipment specified in 7A001 to 7A006, 7A101 to 7A106, 7A115 to 7A117, 7B001, 7B002, 7B003, 7B102, 7B103, 7D101 to 7D103.	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".

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7E102	"Technology" for protection of avionics and electrical subsystems against electromagnetic pulse (EMP) and electromagnetic interference (EMI) hazards, from external sources, as follows: a. Design "technology" for shielding systems; b. Design "technology" for the configuration of hardened electrical circuits and subsystems; c. Design "technology" for the determination of hardening criteria of 7E102.a. and 7E102.b.	M11E1	Design "technology" for protection of avionics and electrical subsystems against Electromagnetic Pulse (EMP) and Electromagnetic Interference (EMI) hazards from external sources, as follows: a. Design "technology" for shielding systems; b. Design "technology" for the configuration of hardened electrical circuits and subsystems; c. Design "technology" for determination of hardening criteria for the above.
7E104	"Technology" for the integration of the flight control, guidance, and propulsion data into a flight management system for optimization of rocket system trajectory.	M10E2	Design "technology" for integration of the flight control, guidance, and propulsion data into a flight management system, designed or modified for the systems specified in 1.A. or 19.A.1., for optimisation of rocket system trajectory.

CATEGORY 9 — AEROSPACE AND PROPULSION

9A Systems, Equipment and Components

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
9A001	Aero gas turbine engines having any of the following: **N.B.: SEE ALSO 9A101.** a. Incorporating any of the "technologies" specified in 9E003.a., 9E003.h. or 9E003.i.; or *Note 1: 9A001.a. does not control aero gas turbine engines which meet all of the following:* *a. Certified by the civil aviation authorities of one or more "participating states"; and* *b. Intended to power non-military manned aircraft for which any of the following has been issued by civil aviation authorities of one or more "participating states" for the aircraft with this specific engine type:*	M3A1	Turbojet and turbofan engines, as follows: a. Engines having both of the following characteristics: 1. 'Maximum thrust value' greater than 400 N (achieved un-installed) excluding civil certified engines with a 'maximum thrust value' greater than 8,89 kN (achieved un-installed); and 2. Specific fuel consumption of 0,15 kg N^{-1} h^{-1} or less (at maximum continuous power at sea level static conditions using the ICAO standard atmosphere); *Technical Note:* *In 3.A.1.a.1., 'maximum thrust value' is the manufacturer's demonstrated maximum thrust for the engine type un-installed. The civil type certified*

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	1. A civil type certificate; or *2. An equivalent document recognized by the International Civil Aviation Organisation (ICAO).* *Note 2: 9A001.a. does not control aero gas turbine engines designed for Auxiliary Power Units (APUs) approved by the civil aviation authority in a "participating state".* b. Designed to power an aircraft to cruise at Mach 1 or higher, for more than thirty minutes.		*thrust value will be equal to or less than the manufacturer's demonstrated maximum thrust for the engine type.* b. Engines designed or modified for systems specified in 1.A. or 19.A.2., regardless of thrust or specific fuel consumption. *Note: Engines specified in 3.A.1. may be exported as part of a manned aircraft or in quantities appropriate for replacement parts for a manned aircraft.*
9A004	Space launch vehicles, "spacecraft", "spacecraft buses", "spacecraft payloads", "spacecraft" on-board systems or equipment, and terrestrial equipment, as follows: **N.B.: SEE ALSO 9A104.** a. Space launch vehicles; b. "Spacecraft"; c. "Spacecraft buses"; d. "Spacecraft payloads" incorporating items specified in 3A001.b.1.a.4., 3A002.g., 5A001.a.1., 5A001.b.3., 5A002.a.5., 5A002.a.9., 6A002.a.1., 6A002.a.2., 6A002.b., 6A002.d., 6A003.b., 6A004.c., 6A004.e., 6A008.d., 6A008.e., 6A008.k., 6A008.l. or 9A010.c.; e. On-board systems or equipment, specially designed for "spacecraft" and having any of the following functions: 1. 'Command and telemetry data handling'; *Note: For the purpose of 9A004.e.1., 'command and telemetry data handling' includes bus data management, storage, and processing.*	M1A1 M19A1	Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) capable of delivering at least a 500 kg "payload" to a "range" of at least 300 km. Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets), not specified in 1.A.1., capable of a "range" equal to or greater than 300 km.

	2. ‘Payload data handling’; or *Note: For the purpose of 9A004.e.2., ‘payload data handling’ includes payload data management, storage, and processing.* 3. ‘Attitude and orbit control’; *Note: For the purpose of 9A004.e.3., ‘attitude and orbit control’ includes sensing and actuation to determine and control the position and orientation of a “spacecraft”.* *N.B.: For equipment specially designed for military use, see Military Goods Controls.* f. Terrestrial equipment, specially designed for “spacecraft” as follows: 1. Telemetry and telecommand equipment; 2. Simulators.		
9A005	Liquid rocket propulsion systems containing any of the systems or components, specified in 9A006. **N.B.: SEE ALSO 9A105 AND 9A119.**	M2A1a	Individual rocket stages usable in the systems specified in 1.A.;
		M2A1c	Rocket propulsion subsystems, usable in the systems specified in 1.A., as follows; 1. Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns; 2. Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns; *Note: Liquid propellant apogee engines or station-keeping engines specified in 2.A.1.c.2., designed or modified for use on satellites, may be treated as Category II, if the subsystem is exported subject to end-use statements and quantity limits appropriate for the excepted end-use stated above, when having a vacuum thrust not greater than 1kN.*

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		M20A1	Complete subsystems as follows: a. Individual rocket stages, not specified in 2.A.1., usable in systems specified in 19.A.; b. Rocket propulsion subsystems, not specified in 2.A.1., usable in the systems specified in 19.A.1., as follows: 1. Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns; 2. Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns;
9A006	Systems and components, specially designed for liquid rocket propulsion systems, as follows: **N.B.: SEE ALSO 9A106, 9A108 AND 9A120.** a. Cryogenic refrigerators, flightweight dewars, cryogenic heat pipes or cryogenic systems, specially designed for use in space vehicles and capable of restricting cryogenic fluid losses to less than 30 % per year; b. Cryogenic containers or closed-cycle refrigeration systems, capable of providing temperatures of 100 K (–173 °C) or less for "aircraft" capable of sustained flight at speeds exceeding Mach 3, launch vehicles or "spacecraft"; c. Slush hydrogen storage or transfer systems; d. High pressure (exceeding 17,5 MPa) turbo pumps, pump components or their associated gas generator or expander cycle turbine drive systems;	M3A8	Liquid propellant tanks specially designed for the propellants controlled in Item 4.C. or other liquid propellants used in the systems specified in 1.A.1.

		M3A5	Liquid, slurry and gel propellant (including oxidisers) control systems, and specially designed components therefor, usable in the systems specified in 1.A., designed or modified to operate in vibration environments greater than 10 g rms between 20 Hz and 2 kHz. *Notes:* *1. The only servo valves, pumps and gas turbines specified in 3.A.5. are the following:* *a. Servo valves designed for flow rates equal to or greater than 24 litres per minute, at an absolute pressure equal to or greater than 7 MPa, that have an actuator response time of less than 100 ms.* *b. Pumps, for liquid propellants, with shaft speeds equal to or greater than 8 000 rpm at the maximum operating mode or with discharge pressures equal to or greater than 7 MPa.* *c. Gas turbines, for liquid propellant turbopumps, with shaft speeds equal to or greater than 8 000 rpm at the maximum operating mode.* *2. Systems and components specified in 3.A.5. may be exported as part of a satellite.*
	e. High-pressure (exceeding 10,6 MPa) thrust chambers and nozzles therefor;	M3A10	Combustion chambers and nozzles for liquid propellant rocket engines usable in the subsystems specified in 2.A.1.c.2. or 20.A.1.b.2.
	f. Propellant storage systems using the principle of capillary containment or positive expulsion (i.e., with flexible bladders);	M3A8	
	g. Liquid propellant injectors with individual orifices of 0,381 mm or smaller in diameter (an area of $1{,}14 \times 10^{-3}$ cm^2 or smaller for non-circular orifices) and specially designed for liquid rocket engines;	M3A5	
	h. One-piece carbon-carbon thrust chambers or one-piece carbon-carbon exit cones, with densities exceeding 1,4 g/cm^3 and tensile strengths exceeding 48 MPa.	M3A10	

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9A007	Solid rocket propulsion systems having any of the following: **N.B.: SEE ALSO 9A107 AND 9A119.** a. Total impulse capacity exceeding 1,1 MNs; b. Specific impulse of 2,4 kNs/kg or more, when the nozzle flow is expanded to ambient sea level conditions for an adjusted chamber pressure of 7 MPa; c. Stage mass fractions exceeding 88 % and propellant solid loadings exceeding 86 %; d. Components specified in 9A008; or e. Insulation and propellant bonding systems, using direct-bonded motor designs to provide a 'strong mechanical bond' or a barrier to chemical migration between the solid propellant and case insulation material. *Technical Note:* *'Strong mechanical bond' means bond strength equal to or more than propellant strength.*	M2A1	Complete subsystems usable in the systems specified in 1.A., as follows: a. Individual rocket stages usable in the systems specified in 1.A.; b. Re-entry vehicles, and equipment designed or modified therefor, usable in the systems specified in 1.A., as follows, except as provided in the Note below 2.A.1. for those designed for non-weapon payloads: 1. Heat shields, and components therefor, fabricated of ceramic or ablative materials; 2. Heat sinks and components therefor, fabricated of light-weight, high heat capacity materials; 3. Electronic equipment specially designed for re-entry vehicles; c. Rocket propulsion subsystems, usable in the systems specified in 1.A., as follows; 1. Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns; 2. Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns; *Note: Liquid propellant apogee engines or station-keeping engines specified in 2.A.1.c.2., designed or modified for use on satellites, may be treated as Category II, if the subsystem is exported subject to end-use statements and quantity limits appropriate for the excepted end-use stated above, when having a vacuum thrust not greater than 1kN.*

d. ‘Guidance sets’, usable in the systems specified in 1.A., capable of achieving system accuracy of 3,33 % or less of the “range” (e.g. a ‘CEP’ of 10 km or less at a “range” of 300 km), except as provided in the Note below 2.A.1. for those designed for missiles with a “range” under 300 km or manned aircraft;

Technical Notes:

1. A ‘guidance set’ integrates the process of measuring and computing a vehicle's position and velocity (i.e. navigation) with that of computing and sending commands to the vehicle's flight control systems to correct the trajectory.

2. ‘CEP’ (circle of equal probability) is a measure of accuracy, defined as the radius of the circle centred at the target, at a specific range, in which 50 % of the payloads impact.

e. Thrust vector control subsystems, usable in the systems specified in 1.A., except as provided in the Note below 2.A.1. for those designed for rocket systems that do not exceed the “range”/“payload” capability of systems specified in 1.A.;

Technical Note:

2.A.1.e. includes the following methods of achieving thrust vector control:

a. Flexible nozzle;

b. Fluid or secondary gas injection;

c. Movable engine or nozzle;

d. Deflection of exhaust gas stream (jet vanes or probes);

e. Use of thrust tabs.

		M2A1c1	f. Weapon or warhead safing, arming, fuzing, and firing mechanisms, usable in the systems specified in 1.A., except as provided in the Note below 2.A.1. for those designed for systems other than those specified in 1.A. *Note: The exceptions in 2.A.1.b., 2.A.1.d., 2.A.1.e. and 2.A.1.f. above may be treated as Category II if the subsystem is exported subject to end-use statements and quantity limits appropriate for the excepted end-use stated above.* Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns;
9A008	Components specially designed for solid rocket propulsion systems, as follows: **N.B.: SEE ALSO 9A108.** a. Insulation and propellant bonding systems, using liners to provide a 'strong mechanical bond' or a barrier to chemical migration between the solid propellant and case insulation material; *Technical Note:* *'Strong mechanical bond' means bond strength equal to or more than propellant strength.*	M3A3	Rocket motor cases, 'insulation' components and nozzles therefor, usable in the systems specified in 1.A. or 19.A.1. *Technical Note:* *In 3.A.3. 'insulation' intended to be applied to the components of a rocket motor, i.e. the case, nozzle inlets, case closures, includes cured or semi-cured compounded rubber components comprising sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps.* *Note: Refer to 3.C.2. for 'insulation' material in bulk or sheet form.*

		M3C1	‘Interior lining’ usable for rocket motor cases in the subsystems specified in 2.A.1.c.1. or specially designed for subsystems specified in 20.A.1.b.1. *Technical Note:* *In 3.C.1. ‘interior lining’ suited for the bond interface between the solid propellant and the case or insulating liner is usually a liquid polymer based dispersion of refractory or insulating materials e.g. carbon filled HTPB or other polymer with added curing agents to be sprayed or screeded over a case interior.*
	b. Filament-wound “composite” motor cases exceeding 0,61 m in diameter or having ‘structural efficiency ratios (PV/W)’ exceeding 25 km; *Technical Note:* *‘Structural efficiency ratio (PV/W)’ is the burst pressure (P) multiplied by the vessel volume (V) divided by the total pressure vessel weight (W).*	M3C2	‘Insulation’ material in bulk form usable for rocket motor cases in the subsystems specified in 2.A.1.c.1. or specially designed for subsystems specified in 20.A.1.b.1. *Technical Note:* *In 3.C.2. ‘insulation’ intended to be applied to the components of a rocket motor, i.e. the case, nozzle inlets, case closures, includes cured or semi-cured compounded rubber sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps specified in 3.A.3.*
	c. Nozzles with thrust levels exceeding 45 kN or nozzle throat erosion rates of less than 0,075 mm/s; d. Movable nozzle or secondary fluid injection thrust vector control systems, capable of any of the following: 1. Omni-axial movement exceeding ± 5°; 2. Angular vector rotations of 20°/s or more; or 3. Angular vector accelerations of 40°/s^2 or more	M2A1e	Thrust vector control subsystems, usable in the systems specified in 1.A., except as provided in the Note below 2.A.1. for those designed for rocket systems that do not exceed the “range”/“payload” capability of systems specified in 1.A.; *Technical Note:* *2.A.1.e. includes the following methods of achieving thrust vector control:* *a. Flexible nozzle;* *b. Fluid or secondary gas injection;* *c. Movable engine or nozzle;* *d. Deflection of exhaust gas stream (jet vanes or probes);* *e. Use of thrust tabs.*

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9A009	Hybrid rocket propulsion systems having any of the following: **N.B.: SEE ALSO 9A109 AND 9A119.** a. Total impulse capacity exceeding 1,1 MNs; or b. Thrust levels exceeding 220 kN in vacuum exit conditions.	M2A1c1	Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns;
		M20A1b	Rocket propulsion subsystems, not specified in 2.A.1., usable in the systems specified in 19.A.1., as follows: 1. Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns; 2. Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns;
9A010	Specially designed components, systems and structures, for launch vehicles, launch vehicle propulsion systems or “spacecraft”, as follows: **N.B.: SEE ALSO 1A002 AND 9A110.** a. Components and structures, each exceeding 10 kg and specially designed for launch vehicles manufactured using any of the following: 1. “Composite” materials consisting of “fibrous or filamentary materials” specified in 1C0010.e. and resins specified in 1C008 or 1C009.b.; 2. Metal “matrix” “composites” reinforced by any of the following: a. Materials specified in 1C007;	M6A1	Composite structures, laminates, and manufactures thereof, specially designed for use in the systems specified in 1.A., 19.A.1. or 19.A.2. and the subsystems specified in 2.A. or 20.A.

	b. "Fibrous or filamentary materials" specified in 1C010; or c. Aluminides specified in 1C002.a.; or 3. Ceramic "matrix" "composite" materials specified in 1C007; *Note: The weight cut-off is not relevant for nose cones.*		
	b. Components and structures, specially designed for launch vehicle propulsion systems specified in 9A005 to 9A009 manufactured using any of the following: 1. "Fibrous or filamentary materials" specified in 1C010.e. and resins specified in 1C008 or 1C009.b.; 2. Metal "matrix" "composites" reinforced by any of the following: a. Materials specified in 1C007; b. "Fibrous or filamentary materials" specified in 1C010; or c. Aluminides specified by 1C002.a.; or 3. Ceramic "matrix" "composite" materials specified in 1C007;	M6A1	Composite structures, laminates, and manufactures thereof, specially designed for use in the systems specified in 1.A., 19.A.1. or 19.A.2. and the subsystems specified in 2.A. or 20.A.
	c. Structural components and isolation systems, specially designed to control actively the dynamic response or distortion of "spacecraft" structures;	M6A1	Composite structures, laminates, and manufactures thereof, specially designed for use in the systems specified in 1.A., 19.A.1. or 19.A.2. and the subsystems specified in 2.A. or 20.A.
	d. Pulsed liquid rocket engines with thrust-to-weight ratios equal to or more than 1 kN/kg and a response time (the time required to achieve 90 % of total rated thrust from start-up) of less than 30 ms.	M3A2	Ramjet/scramjet/pulse jet/'combined cycle engines', including devices to regulate combustion, and specially designed components therefor, usable in the systems specified in 1.A. or 19.A.2. *Technical Note:* *In Item 3.A.2., 'combined cycle engines' are the engines that employ two or more cycles of the following types of engines: gas-turbine engine (turbojet, turboprop, turbofan and turboshaft), ramjet, scramjet, pulse jet, pulse detonation engine, rocket motor (liquid/solid-propellant and hybrid).*

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9A011	Ramjet, scramjet or combined cycle engines, and specially designed components therefor. **N.B.: SEE ALSO 9A111 AND 9A118.**	M3A2	Ramjet/scramjet/pulse jet/‘combined cycle engines’, including devices to regulate combustion, and specially designed components therefor, usable in the systems specified in 1.A. or 19.A.2. *Technical Note:* *In Item 3.A.2., ‘combined cycle engines’ are the engines that employ two or more cycles of the following types of engines: gas-turbine engine (turbojet, turboprop, turbofan and turboshaft), ramjet, scramjet, pulse jet, pulse detonation engine, rocket motor (liquid/solid-propellant and hybrid).*
9A012	“Unmanned aerial vehicles” (“UAVs”), unmanned “airships”, related equipment and components, as follows: **N.B.: SEE ALSO 9A112.** a. “UAVs” or unmanned “airships”, designed to have controlled flight out of the direct ‘natural vision’ of the ‘operator’ and having any of the following: 1. Having all of the following: a. A maximum ‘endurance’ greater than or equal to 30 minutes but less than 1 hour; and b. Designed to take-off and have stable controlled flight in wind gusts equal to or exceeding 46,3 km/h (25 knots); or 2. A maximum ‘endurance’ of 1 hour or greater; *Technical Notes:* *1. For the purposes of 9A012.a., ‘operator’ is a person who initiates or commands the “UAV” or unmanned “airship” flight.* *2. For the purposes of 9A012.a., ‘endurance’ is to be calculated for ISA conditions (ISO 2533:1975) at sea level in zero wind.*	M1A2 M19A	Complete unmanned aerial vehicle systems (including cruise missile systems, target drones and reconnaissance drones) capable of delivering at least a 500 kg “payload” to a “range” of at least 300 km. ITEM 19 OTHER COMPLETE DELIVERY SYSTEMS: equipment, assemblies and components

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	3. For the purposes of 9A012.a., 'natural vision' means unaided human sight, with or without corrective lenses. b. Related equipment and components, as follows: 1. Not used 2. Not used 3. Equipment or components, specially designed to convert a manned "aircraft" or manned "airship", to a "UAV" or unmanned "airship", specified in 9A012.a.; 4. Air breathing reciprocating or rotary internal combustion type engines, specially designed or modified to propel "UAVs" or unmanned "airships", at altitudes above 15 240 metres (50 000 feet).	M9A6	Inertial or other equipment using accelerometers specified in 9.A.3. or 9.A.5. or gyros specified in 9.A.4. or 9.A.5., and systems incorporating such equipment, and specially designed components therefor.
9A101	Turbojet and turbofan engines, other than those specified in 9A001, as follows; a. Engines having both of the following characteristics: 1. 'Maximum thrust value' greater than 400 N (achieved un-installed) excluding civil certified engines with a 'maximum thrust value' greater than 8 890 N (achieved un-installed), and 2. Specific fuel consumption of 0,15 kg/N/hr or less (at maximum continuous power at sea level static conditions using the ICAO standard atmosphere); *Technical Note:* *For the purpose of 9A101.a.1. 'maximum thrust value' is the manufacturer's demonstrated maximum thrust for the engine type un-installed. The civil type certified thrust value will be equal or less than the manufacturer's demonstrated maximum thrust for the engine type.* b. Engines designed or modified for use in "missiles" or unmanned aerial vehicles specified in 9A012 or 9A112.a.,	M3A1	Turbojet and turbofan engines, as follows: a. Engines having both of the following characteristics: 1. 'Maximum thrust value' greater than 400 N (achieved un-installed) excluding civil certified engines with a 'maximum thrust value' greater than 8,89 kN (achieved un-installed); and 2. Specific fuel consumption of 0,15 kg N^{-1} h^{-1} or less (at maximum continuous power at sea level static conditions using the ICAO standard atmosphere); *Technical Note:* *In 3.A.1.a.1., 'maximum thrust value' is the manufacturer's demonstrated maximum thrust for the engine type un-installed. The civil type certified thrust value will be equal to or less than the manufacturer's demonstrated maximum thrust for the engine type.* b. Engines designed or modified for systems specified in 1.A. or 19.A.2., regardless of thrust or specific fuel consumption. *Note: Engines specified in 3.A.1. may be exported as part of a manned aircraft or in quantities appropriate for replacement parts for a manned aircraft.*

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9A102	‘Turboprop engine systems’ specially designed for unmanned aerial vehicles specified in 9A012 or 9A112.a., and specially designed components therefor, having a ‘maximum power’ greater than 10 kW. *Note: 9A102 does not control civil certified engines.* *Technical Notes:* *1. For the purposes of 9A102 a ‘turboprop engine system’ incorporates all of the following:* *a. Turboshaft engine; and* *b. Power transmission system to transfer the power to a propeller.* *2. For the purposes of 9A102 the ‘maximum power’ is achieved uninstalled at sea level static conditions using ICAO standard atmosphere.*	M3A9	‘Turboprop engine systems’ specially designed for the systems in 1.A.2. or 19.A.2., and specially designed components therefor, having a maximum power greater than 10 kW (achieved uninstalled at sea level static conditions using the ICAO standard atmosphere), excluding civil certified engines. *Technical Note:* *For the purposes of Item 3.A.9., a ‘turboprop engine system’ incorporates all of the following: a. Turboshaft engine; and b. Power transmission system to transfer the power to a propeller.*
9A104	Sounding rockets, capable of a range of at least 300 km. **N.B.: SEE ALSO 9A004.**	M1A1	Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) capable of delivering at least a 500 kg “payload” to a “range” of at least 300 km.
		M19A1	Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets), not specified in 1.A.1., capable of a “range” equal to or greater than 300 km.
9A105	Liquid propellant rocket engines, as follows: **N.B.: SEE ALSO 9A119.**		
	a. Liquid propellant rocket engines usable in “missiles”, other than those specified in 9A005, integrated, or designed or modified to be integrated, into a liquid propellant propulsion system which has a total impulse capacity equal to or greater than 1,1 MNs;	M2A1c2	Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns;
	b. Liquid propellant rocket engines, usable in complete rocket systems or unmanned aerial vehicles, capable of a range of 300 km, other than those specified in 9A005 or 9A105.a., integrated, or designed or modified to be integrated, into a liquid propellant propulsion system which has a total impulse capacity equal to or greater than 0,841 MNs	M20A1b2	Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns

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9A106	Systems or components, other than those specified in 9A006 as follows, specially designed for liquid rocket propulsion systems:	M3A3	Rocket motor cases, 'insulation' components and nozzles therefor, usable in the systems specified in 1.A. or 19.A.1.
	a. Ablative liners for thrust or combustion chambers, usable in "missiles", space launch vehicles specified in 9A004 or sounding rockets specified in 9A104;		Technical Note: *In 3.A.3. 'insulation' intended to be applied to the components of a rocket motor, i.e. the case, nozzle inlets, case closures, includes cured or semi-cured compounded rubber components comprising sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps.*
	b. Rocket nozzles, usable in "missiles", space launch vehicles specified in 9A004 or sounding rockets specified in 9A104;		Note: *Refer to 3.C.2. for 'insulation' material in bulk or sheet form.*
	c. Thrust vector control sub-systems, usable in "missiles";	M2A1e	Thrust vector control subsystems, usable in the systems specified in 1.A., except as provided in the Note below 2.A.1. for those designed for rocket systems that do not exceed the "range"/"payload" capability of systems specified in 1.A.; Technical
	Technical Note: *Examples of methods of achieving thrust vector control specified in 9A106.c. are:* 1. *Flexible nozzle;* 2. *Fluid or secondary gas injection;* 3. *Movable engine or nozzle;* 4. *Deflection of exhaust gas stream (jet vanes or probes); or* 5. *Thrust tabs.*		Technical Note: *2.A.1.e. includes the following methods of achieving thrust vector control:* a. *Flexible nozzle;* b. *Fluid or secondary gas injection;* c. *Movable engine or nozzle;* d. *Deflection of exhaust gas stream (jet vanes or probes);* e. *Use of thrust tabs.*
	d. Liquid, slurry and gel propellant (including oxidisers) control systems, and specially designed components therefor, usable in "missiles", designed or modified to operate in vibration environments greater than 10 g rms between 20 Hz and 2 kHz;	M3A5	Liquid, slurry and gel propellant (including oxidisers) control systems, and specially designed components therefor, usable in the systems specified in 1.A., designed or modified to operate in vibration environments greater than 10 g rms between 20 Hz and 2 kHz.
	Note: *The only servo valves, pumps and gas turbines specified in 9A106.d., are the following:*		Notes: 1. *The only servo valves, pumps and gas turbines specified in 3.A.5. are the following:*

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	a. Servo valves designed for flow rates equal to or greater than 24 litres per minute, at an absolute pressure equal to or greater than 7 MPa, that have an actuator response time of less than 100 ms; *b. Pumps, for liquid propellants, with shaft speeds equal to or greater than 8 000 r.p.m. at a maximum operating mode or with discharge pressures equal to or greater than 7 MPa.* *c. Gas turbines, for liquid propellant turbopumps, with shaft speeds equal to or greater than 8 000 r.p.m. at the maximum operating mode.*		*a. Servo valves designed for flow rates equal to or greater than 24 litres per minute, at an absolute pressure equal to or greater than 7 MPa, that have an actuator response time of less than 100 ms.* *b. Pumps, for liquid propellants, with shaft speeds equal to or greater than 8 000 rpm at the maximum operating mode or with discharge pressures equal to or greater than 7 MPa.* *c. Gas turbines, for liquid propellant turbopumps, with shaft speeds equal to or greater than 8 000 rpm at the maximum operating mode.* *2. Systems and components specified in 3.A.5. may be exported as part of a satellite.*
	e. Combustion chambers and nozzles, usable in “missiles”, space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M3A10	Combustion chambers and nozzles for liquid propellant rocket engines usable in the subsystems specified in 2.A.1.c.2. or 20.A.1.b.2.
9A107	Solid propellant rocket engines, usable in complete rocket systems or unmanned aerial vehicles, capable of a range of 300 km, other than those specified in 9A007, having total impulse capacity equal to or greater than 0,841 MNs. **N.B.: SEE ALSO 9A119.**	M20A1b1	Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns;
9A108	Components, other than those specified in 9A008, as follows, specially designed for solid rocket propulsion systems: a. Rocket motor cases and “insulation” components therefor, usable in “missiles”, space launch vehicles specified in 9A004 or sounding rockets specified in 9A104; b. Rocket nozzles, usable in “missiles”, space launch vehicles specified in 9A004 or sounding rockets specified in 9A104;	M3A3 M3A3	Rocket motor cases, ‘insulation’ components and nozzles therefor, usable in the systems specified in 1.A. or 19.A.1. *Technical Note:* *In 3.A.3. ‘insulation’ intended to be applied to the components of a rocket motor, i.e. the case, nozzle inlets, case closures, includes cured or semi-cured compounded rubber components comprising sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps.* *Note: Refer to 3.C.2. for ‘insulation’ material in bulk or sheet form.*

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	c. Thrust vector control sub-systems, usable in “missiles”. *Technical Note:* *Examples of methods of achieving thrust vector control specified in 9A108.c. are:* *1. Flexible nozzle;* *2. Fluid or secondary gas injection;* *3. Movable engine or nozzle;* *4. Deflection of exhaust gas stream (jet vanes or probes); or* *5. Thrust tabs.*	M2A1e	Thrust vector control subsystems, usable in the systems specified in 1.A., except as provided in the Note below 2.A.1. for those designed for rocket systems that do not exceed the “range”/“payload” capability of systems specified in 1.A.; *Technical Note:* *2.A.1.e. includes the following methods of achieving thrust vector control:* *a. Flexible nozzle;* *b. Fluid or secondary gas injection;* *c. Movable engine or nozzle;* *d. Deflection of exhaust gas stream (jet vanes or probes);* *e. Use of thrust tabs.*
9A109	Hybrid rocket motors and specially designed components as follows: a. Hybrid rocket motors usable in complete rocket systems or unmanned aerial vehicles, capable of 300 km, other than those specified in 9A009, having a total impulse capacity equal to or greater than 0,841 MNs, and specially designed components therefor; b. Specially designed components for hybrid rocket motors specified in 9A009 that are usable in “missiles”. **N.B.: SEE ALSO 9A009 and 9A119.**	M3A6	Specially designed components for hybrid rocket motors specified in 2.A.1.c.1. and 20.A.1.b.1.
		M20A1b	Rocket propulsion subsystems, not specified in 2.A.1., usable in the systems specified in 19.A.1., as follows: 1. Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns; 2. Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $8{,}41 \times 10^5$ Ns, but less than $1{,}1 \times 10^6$ Ns;
		M2A1c	Rocket propulsion subsystems, usable in the systems specified in 1.A., as follows; 1. Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns;

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			2. Liquid propellant rocket engines or gel propellant rocket motors integrated, or designed or modified to be integrated, into a liquid propellant or gel propellant propulsion system which has a total impulse capacity equal to or greater than $1{,}1 \times 10^6$ Ns; *Note: Liquid propellant apogee engines or station-keeping engines specified in 2.A.1.c.2., designed or modified for use on satellites, may be treated as Category II, if the subsystem is exported subject to end-use statements and quantity limits appropriate for the excepted end-use stated above, when having a vacuum thrust not greater than 1kN.*
9A110	Composite structures, laminates and manufactures thereof, other than those specified in 9A010, specially designed for use in 'missiles' or the subsystems specified in 9A005, 9A007, 9A105, 9A106.c., 9A107, 9A108.c., 9A116 or 9A119. **N.B.: SEE ALSO 1A002.** *Technical Note:* *In 9A110 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M6A1	Composite structures, laminates, and manufactures thereof, specially designed for use in the systems specified in 1.A., 19.A.1. or 19.A.2. and the subsystems specified in 2.A. or 20.A.
9A111	Pulse jet engines, usable in "missiles" or unmanned aerial vehicles specified in 9A012 or 9A112.a., and specially designed components therefor. **N.B.: SEE ALSO 9A011 AND 9A118.**	M3A2	Ramjet/scramjet/pulse jet/'combined cycle engines', including devices to regulate combustion, and specially designed components therefor, usable in the systems specified in 1.A. or 19.A.2. *Technical Note:* *In Item 3.A.2., 'combined cycle engines' are the engines that employ two or more cycles of the following types of engines: gas-turbine engine (turbojet, turboprop, turbofan and turboshaft), ramjet, scramjet, pulse jet, pulse detonation engine, rocket motor (liquid/solid-propellant and hybrid)*

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9A112	"Unmanned aerial vehicles" ("UAVs"), other than those specified in 9A012, as follows: a. "Unmanned aerial vehicles" ("UAVs") capable of a range of 300 km; b. "Unmanned aerial vehicles" ("UAVs") having all of the following: 1. Having any of the following: a. An autonomous flight control and navigation capability; or b. Capability of controlled flight out of the direct vision range involving a human operator; and 2. Having any of the following: a. Incorporating an aerosol dispensing system/mechanism with a capacity greater than 20 litres; or b. Designed or modified to incorporate an aerosol dispensing system/mechanism with a capacity greater than 20 litres. *Technical Notes:* *1. An aerosol consists of particulate or liquids other than fuel components, by products or additives, as part of the "payload" to be dispersed in the atmosphere. Examples of aerosols include pesticides for crop dusting and dry chemicals for cloud seeding.* *2. An aerosol dispensing system/mechanism contains all those devices (mechanical, electrical, hydraulic, etc.), which are necessary for storage and dispersion of an aerosol into the atmosphere. This includes the possibility of aerosol injection into the combustion exhaust vapour and into the propeller slip stream.*	M19A2	Complete unmanned aerial vehicle systems (including cruise missile systems, target drones and reconnaissance drones), not specified in 1.A.2., capable of a "range" equal to or greater than 300 km.
		M19A3	Complete unmanned aerial vehicle systems, not specified in 1.A.2. or 19.A.2., having all of the following: a. Having any of the following: 1. An autonomous flight control and navigation capability; or 2. Capability of controlled flight out of the direct vision range involving a human operator; and b. Having any of the following: 1. Incorporating an aerosol dispensing system/mechanism with a capacity greater than 20 litres; or 2. Designed or modified to incorporate an aerosol dispensing system/mechanism with a capacity greater than 20 litres. *Note: Item 19.A.3. does not control model aircraft, specially designed for recreational or competition purposes.* *Technical Notes:* *1. An aerosol consists of particulate or liquids other than fuel components, by-products or additives, as part of the "payload" to be dispersed in the atmosphere. Examples of aerosols include pesticides for crop dusting and dry chemicals for cloud seeding.*
9A115	Launch support equipment as follows: a. Apparatus and devices for handling, control, activation or launching, designed or modified for space launch vehicles specified in 9A004, sounding rockets specified in 9A104 or unmanned aerial vehicles specified in 9A012 or 9A112.a.;	M12A1	Apparatus and devices, designed or modified for the handling, control, activation and launching of the systems specified in 1.A., 19.A.1., or 19.A.2.
	b. Vehicles for transport, handling, control, activation or launching, designed or modified for space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.	M12A2	Vehicles designed or modified for the transport, handling, control, activation and launching of the systems specified in 1.A.

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9A116	Reentry vehicles, usable in “missiles”, and equipment designed or modified therefor, as follows: a. Reentry vehicles; b. Heat shields and components therefor, fabricated of ceramic or ablative materials; c. Heat sinks and components therefor, fabricated of light-weight, high heat capacity materials; d. Electronic equipment specially designed for reentry vehicles.	M2A1b	Re-entry vehicles, and equipment designed or modified therefor, usable in the systems specified in 1.A., as follows, except as provided in the Note below 2.A.1. for those designed for non-weapon payloads: 1. Heat shields, and components therefor, fabricated of ceramic or ablative materials; 2. Heat sinks and components therefor, fabricated of light-weight, high heat capacity materials; 3. Electronic equipment specially designed for re-entry vehicles;
9A117	Staging mechanisms, separation mechanisms, and interstages, usable in “missiles”. **N.B.: SEE ALSO 9A121.**	M3A4	Staging mechanisms, separation mechanisms, and interstages therefor, usable in the systems specified in 1.A. *Note: See also Item 11.A.5.* *Technical Note:* *Staging and separation mechanisms specified in 3.A.4. may contain some of the following components:* — *Pyrotechnic bolts, nuts and shackles;* — *Ball locks;* — *Circular cutting devices;* — *Flexible linear shaped charges (FLSC).*
9A118	Devices to regulate combustion usable in engines, which are usable in “missiles” or unmanned aerial vehicles specified in 9A012 or 9A112.a., specified in 9A011 or 9A111.	M3A2	Ramjet/scramjet/pulse jet/‘combined cycle engines’, including devices to regulate combustion, and specially designed components therefor, usable in the systems specified in 1.A. or 19.A.2. *Technical Note:* *In Item 3.A.2., ‘combined cycle engines’ are the engines that employ two or more cycles of the following types of engines: gas-turbine engine (turbojet, turboprop, turbofan and turboshaft), ramjet, scramjet, pulse jet, pulse detonation engine, rocket motor (liquid/solid-propellant and hybrid).*

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9A119	Individual rocket stages, usable in complete rocket systems or unmanned aerial vehicles, capable of a range of 300 km, other than those specified in 9A005, 9A007, 9A009, 9A105, 9A107 and 9A109.	M2A1a M20A1a	Individual rocket stages usable in the systems specified in 1.A.; Complete subsystems as follows: a. Individual rocket stages, not specified in 2.A.1., usable in systems specified in 19.A.
9A120	Liquid propellant tanks, other than those specified in 9A006, specially designed for propellants specified in 1C111 or 'other liquid propellants', used in rocket systems capable of delivering at least a 500 kg payload to a range of at least 300 km.	M3A8	Liquid propellant tanks specially designed for the propellants controlled in Item 4.C. or other liquid propellants used in the systems specified in 1.A.1.
9A121	Umbilical and interstage electrical connectors specially designed for "missiles", space launch vehicles specified in 9A004 or sounding rockets specified in 9A104. *Technical Note:* *Interstage connectors referred to in 9A121 also include electrical connectors installed between the "missile", space launch vehicle or sounding rocket and their payload.*	M11A5	Umbilical and interstage electrical connectors specially designed for systems specified in 1.A.1. or 19.A.1. *Technical Note:* *Interstage connectors referred to in 11.A.5. also include electrical connectors installed between systems specified in 1.A.1. or 19.A.1. and their "payload".*

9B Test, Inspection and Production Equipment

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
9B005	On-line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for use with any of the following: **N.B.: SEE ALSO 9B105.** a. Wind tunnels designed for speeds of Mach 1,2 or more; *Note: 9B005.a. does not control wind tunnels specially designed for educational purposes and having a 'test section size' (measured laterally) of less than 250 mm.*	M15B2	'Aerodynamic test facilities' for speeds of Mach 0,9 or more, usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. or 20.A. Note: Item 15.B.2 does not control wind tunnels for speeds of Mach 3 or less with dimension of the 'test cross section size' equal to or less than 250 mm. *Technical Notes:* *1. 'Aerodynamic test facilities' includes wind tunnels and shock tunnels for the study of airflow over objects.*

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	Technical Note: *'Test section size' means the diameter of the circle, or the side of the square, or the longest side of the rectangle, at the largest test section location.* b. Devices for simulating flow-environments at speeds exceeding Mach 5, including hot-shot tunnels, plasma arc tunnels, shock tubes, shock tunnels, gas tunnels and light gas guns; or c. Wind tunnels or devices, other than two-dimensional sections, capable of simulating Reynolds number flows exceeding 25×10^6.		*2. 'Test cross section size' means the diameter of the circle, or the side of the square, or the longest side of the rectangle, or the major axis of the ellipse at the largest 'test cross section' location. 'Test cross section' is the section perpendicular to the flow direction.*
9B006	Acoustic vibration test equipment capable of producing sound pressure levels of 160 dB or more (referenced to 20 μPa) with a rated output of 4 kW or more at a test cell temperature exceeding 1 273 K (1 000 °C), and specially designed quartz heaters therefor. **N.B.: SEE ALSO 9B106.**	M15B4b	Environmental chambers capable of simulating all of the following flight conditions: 1. Acoustic environments at an overall sound pressure level of 140 dB or greater (referenced to 2×10^{-5} N/m^2) or with a total rated acoustic power output of 4 kW or greater; and 2. Any of the following: a. Altitude equal to or greater than 15 km; or b. Temperature range from below –50 °C to above 125 °C.
9B105	'Aerodynamic test facilities' for speeds of Mach 0,9 or more, usable for 'missiles' and their subsystems. **N.B.: SEE ALSO 9B005.** *Note: 9B105 does not control wind-tunnels for speeds of Mach 3 or less with dimension of the 'test cross section size' equal to or less than 250 mm.* *Technical Notes:* *1. In 9B105 'aerodynamic test facilities' includes wind tunnels and shock tunnels for the study of airflow over objects.* *2. In Note to 9B105, 'test cross section size' means the diameter of the circle, or the side of the square, or the longest side of the rectangle, or the major axis of the ellipse at the largest 'test cross section' location. 'Test cross section' is the section perpendicular to the flow direction.*	M15B2	'Aerodynamic test facilities' for speeds of Mach 0,9 or more, usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. or 20.A. *Note: Item 15.B.2 does not control wind tunnels for speeds of Mach 3 or less with dimension of the 'test cross section size' equal to or less than 250 mm.* *Technical Notes:* *1. 'Aerodynamic test facilities' includes wind tunnels and shock tunnels for the study of airflow over objects.* *2. 'Test cross section size' means the diameter of the circle, or the side of the square, or the longest side of the rectangle, or the major axis of the ellipse at the largest 'test cross section' location. 'Test cross section' is the section perpendicular to the flow direction.*

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	3. In 9B105 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.		
9B106	Environmental chambers and anechoic chambers, as follows: a. Environmental chambers capable of simulating all the following flight conditions: 1. Having any of the following: a. Altitude equal to or greater than 15 km; or b. Temperature range from below 223 K (–50 ° C) to above 398 K (+125 °C); and 2. Incorporating, or 'designed or modified' to incorporate, a shaker unit or other vibration test equipment to produce vibration environments equal to or greater than 10 g rms, measured 'bare table', between 20 Hz and 2 kHz while imparting forces equal to or greater than 5 kN; *Technical Notes:* *1. 9B106.a.2. describes systems that are capable of generating a vibration environment with a single wave (e.g., a sine wave) and systems capable of generating a broad band random vibration (i.e., power spectrum).* *2. In 9B106.a.2., 'designed or modified' means the environmental chamber provides appropriate interfaces (e.g., sealing devices) to incorporate a shaker unit or other vibration test equipment as specified in 2B116.* *3. In 9B106.a.2. 'bare table' means a flat table, or surface, with no fixture or fittings.* b. Environmental chambers capable of simulating the following flight conditions:	M15B4	Environmental chambers as follows, usable for the systems specified in 1.A. or 19.A. or the subsystems specified in 2.A. or 20.A.: a. Environmental chambers having all of the following characteristics: 1. Capable of simulating any of the following flight conditions: a. Altitude equal to or greater than 15 km; or b. Temperature range from below –50 °C to above 125 °C; and 2. Incorporating, or designed or modified to incorporate, a shaker unit or other vibration test equipment to produce vibration environments equal to or greater than 10 g rms, measured 'bare table', between 20 Hz and 2 kHz while imparting forces equal to or greater than 5 kN; *Technical Notes:* *1. Item 15.B.4.a.2. describes systems that are capable of generating a vibration environment with a single wave (e.g. a sine wave) and systems capable of generating a broad band random vibration (i.e. power spectrum).* *2. In Item 15.B.4.a.2., designed or modified means the environmental chamber provides appropriate interfaces (e.g. sealing devices) to incorporate a shaker unit or other vibration test equipment as specified in this Item.* b. Environmental chambers capable of simulating all of the following flight conditions: 1. Acoustic environments at an overall sound pressure level of 140 dB or greater (referenced to 2×10^{-5} N/m^2) or with a total rated acoustic power output of 4 kW or greater; and

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	1. Acoustic environments at an overall sound pressure level of 140 dB or greater (referenced to 20 μPa) or with a total rated acoustic power output of 4 kW or greater; and 2. Altitude equal to or greater than 15 km; or 3. Temperature range from below 223 K (–50 °C) to above 398 K (+125 °C).		2. Any of the following: a. Altitude equal to or greater than 15 km; or b. Temperature range from below –50 °C to above 125 °C
9B115	Specially designed “production equipment” for the systems, sub-systems and components specified in 9A005 to 9A009, 9A011, 9A101, 9A102, 9A105 to 9A109, 9A111, 9A116 to 9A120.	M2B2	“Production equipment” specially designed for the subsystems specified in 2.A.
		M3B2	“Production equipment” specially designed for equipment or materials specified in 3.A.1., 3.A.2., 3.A.3., 3.A.4., 3.A.5., 3.A.6., 3.A.8., 3.A.9., 3.A.10. or 3.C.
		M20B2	“Production equipment” specially designed for the subsystems specified in 20.A.
9B116	Specially designed “production facilities” for the space launch vehicles specified in 9A004, or systems, sub-systems, and components specified in 9A005 to 9A009, 9A011, 9A101, 9A102, 9A104 to 9A109, 9A111, 9A116 to 9A120 or ‘missiles’. *Technical Note:* *In 9B116 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M1B1	“Production facilities” specially designed for the systems specified in 1.A
		M2B1	“Production facilities” specially designed for the subsystems specified in 2.A.
		M3B1	“Production facilities” specially designed for equipment or materials specified in 3.A.1., 3.A.2., 3.A.3., 3.A.4., 3.A.5., 3.A.6., 3.A.8., 3.A.9., 3.A.10. or 3.C.
		M19B1	“Production facilities” specially designed for the systems specified in 19.A.1 or 19.A.2.
		M20B1	“Production facilities” specially designed for the subsystems specified in 20.A.

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9B117	Test benches and test stands for solid or liquid propellant rockets or rocket motors, having either of the following characteristics: a. The capacity to handle more than 68 kN of thrust; or b. Capable of simultaneously measuring the three axial thrust components.	M15B3	Test benches/stands, usable for the systems specified in 1.A., 19.A.1. or 19.A.2. or the subsystems specified in 2.A. or 20.A., which have the capacity to handle solid or liquid propellant rockets, motors or engines having a thrust greater than 68 kN, or which are capable of simultaneously measuring the three axial thrust components.

9C Materials

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
9C108	"Insulation" material in bulk form and "interior lining", other than those specified in 9A008, for rocket motor cases usable in "missiles" or specially designed for 'missiles'. *Technical Note:* *In 9C108 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M3C1	'Interior lining' usable for rocket motor cases in the subsystems specified in 2.A.1.c.1. or specially designed for subsystems specified in 20.A.1.b.1. *Technical Note:* *In 3.C.1. 'interior lining' suited for the bond interface between the solid propellant and the case or insulating liner is usually a liquid polymer based dispersion of refractory or insulating materials e.g. carbon filled HTPB or other polymer with added curing agents to be sprayed or screeded over a case interior.*
		M3C2	'Insulation' material in bulk form usable for rocket motor cases in the subsystems specified in 2.A.1.c.1. or specially designed for subsystems specified in 20.A.1.b.1. *Technical Note:* *In 3.C.2. 'insulation' intended to be applied to the components of a rocket motor, i.e. the case, nozzle inlets, case closures, includes cured or semi-cured compounded rubber sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps specified in 3.A.3.*

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9C110	Resin impregnated fibre prepregs and metal coated fibre preforms therefor, for composite structures, laminates and manufactures specified in 9A110, made either with organic matrix or metal matrix utilising fibrous or filamentary reinforcements having a "specific tensile strength" greater than $7{,}62 \times 10^4$ m and a "specific modulus" greater than $3{,}18 \times 10^6$ m. **N.B.: SEE ALSO 1C010 AND 1C210.** *Note: The only resin impregnated fibre prepregs specified in entry 9C110 are those using resins with a glass transition temperature (T_g), after cure, exceeding 418 K (145 °C) as determined by ASTM D4065 or equivalent.*	M6C1	Resin impregnated fibre prepregs and metal coated fibre preforms, for the goods specified in 6.A.1., made either with organic matrix or metal matrix utilising fibrous or filamentary reinforcements having a specific tensile strength greater than $7{,}62 \times 10^4$ m and a specific modulus greater than $3{,}18 \times 10^6$ m. *Note: The only resin impregnated fibre prepregs specified in 6.C.1. are those using resins with a glass transition temperature (Tg), after cure, exceeding 145 °C as determined by ASTM D4065 or national equivalents.* *Technical Notes:* *1. In Item 6.C.1. 'specific tensile strength' is the ultimate tensile strength in N/m^2 divided by the specific weight in N/m^3, measured at a temperature of (296 ± 2)K ((23 ± 2)°C) and a relative humidity of (50 ± 5)%.* *2. In Item 6.C.1. 'specific modulus' is the Young's modulus in N/m^2 divided by the specific weight in N/m^3, measured at a temperature of (296 ± 2)K ((23 ± 2)°C) and a relative humidity of (50 ± 5)%*

9D Software

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
9D001	"Software" specially designed or modified for the "development" of equipment or "technology", specified in 9A001 to 9A119, 9B or 9E003.	M3D3	"Software" specially designed or modified for the "development" of equipment specified in 3.A.2., 3.A.3. or 3.A.4.
9D002	"Software" specially designed or modified for the "production" of equipment specified in 9A001 to 9A119 or 9B.	M2D2	"Software" specially designed or modified for the "use" of rocket motors or engines specified in 2.A.1.c.
9D004	Other "software" as follows: a. 2D or 3D viscous "software", validated with wind tunnel or flight test data required for detailed engine flow modelling;	M19D1	"Software" which coordinates the function of more than one subsystem, specially designed or modified for "use" in the systems specified in 19.A.1. or 19.A.2.

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	b. “Software” for testing aero gas turbine engines, assemblies or components, specially designed to collect, reduce and analyse data in real time and capable of feedback control, including the dynamic adjustment of test articles or test conditions, as the test is in progress; c. “Software” specially designed to control directional solidification or single-crystal material growth in equipment specified in 9B001.a. or 9B001.c.; d. Not used; e. “Software” specially designed or modified for the operation of items specified in 9A012; f. “Software” specially designed to design the internal cooling passages of aero gas turbine blades, vans and “tip shrouds”; g. “Software” having all of the following: 1. Specially designed to predict aero thermal, aeromechanical and combustion conditions in aero gas turbine engines; and 2. Theoretical modelling predictions of the aero thermal, aeromechanical and combustion conditions, which have been validated with actual aero gas turbine engine (experimental or production) performance data.		
9D101	“Software” specially designed or modified for the “use” of goods specified in 9B105, 9B106, 9B116 or 9B117.	M1D1	“Software” specially designed or modified for the “use” of “production facilities” specified in 1.B.
		M2D1	“Software” specially designed or modified for the “use” of “production facilities” specified in 2.B.1.
		M3D1	“Software” specially designed or modified for the “use” of “production facilities” and flow-forming machines specified in 3.B.1. or 3.B.3.
		M12D1	“Software” specially designed or modified for the “use” of equipment specified in 12.A.1.
		M15D1	“Software” specially designed or modified for the “use” of equipment specified in 15.B. usable for testing systems specified in 1.A., 19.A.1. or 19.A.2. or subsystems specified in 2.A. or 20.A.

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		M20D1	“Software” specially designed or modified for the systems specified in 20.B.1.
9D103	“Software” specially designed for modelling, simulation or design integration of the space launch vehicles specified in 9A004, sounding rockets specified in 9A104 or “missiles”, or the subsystemsspecified in 9A005, 9A007, 9A105, 9A106.c., 9A107, 9A108.c., 9A116 or 9A119. *Note: “Software” specified in 9D103 remains controlled when combined with specially designed hardware specified in 4A102.*	M16D1	“Software” specially designed for modelling, simulation, or design integration of the systems specified in 1.A. or the subsystems specified in 2.A or 20.A. *Technical Note:* *The modelling includes in particular the aerodynamic and thermodynamic analysis of the systems.*
9D104	“Software” specially designed or modified for the “use” of goods specified in 9A001, 9A005, 9A006.d., 9A006.g., 9A007.a., 9A008.d., 9A009.a., 9A010.d., 9A011, 9A101, 9A102, 9A105, 9A106.c., 9A106.d., 9A107, 9A108.c., 9A109, 9A111, 9A115.a., 9A116.d., 9A117 or 9A118.	M2D2 M2D4 M3D2 M2D5 M20D2	“Software” specially designed or modified for the “use” of rocket motors or engines specified in 2.A.1.c. “Software” specially designed or modified for the operation or maintenance of subsystems or equipment specified in 2.A.1.b.3. “Software” specially designed or modified for the “use” of equipment specified in 3.A.1., 3.A.2., 3.A.4., 3.A.5., 3.A.6. or 3.A.9. *Notes:* *1. “Software” specially designed or modified for the “use” of engines specified in 3.A.1. may be exported as part of a manned aircraft or as replacement “software” therefor.* *2. “Software” specially designed or modified for the “use” of propellant control systems specified in 3.A.5. may be exported as part of a satellite or as replacement “software” therefor.*

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			“Software” specially designed or modified for the operation or maintenance of subsystems in 2.A.1.e. “Software”, not specified in 2.D.2., specially designed or modified for the “use” of rocket motors or engines specified in 20.A.1.b.
9D105	“Software” which coordinates the function of more than one subsystem, other than that specified in 9D003.e., specially designed or modified for “use” in space launch vehicles specified in 9A004 or sounding rockets specified in 9A104 or ‘missiles’. *Technical Note:* *In 9D105 ‘missile’ means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M1D2 M19D1	“Software” specially designed or modified to coordinate the function of more than one subsystem in systems specified in 1.A. “Software” which coordinates the function of more than one subsystem, specially designed or modified for “use” in the systems specified in 19.A.1. or 19.A.2.

9E Technology

The corresponding systems, equipment and components as identified in Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items		Missile Technology Control Regime (M.TCR): Equipment, software and technology annex	
9E001	“Technology” according to the General Technology Note for the “development” of equipment	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.
9E002	“Technology” according to the General Technology Note for the “production” of equipment materials, see 1E002.f.	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.
9E101	a. “Technology” according to the General Technology Note for the “development” of goods specified in 9A101, 9A102, 9A104 to 9A111, 9A112.a. or 9A115 to 9A121. b. “Technology” according to the General Technology Note for the “production” of ‘UAV’s specified in 9A012 or goods specified in 9A101, 9A102, 9A104 to 9A111, 9A112.a. or 9A115 to 9A121.	M	Means specific information which is required for the “development”, “production” or “use” of a product. The information may take the form of “technical data” or “technical assistance”.

▼M30

	Technical Note: *In 9E101.b. 'UAV' means unmanned aerial vehicle systems capable of a range exceeding 300 km.*		
9E102	"Technology" according to the General Technology Note for the "use" of space launch vehicles specified in9A004, goods specified in 9A005 to 9A011, 'UAV's specified in 9A012 or goods specified in 9A101, 9A102, 9A104 to 9A111, 9A112.a., 9A115 to 9A121, 9B105, 9B106, 9B115, 9B116, 9B117, 9D101 or 9D103. *Technical Note:* *In 9E102 'UAV' means unmanned aerial vehicle systems capable of a range exceeding 300 km.*	M	Means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance".

▼M24

▼**M49**

ANNEX IV

List of ‘crude oil and petroleum products’ referred to in Articles 11 and 31(1)

HS Code	Description
2709 00	Petroleum oils and oils obtained from bituminous minerals, crude.
2710	Petroleum oils and oils obtained from bituminous minerals, other than crude; preparations not elsewhere specified or included, containing by weight 70 % or more of petroleum oils or of oils obtained from bituminous minerals, these oils being the basic constituents of the preparations; waste oils (save that the purchase, in Iran, of kerosene jet fuel of CN code 2710 19 21 is not prohibited provided that it is intended and used solely for the purpose of the continuation of the flight operation of the aircraft into which it is loaded).
2712	Petroleum jelly; paraffin wax, microcrystalline petroleum wax, slack wax, ozokerite, lignite wax, peat wax, other mineral waxes, and similar products obtained by synthesis or by other processes, whether or not coloured.
2713	Petroleum coke, petroleum bitumen and other residues of petroleum oils or of oils obtained from bituminous minerals.
2714	Bitumen and asphalt, natural; bituminous or oil-shale and tar sands; asphaltites and asphaltic rocks.
2715 00 00	Bituminous mixtures based on natural asphalt, on natural bitumen, on petroleum bitumen, on mineral tar or on mineral tar pitch (for example, bituminous mastics, cut-backs).

▼M52
▼C8

ANNEX IVa

Products referred to in Article 14a and Article 31(1) Natural gas and other gaseous hydrocarbons

HS code	Description
2709 00 10	Natural gas condensates
2711 11 00	Natural Gas – in liquefied state
2711 21 00	Natural Gas – in gaseous state
2711 12	Propane
2711 13	Butanes
2711 19 00	Other liquefied petroleum gases

▼M52
▼C8

ANNEX V

List of “petrochemical products” referred to in Article 13 and Article 31(1)

HS code	Description
2812 11 00	Phosgene (carbonyl chloride)
2814	Ammonia
2901 21 00	Ethylene
2901 22 00	Propene (propylene)
2902 20 00	Benzene
2902 30 00	Toluene
2902 41 00	*o*-Xylene
2902 42 00	*m*-Xylene
2902 43 00	*p*-Xylene
2902 44 00	Mixed xylene isomers
2902 50 00	Styrene
2902 60 00	Ethyl benzene
2902 70 00	Cumene
2903 11 00	Chloromethane (methyl chloride) and chloroethane (ethyl chloride)
2903 29 00	Unsaturated chlorinated derivatives of acyclic hydrocarbons - other
2903 81 00	1,2,3,4,5,6-Hexachlorocyclohexane (HCH (ISO)), including lindane (ISO, INN)
2903 82 00	Aldrin (ISO), chlordane (ISO) and heptachlor (ISO)
2903 89 70	- Halogenated derivatives of cyclanic, cyclenic or cycloterpenic hydrocarbons; – Other; — Other
2903 91 00	Chlorobenzene, o-dichlorobenzene and p-dichlorobenzene
2903 92 00	Hexachlorobenzene (ISO) and DDT (ISO) [clofenotane (DCI), 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane]
2903 99 80	- Halogenated derivatives of aromatic hydrocarbons; – Other; — Other
2905 11 00	Methanol (methyl alcohol)
2905 12 00	Propan-1-ol (propyl alcohol) and propan-2-ol (isopropyl alcohol)
2905 13 00	Butan-1-ol (n-butyl alcohol)
2905 31 00	Ethylene glycol (ethanediol)
2907 11 – 2907 19	Phenols
2909	Ether-alcohols, ether-phenols, ether-alcohol-phenols, alcohol peroxides, ether peroxides, acetal and hemiacetal peroxides, ketone peroxides (whether or not chemically defined), and their halogenated, sulphonated, nitrated or nitrosated derivatives
2909 41 00	2, 2′-Oxydiethanol (diethylene glycol, digol)
2909 43 00	Monobutyl ethers of ethylene-glycol or diethylene glycol
2909 44 00	Other monoalkyl ethers of ethylene-glycol or diethylene glycol
2909 49	Other ether-alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives

▼C8

HS code	Description
2910 10 00	Oxirane (ethylene oxide)
2910 20 00	Methyloxirane (propylene oxide)
2914 11 00	Acetone
2917 14 00	Maleic anhydride (MA)
2917 35 00	Phthalic anhydride (PA)
2917 36 00	Terephthalic acid and its salts
2917 37 00	Dimethyl terephthalate (DMT)
2926 10 00	Acrylonitrile
ex 2929 10 00	Methylene diphenyl diisocyanate (MDI)
ex 2929 10 00	Hexamethylene diisocyanate (HDI)
ex 2929 10 00	Toluene diisocyanate (TDI)
3102 30	Ammonium Nitrate
3901	Polymers of ethylene, in primary forms

HS code	Description
2707 10 00	Benzol (benzene)
2707 20 00	Toluol (toluene)
2707 30 00	Xylol (xylenes)
2707 40 00	Naphthalene
2707 99 80	Phenols
2711 14 00	Ethylene, propylene, butadiene

▼M52
▼C8

ANNEX VI

List of key equipment and technology referred to in Articles 8 and 31(1)

GENERAL NOTES

1. The object of the prohibitions contained in this Annex should not be defeated by the export of any non-prohibited goods (including plant) containing one or more prohibited components when the prohibited component or components are the principal element of the goods and can feasibly be removed or used for other purposes.

N.B.: In judging whether the prohibited component or components are to be considered the principal element, it is necessary to weigh the factors of quantity, value and technological know-how involved and other special circumstances which might establish the prohibited component or components as the principal element of the goods being procured.

2. The goods specified in this Annex include both new and used goods.

3. Definitions of terms between ‘single quotation marks’ are given in a technical note to the relevant item.

4. Definitions of terms between “double quotation marks” can be found in Annex I to Regulation (EU) 2021/821.

GENERAL TECHNOLOGY NOTE (GTN)

1. The “technology” “required” for the “development”, “production” or “use” of prohibited goods remains under prohibition even when applicable to non-prohibited goods.

2. Prohibitions do not apply to that “technology” which is the minimum necessary for the installation, operation, maintenance (checking) and repair of those goods which are not prohibited or the export of which has been authorised in accordance with Regulation (EC) No 423/2007, Regulation (EU) No 961/2010 or this Regulation.

3. Prohibitions on “technology” transfer do not apply to information “in the public domain”, to “basic scientific research” or to the minimum necessary information for patent applications.

EXPLORATION AND PRODUCTION OF CRUDE OIL AND NATURAL GAS

1.A *Equipment*

1. Geophysical survey equipment, vehicles, vessels and aircraft specially designed or adapted to acquire data for oil and gas exploration and specially designed components therefore.

2. Sensors specially designed for downhole well operations in oil and gas wells, including sensors used for measurement whilst drilling and the associated equipment specially designed to acquire and store data from such sensors.

3. Drilling equipment designed to drill rock formations, specifically for the purpose of exploring for, or producing oil, gas and other naturally occurring, hydrocarbon materials.

4. Drill bits, drill pipes, drill collars, centralisers and other equipment, specially designed for use in and with oil and gas well drilling equipment.

▼C8

5. Drilling wellheads, 'blowout preventers' and 'Christmas or production trees' and the specially designed components thereof, meeting the 'API and ISO specifications' for use with oil and gas wells.

Technical Notes:

a. A 'blowout preventer' is a device typically used at ground level (or if drilling underwater, at the seabed) during drilling to prevent the uncontrolled escape of oil and/or gas from the well.

b. A 'Christmas tree or production tree' is a device typically used to control flow of fluids from the well when it is complete and oil and/or gas production has started.

c. For the purpose of this item, 'API and ISO specifications' refers to the American Petroleum Institute specifications 6A, 16A, 17D and 11IW and/or the International Standards Organisation specifications 10423 and 13533 for blowout preventers, wellhead and Christmas trees for use on oil and/or gas wells.

6. Drilling and production platforms for crude oil and natural gas.

7. Vessels and barges incorporating drilling and/or petroleum processing equipment used for producing oil, gas and other naturally occurring flammable materials.

8. Liquid/gas separators meeting API specification 12J, specially designed to process the production from an oil or gas well, to separate the petroleum liquids from any water and any gas from the liquids.

9. Gas compressor with a design pressure of 40 bar (PN 40 and/or ANSI 300) or more and having a suction volume capacity of 300 000 Nm^3/h or more, for the initial processing and transmission of natural gas, excluded gas compressors for CNG (Compressed Natural Gas) filling stations, and specially designed components therefore.

10. Subsea production control equipment and the components thereof meeting 'API and ISO specifications' for use with oil and gas wells.

Technical Note:

For the purposes of this entry, 'API and ISO specifications' refers to the American Petroleum Institute specification 17 F and/or the International Standards Organisation specification 13268 for subsea production control systems.

11. Pumps, typically high capacity and/or high pressure (in excess of 0,3 m^3 per minute and/or 40 bar), specially designed to pump drilling muds and/or cement into oil and gas wells.

1.B *Test and inspection equipment*

1. Equipment specially designed for sampling, testing and analysing the properties of drilling mud, oil well cements and other materials specially designed and/or formulated for use in oil and gas wells.

2. Equipment specially designed for sampling, testing and analysing the properties of rock samples, liquid and gaseous samples and other materials taken from an oil and/or gas well either during or after drilling, or from the initial processing facilities attached thereto.

3. Equipment specially designed for collecting and interpreting information about the physical and mechanical condition of an oil and/or gas well, and for determining the *in situ* properties of the rock and reservoir formation.

▼C8

1.C *Materials*

1. Drilling mud, drilling mud additives and the components thereof, specially formulated to stabilise oil and gas wells during drilling, to recover drill cuttings to the surface and to lubricate and cool the drilling equipment in the well.

2. Cements and other materials meeting the 'API and ISO specifications' for use in oil and gas wells.

Technical Note:

'API and ISO specification' refers to the American Petroleum Institute specification 10A or the International Standards Organisation specification 10426 for oil well cements and other materials specially formulated for use in the cementing of oil and gas wells.

3. Corrosion inhibiting, emulsion treatment, defoaming agents and other chemicals specially formulated to be used in the drilling for, and the initial processing of, petroleum produced from an oil and/or gas well.

1.D *Software*

1. "Software" specially designed to collect and interpret data acquired from seismic, electromagnetic, magnetic or gravity surveys for the purpose of establishing oil or gas prospectivity.

2. "Software" specially designed for storing, analysing and interpreting information acquired during drilling and production to assess the physical characteristics and behaviour of oil or gas reservoirs.

3. "Software" specially designed for the "use" of petroleum production and processing facilities or specific sub-units of such facilities.

1.E *Technology*

1. "Technology" "required" for the "development", "production" and "use" of equipment specified in 1.A.01 – 1.A.11.

REFINING OF CRUDE OIL AND LIQUEFACTION OF NATURAL GAS

2.A *Equipment*

1. Heat exchangers as follows and specially designed components therefore:

   a. Plate-fin heat exchangers with a surface/volume ratio greater than 500 m^2/m^3, specially designed for pre-cooling of natural gas;

   b. Coil-wound heat exchangers specially designed for liquefaction or sub-cooling of natural gas.

2. Cryogenic pumps for the transport of media at a temperature below – 120 ^oC having a transport capacity of more than 500 m^3/h and specially designed components therefore.

3. 'Coldbox' and 'coldbox' equipment not specified by 2.A.1.

Technical Note:

'Coldbox' equipment refers to a specially designed construction, which is specific for LNG plants and incorporates the process stage of liquefaction. The 'coldbox' comprises heat exchangers, piping, other instrumentation and thermal insulators. The temperature inside the 'coldbox' is below – 120 ^oC (conditions for condensation of natural gas). The function of the 'coldbox' is the thermal insulation of the above described equipment.

▼C8

4. Equipment for shipping terminals of liquefied gases having a temperature below – 120 °C and specially designed components therefore.

5. Flexible and non-flexible transfer line having a diameter greater than 50 mm for the transport of media below – 120 °C.

6. Maritime vessels specially designed for the transport of LNG.

7. Electrostatic desalters specially designed to remove contaminants such as salts, solids and water from crude oil and specially designed components therefore.

8. All crackers, including hydrocrackers, and cokers, specially designed for conversion of vacuum gas oils or vacuum residuum, and specially designed components therefore.

9. Hydrotreaters specially designed for desulphurisation of gasoline, diesel cuts and kerosene and specially designed components therefore.

10. Catalytic reformers specially designed for conversion of desulphurised gasoline into high-octane gasoline, and specially designed components therefore.

11. Refinery units for C5-C6 cuts isomerisation, and refinery units for alkylation of light olefins, to improve the octane index of the hydrocarbon cuts.

12. Pumps specially designed for the transport of crude oil and fuels, having a capacity of 50 m^3/h or more and specially designed components therefore.

13. Tubes with an outer diameter of 0,2 m or more and made from any of the following materials:

    a. Stainless steels with 23 % chromium or more by weight;

    b. Stainless steels and nickel bases alloys with a ‘Pitting resistance equivalent’ number higher than 33.

Technical Note:

*‘Pitting resistance equivalent’ (PRE) number characterises the corrosion resistance of stainless steels and nickel alloys to pitting or crevice corrosion. The pitting resistance of stainless steels and nickel alloys is primarily determined by their compositions, primarily: chromium, molybdenum, and nitrogen. The formula to calculate the PRE number is: PRE = % Cr +3,3 * % Mo + 30 * % N*

14. ‘Pigs’ (Pipeline Inspection Gauge(s)) and specially designed components therefore.

15. ‘Pig’ launchers and ‘pig’ catchers for the integration or removing of ‘pigs’

Technical Note:

‘Pig’ is a device typically used for cleaning or inspection of a pipeline from inside (corrosion state or crack formation) and is propelled by the pressure of the product in the pipeline.

16. Tanks for the storage of crude oil and fuels with a volume greater than 1 000 m^3 (1 000 000 litres) as follows, and specially designed components therefore:

    a. fixed roof tanks;

    b. floating roof tanks.

▼C8

17. Subsea flexible pipes specially designed for the transportation of hydrocarbons and injection fluids, water or gas, having a diameter greater than 50 mm.

18. Flexible pipes used for high pressure for topside and subsea application.

19. Isomeration equipment specially designed for production of high-octane gasoline based on light hydrocarbons as feed, and specially designed components therefore.

2.B *Test and inspection equipment*

1. Equipment specially designed for testing and analysing of quality (properties) of crude oil and fuels.

2. Interface control systems specially designed for controlling and optimising of the desalting process.

2.C *Materials*

1. Diethyleneglycol (CAS 111-46-6), triethylene glycol (CAS 112-27-6)

2. N-Methylpyrrolidone (CAS 872-50-4), sulfolane (CAS 126-33-0)

3. Zeolites, of natural or synthetic origin, specially designed for fluid catalytic cracking or for the purification and/or dehydration of gases, including natural gases.

4. Catalysts for the cracking and conversion of hydrocarbons as follows:

   a. Single metal (platinum group) on alumina type or on zeolite, specially designed for catalytic reforming process;

   b. Mixed metal species (platinum in combination with other noble metals) on alumina type or on zeolite, specially designed for catalytic reforming process;

   c. Cobalt and nickel catalysts doped with molybdenum on alumina type or on zeolite, specially designed for catalytic desulphurisation process;

   d. Palladium, nickel, chromium and tungsten catalysts on alumina type or on zeolite, specially designed for catalytic hydrocracking process.

5. Gasoline additives specially formulated for increasing the octane number of gasoline.

Note:

This entry includes Ethyl tertiary butyl ether (ETBE) (CAS 637-92-3) and Methyl tertiary butyl ether (MTBE) (CAS 1634-04-4).

2.D *Software*

1. “Software” specially designed for the “use” of LNG plants or specific sub-units of such plants.

2. “Software” specially designed for the “development”, “production” or “use” of plants (including their sub-units) for oil refining.

▼C8

2.E *Technology*

1. “Technology” “required” for the “development”, “production” or “use” of equipment for the conditioning and purification of raw natural gas (dehydration, sweetening, removal of impurities).

2. “Technology” for the liquefaction of natural gas, including “technology” required for the “development”, “production” or “use” of LNG plants.

3. “Technology” “required” for the “development”, “production” or “use” of equipment for the shipment of liquefied natural gas.

4. “Technology” “required” for the “development”, “production” or “use” of maritime vessels specially designed for the transport of liquefied natural gas.

5. “Technology” “required” for the “development”, “production” or “use” of tanks for the storage of crude oil and fuels.

6. “Technology” “required” for the “development”, “production” or “use” of a refinery plant, such as:

6.1. “Technology” for conversion of light olefin to gasoline;

6.2. Catalytic reforming and isomerisation technology;

6.3. Catalytic and thermal cracking technology.

PETROCHEMICAL INDUSTRY

3.A *Equipment*

1. Reactors

a. specially designed for production of phosgene (CAS 75-44-5) and specially designed components therefor;

b. for phosgenation specially designed for the production of HDI, TDI, MDI and specially designed components therefor, with the exception of secondary reactors;

c. specially designed for low pressure (up to max 40 bar) polymerisation of ethylene and propylene and specially designed components therefore;

d. specially designed for the thermal cracking of EDC (ethylene dichloride) and specially designed components therefor, with the exception of secondary reactors;

e. specially designed for chlorination and oxychlorination in the production of vinyl chloride and specially designed components therefor, with the exception of secondary reactors;

2. Thin film evaporators and falling film evaporators consisting of materials resistant to hot concentrated acetic acid and specially designed components therefor, and the relevant software developed therefor;

3. Plants for the separation of hydrochloric acid by electrolysis and specially designed components therefore, and the relevant software developed therefor;

4. Columns having a diameter larger than 5 000 mm and specially designed components therefor;

▼C8

5. Ball valves and plug valves with ceramic balls or plugs, having a nominal diameter of 10 mm or more, and specially designed components therefor;

6. Centrifugal and/or reciprocating compressor having an installed power above 2 MW and meeting specification API 617 or API 618;

3.B *Test and inspection equipment*

3.C *Materials*

1. Catalysts applicable to processes of production of trinitrotoluene, ammonium nitrate and other chemical and petrochemical processes used for explosive manufacturing, and the relevant software developed therefor;

2. Catalysts used for the production of monomers such as ethylene and propylene (steam cracking units and/or Gas to petrochemicals units), and the relevant software developed therefor;

3.D *Software*

1. “Software” specially designed for the “development”, “production” or “use” of equipment specified in 3.A;

2. “Software” specially designed for the “use” in methanol plants;

3.E *Technology*

1. “Technology” for the “development”, “production” or “use” of Gas-To-Liquid (GTL) or Gas-To-Petrochemicals (GTP) processes or for GTL- or GTP- plants;

2. “Technology” “required” for the “development”, “production” or “use” of equipment designed for the manufacture of ammonia and methanol plants;

3. “Technology” for the “production” of MEG (Mono ethylene glycol), EO (Ethylene oxide)/EG (Ethylene glycol)

Note:

“Technology” means specific information necessary for the “development”, “production” or “use” of goods. This information takes the form of “technical data” or “technical assistance”.

▼**M49**

ANNEX VIa

Key equipment and technology referred to in Articles 8, 10(1)(c) and 31(1)

HS code	Description
	– Casing, tubing and drill pipe, of a kind used in drilling for oil or gas:
7304 22	– Drill pipe of stainless steel
7304 23	– – Other drill pipe
7304 24	– – Other, of stainless steel
7304 29	– – Other
ex 7305	Other tubes and pipes (for example, welded, riveted or similarly closed), having circular cross-sections, the external diameter of which exceeds 406,4 mm, of iron or steel, with a chrome content of 1 % or more and with a cold resistance that can go below – 120 °C
	– Line pipe of a kind used for oil or gas pipelines:
7306 11	– – Welded, of stainless steel
7306 19	– – Other
	– Casing and tubing of a kind used in drilling for oil or gas:
7306 21 00	– – Welded, of stainless steel
7306 29 00	– – Other
	Containers for compressed or liquefied gas, of iron or steel:
7311 00 99	– Other, of a capacity of 1 000 l or more
ex 7613	Aluminium containers for compressed or liquefied gas, of a capacity of 1 000 l or more

▼M52

▼C8

ANNEX VIb

Key equipment and technology referred to in Articles 10a, 10b and 10c and Article 31(1)

HS code	Description
8406 10	Steam and other vapour turbines for marine propulsion
ex 8406 90	Parts of steam turbines for marine propulsion
8407 21	Marine propulsion engines, outboard motors
ex 8407 29	Marine propulsion engines, other
8408 10	Marine propulsion engines
ex 8409 91 00	Parts suitable for use solely or principally with machines of subheadings 8407 21 or 8407 29
ex 8409 99 00	Parts suitable for use solely or principally with machines of subheading 8408 10°
ex 8411 81	Other gas turbine of a power not exceeding 5 000 kW, for marine propulsion
ex 8411 82	Other gas turbines of a power exceeding 5 000 kW, for marine propulsion
ex 8468	Machinery and apparatus for soldering, brazing or welding whether or not capable of cutting, other than those of heading 8515; gas-operated surface tempering machines and appliances
ex 8483	Transmission shafts (including cam shafts and crank shafts) and cranks; bearing housings and plain shaft bearings; gears and gearing; ball or roller screws; gear boxes and other speed changers, including torque converters; flywheels and pulleys, including pulley blocks; clutches and shaft couplings (including universal joints), designed for the propulsion of vessels at the maximum possible deadweight tonnage at scantling draught of 55 000 dwt or more
8487 10	Ships' or boats' propellers and blades therefor
ex 8515	Electric (including electrically heated gas), laser or other light or photon beam, ultrasonic, electron beam, magnetic pulse or plasma arc soldering, brazing or welding machines and apparatus, whether or not capable of cutting; electric machines and apparatus for hot spraying of metals or cermets
ex 9014 10 00	Direction finding compasses, solely for the maritime industry
ex 9014 80 00	Other navigational instruments and appliances, solely for the maritime industry
ex 9014 90 00	Parts and accessories of subheadings 9014 10 00 and 9014 80 00, solely for the maritime industry
ex 9015	Surveying (including photogram metrical surveying), hydro graphic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses; rangefinders, solely for the maritime industry

▼**M49**

ANNEX VII

List of gold, precious metals and diamonds referred to in Articles 15 and 31(1)

HS Code	Description
7102	Diamonds, whether or not worked, but not mounted or set
7106	Silver (including silver plated with gold or platinum), unwrought or in semi-manufactured forms, or in powder form
7108	Gold (including gold plated with platinum), unwrought or in semi-manufactured forms, or in powder form
7109	Base metals or silver, clad with gold, not further worked than semi-manufactured.
7110	Platinum, unwrought or in semi-manufactured forms, or in powder form
7111	Base metals, silver or gold, clad with platinum, not further worked than semi-manufactured.
7112	Waste and scrap of precious metal or of metal clad with precious metal; other waste and scrap containing precious metal or precious-metal compounds, of a kind used principally for the recovery of precious metal

▼**M49**

ANNEX VIIa

Software for integrating industrial processes referred to in Article 10d, 10e, 10f and 31(1)

1. Enterprise Resource Planning software, designed specifically for use in nuclear, military, gas, oil, navy, aviation, financial and construction industries.

   Explanatory note: Enterprise Resource Planning software is software used for financial accounting, management accounting, human resources, manufacturing, supply chain management, project management, customer relationship management, data services, or access control.

▼M52

▼C8

ANNEX VIIb

Graphite and raw or semi-finished metals referred to in Articles 15a, 15b and 15c and Article 31(1)

Introductory note: The inclusion of goods in this Annex is without prejudice to the rules applicable to the goods included in Annexes I, II and III.

1. Graphite

HS code	Description
2504	Natural graphite
3801	Artificial graphite; colloidal or semi-colloidal graphite; preparations based on graphite or other carbon in the form of pastes, blocks, plates or other semi-manufactures
6815 11	Carbon fibres
6815 12	Fabrics of carbon fibres
6815 13	Other articles of carbon fibres
6815 19	Other articles of graphite or other carbon for non-electrical uses
6903 10	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths, rods and slide gates), other than those of siliceous fossil meals or of similar siliceous earths: containing, by weight, more than 50 % of free carbon
8545	Carbon electrodes, carbon brushes, lamp carbons, battery carbons and other articles of graphite or other carbon, with or without metal, of a kind used for electrical purposes

2. Iron and Steel

HS code	Description
7201	Pig iron and spiegeleisen in pigs, blocks or other primary forms
7202	Ferro-alloys
7203	Ferrous products obtained by direct reduction of iron ore and other spongy ferrous products, in lumps, pellets or similar forms; iron having a minimum purity by weight of 99,94 %, in lumps, pellets or similar forms
7204	Ferrous waste and scrap; remelting scrap ingots of iron or steel
7205	Granules and powders, of pig iron, spiegeleisen, iron or steel
7206	Iron and non-alloy steel in ingots or other primary forms (excluding iron of heading 7203)
7207	Semi-finished products of iron or non-alloy steel
7218	Stainless steel in ingots or other primary forms; semi-finished products of stainless steel
7224	Other alloy steel in ingots or other primary forms; semi-finished products of other alloy steel

▼C8

3. Copper and articles thereof

HS code	Description
7401 00 00	Copper mattes; cement copper (precipitated copper)
7402 00 00	Unrefined copper; copper anodes for electrolytic refining
7403	Refined copper and copper alloys, unwrought
7404 00	Copper waste and scrap
7405 00 00	Master alloys of copper
7406	Copper powders and flakes
7407	Copper bars, rods and profiles
7410	Copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0,15 mm
7413 00 00	Stranded wire, cables, plaited bands and the like, of copper, not electrically insulated

4. Nickel and articles thereof

HS code	Description
7501	Nickel mattes, nickel oxide sinters and other intermediate products of nickel metallurgy
7502	Unwrought nickel
7503 00	Nickel waste and scrap
7504 00 00	Nickel powders and flakes
7505	Nickel bars, rods, profiles and wire
7506	Nickel plates, sheets, strip and foil
7507	Nickel tubes, pipes and tube or pipe fittings (for example, couplings, elbows, sleeves)

5. Aluminium

HS code	Description
7601	Unwrought aluminium
7602	Aluminium waste and scrap
7603	Aluminium powders and flakes
7605	Aluminium wire
7606	Aluminium plates, sheets and strip, of a thickness exceeding 0,2 mm
7609 00 00	Aluminium tube or pipe fittings (for example, couplings, elbows, sleeves)
7614	Stranded wire, cables, plaited bands and the like, of aluminium, not electrically insulated

▼C8

6. Lead

HS code	Description
7801	Unwrought lead
7802 00 00	Lead waste and scrap
7804	Lead plates, sheets, strip and foil; lead powders and flakes

7. Zinc

HS code	Description
7901	Unwrought zinc
7902 00 00	Zinc waste and scrap
7903	Zinc dust, powders and flakes
7904 00 00	Zinc bars, rods, profiles and wire
7905 00 00	Zinc plates, sheets, strip and foil

8. Tin

HS code	Description
8001	Unwrought tin
8002 00 00	Tin waste and scrap
8003 00 00	Tin bars, rods, profiles and wire

9. Other base metals, cermets, articles thereof

HS code	Description
ex 8101	Tungsten (wolfram) and articles thereof, including waste and scrap, other than anti-cathodes for X-ray tubes
ex 8102	Molybdenum and articles thereof, including waste and scrap, other than articles specifically designed for use in dentistry
ex 8103	Tantalum and articles thereof, including waste and scrap, other than dental instruments and surgical tools and articles specially designed for orthopaedic and surgical purposes
8104	Magnesium and articles thereof, including waste and scrap
8105	Cobalt mattes and other intermediate products of cobalt metallurgy; cobalt and articles thereof, including waste and scrap

▼C8

9. Other base metals, cermets, articles thereof

HS code	Description
ex 8106	Bismuth and articles thereof, including waste and scrap, other than that specially prepared for the preparation of chemical compounds for pharmaceutical use
8108	Titanium and articles thereof, including waste and scrap
8109	Zirconium and articles thereof, including waste and scrap
8110	Antimony and articles thereof, including waste and scrap
8111 00	Manganese and articles thereof, including waste and scrap
ex 8112	Beryllium, chromium, hafnium, rhenium, thallium, cadmium, germanium, vanadium, gallium, indium and niobium (columbium), and articles of these metals, including waste and scrap other than windows for X-ray tubes
8113 00	Cermets and articles thereof, including waste and scrap

▼B

ANNEX VIII

List of persons and entities referred to in Article 23(1)

A. Persons and entities involved in nuclear or ballistic missiles activities

Natural persons

▼M45

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▼M51

▼C6

(1) Fereidoun Abbasi-Davani. Function: Senior Ministry of Defence and Armed Forces Logistics (MODAFL) Scientist. DOB: (a) 1958 (b) 1959. POB: Abadan, Iran (Islamic Republic of). Other information: Has 'links to the Institute of Applied Physics. Working closely with Mohsen Fakhrizadeh-Mahabadi.'

Date of UN designation: 24.3.2007.

(2) Dawood Agha-Jani. Function: Head of the PFEP – Natanz. Other information: Person involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(3) Ali Akbar Ahmadian. Title: Vice Admiral. Function: Chief of Iranian Revolutionary Guard Corps (IRGC) Joint Staff. DOB: 1961. POB: Kerman, Iran (Islamic Republic of). A.k.a.: Ali Akbar Ahmedian. Other information: position changed.

Date of UN designation: 24.3.2007.

(4) Amir Moayyed Alai. Other information: involved in managing the assembly and engineering of centrifuges.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(5) Behman Asgarpour. Function: Operational Manager (Arak). Other information: Person involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(6) Mohammad Fedai Ashiani. Other information: involved in the production of ammonium uranyl carbonate and management of the Natanz enrichment complex.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(7) Abbas Rezaee Ashtiani. Other information: a senior official at the AEOI Office of Exploration and Mining Affairs.

Date of UN designation: 3.3.2008.

(8) Bahmanyar Morteza Bahmanyar. Function: Head of Finance & Budget Department of the Aerospace Industries Organisation (AIO). DOB: 31.12.1952. Nationality: Iran. Passport no: (a) I0005159, issued in Iran (b) 10005159, issued in Iran.

Date of UN designation: 23.12.2006.

▼C6

(9) Haleh Bakhtiar. Other information: involved in the production of magnesium at a concentration of 99,9 %.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(10) Morteza Behzad. Other information: involved in making centrifuge components.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(11) Ahmad Vahid Dastjerdi. Function: Head of the Aerospace Industries Organisation (AIO). DOB: 15.1.1954. Passport no: A0002987, issued in Iran. Other information: Served as Deputy Defence Minister.

Date of UN designation: 23.12.2006.

(12) Ahmad Derakhshandeh. Function: Chairman and Managing Director of Bank Sepah, which provides support for the AIO and subordinates, including SHIG and SBIG, both of which were designated under resolution 1737 (2006). DOB: 11.8.1956. Address: 33 Hormozan Building, Pirozan St., Sharaj Ghods, Tehran, Iran (Islamic Republic of).

Date of UN designation: 24.3.2007.

(13) Mohammad Eslami. Title: Dr. Other information: Head of Defence Industries Training and Research Institute. A.k.a.: Mohammad Islami; Mohamed Islami; Mohammed Islami. Other information: Served as Deputy Defence Minister from 2012 to 2013.

Date of UN designation: 3.3.2008.

(14) Reza-Gholi Esmaeli. Function: Head of Trade & International Affairs Dept, Aerospace Industries Organisation (AIO). DOB: 3.4.1961. A.k.a.: Reza-Gholi Ismaili. Passport no: A0002302, issued in Iran (Islamic Republic of).

Date of UN designation: 23.12.2006.

(15) Mohsen Fakhrizadeh-Mahabadi. Function: Senior MODAFL scientist and former head of the Physics Research Centre (PHRC). Passport no: (a) A0009228 (Unconfirmed (likely Iran)) (b) 4229533 (Unconfirmed (likely Iran)). Other information: The IAEA have asked to interview him about the activities of the PHRC over the period he was head but Iran has refused.

Date of UN designation: 24.3.2007.

(16) Mohammad Hejazi. Title: Brigadier General. Function: Commander of Bassij resistance force. DOB: 1959. POB: Isfahan, Iran (Islamic Republic of). A.k.a.: Mohammed Hijazi.

Date of UN designation: 24.3.2007.

(17) Mohsen Hojati. Function: Head of Fajr Industrial Group, which is designated under resolution 1737(2006) for its role in the ballistic missile programme. DOB: 28.9.1955. Passport no: G4506013, issued in Iran (Islamic Republic of).

Date of UN designation: 24.3.2007.

▼C6

(18) Seyyed Hussein Hosseini. Other information: AEOI official involved in the heavy water research reactor project at Arak.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(19) M. Javad Karimi Sabet. Other information: Head of Novin Energy Company, which is designated under resolution 1747 (2007).

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(20) Mehrdada Akhlaghi Ketabachi. Function: Head of Shahid Bagheri Industrial Group (SBIG), which is designated under resolution 1737(2006) for its role in the ballistic missile programme. DOB: 10.9.1958. Passport no: A0030940, issued in Iran (Islamic Republic of).

Date of UN designation: 24.3.2007.

(21) Ali Hajinia Leilabadi. Function: Director General of Mesbah Energy Company. Other information: Person involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(22) Naser Maleki. Function: Head of Shahid Hemmat Industrial Group (SHIG), which is designated under resolution 1737(2006) for its role in Iran's ballistic missile programme. DOB: 1960. Passport no: A0003039 issued in Iran (Islamic Republic of). National identification no: Iran (Islamic Republic of) 0035-11785, issued in Iran (Islamic Republic of). Other information: Naser Maleki is also a MODAFL official overseeing work on the Shahab-3 ballistic missile programme. The Shahab-3 is Iran's long-range ballistic missile currently in service.

Date of UN designation: 24.3.2007.

(23) Hamid-Reza Mohajerani. Other information: involved in production management at the Uranium Conversion Facility (UCF) at Esfahan.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(24) Jafar Mohammadi. Function: Technical Adviser to the Atomic Energy Organisation of Iran (AEOI) (in charge of managing the production of valves for centrifuges). Other information: Person involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(25) Ehsan Monajemi. Function: Construction Project Manager, Natanz. Other information: Person involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(26) Mohammad Reza Naqdi. Title: Brigadier-General. DOB: (a) 11.2.1949 (b) 11.2.1952 (c) 11.2.1953 (d) 11.2.1961. POB: (a) Najaf, Iraq (b) Tehran, Iran (Islamic Republic of). Other information: former Deputy Chief of Armed Forces General Staff for Logistics and Industrial Research. Head of State Anti-Smuggling Headquarters, engaged in efforts to get round the sanctions imposed by UNSCR 1737 (2006) and 1747 (2007).

Date of UN designation: 3.3.2008.

▼C6

(27) Houshang Nobari. Other information: involved in the management of the Natanz enrichment complex.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(28) Mohammad Mehdi Nejad Nouri. Title: Lieutenant General. Function: Rector of Malek Ashtar University of Defence Technology. Other information: The chemistry department of Ashtar University of Defence Technology, affiliated to MODALF and has conducted experiments on beryllium. Deputy Minister of Science, Research and Technology.

Date of UN designation: 23.12.2006.

(29) Mohammad Qannadi. Function: AEOI Vice President for Research & Development. Other information: Person involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(30) Amir Rahimi. Function: Head of Esfahan Nuclear Fuel Research and Production Center. Other information: Esfahan Nuclear Fuel Research and Production Center is part of the AEOI's Nuclear Fuel Production and Procurement Company, which is involved in enrichment-related activities.

Date of UN designation: 24.3.2007.

(31) Javad Rahiqi: Function: Head of the Atomic Energy Organization of Iran (AEOI) Esfahan Nuclear Technology Center (additional information: DOB: 24.4.1954; POB: Marshad).

Date of UN designation: 9.6.2010 (EU: 24.4.2007).

(32) Abbas Rashidi. Other information: involved in enrichment work at Natanz.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

(33) Morteza Rezaie. Title: Brigadier General. Function: Deputy Commander of IRGC. DOB: 1956. A.k.a.: Mortaza Rezaie; Mortaza Rezai; Morteza Rezai.

Date of UN designation: 24.3.2007.

(34) Morteza Safari. Title: Rear Admiral. Function: Commander of IRGC Navy. A.k.a.: Mortaza Safari; Morteza Saferi; Murtaza Saferi; Murtaza Safari.

Date of UN designation: 24.3.2007.

(35) Yahya Rahim Safavi. Title: Major General. Function: Commander, IRGC (Pasdaran). DOB: 1952. POB: Isfahan, Iran (Islamic Republic of). A.k.a.: Yahya Raheem Safavi.

Date of UN designation: 23.12.2006.

(36) Seyed Jaber Safdari. Other information: Manager of the Natanz Enrichment Facilities.

Date of UN designation: 24.3.2007.

▼C6

(37) Hosein Salimi. Title: General. Function: Commander of the Air Force, IRGC (Pasdaran). Other information: Person involved in Iran's ballistic missile programme.

Date of UN designation: 23.12.2006

(38) Qasem Soleimani. Title: Brigadier General. Function: Commander of Qods force. DOB: 11.3.1957. POB: Qom, Iran (Islamic Republic of). A.k.a.: Qasim Soleimani; Qasem Sulaimani; Qasim Sulaimani; Qasim Sulaymani; Qasem Sulaymani; Kasim Soleimani; Kasim Sulaimani; Kasim Sulaymani; Haj Qasem; Haji Qassem; Sarder Soleimani. Passport no: 008827, issued in Iran. Other information: Promoted to Major General, retaining his position as Commander of Qods Force.

Date of UN designation: 24.3.2007.

(39) Ghasem Soleymani. Other information: Director of Uranium Mining Operations at the Saghand Uranium Mine.

Date of UN designation: 3.3.2008.

(40) Mohammad Reza Zahedi. Title: Brigadier General. Function: Commander of IRGC Ground Forces. DOB: 1944. POB: Isfahan, Iran (Islamic Republic of). A.k.a.: Mohammad Reza Zahidi; Mohammad Raza Zahedi.

Date of UN designation: 24.3.2007.

(41) Mohammad Baqer Zolqadr. Function: General, IRGC officer, Deputy Interior Minister for Security Affairs. A.k.a.: Mohammad Bakr Zolqadr; Mohammad Bakr Zolkadr; Mohammad Baqer Zolqadir; Mohammad Baqer Zolqader.

Date of UN designation: 24.3.2007.

(42) Azim Aghajani. Function: Member of the IRGC-Qods Force operating under the direction of Qods Force Commander, Major General Qasem Soleimani, who was designated by the UN Security Council in Resolution 1747 (2007). A.k.a.: Azim Adhajani; Azim Agha-Jani. Nationality: Iran (Islamic Republic of). Passport no: (a) 6620505 issued in Iran (Islamic Republic of) (b) 9003213 issued in Iran (Islamic Republic of). Other information: facilitated a breach of paragraph 5 of Resolution 1747 (2007) prohibiting the export of arms and related materiel from Iran.

Date of UN designation: 18.4.2012

(43) Ali Akbar Tabatabaei. Function: Member of the IRGC Qods Force operating under the direction of Qods Force Commander, Major General Qasem Soleimani, who was designated by the UN Security Council in Resolution 1747 (2007). DOB: 1967. A.k.a.: (a) Sayed Akbar Tahmaesebi; Syed Akber Tahmaesebi (b) Ali Akber Tabatabaei; Ali Akber Tahmaesebi; Ali Akbar Tahmaesebi. Nationality: Iran (Islamic Republic of). Passport no: (a) 9003213 issued in Iran/unknown (b) 6620505 issued in Iran/unknown. Other information: facilitated a breach of paragraph 5 of Resolution 1747 (2007) prohibiting the export of arms and related materiel from Iran.

Date of UN designation: 18.4.2012.

▼B

Entities

▼M45

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▼M51

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(1) Abzar Boresh Kaveh Co. (alias BK Co.). Other information: involved in the production of centrifuge components.

Date of UN designation: 3.3.2008.

(2) Amin Industrial Complex. Amin Industrial Complex sought temperature controllers which may be used in nuclear research and operational/ production facilities. Amin Industrial Complex is owned or controlled by, or acts on behalf of, the Defense Industries Organization (DIO), which was designated in resolution 1737 (2006).

Location: P.O. Box 91735-549, Mashad, Iran; Amin Industrial Estate, Khalage Rd., Seyedi District, Mashad, Iran; Kaveh Complex, Khalaj Rd., Seyedi St., Mashad, Iran A.K.A.: Amin Industrial Compound and Amin Industrial Company. Date of UN designation: 9.6.2010.

(3) Ammunition and Metallurgy Industries Group (AMIG) A.k.a. Ammunition Industries Group. Other information: (a) AMIG controls 7th of Tir, which is designated under resolution 1737 (2006) for its role in Iran's centrifuge programme. AMIG is in turn owned and controlled by DIO, which is designated under resolution 1737 (2006).

Date of UN designation: 24.3.2007.

(4) Armament Industries Group. Armament Industries Group (AIG) manufacturers and services a variety of small arms and light weapons, including large- and medium-calibre guns and related technology. AIG conducts the majority of its procurement activity through Hadid Industries Complex.

Location: Sepah Islam Road, Karaj Special Road Km 10, Iran; Pasdaran Ave., P.O. Box 19585/777, Tehran, Iran. Date of EU designation: 24.4.2007 (UN: 9.6.2010).

(5) Atomic Energy Organisation of Iran (AEOI). Other information: Involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(6) Bank Sepah and Bank Sepah International. Other information: Bank Sepah provides support for the Aerospace Industries Organisation (AIO) and subordinates, including Shahid Hemmat Industrial Group (SHIG) and Shahid Bagheri Industrial Group (SBIG).

Date of UN designation: 24.3.2007.

(7) Barzagani Tejarat Tavanmad Saccal companies. Other information: (a) subsidiary of Saccal System companies, (b) this company tried to purchase sensitive goods for an entity listed in resolution 1737 (2006).

Date of UN designation: 3.3.2008.

(8) Cruise Missile Industry Group. A.k.a. Naval Defense Missile Industry Group. Other information: Production and development of cruise missiles. Responsible for naval missiles including cruise missiles.

Date of UN designation: 3.3.2008.

▼C6

(9) Defence Industries Organisation (DIO). Other information: Overarching MODAFL-controlled entity, some of whose subordinates have been involved in the centrifuge programme making components, and in the missile programme.

Date of UN designation: 23.12.2006.

(10) Defense Technology and Science Research Center. Defense Technology and Science Research Center (DTSRC) is owned or controlled by, or acts on behalf of, Iran's Ministry of Defense and Armed Forces Logistics (MODAFL), which oversees Iran's defence R&D, production, maintenance, exports, and procurement.

Location: Pasdaran Ave, PO Box 19585/777, Tehran, Iran. Date of EU designation: 24.4.2007 (UN: 9.6.2010).

(11) Doostan International Company. Doostan International Company (DICO) supplies elements to Iran's ballistic missile program.

Date of UN designation: 9.6.2010.

(12) Electro Sanam Company (alias (a) E. S. Co., (b) E. X. Co.). Other information: AIO front-company, involved in the ballistic missile programme.

Date of UN designation: 3.3.2008.

(13) Esfahan Nuclear Fuel Research and Production Centre (NFRPC) and Esfahan Nuclear Technology Centre (ENTC). Other information: They are parts of the Atomic Energy Organisation of Iran's (AEOI) Nuclear Fuel Production and Procurement Company.

Date of UN designation: 24.3.2007.

(14) Ettehad Technical Group. Other information: AIO front-company, involved in the ballistic missile programme.

Date of UN designation: 3.3.2008.

(15) Fajr Industrial Group. Other information: (a) Formerly Instrumentation Factory Plant, (b) Subordinate entity of AIO, (c) Involved in Iran's ballistic missile programme.

Date of UN designation: 23.12.2006.

(16) Farasakht Industries. Farasakht Industries is owned or controlled by, or act on behalf of, the Iran Aircraft Manufacturing Company, which in turn is owned or controlled by MODAFL.

Location: P.O. Box 83145-311, Kilometer 28, Esfahan-Tehran Freeway, Shahin Shahr, Esfahan, Iran. Date of UN designation: 9.6.2010.

(17) Farayand Technique. Other information: (a) Involved in Iran's nuclear programme (centrifuge programme), (b) Identified in IAEA reports.

Date of UN designation: 23.12.2006.

▼C6

(18) First East Export Bank, P.L.C. First East Export Bank, PLC is owned or controlled by, or acts on behalf of, Bank Mellat. Over the last seven years, Bank Mellat has facilitated hundreds of millions of dollars in transactions for Iranian nuclear, missile, and defense entities.

Location: Unit Level 10 (B1), Main Office Tower, Financial Park Labuan, Jalan Merdeka, 87000 WP Labuan, Malaysia; Business Registration Number LL06889 (Malaysia). Date of UN designation: 9.6.2010.

(19) Industrial Factories of Precision (IFP) Machinery (alias Instrumentation Factories Plant). Other information: used by AIO for some acquisition attempts.

Date of UN designation: 3.3.2008.

(20) Jabber Ibn Hayan. Other information: AEOI laboratory involved in fuel-cycle activities.

Date of UN designation: 3.3.2008 (EU: 24.4.2007).

(21) Joza Industrial Co. Other information: AIO front-company, involved in the ballistic missile programme.

Date of UN designation: 3.3.2008.

(22) Kala-Electric. A.k.a. Kalaye Electric. Other information: Provider for PFEP – Natanz.

Date of UN designation: 23.12.2006.

(23) Karaj Nuclear Research Centre. Other information: Part of AEOI's research division.

Date of UN designation: 24.3.2007.

(24) Kaveh Cutting Tools Company. Kaveh Cutting Tools Company is owned or controlled by, or acts on behalf of, the DIO.

Location: 3rd Km of Khalaj Road, Seyyedi Street, Mashad 91638, Iran; Km 4 of Khalaj Road, End of Seyedi Street, Mashad, Iran; P.O. Box 91735-549, Mashad, Iran; Khalaj Rd., End of Seyyedi Alley, Mashad, Iran; Moqan St., Pasdaran St., Pasdaran Cross Rd., Tehran, Iran. Date of UN designation: 9.6.2010.

(25) Kavoshyar Company. Other information: Subsidiary company of AEOI.

Date of UN designation: 24.3.2007.

(26) Khorasan Metallurgy Industries. Other information: (a) subsidiary of the Ammunition Industries Group (AMIG) which depends on DIO, (b) involved in the production of centrifuge components.

Date of UN designation: 3.3.2008.

(27) M. Babaie Industries. M. Babaie Industries is subordinate to Shahid Ahmad Kazemi Industries Group (formally the Air Defense Missile Industries Group) of Iran's Aerospace Industries Organization (AIO). AIO controls the missile organizations Shahid Hemmat Industrial Group (SHIG) and the Shahid Bakeri Industrial Group (SBIG), both of which were designated in resolution 1737 (2006).

Location: P.O. Box 16535-76, Tehran, 16548, Iran. Date of UN designation: 9.6.2010.

▼C6

(28) Malek Ashtar University. A subordinate of the DTRSC within MODAFL. This includes research groups previously falling under the Physics Research Center (PHRC). IAEA inspectors have not been allowed to interview staff or see documents under the control of this organization to resolve the outstanding issue of the possible military dimension to Iran's nuclear program.

Location: Corner of Imam Ali Highway and Babaei Highway, Tehran, Iran. Date of EU designation: 24.6.2008 (UN: 9.6.2010).

(29) Mesbah Energy Company. Other information: (a) Provider for A40 research reactor – Arak, (b) Involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(30) Ministry of Defense Logistics Export. Ministry of Defense Logistics Export (MODLEX) sells Iranian-produced arms to customers around the world in contravention of resolution 1747 (2007), which prohibits Iran from selling arms or related materiel.

Location: PO Box 16315-189, Tehran, Iran; located on the west side of Dabestan Street, Abbas Abad District, Tehran, Iran. Date of EU designation: 24.6.2008 (UN: 9.6.2010).

(31) Mizan Machinery Manufacturing. Mizan Machinery Manufacturing (3M) is owned or controlled by, or acts on behalf of, SHIG.

Location: P.O. Box 16595-365, Tehran, Iran A.K.A.: 3MG Date of EU designation: 24.6.2008 (UN: 9.6.2010).

(32) Modern Industries Technique Company. Modern Industries Technique Company (MITEC) is responsible for design and construction of the IR-40 heavy water reactor in Arak. MITEC has spearheaded procurement for the construction of the IR-40 heavy water reactor.

Location: Arak, Iran A.K.A.: Rahkar Company, Rahkar Industries, Rahkar Sanaye Company, Rahkar Sanaye Novin Date of UN designation: 9.6.2010.

(33) Nuclear Research Center for Agriculture and Medicine. The Nuclear Research Center for Agriculture and Medicine (NFRPC) is a large research component of the Atomic Energy Organization of Iran (AEOI), which was designated in resolution 1737 (2006). The NFRPC is AEOI's center for the development of nuclear fuel and is involved in enrichment-related activities.

Location: P.O. Box 31585-4395, Karaj, Iran A.K.A.: Center for Agricultural Research and Nuclear Medicine; Karaji Agricultural and Medical Research Center Date of UN designation: 9.6.2010.

▼C6

(34) Niru Battery Manufacturing Company. Other information: (a) subsidiary of the DIO, (b) its role is to manufacture power units for the Iranian military including missile systems.

Date of UN designation: 3.3.2008.

(35) Novin Energy Company (alias Pars Novin). Other information: It operates within AEOI.

Date of UN designation: 24.3.2007.

(36) Parchin Chemical Industries. Other information: Branch of DIO, which produces ammunition, explosives, as well as solid propellants for rockets and missiles.

Date of UN designation: 24.3.2007.

(37) Pars Aviation Services Company. Other information: maintains various aircraft, including MI-171, used by IRGC Air Force.

Date of UN designation: 24.3.2007.

(38) Pars Trash Company. Other information: (a) Involved in Iran's nuclear programme (centrifuge programme), (b) Identified in IAEA reports.

Date of UN designation: 23.12.2006.

(39) Pejman Industrial Services Corporation. Pejman Industrial Services Corporation is owned or controlled by, or acts on behalf of, SBIG.

Location: P.O. Box 16785-195, Tehran, Iran. Date of UN designation: 9.6.2010.

(40) Pishgam (Pioneer) Energy Industries. Other information: has participated in construction of the Uranium Conversion Facility at Esfahan.

Date of UN designation: 3.3.2008.

(41) Qods Aeronautics Industries. Other information: It produces unmanned aerial vehicles (UAVs), parachutes, paragliders, para-motors, etc. IRGC has boasted to use these products as part of its asymmetric warfare doctrine.

Date of UN designation: 24.3.2007.

(42) Sabalan Company. Sabalan is a cover name for SHIG.

Location: Damavand Tehran Highway, Tehran, Iran. Date of UN designation: 9.6.2010.

(43) Sanam Industrial Group. Other information: subordinate to AIO, which has purchased equipment on AIO's behalf for the missile programme.

Date of UN designation: 24.3.2007.

(44) Safety Equipment Procurement (SEP). Other information: AIO front-company, involved in the ballistic missile programme.

Date of UN designation: 3.3.2008.

▼C6

(45) 7th of Tir. Other information: Subordinate of DIO, widely recognised as being directly involved in Iran's nuclear programme.

Date of UN designation: 23.12.2006.

(46) Sahand Aluminum Parts Industrial Company (SAPICO). SAPICO is a cover name for SHIG.

Location: Damavand Tehran Highway, Tehran, Iran. Date of UN designation: 9.6.2010.

(47) Shahid Bagheri Industrial Group (SBIG). Other information: Subordinate entity of AIO.

Date of UN designation: 23.12.2006.

(48) Shahid Hemmat Industrial Group (SHIG). Other information: Subordinate entity of AIO.

Date of UN designation: 23.12.2006.

(49) Shahid Karrazi Industries. Shahid Karrazi Industries is owned or controlled by, or act on behalf of, SBIG.

Location: Tehran, Iran. Date of UN designation: 9.6.2010.

(50) Shahid Satarri Industries. Shahid Sattari Industries is owned or controlled by, or acts on behalf of, SBIG.

Location: Southeast Tehran, Iran A.K.A.: Shahid Sattari Group Equipment Industries. Date of UN designation: 9.6.2010.

(51) Shahid Sayyade Shirazi Industries. Shahid Sayyade Shirazi Industries (SSSI) is owned or controlled by, or acts on behalf of, the DIO.

Location: Next To Nirou Battery Mfg. Co, Shahid Babaii Expressway, Nobonyad Square, Tehran, Iran; Pasdaran St., P.O. Box 16765, Tehran 1835, Iran; Babaei Highway – Next to Niru M.F.G, Tehran, Iran. Date of UN designation: 9.6.2010.

(52) Sho'a' Aviation. Other information: It produces micro-lights, which IRGC has claimed it is using as part of its asymmetric warfare doctrine.

Date of UN designation: 24.3.2007.

(53) Special Industries Group. Special Industries Group (SIG) is a subordinate of DIO.

Location: Pasdaran Avenue, PO Box 19585/777, Tehran, Iran. Date of EU designation: 24.7.2007 (UN: 9.6.2010).

(54) TAMAS Company. Other information: (a) involved in enrichment-related activities, (b) TAMAS is an overarching body, under which four subsidiaries have been established, including one for uranium extraction to concentration and another in charge of uranium processing, enrichment and waste.

Date of EU designation: 24.4.2007 (UN: 3.3.2008).

▼C6

(55) Tiz Pars. Tiz Pars is a cover name for SHIG. Between April and July 2007, Tiz Pars attempted to procure a five axis laser welding and cutting machine, which could make a material contribution to Iran's missile program, on behalf of SHIG.

Location: Damavand Tehran Highway, Tehran, Iran. Date of UN designation: 9.6.2010.

(56) Ya Mahdi Industries Group. Other information: subordinate to AIO, which is involved in international purchase of missile equipment.

Date of UN designation: 24.3.2007.

(57) Yazd Metallurgy Industries. Yazd Metallurgy Industries (YMI) is a subordinate of DIO.

Location: Pasdaran Avenue, Next To Telecommunication Industry, Tehran 16588, Iran; Postal Box 89195/878, Yazd, Iran; P.O. Box 89195-678, Yazd, Iran; Km 5 of Taft Road, Yazd, Iran. A.K.A.: Yazd Ammunition Manufacturing and Metallurgy Industries, Directorate of Yazd Ammunition and Metallurgy Industries Date of UN designation: 9.6.2010.

(58) Behineh Trading Co.

Other information: An Iranian company that played a key role in Iran's illicit transfer of arms to West Africa and acted on behalf of the IRGC Qods Force, commanded by Major General Qasem Soleimani, designated by the UN Security Council in Resolution 1747 (2007), as the shipper of the weapons consignment. Additional information: Location: Tavakoli Building, Opposite of 15th Alley, Emam-Jomeh Street, Tehran, Iran. Telephone: +98 919 538 2305. Website: http://www.behinehco.ir Date of UN designation: 18 April 2012

(59) Yas Air. Yas Air is the new name for Pars Air, a company that was owned by Pars Aviation Services Company, which in turn was designated by the United Nations Security Council in Resolution 1747 (2007). Yas Air has assisted Pars Aviation Services Company, a United Nations-designated entity, in violating paragraph 5 of Resolution 1747 (2007).

Location: Mehrabad International Airport, Next to Terminal No. 6, Tehran, Iran. Date of UN designation: 10.12.2012.

(60) SAD Import Export Company. SAD Import Export Company has assisted Parchin Chemical Industries and 7th of Tir Industries, a United Nations-designated entity, in violating paragraph 5 of Resolution 1747 (2007).

Location: Haftom Tir Square, South Mofte Avenue, Tour Line No 3/1, Tehran, Iran. (2) P.O. Box 1584864813. Date of UN designation: 10.12.2012.

▼B

B. Entities owned, controlled, or acting on behalf of the ►C1 Iranian Revolutionary Guard Corps ◄

▼M45

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▼M51

▼C6

(1) Fater (or Faater) Institute: Khatam al-Anbiya (KAA) subsidiary. Fater has worked with foreign suppliers, likely on behalf of other KAA companies on IRGC projects in Iran.

Date of UN designation: 9.6.2010.

(2) Gharagahe Sazandegi Ghaem: Gharagahe Sazandegi Ghaem is owned or controlled by KAA.

Date of UN designation: 9.6.2010.

(3) Ghorb Karbala: Ghorb Karbala is owned or controlled by KAA.

Date of UN designation: 9.6.2010.

(4) Ghorb Nooh: Ghorb Nooh is owned or controlled by KAA.

Date of UN designation: 9.6.2010.

(5) Hara Company: Hara Company is owned or controlled by Ghorb Nooh.

Date of UN designation: 9.6.2010.

(6) Imensazan Consultant Engineers Institute: Imensazan Consultant Engineers Institute is owned or controlled by, or acts on behalf of, KAA.

Date of UN designation: 9.6.2010.

(7) Khatam al-Anbiya Construction Headquarters: Khatam al-Anbiya Construction Headquarters (KAA) is an IRGC-owned company involved in large scale civil and military construction projects and other engineering activities. It undertakes a significant amount of work on Passive Defense Organization projects. In particular, KAA subsidiaries were heavily involved in the construction of the uranium enrichment site at Qom/Fordow.

Date of UN designation: 9.6.2010.

(8) Makin: Makin is owned or controlled by or acting on behalf of KAA, and is a subsidiary of KAA.

Date of UN designation: 9.6.2010.

(9) Omran Sahel: Omran Sahel is owned or controlled by Ghorb Nooh.

Date of UN designation: 9.6.2010.

▼C6

(10) Oriental Oil Kish: Oriental Oil Kish is owned or controlled by or acting on behalf of KAA.

Date of UN designation: 9.6.2010.

(11) Rah Sahel: Rah Sahel is owned or controlled by or acting on behalf of KAA.

Date of UN designation: 9.6.2010.

(12) Rahab Engineering Institute: Rahab is owned or controlled by or acting on behalf of KAA, and is a subsidiary of KAA.

Date of UN designation: 9.6.2010.

(13) Sahel Consultant Engineers: Sahel Consultant Engineers is owned or controlled by Ghorb Nooh.

Date of UN designation: 9.6.2010.

(14) Sepanir: Sepanir is owned or controlled by or acting on behalf of KAA.

Date of UN designation: 9.6.2010.

(15) Sepasad Engineering Company: Sepasad Engineering Company is owned or controlled by or acting on behalf of KAA.

Date of UN designation: 9.6.2010.

▼B

C. Entities owned, controlled, or acting on behalf of the Islamic Republic of Iran Shipping Lines (IRISL)

▼M25

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▼M51

▼C6

(1) Irano Hind Shipping Company: Location: 18 Mehrshad Street, Sadaghat Street, Opposite of Park Mellat, Vali-e-Asr Ave., Tehran, Iran; 265, Next to Mehrshad, Sedaghat St., Opposite of Mellat Park, Vali Asr Ave., Tehran 1A001, Iran

Date of UN designation: 9.6.2010.

(2) IRISL Benelux NV: Location: Noorderlaan 139, B-2030, Antwerp, Belgium; V.A.T. Number BE480224531 (Belgium)

Date of UN designation: 9.6.2010.

(3) South Shipping Line Iran (SSL): Location: Apt. No. 7, 3rd Floor, No. 2, 4th Alley, Gandi Ave., Tehran, Iran; Qaem Magham Farahani St., Tehran, Iran

Date of UN designation: 9.6.2010.

▼B

ANNEX IX

List of persons and entities referred to in Article 23(2)

I. **►M4 Persons and entities involved in nuclear or ballistic missile activities and persons and entities providing support to the Government of Iran ◄**

A. *Persons*

		Name	Identifying information	Reasons	Date of listing
▼M25	———				
▼M50	1.	Reza AGHAZADEH	DOB: 14.3.1949 POB: Khoy, Islamic Republic of Iran Gender: male	Reza Aghazadeh is an Iranian national, member of the Expediency Discernment Council. He served as Head of the Atomic Energy Organization between 1997 and 2009. His positions have led him to be at the forefront of the development of Iran's nuclear programme. He is still consulted by his AEOI colleagues on nuclear issues. Reza Aghazadeh is therefore responsible for directly participating in Iran's nuclear programme and nuclear escalation.	29.9.2025 (23.4.2007, suspended since 16.1.2016)
▼M3	———				
▼M25	———				
▼M53	———				
▼B	4.	Engineer Mojtaba HAERI		MODAFL Deputy for Industry. Supervisory role over AIO and DIO	23.6.2008
▼M21	———				
▼M25	———				
▼M53	———				

▼B

	Name	Identifying information	Reasons	Date of listing
▼M53				
7.	Ali Reza KHANCHI	Address of NRC: AEOI-NRC P.O. Box: 11365-8486 Tehran/Iran; Fax: (+9821) 8021412 Gender: male	Ali Reza Khanchi is a nuclear scientist affiliated with the Iranian Nuclear Science and Technology Research Institute (NSTRI). NSTRI is an EU-listed research body which is affiliated on an official level with the Atomic Energy Organisation of Iran (AEOI). Ali Reza Khanchi is therefore engaged in and providing support to Iran's nuclear proliferation activities.	29.9.2025 (23.4.2007, suspended since 16.1.2016)
▼M48				
8.	Ebrahim MAHMUDZADEH	DOB: 2.4.1955 Function: Professor at Malek Ashtar University; Chairman of the Board of Iran Telecommunication Company Nationality: Iranian Gender: male	Ebrahim Mahmudzadeh is a professor at EU-listed Malek Ashtar University, subordinate to EU-listed Defense Technology and Science Research Centre (DTSRC), which supports Iran's Ministry of Defense for Armed Forces Logistics (MODAFL) with research and development (R&D) services. Faculty members of Malek Ashtar University are involved in research regarding missiles and nuclear power and thereby provide research and development support to the Government of Iran. Ebrahim Mahmudzadeh is also Chairman of the Board of Iran Telecommunication Company, which is partially controlled by the EU-listed Islamic Revolutionary Guard Corps (IRGC). Ebrahim Mahmudzadeh therefore provides support to the Government of Iran.	23.6.2008
▼M14				
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▼B				
10.	Brigadier-General Beik MOHAMMADLU		MODAFL Deputy for Supplies and Logistics (see Part B, no 29)	23.6.2008
▼M4				
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▼B

	Name	Identifying information	Reasons	Date of listing
▼M46				
12.	Mohammad Reza MOVASAGHNIA		Deputy Minister for Industry and Chairman of IMIDRO, the Iranian Mines and Mining Industries Development and Renovation Organization, since August 2023. Former head of EU-designated Naval Defense Missile Industry Group, also known as Samen Al A'Emmeh Industries Group (SAIG), and Cruise Missile Industry Group.	26.7.2010
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▼M25				
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▼M50				
15.	Ali Akbar SALEHI		Former Minister for Foreign Affairs. Former Head of the Atomic Energy Organisation of Iran (AEOI). He continues to operate at the intersection of academics and politics and in recent public appearances he has defended and promoted the nuclear industry of Iran. He therefore provides support to the Government of Iran and is providing support for Iran's proliferation-sensitive nuclear activities.	29.9.2025 (17.11.2009, suspended since 16.1.2016)
▼M39				
16.	Rear Admiral Mohammad SHAFI'I RUDSARI (a.k.a. ROODSARI, Mohammad, Hossein, Shafiei; ROODSARI, Mohammad, Shafi'I; ROODSARI, Mohammad, Shafiei; RUDSARI, Mohammad, Hossein, Shafiei; RUDSARI, Mohammad, Shafi'I; RUDSARI, Mohammad, Shafiei)		Former MODAFL Deputy for Coordination (see Part B, n 29).	23.6.2008
17.	Abdollah SOLAT SANA (a.k.a. Solatsana Solat Sanna; Sowlat Senna; Sovlat Thana)		Managing Director of the Uranium Conversion Facility (UCF) in Esfahan. This is the facility that produces the feed material (UF6) for the enrichment facilities at Natanz. On 27 August 2006, Solat Sana received a special award from President Ahmadinejad for his role.	23.4.2007
▼M25				
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▼B

	Name	Identifying information	Reasons	Date of listing
▼M50				
19.	Engineer Naser RASTKHAH	Nationality: Iranian Gender: male	Former Deputy Head of the AEOI. The AEOI oversees Iran's nuclear programme and is designated under UNSCR 1737 (2006). Rastkhah is currently part of the board of directors of the Iranian Radiation Protection Society, a state institution affiliated with the AEOI, which oversees Iran's nuclear programme. Rastkhah is therefore engaged in and providing support for Iran's nuclear programme.	29.9.2025 (23.5.2011, suspended since 16.1.2016)
▼M53				
▼M3				
▼M39				
23.	Davoud BABAEI		The current head of security for the Ministry Of Defence Armed Forces Logistics' research institute the Organisation of Defensive Innovation and Research (SPND), which was run by UN-designated Mohsen Fakhrizadeh-Mahabadi. The IAEA have identified SPND with their concerns over possible military dimensions to Iran's nuclear programme over which Iran refuses to co-operate. As head of security, Babaei is responsible for preventing the disclosure of information, including to the IAEA.	1.12.2011
▼M4				
▼M39				
▼M4				
▼M48				
27.	Kamran DANESHJOO (a.k.a. DANESHJOU)	Function: Professor at Iran University of Science and Technology Nationality: Iranian Gender: male	Professor at Iran University of Science and Technology. Former Minister of Science, Research and Technology. As project manager of the 111th section of the AMAD Plan, he provided support for Iran's proliferation-sensitive nuclear activities.	1.12.2011

▼B

	Name	Identifying information	Reasons	Date of listing
▼M3 ———				
▼M48 29.	Milad JAFARI (Milad JAFERI)	DOB: 20.9.1974 POB: Iran Nationality: Iranian Gender: male Associated entities: Shahid Hemmat Industries Group (SHIG); MACPAR Makina San Ve Tic; Multimat lc ve Dis Ticaret Pazarlama Limited Sirketi; STEP Standart Teknik Parca San ve TIC A.S.	Iranian national supplying goods, mostly metals, to EU-designated Shahid Hemmat Industries Group (SHIG) front companies.	1.12.2011
▼M4 ———				
▼M46 31.	Ali KARIMIAN		Iranian national supplying goods, mostly carbon fibre to EU-designated SHIG and SBIG.	1.12.2011
▼M48 32.	Majid KHANSARI	DOB: 1972 POB: Khomeini Shahr, Iran Nationality: Iranian Gender: male	Majid Khansari plays an influential role in Iran's nuclear programme. He is the former CEO of Natanz nuclear site, as well as of EU-listed centrifuge manufacturer Kalaye Electric Company (KEC). As an expert in the field of nuclear management, he continues to share his opinion on Iran's nuclear programme and influence the national debate around that programme. Majid Khansari is therefore involved in Iran's nuclear or ballistic missile activities.	1.12.2011
▼M4 ———				
▼M3 ———				
▼B 35.	Mohammad MOHAMMADI		Managing Director of MATSA.	1.12.2011

▼B

	Name	Identifying information	Reasons	Date of listing
▼M4				
▼B				
37.	Mohammad Sadegh NASERI		Head of the Physics Research Institute (formerly known as the Institute of Applied Physics).	1.12.2011
▼M25				
▼M50				
38.	Mohammad Reza REZVANIANZADEH	Nationality: Iranian Gender: male	Mohammad Reza Rezvanianzadeh is affiliated to the Atomic Energy Organization of Iran and to the government entity Geology and Mineral Exploration Organization of Iran. Therefore, he is associated with entities providing support to the Government of Iran.	29.9.2025 (1.12.2011, suspended since 16.1.2016)
▼M1				
▼M48				
40.	Hamid SOLTANI	Function: Managing Director of Management Company for Nuclear Power Plant Construction (MASNA) Nationality: Iranian Gender: male	Hamid Soltani is the Managing Director of Management Company for Nuclear Power Plant Construction (MASNA). In this position, he has been involved in Iran's proliferation-sensitive nuclear activities or Iran's development of nuclear weapon delivery systems.	1.12.2011
▼M4				
▼M48				
42.	Javad AL YASIN	Function: Head of the Research Centre for Explosion and Impact Nationality: Iranian Gender: male	Head of the Research Centre for Explosion and Impact, also known as METFAZ.	1.12.2011
▼M3				
▼M25				
▼M51				
▼C6				

▼B

	Name	Identifying information	Reasons	Date of listing
▼M55				
57.	Ali ANSARI a.k.a. Ali Akbar ANSARI	Function: Businessperson DOB: 26.12.1968 Nationality: Iranian Gender: male	Ali Ansari is an Iranian businessman and former owner of Bank Ayandeh and of the Iran Mall. Through a network of companies, Ali Ansari uses foreign banking channels to transfer funds abroad. Those funds originate in part from Iranian oil sales. The Iranian oil sector constitutes a significant source of funding for Iran's military and the Islamic Revolutionary Guard Corps (IRGC). In addition, through a network of companies, Ali Ansari acquires substantial assets, including real estate in the EU and in the UK, on behalf of persons connected to the Iranian leadership, including the Supreme Leader Mojtaba Khamenei. Therefore, Ali Ansari provides support to the Government of Iran.	30.7.2026

▼B

B. *Entities*

	Name	Identifying information	Reasons	Date of listing
▼M48				
1.	Aerospace Industries Organisation, AIO	Address 1: AIO, 28 Shian 5, Lavizan, Tehran, Iran Address 2: Langare Street, Nobonyad Square, Tehran, Iran Associated entities: Ministry of Defense for Armed Forces Logistics (MODAFL)	Aerospace Industries Organisation (AIO) is a subsidiary of the EU-listed Iran's Ministry of Defense for Armed Forces Logistics (MODAFL) in charge of overseeing Iran's ballistic missile programme. It supervises several subsidiaries tasked with the production or procurement of different components of the ballistic missile programme. The Aerospace Industries Organisation (AIO) therefore provides support to the Government of Iran.	23.4.2007
▼M39				
2.	Armed Forces Geographical Organisation		A subsidiary of MODAFL assessed to provide geospatial data for the Ballistic Missile programme.	23.6.2008
▼M25				
▼B				
4.	►M25 ——— ◄ ►M25 ——— ◄ (b) [redacted]	►M25 ——— ◄ ►M25 ——— ◄ [redacted]	►M25 ——— ◄ ►M25 ——— ◄ [redacted]	►M25 — ◄ ►M25 — ◄ [redacted]
▼M25				

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	Name	Identifying information	Reasons	Date of listing
▼M50				
3.	Azarab Industries	Address: Head office: No.15, MollaSadra Ave., Vanak sq., Tehran (Postal Code: 1991913981), Iran; Factory: Sanaat Sq., Arak-Iran, Postal Code: 3818997873	Azarab Industries is involved in the field of nuclear energy production and has close ties to the Atomic Energy Organization of Iran (AEOI). Furthermore, Azarab Industries is linked to Khatam-al Anbiya, an engineering company under the control of the IRGC. Therefore, Azarab Industries is engaged in and providing support to Iran's proliferation-sensitive nuclear activities.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
4.	Bank Mellat	Address: Head Office Building, 327 Takeghani (Taleghani) Avenue, Tehran 15817, Iran; P.O. Box 11365-5964, Tehran 15817, Iran	Bank Mellat provides financial support to the Government of Iran, notably by means of loans aimed at supporting unprofitable Government companies. The Iranian Government is also the largest shareholder of Bank Mellat. Therefore, Bank Mellat provides support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
5.	Bank Melli, Bank Melli Iran (including all branches) and subsidiaries	Ferdowsi Avenue, PO Box 11365-171, Tehran, Iran Registration number: 60FC005874HRB10813	Bank Melli is Iran's largest bank and is owned and controlled by the Government of Iran and provides services to the Ministry of Defense (MODAFL). Therefore, Bank Melli is is controlled by and provides support to the Government of Iran.	29.9.2025 (23.6.2008, suspended since 16.1.2016)
5. (a)	Arian Bank (a.k.a. Aryan Bank)	Address: House 2, Street Number 13, Wazir Akbar Khan, Kabul, Afghanistan	Arian Bank is an Afghan joint-venture between Bank Melli and Bank Saderat. Bank Melli is Iran's largest bank, owned and controlled by the Government of Iran and providing services to the Ministry of Defense (MODAFL). Bank Saderat is one of Iran's largest banks, the Government of Iran is one of its major shareholders. It provides financial support to entities close to the IRGC and to proxies of the Government of Iran. Therefore, Arian Bank is an entity owned and controlled by entities providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
▼M53				
▼M50				
5. (d)	Bank Kargoshaie (a.k.a. Bank Kargoshaee, a.k.a Kargosai Bank, a.k.a Kargosa'i Bank)	Address: 587 Mohammadiye Square, Mowlavi St., Tehran 11986, Iran	Bank Kargoshaie is a subsidiary of Bank Melli. Bank Kargoshaie provides financial services to both individuals and businesses. In turn, Bank Melli is Iran's largest bank which is owned and controlled by the Government of Iran and provides services to the Ministry of Defense (MODAFL). Therefore, Bank Kargoshaie is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
5. (e)	Bank Melli Iran Investment Company (BMIIC)	Address: No.2, Nader Alley, Vali-Asr Str., Tehran, Iran, P.O. Box 3898-15875 Address: Bldg 2, Nader Alley after Beheshi Forked Road, P.O. Box 15875-3898, Tehran, Iran 15116 Address: Rafiee Alley, Nader Alley, 2 After Serahi Shahid Beheshti, Vali E Asr Avenue, Tehran, Iran Registration Number: 89584	Bank Melli Iran Investment Company is an Iranian investment bank. Bank Melli Iran Investment Company is owned and controlled by Bank Melli, Iran's largest bank, which is owned and controlled by and provides support to the Government of Iran. Therefore, Bank Melli Iran Investment Company is owned and controlled by an entity which supports the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
5. (f)	Bank Melli Iran ZAO a.k.a. Mir Business Bank	Address: Number 9/1, Ulitsa Mashkova, Moscow, 130064, Russia Address: Mashkova st. 9/1 Moscow 105062 Russia Fax: +7 (495) 9286286, (007495) 6286286 EMail: mbbmos@mbbru.com Mellimos@BMIRU.com Mellimos@Rex400.ru Entity Web Site: www.mbbru.com www.bmiru.com	Bank Melli Iran ZAO is an Iranian bank based in Russia. Bank Melli Iran ZAO is owned and controlled by Bank Melli, Iran's largest bank, which is owned and controlled by and provides support to the Government of Iran Therefore, Bank Melli Iran ZAO is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (23.6.2008, suspended since 16.1.2016)
5. (g)	Bank Melli Printing and Publishing Company a.k.a. BMPPC	Address:18th Km Karaj Special Road, 1398185611 Tehran, Iran, P.O. Box 37515-183 Address: Km 16 Karaj Special Road, Tehran, Iran Address: P.O. Box 37515-183, Tehran, Iran Registration Number: 382231	Bank Melli Printing and Publishing Company is an Iranian printing and publishing company. Bank Melli Printing and Publishing Company is owned and controlled by Bank Melli, which provides support to the Government of Iran. Therefore, Bank Melli Printing and Publishing Company is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
5. (h)	Cement Investment and Development Company a.k.a. CIDCO a.k.a.: Cement Industry Investment and Development Company a.k.a. CIDCO Cement Holding	Address: No 20, West Nahid Blvd. Vali Asr Ave., Tehran, Iran, 1967757451 Address: No. 241, Mirdamad Street, Tehran, Iran	The Cement Investment and Development Company is an Iranian company owned and controlled by Bank Melli Iran Investment Company (BMIIC). BMIIC is owned and controlled by Bank Melli, which, in turn, is owned and controlled by the Government of Iran and provides support to the Government of Iran. Therefore, the Cement Investment and Development Company is owned and controlled by an entity which provides support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
5. (i)	First Persian Equity Fund	Address: Walker House, 87 Mary Street, George Town, Grand Cayman, KY1-9002, Cayman Islands Address: Clifton House, 7z5 Fort Street, P.O. Box 190, Grand Cayman, KY1-1104; Cayman Islands Address: Rafi Alley, Vali Asr Avenue, Nader Alley, Tehran, 15116, Iran, P.O. Box 15875-3898	The First Persian Equity Fund is an investment fund launched in 2007 by Bank Melli. Bank Melli is Iran's largest bank which is owned and controlled by the Government of Iran. Therefore, the First Persian Equity Fund is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
5. (j)	Mazandaran Cement Company	Address: 51 Africa Street, Shaheed Sattari Avenue, between Zafar & Mirdamad, 1968856911 Tehran, Iran Registration number: IR40014GN Date of registration: 1975	Mazandaran Cement Company is an Iranian company controlled by Bank Melli and the Government of Iran. It serves as a vehicle for Bank Melli's interests in the cement industry. Therefore, Mazandaran Cement Company is controlled by the Government of Iran and by an entity which provides support to the Government of Iran. Furthermore, it provides support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
5. (m)	Melli Bank plc	Address: 98A Kensington High Street, W8 4SG London, United Kingdom Registration number: GB04152338	Melli Bank PLC is a wholly owned subsidiary of Bank Melli Iran, which is owned by the Government of Iran. Therefore, Melli Bank PLC is owned by an entity which provides support to the Government of Iran.	29.9.2025 (23.6.2008, suspended since 16.1.2016)
5. (o)	Shemal Cement Company a.k.a: Siman Shomal a.k.a Shomal Cement Company	Address: No 269 Dr Beheshti Ave. P.O. Box 15875/4571 Tehran – 15146, Iran Address: Dr Beheshti Ave No. 289, Tehran, 151446, Iran Address: 289 Shahid Baheshti Ave., P.O. Box 15146, Tehran, Iran	Shemal Cement Company is a cement company controlled by Bank Melli Iran, which is owned and controlled by the Government of Iran and provides support to it. Shemal Cement Company's main shareholder is the Cement Industries Investment and Development Company, which is majority-owned by the National Development Group Investment, whose main shareholder is Bank Melli Iran. Therefore, Shemal Cement Company is controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼B

6.	[redacted]	[redacted]	[redacted]	[redacted]
7.	[redacted]	[redacted]	[redacted]	[redacted]

▼M50

7.	Bank Saderat	Address: Bank Saderat Tower, 43 Somayeh Ave, Tehran, Iran	Bank Saderat is one of Iran's largest banks. The Government of Iran is one of its major shareholders. Bank Saderat provides financial support in the form of loans to entities close to the IRGC. It also allows the funnelling of funding to the Iranian Government's proxies in the region, which are responsible for destabilising activities. Therefore, Bank Saderat is supporting the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M31

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▼M29

7a. ([1])	[redacted] ►M29 ——— ◄	[redacted] ►M29 ——— ◄	[redacted] ►M29 ——— ◄	

▼B

	Name	Identifying information	Reasons	Date of listing
▼M25				
▼M50				
	8. Sina Bank	187 Mothari Avenue, Tehran, Iran Registration number: IRFEB54525	Sina Bank is controlled by the Islamic Revolution Mostazafan Foundation, a major Iranian parastatal entity controlled by the Supreme Leader Khamenei, and which has a controlling shareholding in Sina Bank. It provides financial services to the Mostazafan Foundation and its group of subsidiary units and companies. Accordingly, Sina Bank provides financial support to the Government of Iran through the Mostazafan Foundation.	29.9.2025 (8.11.2014, suspended since 16.1.2016)
▼M46				
	9. ESNICO (Equipment Supplier for Nuclear Industries Corporation)	No. 1, 37th Avenue, Asadabadi Street, Tehran, Iran	Procures industrial goods, specifically for the nuclear programme activities carried out by AEOI, Novin Energy and EU-designated Kalaye Electric Company. ESNICO's Director is Haleh Bakhtiar.	26.7.2010
▼M35				
▼B				
	11. [redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
▼M50				
	11. (a) EDBI Exchange Company a.k.a. Export Development Exchange Broker Co.	Address: No 20, 13th St., Vozara Ave., Tehran, Iran 1513753411, P.O. Box: 15875-6353 Address: Tose'e Tower, corner of 15th St., Ahmad Qasir Ave.; Argentine Square, Tehran, Iran	EDBI Exchange Company is a subsidiary of the Export Development Bank of Iran (EDBI). It provides foreign exchange services to its customers. EDBI is a state-owned bank which provides support to the Government of Iran. Therefore, EDBI Exchange Company is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
11. (b)	EDBI Stock Brokerage Company	Address: Tose'e Tower, corner of 15th St., Ahmad Qasir Ave.; Argentine Square, Tehran, Iran	EDBI Stock Brokerage Company is a subsidiary of the Export Development Bank of Iran (EDBI). It provides stock brokerage services to its customers. EDBI is a state-owned bank which provides support to the Government of Iran. Therefore, EDBI Stock Brokerage Company is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
11. (c)	Banco Internacional De Desarrollo CA	Address: Urb. El Rosal, Avenida Francesco de Miranda, Edificio Dozsa, Piso 8, Caracas C.P. 1060, Venezuela Place of registration: Caracas, Venezuela Date of registration: 2007 or 2008 Registration number: J294640109	The Banco Internacional de Desarrollo (BID) is a Venezuelan entity owned by Export Development Bank of Iran (EDBI), an Iranian entity whose objective is to provide support to the Iranian government. Therefore, BID is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M43

12.	Fajr Aviation Composite Industries	Mehrabad Airport, PO Box 13445-885, Tehran, Iran	A subsidiary of the IAIO within MODAFL both designated by the EU which primarily produces composite materials for the aircraft industry. Fajr Aviation Composite Industries also produces drones, which are allegedly being used for regional destabilisation.	26.7.2010

▼M14

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14.	Future Bank BSC	Address: Block 304. City Centre Building. Building 199, Government Avenue, Road 383, Manama, Bahrain. PO Box 785 Business Registration Number: 54514-1 (Bahrain) expires 9.6.2009; Trade License No 13388 (Bahrain)	Future Bank BSC is an Iranian bank based in Bahrain. Future Bank BSC was created as a joint-venture between Bank Saderat and Bank Melli, two of Iran's largest banks, which are owned and controlled by and providing support to the Government of Iran. Therefore, Future Bank BSC is owned and controlled by entities that provide support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
15.	Industrial Development & Renovation Organization a.k.a. IDRO	Address: 78/1 Atefi Street and Africa Avenue, Tehran, Iran Address: P.O. Box 55958, Arbift Tower 1508, Dubai, United Arab Emirates Address: P.O. Box 16820, Jebel Ali, Dubai, United Arab Emirates Address: Vali e Asr Building, Vali Asr St, Jam e Jam Ave, Tehran, Iran Address: P.O. Box 19395-1855, Tehran, Iran Address: No.2 Vali-Asr Building, Vali-Asr Street, Jam-e-Jam Ave, Tehran, Iran Date of registration: 1967	The Industrial Development and Renovation Organisation is a government body responsible for acceleration of Iran's industrialisation. It is involved in the nuclear and missile programmes and provides support to the Iranian industrial sector. Therefore, the Industrial Development and Renovation Organisation is owned or controlled by and supports the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

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16.	Iran Aircraft Industries (IACI)		A subsidiary of the IAIO within MODAFL (see no 29). Manufactures, repairs, and conducts overhauls of airplanes and aircraft engines and procures aviation-related parts often of US-origin typically via foreign intermediaries. IACI and its subsidiaries have also been detected using a worldwide network of brokers seeking to procure aviation-related goods.	26.7.2010
17.	Iran Aircraft Manufacturing Company (a.k.a: HESA, HESA Trade Center, HTC, IAMCO, IAMI, Iran Aircraft Manufacturing Company, Iran Aircraft Manufacturing Industries, Karkhanejate Sanaye Havapaymaie Iran, Hava Peyma Sazi-e Iran, Havapeyma Sazhran, Havapeyma Sazi Iran, Hevapeimasazi)	P.O. Box 83145-311, 28 km Esfahan – Tehran Freeway, Shahin Shahr, Esfahan, Iran; P.O. Box 14155-5568, No. 27 Ahahamat Ave., Vallie Asr Square, Tehran 15946, Iran; P.O. Box 81465-935, Esfahan, Iran; Shahih Shar Industrial Zone, Isfahan, Iran; P.O. Box 8140, No. 107 Sepahbod Gharany Ave., Tehran, Iran	Owned or controlled by, or acts on behalf of; MODAFL (see no 29).	26.7.2010

▼M46

18.	Iran Centrifuge Technology Company (a.k.a. TSA; TESA; Farayand Technique; Technology of Centrifuge of Iran Company)	Address 1: 156 Golestan Street, Saradr-e Jangal, Tehran Address 2: Khalij-e Fars Boulevard, Kilometre 10 of Atomic Energy Road, Rowshan Shahr, Third Moshtaq Street, Esfahan, Iran Address 3: Yousef Abad District, No. 1, 37th Street, Tehran, Iran	Iran Centrifuge Technology Company manufactures uranium enrichment centrifuge parts, and is directly supporting Iran's proliferation-sensitive nuclear activities.	26.7.2010

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	Name	Identifying information	Reasons	Date of listing
▼M46				
20.	Iran Electronics Industries and the following subsidiaries:	P.O. Box 18575-365, Tehran, Iran	Wholly-owned subsidiary of MODAFL (and therefore a sister-organisation to AIO, AvIO and DIO). Its role is to manufacture electronic components for Iranian weapons systems. It is therefore an entity engaged in Iran's proliferation-sensitive nuclear activities.	23.6.2008
	(a) Isfahan Optics	P.O. Box 81465-313 Kaveh Ave., Isfahan, Iran P.O. Box 81465-117, Isfahan, Iran	Owned, controlled by, or acts on behalf of Iran Electronics Industries, an entity engaged in Iran's proliferation-sensitive nuclear activities. Isfahan Optics is also engaged in Iran's proliferation-sensitive nuclear activities.	26.7.2010
▼B				
21.	[redacted]	[redacted]	[redacted]	[redacted]
22.	Iranian Aviation Industries Organization (IAIO)	Ave. Sepahbod Gharani P.O. Box 15815/1775 Tehran, Iran Ave. Sepahbod Gharani P.O. Box 15815/3446 Tehran, Iran 107 Sepahbod Gharani Avenue, Tehran, Iran	A MODAFL (see no 29) organisation responsible for planning and managing Iran's military aviation industry.	26.7.2010
23.	Javedan Mehr Toos		Engineering firm that procures for the Atomic Energy Organisation of Iran which was designated under UNSCR 1737.	26.7.2010
▼M25				
▼M50				
24.	Kala Naft	Kala Naft Tehran Trading Building, Sepahbod Gharani Street, Karim Khan Zand Avenue, 15988 Tehran, Iran Registration number: IR0000047040	Kala Naft is a Manufacturing, Support and Procurement Company and a subsidiary of the National Iranian Oil Company (NIOC). NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, Kala Naft is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
25.	Machine Sazi Arak	P.O. Box: 148, KM 4, Tehran Alley, 3818997888 Arak, Iran Registration number: IR30177GN Date of registration: 1967	Machine Sazi Arak is an Iranian industrial machinery and equipment manufacturing company. It manufactures equipment for proliferation sensitive activities and lists the Atomic Energy Organization of Iran (AEOI) as well as MODAFL as its customers. It is also affiliated with IDRO that provides manufacturing support to the nuclear programme. Machine Sazi Arak was also involved in the construction of the Arak heavy-water reactor. It also supports oil and gas exploration activities overseen by the Ministry of Petroleum as well as NIOC and its subsidiaries. Therefore, Machine Sazi Arak is involved in the nuclear missile programme, and it provides support to the Government of Iran.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼M48

26.	Marine Industries (a.k.a. Marine Industries Organisation (MIO), Marine Industries Group (MIG))	Address: Pasdaran Ave., PO Box 19585/ 777, Tehran, Iran Place of registration: Tehran, Iran Date of registration: 1996 Principal place of business: Iran Associated entities: Defense Industries Organization (DIO), Ministry of Defense for Armed Forces Logistics (MODAFL)	Marine Industries is a subsidiary of the EU-listed Defense Industries Organization (DIO), which is a subsidiary of EU-listed Iran's Ministry of Defense for Armed Forces Logistics (MODAFL). Marine Industries is involved in the maritime dimension of Iran's missile programme, including by building ships that can carry and launch offensive missiles. Marine Industries is therefore an entity involved in nuclear or ballistic missile activities and an entity providing support to the Government of Iran.	23.4.2007

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27.	Power Plants' Equipment Manufacturing Company a.k.a. Saakhte Tajhizate Niroogahi	Address: No. 10, Jahanara Alley, after Hemmat Bridge, Abbaspour St. (previously called Tavanir), Tehran, Post Code 1435733161, Iran	The Power Plants' Equipment Manufacturing Company (SATNA) is subordinate to AEOI and Novin Energy (both designated under UNSCR 1737). It is involved in the development of nuclear reactors. Therefore, Power Plants' Equipment Manufacturing Company provides support to Iran's nuclear-proliferation activities.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
▼M39				
28.	Mechanic Industries Group (a.k.a.: Mechanic Industries Organisation; Mechanical Industries Complex; Mechanical Industries Group; Sanaye Mechanic)		Took part in the production of components for the ballistics programme.	23.6.2008
▼M46				
29.	Ministry Of Defense And Support For Armed Forces Logistics (a.k.a. Ministry Of Defense For Armed Forces Logistics; a.k.a. MODAFL; a.k.a. MODSAF)	Address no. 1: Ferdowsi Avenue, Sarhang Sakhaei Street, Tehran, Iran Address no. 2: PO Box 11365-8439, Iran Address no. 3: Sarhang Sakhaei Street, Ferdowsi Avenue, Tehran, Iran Address no. 4: PO Box 11365-8439, Iran Address no. 5: Pasdaran Ave., Tehran, Iran Address no. 6: PO Box 16315-189, Tehran, Iran Address no. 7: located on the west side of Dabestan Street, Abbas Abad District, Tehran, Iran Address no. 8: PO Box 19315-189, Pasdaran Street, South Noubonyand Square, Tehran, Iran	The Ministry Of Defense And Support For Armed Forces Logistics, which includes the MODLEX Export Center (also referred to as the Ministry of Defense Logistics Export (MODLEX)), is responsible for Iran's defence research, development, manufacturing and export programmes, including support to missile and nuclear programmes.	23.6.2008
▼M25				
▼M50				
30.	Nuclear Power Production and Procurement Company (NPPD)	No. 8, Tandis St., Africa Ave., Tehran (headquarter), Iran	Nuclear Power Production & Development Company (NPPD) is a subsidiary of AEOI and involved in nuclear power plant development. Therefore, NPPD is engaged in Iran's proliferation-sensitive nuclear activities.	29.9.2025 (23.4.2007, suspended since 16.1.2016)
▼M46				
31.	Parchin Chemical Industries (PCI) صنایع شیمیایی پارچین (a.k.a. Parchin Chemical Factories Chemical Industries Group; PCF Chemical Industries Group; Parchin Chemical Factories; Parchin Chemical Industry Group; PCI Group;	Address no. 1: Khavaran Road Km 30-35, Parchin Special Road, Varamin, Parchin Address no. 2: Nobonyad Square, Tehran 15765-358 Address no. 3: Parchin Forked Rd., 35th km. Khavaran Rd., Pakdasht, Tehran, Iran (Factory) Address no. 4: 2nd Floor, Sanam Bldg., Nobonyad Sq., Tehran, Iran (Head Office) Address no. 5: Pasdaran Square, P.O. Box 16765/358, Tehran, Iran Address no. 6: 2nd Floor, Sanam Bldg., 3rd Floor, Sanam Bldg., P.O. Box 16765/358, Nobonyad Square, Tehran, Iran	Parchin Chemical Industries (PCI) produces ammunition, explosives and solid propellants for rockets and missiles. Parchin facilities were used for the production and testing of nuclear weapons. Parchin Chemical Industries is therefore responsible for providing support for Iran's proliferation-sensitive nuclear activities.	23.6.2008 (UN: 24.3.2007)

▼M46

	Name	Identifying information	Reasons	Date of listing
	Parchin Chemical Ind (PCF);Parchin Chemical Factories; Para Chemical Industries; PCF; PCI; Parchin Military Base)	Telephone no.: + 98 21 2258929; + 98 21 35243153; + 98 21 3130626 Website: http://icig.ir/ Registration no.: Cooperative Company Registration No 892 Associated entities: Ministry of Defense and Armed Forces Logistics (MODAFL); Defense Industries Organization (DIO); Aerospace Industries Organization (AIO); Iran Electronics Industries (IEI)	Parchin Chemical Industries is part of the Chemical Industries and Development of Material Group (CIDMG), which is a branch of Iran's Defense Industries Organization (DIO), which falls under Ministry of Defense and Armed Forces Logistics (MODAFL) and is therefore owned by the Iranian Government. Parchin Chemical Industries is therefore an entity that provides support to the Government of Iran, and is controlled by and associated with entities providing support to the Government of Iran.	

▼M48

32.	Parto Sanat Co (a.k.a. Parto Sanaat Co.; Parto Sanat Company; Partonsanat; Partosanat Co.; Partosanat PJSC; Yakan Parto; Bargh Va Electronic Partosanat)	Address: No. 2417 Valiasr St., corner of 14th St., PO Box 15178 43316, Tehran, Iran	Manufacturer of frequency changers and it is capable of developing and modifying imported foreign frequency changers in a way that makes them usable in gas centrifuge enrichment. It is deemed to be involved in nuclear proliferation activities.	26.7.2010

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33.	Passive Defense Organization		Responsible for the selection and construction of strategic facilities, including – according to Iranian statements - the uranium enrichment site at Fordow (Qom) built without being declared to the IAEA contrary to Iran's obligations (affirmed in a resolution by the IAEA Board of Governors). Brigadier General Gholam-Reza Jalali, former IRGC is PDO's chairman.	26.7.2010
34.	[redacted]	[redacted]	[redacted]	[redacted]

▼M48

35.	Raka	Associated entity: Kalaye Electric Company (KEC)	A department of EU-designated Kalaye Electric Company. Established in late 2006, it was responsible for the construction of the Uranium enrichment plant at Fordow (Qom).	26.7.2010

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	Name	Identifying information	Reasons	Date of listing
▼M25 ———				
▼M50 36.	Iranian Nuclear Science and Technology Research Institute a.k.a. Research Institute of Nuclear Science and Technology a.k.a. Nuclear Science and Technology Research Institute	AEOI, PO Box 14395-836, Tehran, Iran	The Iranian Nuclear Science and Technology Research Institute is affiliated on an official level with the Atomic Energy Organization of Iran (AEOI), which oversees the Iranian nuclear programme. Therefore, the Iranian Nuclear Science and Technology Research Institute is involved in and supports Iran's proliferation sensitive nuclear activities.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
▼M39 37.	Schiller Novin (a.k.a.: Schiler Novin Co.; Schiller Novin Co.; Shiller Novin)	Gheytariyeh Avenue - no 153 - 3rd Floor - PO BOX 17665/153 6 19389 Tehran	Acting on behalf of Defense Industries Organisation (DIO).	26.7.2010
38.	Shahid Ahmad Kazemi Industrial Group (SAKIG)		Entity subordinate to Iran's Aerospace Industries Organisation (AIO). SAKIG develops and produces surface-to-air missiles systems for Iran's military. It maintains military, missile, and air defense projects and procures goods from Russia, Belarus, and North Korea.	26.7.2010
▼B 39.	Shakhese Behbud Sanat		Involved in the production of equipment and parts for the nuclear fuel cycle.	26.7.2010
▼M39 40.	State Purchasing Organisation (SPO, a.k.a. State Purchasing Office; State Purchasing Organization)		The SPO appears to facilitate the import of whole weapons. It appears to be a subsidiary of MODAFL.	23.6.2008

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	Name	Identifying information	Reasons	Date of listing
▼M48				
41.	Technology Cooperation Office (TCO) of the Iranian President's Office (a.k.a. Center for Innovation and Technology Cooperation (CITC); Presidential Center for Cooperation on Transformation and Progress)	Place of registration: Tehran, Iran	The Technology Cooperation Office (TCO) of the Iranian President's Office operates in the fields of research, biotechnology, nanotechnology, renewable energy and information technology. Its operations go back to 2001 when it was charged with strategic planning and the coordination of Iran's developmental activities for nanotechnology. It is attached to and supervised by the President's Office. It acts as a hub in the field and serves as a coordinator and facilitator of connections and collaborations. It maintains connections with the international community, networks between country laboratories, funds Iranian scientists, and engages in teaching. Under its alias, Center for Innovation and Technology Cooperation (CITC), it is furthermore part of an interdepartmental system consisting of CITC, the Iranian Ministry of Information and the Islamic Revolutionary Guard Corps (IRGC) under the direct command of the Iranian President. Individuals associated with CITC, acting as Iranian official representatives abroad, also carried out secret functions of scientific and technical intelligence officers. Responsible for Iran's technological advancement through relevant foreign procurement and training links. It provides support to the Government of Iran.	26.7.2010
42.	Yeganeh Energy Sazan Atrak Part (formerly known as Yasa Part) and the following subsidiaries:	Address: Ground Floor – Building 0 – Maharat 3 Alley – Maharat Street – Bidak Industrial Area – Badranlu Rural District – Central District – Bojnord City – Northern Khorasan Province, Iran Postal Code: 9418156318 Type of entity: Private joint-stock company Place of registration: Bojnord – North Khorasan Province, Iran Registration no.: 5219	Company dealing with procurement activities related to the purchase of materials and technologies necessary to nuclear and ballistic programmes.	26.7.2010
	(a) Arfa Paint Company (a.k.a. ARFA; Arfa Company)	Address 1: Unit 5, 9th floor, Sarve Tower, Saadat Abad, Tehran, Iran Address 2: 16th km Karaj Special Road, Tehran, Iran	Acting on behalf of Yasa Part.	26.7.2010

▼M48

	Name	Identifying information	Reasons	Date of listing
	(b) Arfeh Company	Address: West Lavasani, Tehran, Iran	Acting on behalf of Yasa Part.	26.7.2010
	(d) Hosseini Nejad Trading Co. (a.k.a. Hosseini Nejad Trading Company)		Acting on behalf of Yasa Part.	26.7.2010
	(e) Iran Saffron Company (a.k.a. Iransaffron Co.; Iran Safron; Iran Saffron; Iran Saffron Co.)		Acting on behalf of Yasa Part.	26.7.2010
▼M25 ———				
▼M50 43.	Europäisch-Iranische Handelsbank (EIH)	Address: Head Office: Depenau 2, D-20095 Hamburg; Kish branch, Sanaee Avenue, PO Box 79415/148, Kish Island 79415 Address: Tehran branch, No. 1655/1, Valiasr Avenue, PO Box 19656 43 511, Tehran, Iran	Europäisch-Iranische Handelsbank (EIH) is owned and controlled by the Iranian Government and the Bank of Industry and Mines. Therefore, the EIH is an entity owned or controlled by the Government of Iran.	29.9.2025 (23.5.2011, suspended since 16.1.2016)
▼B 45.	Aras Farayande	Unit 12, No 35 Kooshesh Street, Tehran	Involved in procurement of materials for EU-sanctioned Iran Centrifuge Technology Company	23.05.2011
▼M25 ———				
▼M38 ———				
▼M31 ———				
▼M53 46.	EMKA Company	Address: P.O. Box 14155-1339, Tehran, Iran	EMKA Company is active in Iran's nuclear industry. EMKA Company is a subsidiary of TAMAS Company which is a specialised company for the production of raw materials and nuclear fuel in Iran. EMKA Company is specifically responsible for exploration, mining, and mineral processing operations within the nuclear fuel cycle. In addition, in 2023, EMKA signed a co-operation agreement with, among others, the Atomic Energy Organisation of Iran (AEOI), to construct an accelerator. Therefore, EMKA Company is engaged in and providing support for Iran's nuclear-proliferation activities.	29.9.2025 (23.5.2011, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
▼M34				
49.	Noavaran Pooyamoj (a.k.a. Noavaran Tejarat Paya, Bastan Tejerat Mabna, Behdis Tejarat (or Bazarganis Behdis Tejarat Alborz Company or Behdis Tejarat General Trading Company), Fanavaran Mojpooya, Faramoj Company (or Tosee Danesh Fanavari Faramoj), Green Emirate Paya, Mehbang Sana, Mohandesi Hedayat Control Paya, Pooya Wave Company, Towsee Fanavari Boshra)		Involved in procurement of materials that are controlled and have direct application in the manufacture of centrifuges for Iran's uranium enrichment programme.	23.5.2011
▼M25				
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▼M4				
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▼M41				
52.	Raad Iran (a.k.a. Raad Automation Company; Middle East Raad Automation; RAAD Automation Co.; Raad Iran Automation Co.; RAADIRAN; Middle East RAAD Automation Co.; Automasion RAAD Khavar Mianeh; Automation Raad Khavar Mianeh Nabbet Co)	Unit 1, No 35, Bouali Sina Sharghi, Chehel Sotoun Street, Fatemi Square, Tehran	A company involved in procurement of inverters for Iran's proscribed enrichment programme. Raad Iran was established to produce and design controlling systems and provides the sale and installation of inverters and programmable Logic Controllers.	23.5.2011
▼M25				
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▼M50				
53.	Isfahan Nuclear Reactor Fuel Company a.k.a. Sureh Nuclear Reactors Fuel Company a.k.a. Nuclear Fuel Reactor Company; Sookht Atomi Reactorhaye Iran; Soukht Atomi Reactorha-ye Iran	Head Office: 61 Shahid Abtahi St, Karegar e Shomali, Tehran, Iran Complex: Persian Gulf Boulevard, Km 20 SW Esfahan Road, Esfahan; Iran	Previously known as Sureh Nuclear Reactors Fuel Company, it is subordinate to the Atomic Energy Organisation of Iran (AEOI) consisting of the Uranium Conversion Facility, the Fuel Manufacturing Plant and the Zirconium Production Plant. Therefore, Isfahan Nuclear Reactor Fuel Company is involved in Iran's proliferation-sensitive nuclear activities.	29.9.2025 (23.5.2011, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
54.	Sun Middle East FZ Company		A company that procures sensitive goods for the Nuclear Reactors Fuel Company (SUREH). Sun Middle East uses intermediaries based outside of Iran to source goods SUREH requires. Sun Middle East provides these intermediaries with false end user details for when the goods are sent to Iran, thereby seeking to circumvent the relevant country's Customs regime.	23.05.2011
▼M34 55.	Ashtian Tablo	Ashtian Tablo - No 67, Ghods mirheydari St, Yoosefabad, Tehran	Involved in the production and supply of specialist electrical equipment and materials that have a direct application in the Iranian nuclear sector.	23.5.2011
▼B 56.	Bals Alman		A manufacturer of electrical equipment (switchgear) involved in the ongoing construction of the Fordow (Qom) facility built without being declared to the IAEA.	23.05.2011
▼M48 57.	Hirbod Co (a.k.a. HIRBOD Company)	Address 1: Hirbod Co – Flat 2, 3 Second Street, Asad Abadi Avenue, Tehran 14316, Iran Address 2 (factory): Tehran-Saveh Highway, km 80, Mamounieh Industrial Town, at the end of 8th Street, Asad Abadi Tehran, Iran Date of registration: 1995 Principal place of business: Tehran, Iran Associated entities: Kalaye Electric Company (KEC)	Hirbod Co is one of the leading companies in the field of stainless steel products. It provides steel products, including within security and military apparatus, to many Iranian entities, in particular Arthesh, the Iranian army. Therefore, Hirbod Co is supporting the Government of Iran and provides support for the development of nuclear weapons and nuclear weapons delivery systems by Iran.	23.5.2011
▼M13 ———				
▼M46 ———				
▼M48 60.	Paya Parto (a.k.a. Paya Partov; National Centre for Laser Science and Technology)		Paya Parto is an entity that researches stable isotope separation, a key parameter for centrifuges component production, as part of Iran's nuclear programme. It has close ties to the Atomic Energy Organisation of Iran (AEOI), which runs Iran's Nuclear programme and supervises individual projects. Paya Parto is therefore responsible for providing support for Iran's proliferation-sensitive nuclear activities.	23.5.2011

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	Name	Identifying information	Reasons	Date of listing
▼M16				
▼M48				
62.	Taghtiran (a.k.a. Taghtiran Kashan Company)	Address: Unit 2, No. 3, 2nd Alley, Asad Abadi St., Vali-e asr St., 14316 Tehran, Iran Place of registration: Tehran, Iran Principal place of business: Tehran, Iran Associated entities: Defense Industries Organization (DIO)	Taghtiran manufactures stainless steel and carbon steel parts for various entities, including the security and defence industries, such as Defense Industries Organization (DIO) and nuclear facilities, for example, the uranium conversion facility.	23.5.2011
▼M25				
▼M31				
▼B				
66.	MAAA Synergy	Malaysia	Involved in procurement of components for Iranian fighter planes	23.05.2011
67.	Modern Technologies FZC (MTFZC)	PO Box 8032, Sharjah, United Arab Emirates	Involved in procurement of components for Iranian nuclear programme	23.05.2011
68.	[redacted]	[redacted]	[redacted]	[redacted]
▼M25				
▼M50				
69.	Bonab Research Center (BRC)	Address: Jade ye Tabriz (km 7), East Azerbaijan, Iran	The Bonab Research Center is providing research for the design and manufacturing of nuclear components and equipment by Iranian organisations. Therefore, the Bonab Research Center is providing support for Iran's proliferation-sensitive nuclear activities.	29.9.2025 (23.5.2011, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
70.	Tajhiz Sanat Shayan (TSS)	Unit 7, No. 40, Yazdanpanah, Afriqa Blvd., Teheran, Iran	Involved in procurement of components for Iranian nuclear programme	23.05.2011
▼M48 71.	Institute of Applied Physics (IAP)	Associated entities: Organisation of Defensive Innovation and Research (SPND); Ministry of Defense for Armed Forces Logistics (MODAFL)	The Institute of Applied Physics provides research and development for Iran's nuclear programme. It has project partnerships with the EU-listed Organisation of Defensive Innovation and Research (SPND), which is a subsidiary of EU-listed Ministry of Defense for Armed Forces Logistics (MODAFL), working to weaponise the nuclear programme, which is under the authority of the General Staff of the Armed Forces. The Institute of Applied Physics is therefore involved in Iran's nuclear programme and in Iran's ballistic missile activities.	23.5.2011
▼B 72.	Aran Modern Devices (AMD)		Affiliated to MTFZC network	23.05.2011
▼M13 ———				
▼B 74.	Electronic Components Industries (ECI)	Hossain Abad Avenue, Shiraz, Iran	Subsidiary of Iran Electronics Industries	23.05.2011
75.	Shiraz Electronics Industries	Mirzaie Shirazi, P.O. Box 71365-1589, Shiraz, Iran	Subsidiary of Iran Electronics Industries	23.05.2011
▼M46 76.	Iran Marine Industrial Company (SADRA)	Sadra Building No 3, Shafagh St., Poonak Khavari Blvd., Shahrak Ghods, P.O. Box 14669-56491, Tehran, Iran	Effectively controlled by EU-designated Khatam al-Anbiya Construction Headquarters (KAA), which is designated for being an IRGC company. Provides support to the Government of Iran through its involvement in the Iranian energy sector including in the South Pars Gas field.	23.5.2011

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	Name	Identifying information	Reasons	Date of listing
▼M48				
77.	Shahid Beheshti University	Address 1: Daneshju Blvd., Yaman St., Chamran Blvd., P.O. Box 19839-63113, Tehran, Iran Address 2: Shahid Shahriari Square, Evin, P.O. Box 19839-6311369411, Tehran, Iran	Shahid Beheshti University is a public entity which is under the supervision of the Ministry of Science, Research and Technology. Carries out scientific research relevant to the development of nuclear weapons.	23.5.2011
▼B				
78.	Aria Nikan, (a.k.a. Pergas Aria Movalled Ltd)	Suite 1, 59 Azadi Ali North Sohrevardi Avenue, Tehran, 1576935561	Known to procure for EU designated Iran Centrifuge Technology Company (TESA) Commercial Department. They have made efforts to procure designated materials, including goods from the EU, which have applications in the Iranian nuclear programme.	1.12.2011
79.	Bargh Azaraksh; (a.k.a Barghe Azerakhsh Sakht)	No 599, Stage 3, Ata Al Malek Blvd, Emam Khomeini Street, Esfahan.	Company that has been contracted to work at the uranium enrichment sites at Natanz and Qom/Fordow on the electricity and piping works. It was in charge of designing, procuring and installing electrical control equipment at Natanz in 2010.	1.12.2011
▼M3				
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▼M48				
81.	Eyvaz Technic (a.k.a. Azarsam Instrument Company)	Address 1: No 3, Building 3, Shahid Hamid Sadigh Alley, Shariati Street, Tehran, Iran Address 2: Tehran Province, Tehran, Kooy-e-Mehrzad, Kooy-e-Mehrzad, M78Q+V2R, Iran Associated entities: Kalaye Electric Company (KEC)	Producer of vacuum equipment that has supplied the uranium enrichment sites at Natanz and Qom/Fordow. In 2011, it supplied pressure transducers to EU-designated Kalaye Electric Company (KEC).	1.12.2011
▼M25				
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	Name	Identifying information	Reasons	Date of listing
▼M50				
82.	Uranium Processing Nuclear Fuel Production Company of Iran a.k.a. FATSA a.k.a. Uranium Processing and Nuclear Fuel Production Company of Iran a.k.a. Uranium Processing and Production Company Esfahan Nuclear Fuel a.k.a. Iran Uranium Processing and Nuclear Fuel Production Company	Address: Atomic Energy Organization of Iran, No. 1995, North Karegar St., West Shahid Seyyed Abbas Abtahi Street 20, Amirabad, Tehran, Iran. Date of registration: 11.7.2007 Registration number: 300525	Iran's Uranium Processing and Nuclear Fuel Production Company (FATSA) is active in uranium conversion and related elements, managing and supervising the construction, commissioning, operation and decommissioning of uranium conversion facilities and factories, fuel assembly production and related industries, and carrying out all relevant domestic and foreign transactions in this field, as well as importing or exporting converted fuel assembly materials and factory products. Therefore, it is engaged in, directly associated with, or providing support for Iran's proliferation-sensitive nuclear activities. Additionally, it is controlled by the Atomic Energy Organisation of Iran and provides support, such as material, logistical or financial support, to the Government of Iran. Therefore, FATSA is engaged in and providing support for Iran's proliferation-sensitive nuclear activities. Furthermore, it provides support to the Government of Iran.	29.9.2025 (1.12.2011, suspended since 16.1.2016)
▼M48				
83.	Ghani Sazi Uranium Company (a.k.a. Iran Uranium Enrichment Company; Sherkat-e Ghanisazi-ye Uranium)	Address: 3, Qarqavol Close, 20th Street, Tehran, Iran Associated entities: Kalaye Electric Company (KEC); Iran Centrifuge Technology Company	Ghani Sazi Uranium Company has production contracts with EU-designated Kalaye Electric Company (KEC) and EU-designated Iran Centrifuge Technology Company.	1.12.2011
▼M46				
84.	Iran Pooya (a.k.a. Iran Pouya)		A government owned company that operated the biggest extruder of aluminium in Iran and supplied material for use in the production of casings for the IR-1 and IR-2 centrifuges. A major manufacturer of aluminium cylinders for centrifuges whose customers include the AEOI and EU-designated TESA.	1.12.2011
▼B				
85.	[redacted]	[redacted]	[redacted]	[redacted]

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	Name	Identifying information	Reasons	Date of listing
▼M48				
86.	Karanir (a.k.a Karanir Sanat, Moaser; Tajhiz Sanat; Karanir Sanat Co; Moshever Sanat Moaser; TSI; Tajis Sanat; Tajhis Sanat Industries)	Address 1: 1139/1 Unit 104 Gol Building, Gol Alley, North Side of Sae, Vali Asr Avenue. PO Box 19395-6439, Tehran, Iran Address 2: Beheshti St., Sabonuchi St., Adaee Alley, No. 2, Unit 301, Tehran, Iran	Karanir has been involved in purchasing equipment and materials, which have direct applications in the Iranian nuclear programme.	1.12.2011
87.	Khala Afarin Pars (a.k.a. PISHRO KHALA AFARIN COMPANY; Vacuum Afarin, Pars Vacuum Company)	Address 1: Unit 5, 2nd Floor, No 75, Mehran Afrand St, Sattarkhan St, Tehran. Address 2: No. 94, 4th Floor, Unit 16, Bagherkhan St., Sattarkhan St., Tehran, Iran	Involved in purchasing equipment and materials which have direct applications in the Iranian nuclear programme.	1.12.2011
88.	MACPAR Makina San Ve Tic	Address: Istasyon MH, Sehitler cad, Guldeniz Sit, Number 79/2, Tuzla 34930, Istanbul, Türkiye Associated individual: Milad Jafari	Company run by EU-designated Milad Jafari who has supplied goods, mostly metals, to EU-designated Shahid Hemmat Industries Group (SHIG) through front companies.	1.12.2011
89.	MATSA (Mohandesi Toseh Sokht Atomi Company) (a.k.a. Mohandesi Toseh Sanayeh Atomi (METSA))	Address: 90, Fathi Shaghaghi Street, Tehran, Iran. Registration no.: 2833278 National ID no.: 10103191030 Associated individuals: Mohammad Mohammadi (Managing Director) Associated entities: Kalaye Electric Company (KEC)	MATSA (Mohandesi Toseh Sokht Atomi Company) is an Iranian company contracted to EU-designated Kalaye Electric Company (KEC) to provide design and engineering services across the nuclear fuel cycle. It has been procuring equipment for the Natanz uranium enrichment site.	1.12.2011
90.	Mobin Sanjesh (a.k.a. Fakoor International Tehran Engineering Company (FITCO))	Address: Entry 3, No 11, 12th Street, Miremad Alley, Abbas Abad, Tehran, Iran	Mobin Sanjesh directly participates in Iran's proliferation-sensitive nuclear activities. It provides goods and services for magnetic systems which have a direct application in Iran's nuclear fuel cycle industry, for example calibration of mass spectrometers.	1.12.2011

▼M48

	Name	Identifying information	Reasons	Date of listing
91.	Multimat lc ve Dis Ticaret Pazarlama Limited Sirketi (a.k.a. MULTIMAT IC VE DIS TIC. PAZ. LTD. STI.; MULTIMAT IC VE DIS TICARET PAZARLAMA LIMITED SIRKETI; MULTIMAT IMPORT AND EXPORT; MULTIMAT LTD.; MULTIMAT TEHRAN; MULTIMAT TRADING COMPANY)	Address: Guvendik Mahallesi 132/1 Sokak, Izmir, Türkiye Place of registration: Izmir, Türkiye Date of registration: 30.12.1996 Associated individual: Milad Jafari Associated entity: Shahid Hemmat Industries Group (SHIG)	Company run by EU-designated Milad Jafari who has supplied goods, mostly metals, to EU-designated Shahid Hemmat Industries Group (SHIG) through front companies.	1.12.2011
▼M54 92.	Research Centre for Explosion and Impact (a.k.a. METFAZ)	44, 180th Street West, Tehran, 16539-75751	The Research Centre for Explosion and Impact (METFAZ) is a subsidiary of the EU-listed Organisation of Defensive Innovation and Research (SPND), which is part of the Ministry of Defense for Armed Forces Logistics (MODAFL). The activities of METFAZ focus on detonation technology, thereby supporting the development of nuclear warheads. Therefore, METFAZ is engaged in and providing support for Iran's proliferation-sensitive nuclear activities.	1.12.2011
▼B 93.	Saman Nasb Zayendeh Rood; Saman Nasbzainde Rood	Unit 7, 3rd Floor Mehdi Building, Kahorz Blvd, Esfahan, Iran.	Construction contractor that has installed piping and associated support equipment at the uranium enrichment site at Natanz. It has dealt specifically with centrifuge piping.	1.12.2011
▼M48 94.	Saman Tose'e Asia (SATA)	Address: 4th Unit, 51 Sane'e St., N.W. of Jahan Kudak, Africa Blvd., Tehran, Iran 19699-35145	Engineering firm involved in supporting a range of large-scale industrial projects including Iran's uranium enrichment programme, including undeclared work at the uranium enrichment site at Qom/ Fordow.	1.12.2011
▼M46 ———				
▼M8 ———				

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	Name	Identifying information	Reasons	Date of listing
▼M48				
97.	STEP Standart Teknik Parca San ve TIC A.S. (a.k.a. SSTP, Step Standard Technical Components Industry and Trading Corporation, Step Corporation, Step Standart Teknik Parca Sanayi Ve Ticaret A.S., Step AS, Step Company, Stap Standart Tek Par San Tic AS, Step Standart Teknyk, Parca San. Ve Tyc. A.S., STEP Standart Teknik Parca San. ve Tic. A.S., Step Standart Teknik Parca Sanayi ve Ticaret Anonim Sirketi, Step A.S., Step S.A., Step Istanbul, Standart Teknik Parca San Ve Tic A.S., Standart Teknik Parca San. Ve Ticaret A.S., Standard Technical Component Industry and Trade Company, Step Standart Teknik Parca San Ve Tic As, Step Istanbul/Standart Teknik Parca San. Ve Tic. A.S.)	Address: 79/2 Tuzla, 34940, Istanbul, Türkiye Associated individual: Milad Jafari Associated entity: Shahid Hemmat Industries Group (SHIG)	Company run by Milad Jafari who has supplied goods, mostly metals, to EU-designated Shahid Hemmat Industrial Group (SHIG) through front companies.	1.12.2011
▼M46				
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▼M39				
99.	TABA (Iran Cutting Tools Manufacturing company - Taba Towlid Abzar Boreshi Iran; a.k.a. Iran Centrifuge Technology Co.; Iran's Centrifuge Technology Company; Sherkate Technology Centrifuge Iran, TESA, TSA)	12 Ferdowsi, Avenue Sakhaee, avenue 30 Tir (sud), nr 66 – Tehran	Owned or controlled by EU-sanctioned TESA, Involved in manufacturing equipment and materials, which have direct applications in the Iranian nuclear programme.	1.12.2011
▼B				
100.	Test Tafsir	No 11, Tawhid 6 Street, Moj Street, Darya Blvd, Shahrak Gharb, Tehran, Iran.	Company produces and has supplied UF6 specific containers to the uranium enrichment sites at Natanz and Qom/ Fordow.	1.12.2011

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	Name	Identifying information	Reasons	Date of listing
▼M48				
101.	Tosse Silooha (a.k.a. Tosseh Jahad E Silo; Tosee Siloha)	Address: NO.3. 50th st., Kalantari sq., Seyed Jamaleddin Asadabadi Ave. (Yousefabad), Tehran, Iran	Tosse Silooha is a company involved in Iran's proliferation-sensitive nuclear activities. It is involved in fabricating components for nuclear power plants such as cooling tower plants, and industrial chimneys. The company is also supporting the Government of Iran.	1.12.2011
102.	Yarsanat (a.k.a. Yar Sanat; Yarestan Vacuumi; Zist Yar Sanat; Yar Sanat Co)	Address 1: No. 101, West Zardosht Street, 3rd Floor, 14157 Tehran; Iran Address 2: No. 139 Hoveyzeh Street, 15337, Tehran, Iran Address 3: 15, Fatemi Eshragi Alley, Gerda Afrid Building, science and Technology Park, Tarbiat Modares University, S.S 2 – Development Center, 4th Floor, Tehran, Iran Principal place of business: Iran Associated entities: Kalaye Electric Company (KEC)	Procurement company for EU-listed Kalaye Electric Company (KEC). Involved in purchasing equipment and materials, which have direct applications in the Iranian nuclear programme, for example instruments for uranium enrichment.	1.12.2011
▼M13				
▼M25				
▼M53				
104.	Central Bank of Iran (a.k.a. Central Bank of the Islamic Republic of Iran, a.k.a. Bank Markazi Jomhouri Islami Iran)	Address: 213 Ferdowsi Avenue, 11365 Tehran, Iran; Mirdamad Blvd, 144 – P.O. Box 15875/7/77, Tehran, Iran; PO Box 15875/7177, 144 Mirdamad Blvd, Tehran, Iran P.O. Box: 15875 / 7177 Place of registration: Iran Date of registration: 1960 Registration number: 4296905415 SWIFT/BIC: BMJIIRT1 Web Site: http://www.cbi.ir Email: G.SecDept@cbi.ir	The Central Bank of Iran provides financial support to the IRGC, which is engaged in Iran's nuclear and missile programmes. In addition, in its capacity as central bank, it provides financial services to the Government of Iran, which is one of its clients. The Central Bank of Iran therefore supports Iran's proliferation-sensitive nuclear activities and the Government of Iran.	29.9.2025 (23.1.2012, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
▼M50				
105.	Tejarat Bank	Address: Taleghani Br. 130, Taleghani Ave. P.O. Box: 11365 -5416, Tehran Phone: 88826690 Fax: 8890028	Tejarat Bank is an Iranian bank which provides support to Iran's industrial, energy and economic infrastructure, including in the petrochemical and energy sectors. Bank Tejarat has a prominent role in supporting Government projects led by the Ministry of Energy. It also provides financial support for the development of national petrochemical and oil extraction projects. It is partially owned and controlled by the Government of Iran, which chairs the Ordinary General Assembly of Tejarat Bank. Therefore, Tejarat Bank is providing support to the Government of Iran.	29.9.2025 (8.4.2015, suspended since 16.1.2016)
▼M48				
106.	Tidewater (a.k.a. Tidewater Middle East Co; Tide Water Khav-armianeh)	Postal address: No. 84, Vozara St., Tehran, Iran Type of entity: Public Joint Stock Company Place of registration: Tehran, Iran Registration no.: 12341 Principal place of business: Tehran, Iran	Owned or controlled by the Islamic Revolutionary Guard Corps (IRGC).	23.1.2012
▼B				
107.	Turbine Engineering Manufacturing (TEM) (a.k.a T.E.M. Co.)	Postal address: Shishesh Mina Street, Karaj Special Road, Tehran, Iran	Used as a front company by designated Iran Aircraft Industries (IACI) for covert procurement activities.	23.1.2012
▼M9				
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109.	Rosmachin	Postal address: Haftom Tir Square, South Mofte Avenue, Tour Line No; 3/1, Tehran, Iran P.O. Box 1584864813 Tehran, Iran	Front company of Sad Export Import Company. Involved in illicit arms transfer aboard M/V Monchgorsk.	23.1.2012
▼M25				
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	Name	Identifying information	Reasons	Date of listing
▼M50				
110.	Ministry of Energy Farsi: وزارت نیرو	Address: Tehran Province, Tehran, District 3, Kordestan Expy, QCF4+FRR, 19968 32611, Iran Address: Tehran, Vali Asr Street, the beginning of Ayatollah Hashemi Rafsanjani Highway (Niyaish), Block 4 - Ministry of Energy Building, Postal code: 199683393, Iran	The Ministry of Energy of Iran (MOE) is responsible for policy in the energy sector and for furthering cooperation with third countries. MOE owns or controls MAPNA Group, a key player in the Iranian energy, oil and gas business. In cooperation with the Ministry of Petroleum, MAPNA Group is involved in the exploration of gas and oil fields and therefore contributes to Iran's oil revenues. A significant part of these revenues is allocated to the Armed Forces and SPND. Through its link to MAPNA Group, the Ministry of Energy of Iran supports Iran's nuclear activities.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
111.	Ministry of Petroleum	Address: Taleghani Avenue, next to Hafez Bridge, Iran Registration number: IR0022770444	The Ministry of Petroleum of Iran is responsible for policy in the oil sector, which is a sector providing substantial funds for Iran's proliferation-sensitive nuclear activities. Therefore, the Ministry of Petroleum is providing support for Iran's proliferation-sensitive nuclear activities.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
112.	National Iranian Oil Company a.k.a. NIOC	NIOC HQ, National Iranian Oil Company Hafez Crossing, Taleghani Avenue Tehran - Iran/ First Central Building, Taleghan St., Tehran, Postal Code: 1593657919, P.O. Box 1863 and 2501, Iran Registration number: IR0000047087 Date of registration: 6.12.1955	The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. The Minister of Oil is Director of the NIOC Board and the Deputy Minister of Oil is the Managing Director of NIOC. Therefore, NIOC provides support to and is owned by the Government of Iran. Furthermore, it provides essential services to the IRGC.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
113.	National Iranian Oil Company (NIOC) PTE LTD	7 Temasek Boulevard #07-02, Suntec Tower One 038987, Singapore Registration Number: SG199004388C (Singapore) Date of registration: 5.9.1990 (Singapore)	The National Iranian Oil Company PTE LTD is a subsidiary (100 %) of the state-owned and operated National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, the National Iranian Oil Company PTE LTD is owned or controlled by an entity providing support to the Government of Iran. It also provides essential services to the IRGC.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
114.	National Iranian Oil Company International Affairs Limited a.k.a. NIOC International Affairs Limited	24 Grosvenor Gardens, SW1W 0DH, London, United Kingdom Company Number: 02772297 (United Kingdom)	The National Iranian Oil Company International Affairs Limited is a subsidiary (100 %) of the state-owned and operated National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, the National Iranian Oil Company International Affairs Limited is owned or controlled by an entity that provides support to the Government of Iran. Furthermore, it provides essential services to the IRGC.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
115.	Iran Fuel Conservation Organization a.k.a. IFCO	Address: No. 23 East Daneshvar St. North Shiraz St.Molasadra St.Vanak Sq. Tehran, Iran Tel.: (+98) 2188604760-6	Iran Fuel Conservation Organization is an Iranian entity working in the field of fuel consumption, and a subsidiary (100 %) of the National Iranian Oil Company (NIOC), a State-owned and operated entity providing substantial financial resources to the Government of Iran. Therefore, Iran Fuel Conservation Organization is owned and controlled by an entity which provides support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
116.	Karoon Oil & Gas Production Company	Industrial Zone, Ahwaz, Khouzestan, Iran Registration number: IR915378759 Other associated entities (subsidiaries): — Kala Naft — Karoon Oil & Gas Production Company — Khazar Expl & Prod Co (KEPCO) — Masjed-soleyman Oil & Gas Company (MOGC) — Maroun Oil & Gas Company — Naftiran Intertrade Company (a.k.a. Naftiran Trade Company) (NICO) — National Iranian Central Oilfield Company (ICOFC) — National Iranian Oil Company International Affairs Limited — Petroleum Engineering & Development Company — Petropars International FZE (PPI FZE) — Petropars Iran Company (PPI) — Petropars Ltd — Petropars Oilfield Services Company (POSCO) — Petropars Resources Engineering LTD (PRDE) — Petropars UK Limited — South Zagros Oil & Gas Production Company — West Oil & Gas Production Company	Karoon Oil & Gas Production Company is Iran's largest oil production company and a subsidiary of the National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, Karoon Oil & Gas Production Company is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
117.	Petroleum Engineering & Development Company a.k.a. PEDEC	No. 61 Shahid Kalantari St., Sepahbod Qarani Ave., Tehran, Iran Registration number: IR0000054377 Date of registration: 27.08.1980	The Petroleum Engineering & Development Company (PEDEC) is a subsidiary of the National Iranian Oil Company (NIOC) and its development and engineering arm. NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, PEDEC is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
118.	North Drilling Company (NDC)	Address: No. 2127 Valiasr St., Corner of Del Afrooz St., Tehran, Iran Registration number: IR30068GN / 10101920830 Date of registration: 1999 (privatised 2009)	North Drilling Company is a leading company in oil and gas drilling sector. It is a subsidiary of Sina Energy Holding which is a subsidiary of the Mostazafan Foundation. The Mostazafan Foundation is a major Iranian parastatal entity controlled by the Family of the Supreme Leader, the IRGC and the Government of Iran. Furthermore, the North Drilling Company cooperated with the National Iranian South Oil Company and the National Iranian Oil Company. Therefore, North Drilling Company provides support to the Government of Iran and is owned or controlled by the Government of Iran. Furthermore, it is associated with entities owned or controlled by and providing support to the Government of Iran.	29.9.2025 (23.4.2014, suspended since 16.1.2016)
119.	Khazar Expl & Prod Co a.k.a. KEPCO	No. 19 11th St. Khaled Eslamboli St., Tehran, Iran Tel.: (+98) 2188722430	Khazar Exploration and Production Company (KEPCO) is one of the five oil and gas production and exploration companies of the National Iranian Oil Company (NIOC) and therefore its subsidiary. The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, KEPCO is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
120.	National Iranian Drilling Company a.k.a. NIDC	Address: Airport Sq. Pasdaran Blvd., Ahwaz, Khouzestan, Iran Registration number: IR0000368792	The National Iranian Drilling Company (NIDC) is a subsidiary (100 %) of the state-owned and operated National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, NIDC is owned or controlled by an entity providing support to the Government of Iran. Furthermore, it provides essential services to the IRGC.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
121.	South Zagros Oil & Gas Production Company Farsi: شرکت بهره برداری نفت و گاز زاگرس جنوبی	Address: Parvaneh St., Karimkhan Zand Blvd., Shiraz, Iran Registration number: IR0052586382 Tel.: (+98) 7112138204	South Zagros Oil & Gas Production Company is an oil and gas production company, which is a subsidiary of National Iranian Central Oilfield Company (ICOFC), which is in turn a subsidiary of National Iranian Oil Company (NIOC). NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, South Zagros Oil & Gas Production Company is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
122.	Maroun Oil & Gas Company a.k.a. Maroun Oil and Gas Operations a.k.a. Maround Oil and Gas Production Co. a.k.a. MOGPC	Tehran, Iran Registration number: IR0052586388 Date of registration: 2.12.1998	Maroun Oil & Gas Company is a subsidiary of the National Iranian South Oil Company (NISOC), which is in turn a subsidiary of the National Iranian Oil Company (NIOC). Maroun Oil & Gas Company is responsible for the production, processing and transfer of oil, gas and condensates from larger oil fields. Oil production and sales play a crucial role in the financing of Iran's military as well as the IRGC. Therefore, Maroun Oil & Gas Company is owned or controlled by an entity providing support to the Government of Iran. Furthermore, it provides essential services to the IRGC and supports the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
123.	Masjed-soleyman Oil & Gas Company (MOGC)	Address: Khuzestan, Iran Registration number: IR915378790	Masjed-soleyman Oil & Gas Company (MOGC) is a subsidiary (100 %) of the National Iranian Oil Company (NIOC). NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. Therefore, MOGC is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
124.	Gachsaran Oil & Gas Company Farsi: شرکت بهرهبرداری نفت و گاز گچساران a.k.a. Gacharsan Oil Gas Co.	Adrdress: Gachsaran, Kohkiluye-va-Boyer, Ahmad, Iran Tel.: (+98) 7422222581	Gachsaran Oil & Gas Company is managed via the National Iranian South Oil Company (NISOC), and it is a subsidiary (100 %) of the State-owned National Iranian Oil Company (NIOC). In turn, NIOC provides support to and is owned by the Government of Iran. Therefore, Gachsaran Oil & Gas Company is controlled by an entity providing support to and owned by the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
125.	Aghajari Oil & Gas Production Company (AOGPC)	Address: Naft Blvd., Omidieh, Khouzestan, Iran Address: Khuzestan, Omidieh, Oil Boulevard, Iran Website: aogpc.nisoc.ir	Aghajari Oil & Gas Production Company (AOGPC), also known as Aghajari Oil and Gas Exploitation Company, is an Iranian entity working in the field of energy and a subsidiary of the National Iranian South Oil Company (NISOC). NISOC is a subsidiary of the National Iranian Oil Company (NIOC), which provides support to and is owned by the Government of Iran. Therefore, AOGPC is controlled by an entity, which provides support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
126.	Arvandan Oil & Gas Company a.k.a. AOGC	Address: Khamenei Ave., Khor-ramshahr, Iran Tel.: (+98) 6324214021	Arvandan Oil & Gas Company is an Iranian oil and gas entity and subsidiary of the National Iranian Oil Company (NIOC). It operates major oil and gas fields in the West Karoun region. Its activities contribute to NIOC's national production goals. NIOC is a State-owned and operated energy company providing substantial financial resources and support to the Government of Iran. Therefore, Arvadan Oil & Gas company is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
127.	West Oil & Gas Production Company	Address: No. 42 Zan Blvd, Naft Sq., Kermanshah, Iran Registration number: IR915378784	West Oil & Gas Production Company is a subsidiary of Iranian Central Oil Fields Company, which is a subsidiary of the National Iranian Oil Company (NIOC). NIOC is a State-owned and operated company that provides support to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, West Oil & Gas Production Company is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
128.	East Oil & Gas Production Company a.k.a. EOGPC	Address: No. 18 Payam 6 St, Payam Ave, Sheshsad Dastga, Mashha, Iran Tel.: (+98) 5117633011	East Oil & Gas Production Company (EOGPC) is a subsidiary of the Iranian Central Oil Fields Company (ICOFC) which in turn is a subsidiary of the National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources and support to the Government of Iran. Therefore, EOGPC is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
129.	Iranian Oil Terminals Company a.k.a. IOTC	Address - No. 11 Hojjat Souri Street (7th Street), Pasdaran Ave., Tehran, Iran Tel.: (+98) 2188732221	Iranian Oil Terminals Company is an Iranian company, a subsidiary (100 %) of National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources and support to the Government of Iran. It receives, stores, exports and imports crude oil, petroleum products and gas condensate, as well as providing services including marine services. It is an important supporter of the country's oil and gas production and exports, therefore it provides revenue to the Iranian government. Therefore, the Iranian Oil Terminals Company is owned and controlled by an entity providing support to the Government of Iran. Furthermore, Iranian Oil Terminals Company itself provides support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
130.	Pars Special Economic Energy Zone Farsi: پارس منطقه ویژه اقتصادی انرژی a.k.a. PSEEZ	Address: Pars Special Economic Energy Zone Org., Assaluyeh, Boushehr, Iran Address: Bushehr Province, Assaluyeh, Pars Special Economic Energy Zone Organization, P.O. Box: 7511946484, Iran Registration number: IR916378778	Pars Special Economic Energy Zone (PSEEZ) is a subsidiary (100 %) of the State-owned National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources and support to the Government of Iran. Furthermore, PSEEZ's Assaluyeh Port provides port operating services to IRISL. Therefore, PSEEZ is owned or controlled by an entity providing support to the Government of Iran. Furthermore, it provides essential services to IRISL.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
▼M4 131.	[redacted]	[redacted]	[redacted]	[redacted]
▼M25				
▼M50 131.	Iran Liquefied Natural Gas Co.	Address: No. 20, Alvand St, Argentina Sq, Tehran, 1514938111, Iran	Iran Liquefied Natural Gas Co. is managing Iran LNG projects. It is a subsidiary of the National Iranian Gas Export Company, which is itself a subsidiary of the State-owned National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources and support to the Government of Iran. The main shareholder of Iran Liquefied Natural Gas Co is the Government of Iran. Therefore, Iran Liquefied Natural Gas Co. is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
132.	Naftiran Intertrade Company (NICO) Farsi: شرکت بازرگانی نفت ایران a.k.a. Naftiran Trade Company a.k.a. NICO a.k.a. Naftiran Intertrade Co. (NICO) Limited	Address: 5th Floor, Petropars Building, No 35 Farhang Boulevard, Snadat Abad Avenue, Tehran, Iran Address: No. 35, Farhang Blvd (Erfan St Corner), Saadat Abad, Tehran, Iran Address: Level 5(I), Main Office Tower, Financial Park Complex, Jalan Merdeka, 87000 Federal Territory of Labuan, Malaysia Address: Suite 17, Burlington House, St. Saviours Road, St. Helier, Jersey, United Kingdom Registration number: IRL0000000024809 Tel. +98 21 22372486; +98 21 22374681; +98 21 22374678; Fax +98 21 22374678; +98 21 22372481 Email: info@naftiran.com	Naftiran Intertrade Company is a subsidiary (100 %) of the National Iranian Oil Company (NIOC). The National Iranian Oil Company (NIOC) is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, Naftiran Intertrade Company is owned or controlled by an entity providing support to the Government of Iran. It also provides essential services to the IRGC.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
133.	Naftiran Intertrade Company Srl Farsi: شرکت بازرگانی نفت ایران	Address: Avenue de la Tour-Haldimand, 6, 1009 Pully, Switzerland Registration number: CH-550.1.031.089-0 VAT No: CHE-109.711.148 Tel: +41 21 3106565 Fax: +41 21 3106566/67/72 Email: nico.finance@naftiran.ch	Naftiran Intertrade Company SRL (NICO SRL) is a subsidiary (100 %) of Naftiran Intertrade Company, which is in turn a subsidiary of the National Iranian Oil Company (NIOC). NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, NICO SRL is owned or controlled by an entity providing support to the Government of Iran. Furthermore it provides essential services to the IRGC.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
134.	Petroiran Development Company (PEDCO) Ltd (a.k.a. PetroIran; a.k.a. 'PEDCO')	Address: PEDCO, P.O. Box 2965, Al Bathaa Tower,9th Floor, Apt. 905, Al Buhaira Corniche, Sharjah, United Arab Emirates; P.O. Box 15875-6731, Tehran, Iran; 41,1st Floor, International House, The Parade, St. Helier JE2 3QQ, Jersey; No. 22, 7th Lane, Khalid Eslamboli Street, Shahid Beheshti Avenue, Tehran, Iran; No. 102, Next to Shahid Amir Soheil Tabrizian Alley, Shahid Dastgerdi (Ex Zafar) Street, Shariati Street, Tehran 19199/45111, Iran	Petroiran Development Company Ltd. (PEDCO) is a wholly-owned subsidiary of Naftiran Intertrade Company Ltd (NICO), which is in turn a subsidiary of the National Iranian Oil Company (NIOC), which provides support to the Government of Iran. NIOC not only indirectly owns PEDCO, but also makes direct appointments to the company's leadership. PEDCO is a production and exploration company responsible for developing oil and gas fields. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, PEDCO is owned or controlled by an entity that provides support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
135.	Petropars Ltd. (a.k.a. Petropasr Limited; a.k.a. 'PPL')	Address: North Naft Street 10, Mirdawad Boulevard, Tehran, Iran Registration number: IR0000102447	Petropars Ltd (PPL) is a wholly-owned subsidiary of Naftiran Intertrade Company Ltd (NICO), which in turn is a 100 % subsidiary of the State-owned National Iranian Oil Company NIOC, which provides support to the Government of Iran. Petropars Ltd (PPL) represents NIOC in certain deals with international partners and serves as its executive arm. Therefore, Petropars Ltd is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
136.	Petropars International FZE a.k.a. PPI FZE	Address: P.O. Box 72146, Dubai, United Arab Emirates Address: Kish Address: 79 to 82 Plates, 6 Sanat Tree, Derakhte Sabs Tree, Kish Island, Iran Address: 3rd Floor, Petropars Limited, Farhang Blvd, Farhang Square, Sa'adat Abad, Tehran, Iran	Petropars International FZE is a wholly-owned subsidiary of Petropars Ltd (PPL), which is in turn is a wholly-owned subsidiary of Naftiran Intertrade Company Ltd (NICO). NICO belongs to the National Iranian Oil Company (NIOC), which is a State-owned and operated entity providing support to the Government of Iran. Petropars Ltd (PPL) represents NIOC in certain deals with international partners and serves as its executive arm. Petropars International FZE provides transportation, logistics and commercial services in the Persian Gulf region. Therefore, Petropars International FZE is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
137.	Petropars UK Limited	Address: 47 Queen Anne Street, London W1G 9JG, United Kingdom Address: 4 Dancastle Court, 14 Arcadia Avenue, London, N3 2JU Registration Number: 03503060 (United Kingdom)	Petropars UK Ltd. is a subsidiary of Petropars Ltd (PPL). Petropars Ltd (PPL) is wholly owned by Naftiran Intertrade Company Ltd (NICO), which belongs to the National Iranian Oil Company (NIOC), an Iranian State-owned company providing support to the Government of Iran. Therefore, Petropars UK Ltd is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
138.	National Iranian Gas Company a.k.a. NIGC	Address: National Iranian Gas Company Building, South Aban Street, Karimkhan Boulevard, Tehran, Iran Address (2): P.O. Box 15875, Tehran, Iran	The National Iranian Gas Company (NIGC) is a state-owned and operated entity involved in the production and distribution of gas in the country as well as in the export of gas. The Minister of Oil is Chairman of NIGC's Board and the Deputy Oil Minister is Managing Director and Vice Chairman of NIGC. Therefore, NIGC provides support to the government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
139.	National Iranian Oil Refining and Distribution Company Farsi: شرکت ملی پالایش و پخش فرآورده های نفتی ایران a.k.a. NIORDC	Address: 4 Varsho Street, Tehran 1598666611, P.O. Box 15815/3499, Tehran, Iran Registration number: IR0000365670	The National Iranian Oil Refining and Distribution Company (NIORDC) is a subsidiary (100 %) of the state-owned and operated National Iranian Oil Company (NIOC), responsible for engineering and building refineries, pipelines and communications networks. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Furthermore, the Minister of Petroleum is responsible for appointing NIORDC's CEO. Therefore, NIORDC is controlled by the Government of Iran and by NIOC, which provides support to and is owned by the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
140.	National Iranian Tanker Company (NITC)	35 East Shahid Atefi Street, Africa Ave., 19177 Tehran, P.O. Box: 19395-4833 Tel. +98 21 23801 Email: info@nitc-tankers.com; all offices worldwide	The National Iranian Tanker Company provides financial support to the Government of Iran through its shareholders, including the Iranian State Retirement Fund. Moreover, NITC is one of the largest operators of crude oil carriers in the world and one of the main transporters of Iranian crude oil. Accordingly, NITC provides logistical support to the Government of Iran through the transport of Iranian oil. Iran's oil exports are a crucial source of revenue for its budget and military expenditures. Therefore, the National Iranian Tanker Company provides support to the Government of Iran.	29.9.2025

▼**M50**

	Name	Identifying information	Reasons	Date of listing
141.	Trade Capital Bank	220035 Belarus Timiriazeva str. 65A Tel: +375 (17) 3121012 Fax +375 (17) 3121008 Email: info@tcbank.by	Trade Capital Bank is a subsidiary (99 %) of Tejarat Bank. Tejarat Bank is partially owned and controlled by the Government of Iran. Furthermore, through its subsidiaries, it is involved in the circumvention of restrictive measures, by providing services to front companies used by Iran. Therefore, Tejarat Bank is both supporting the Government of Iran and supporting designated entities in circumvention of restrictive measures. Therefore, Trade Capital Bank is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
142.	Bank of Industry and Mine	Address: Hafez Avenue, P.O. Box 11365/4978, Tehran, Iran Address: PO Box 15875-4456, Firouzeh Tower, No 1655 Vali-Asr Ave after Chamran Crossroads, Tehran 1965643511, Iran Address: No. 491, Opposite to Saman Building, past of Shahid Beheshti Crossroad, Imam Khomeyni St, Iran. Phone: +98 21 22029811-19, 22029837 Fax: +98 21 22029894, 0451-7724202 Email: info@bim.ir	The Bank of Industry and Mine is a state-owned bank working in the field of industry and mining in Iran. Therefore, the Bank of Industry and Mine is an entity owned and controlled by the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
143.	Cooperative Development Bank a.k.a. Tose'e Ta'avon Bank	Address: Bozorgmehr Street, Block 271, P.O. Box 14155-6569, Tehran, Iran Address: Mirdamad Blvd., Northeast Corner of Mirdamad Bridge, No. 271, Tehran No. 271, 4th Floor, Mirdamad Blvd, Northeast of Mirdamad Bridge, Tehran, Iran	The Cooperative Development Bank is an Iranian state-owned banking institution, providing support to the Government of Iran.	29.9.2025 (16.10.2012, suspended since 16.1.2016)
145.	National Iranian Oil Products Distribution Company (NIOPDC)	Address: No.1, Tehran, Iranshahr Ave. Shadab.St, P.O. Box: 79145/3184; Iran Tel: +98-21-77606030 Registration number: 4000000128233 Website: www.niopdc.ir	The National Iranian Oil Products Distribution Company (NIOPDC) is a wholly-owned subsidiary of the National Iranian Oil Refining and Distribution Company (NIORDC), which is in turn a wholly-owned subsidiary of the National Iranian Oil Company (NIOC). NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. NIOPDC is tasked with the provision of fuel throughout the country. Therefore, NIOPDC is owned or controlled by an entity providing support to the Government of Iran. Furthermore, it provides essential services to the IRGC.	29.9.2025 (22.12.2012, suspended since 16.1.2016)

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	Name	Identifying information	Reasons	Date of listing
146.	Iranian Oil Pipelines and Telecommunications Company (IOPTC)	Address: No.194, Sepahbod Gharani Ave., Tehran, Iran Tel: +98-21-88801960 / +98-21-66152223 Fax: +98-21-66154351 Website: www.ioptc.com	The Iranian Oil Pipelines and Telecommunications Company (IOPTC) is a subsidiary of the National Iranian Oil Refining and Distribution Company (NIORDC), which is in turn controlled by the Government of Iran and by the National Iranian Oil Company (NIOC), an entity providing support and being controlled by the Government of Iran. Therefore, IOPTC is controlled by entities providing support to and being owned by the Government of Iran.	29.9.2025 (22.12.2012, suspended since 16.1.2016)
147.	National Iranian Oil Engineering and Construction Company (NIOEC) a.k.a. شرکت ملی مهندسی و ساختمان نفت ایران	No.263, Ostad Nejatollahi Ave., Tehran, Iran Registration number: IR0000047088 Date of registration 18.3.1992	The National Iranian Oil Engineering and Construction Company (NIOEC) is a subsidiary (100 %) of the state-owned and operated National Iranian Oil Company (NIOC), and is responsible for engineering and building refineries, pipelines and communications networks. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC' oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, NIOEC is owned or controlled by an entity providing support to the Government of Iran. Furthermore, it provides essential services to the IRGC.	29.9.2025 (22.12.2012, suspended since 16.1.2016)

▼M48

148.	Iran Composites Institute (a.k.a. Composites Research Laboratory (CRL))	Iran Composites Institute, Iranian University of Science and Technology, 16845-188, Tehran, Iran, Telephone: 98 217 3912858 Fax: 98 217 7491206 Email: mailto:ici@iust.ac.ir Website: http://www.irancomposites.org Associated entities: Malek Ashtar University; Iran Centrifuge Technology Company (a.k.a. TESA)	The Iran Composites Institute is a centre for research and development in the field of composite materials and structures. It was established in cooperation with the Iran University of Science and Technology (IUST) and remains part of it. Through its research, IUST is involved in Iran's nuclear programme. It is linked to several Iranian academic institutions, including EU-listed Malek Ashtar University which is linked to the EU-listed Ministry of Defense for Armed Forces Logistics (MODAFL). In the past, Iran Composites Institute had been contracted to provide EU-listed Iran Centrifuge Technology Company (a.k.a. TESA) with IR-2M centrifuge rotors. Iran Composites Institute is therefore providing support to the Government of Iran and entities owned or controlled by it.	22.12.2012

▼B

	Name	Identifying information	Reasons	Date of listing
▼M46				
149.	Jelvesazan Company	22 Bahman St., Bozorgmehr Ave, 84155666, Esfahan, Iran Tel: 98 0311 2658311 15 Fax: 98 0311 2679097	Jelvesazan Company has been assisting designated entities to violate the provisions of UN and EU sanctions on Iran and is directly supporting Iran's proliferation sensitive nuclear activities. As of early 2012, Jelvesazan intended to supply controlled vacuum pumps to EU-designated Iran Centrifuge Technology Company (TESA).	22.12.2012
▼M8				
150.	[redacted]	[redacted]	[redacted]	[redacted]
▼M48				
151.	Simatec Development Company		Simatec Development Company has been assisting designated entities to violate the provisions of UN and EU sanctions on Iran and is directly supporting Iran's proliferation sensitive nuclear activities.	22.12.2012
▼M46				
152.	Aluminat	1. Parcham St, 13th Km of Qom Rd 38135 Arak (Factory) 2. Unit 38, 5th Fl, Bldg No 60, Golfam St, Jordan, 19395-5716, Tehran Tel: 98 212 2049216 / 22049928 / 22045237 Fax: 98 21 22057127 Website: www.aluminat.com	Aluminat has been assisting designated entities to violate the provisions of EU sanctions on Iran and is directly supporting Iran's proliferation sensitive nuclear activities. In early 2012, Aluminat had a contract to supply 6061-T6 aluminium to EU-designated Iran Centrifuge Technology Company (TESA).	22.12.2012
▼M48				
153.	Organisation of Defensive Innovation and Research (SPND)	Address: Negarestan 3, off Pasdaran Street, Tehran, Iran Principal place of business: Tehran, Iran Associated entities: Ministry of Defense for Armed Forces Logistics (MODAFL)	The Organisation of Defensive Innovation and Research (SPND) directly supports Iran's proliferation sensitive nuclear activities. The IAEA has identified SPND with their concerns over possible military dimensions (PMD) to Iran's nuclear programme. SPND was run by UN-designated Mohsen Fakhrizadeh-Mahabadi and is part of the Ministry of Defense for Armed Forces Logistics (MODAFL) designated by the EU.	22.12.2012

▼B

	Name	Identifying information	Reasons	Date of listing
▼M25 ———				
▼M50				
154.	First Islamic Investment Bank (FIIB)	Address: Main Office Tower, Financial Park Labuan Complex, Jalan Merdeka Federal Territory of Labuan, Labuan 87000, Malaysia Address: 19A-31-3A, Level 31, Business Suite, Wisma UOA, No. 19 Jalan Pinang, Kuala Lumpur, 50450, Malaysia Address: Menara Prima 17th floor Jalan Lingkar Mega Kuningan Blok 6.2 Jakarta 12950, Indonesia Address: Branch: 19A-31-3A, Level 31 Business Suite, Wisma UOA, Jalan Pinang 50450, Kuala Lumpur, Kuala Lumpur, Wilayah Persekutuan, 50450, Malaysia Address: Unit 13 (C), Main Office Tower, Financial Park Labuan Complex, Jalan Merdeka, 87000 Federal Territory of Labuan, Labuan F.T, 87000, Malaysia	The First Islamic Investment Bank (FIIB) is a South-Asian bank part of Sorinet Group, owned by Iranian businessman Babak Zanjani. The FIIB's activities include various actions supporting the Government of Iran's policy of restrictive measures circumvention. Therefore, the FIIB is providing support to the Government of Iran.	29.9.2025 (22.12.2012, suspended since 16.1.2016)
155.	International Safe Oil	Address: Labuan Federal Territory, Malaysia	International Safe Oil (ISO) is selling Iranian oil in Malaysia. It is assisting designated entities to violate the provisions of international restrictive measures against Iran and is providing financial support to the government of Iran. It provides support, including financial support, to the National Iranian Oil Company (NIOC) and Nafitran Intertrade Company Ltd (NICO), both EU-listed entities. International Safe Oil is therefore responsible for providing support to EU-listed entities and to the Government of Iran.	29.9.2025 (22.12.2012, suspended since 16.1.2016)
156.	Sorinet Commercial Trust Bankers Ltd. (SCT) (a.k.a.: SCT Bankers; SCT Bankers Kish Company (PJS); SCT Bankers Company Branch; Sorinet Commercial Trust)	Address: Sorinet Commercial Trust Bankers, Sadaf Tower, 3rd Floor, Suite No. 301, Kish Island, Iran Address: Sorinet Commercial Trust Bankers, No.1808, 18th Floor, Grosvenor House Commercial Tower, Sheikh Zayed Road, Dubai, UAE, P.O. Box 31988 ►C7 Address: Tehran branch: Reahi Aiiey, First of Karaj, Maksous Road 9, Tehran, Iran. SWIFT codes: SCERIRTHKSH (Kish Island branch), SCTSAEA1 (Dubai branch), SCERIRTH (Tehran branch) ◄	Sorinet Commercial Trust (SCT) participates in a network of 'trust companies' and banks used by the Government of Iran to circumvent restrictive measures, notably allowing the sale of Iranian oil in the oil black market. Therefore, Sorinet Commercial Trust provides support to the Government of Iran.	29.9.2025 (8.11.2014, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
		Address: Kish Banking Fin Activities Centre, No 42, 4th floor, VC25 Address: SCT Bankers Kish Company (PJS), Head Office, Kish Island, Sadaf Tower, 3rd floor, Suite 301, P.O. Box 87. Address: Sheykh Admad, Sheykh Zayed Road, 31988, Dubai, Port Tel: 09347695504 (Kish Island branch) 09347695504/97-143257022-99 (Dubai branch) 09347695504 (Tehran branch) Email: info@sctbankers.com zanjani@sctbankers.com		
157.	HK Intertrade Company Ltd a.k.a. HK Intertrade	Address: 21st Floor, Tai Yau Building, 181 Johnston Road, Wanchai, Hong Kong	HK Intertrade Company benefitted the Iranian government by being involved in a scheme that helped launder Iranian oil proceeds. HK Intertrade is also believed to be a front company for the National Iranian Oil Company (NIOC). NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, HK Intertrade Company Ltd provides support to the Government of Iran and is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025 (22.12.2012, suspended since 16.1.2016)
158.	Petro Suisse	Petro Suisse Avenue de la Tour-Haldimand 6, 1009 Pully, Switzerland	Petro Suisse is a company active in the Iranian oil and gas sector, led by officials of the National Iranian Oil Company (NIOC). In turn, NIOC provides financial support to the Government of Iran. Petro Suisse is also associated with Naftiran Intertrade Co (NICO) which is a subsidiary (100 %) of the National Iranian Oil Company (NIOC). Therefore, Petro Suisse is controlled by an entity providing financial support to the Government of Iran and it is associated with an entity providing support to the Government of Iran.	29.9.2025 (22.12.2012, suspended since 16.1.2016)
▼M31 ——				
▼M21 ——				

▼B

	Name	Identifying information	Reasons	Date of listing
▼M48				
161.	Sharif University of Technology	Last address known: Azadi Ave/ Street, PO Box 11365-11155, Tehran, Iran Tel. + 98 21 66 161 Email: info@sharif.ir Associated entities: Aerospace Industries Organization (AIO); Islamic Revolutionary Guard Corps (IRGC)	Sharif University of Technology is a Tehran-based university and Iran's central repository for nuclear research. In the field of ballistic missile research and production, it cooperates with the EU-listed Aerospace Industries Organization (AIO), which oversees Iran's ballistic missile programme on behalf of the Ministry of Defense for Armed Forces Logistics (MODAFL). Furthermore, it cooperates with the Islamic Revolutionary Guard Corps (IRGC) and supports it, among other activities, in its procurement efforts. Taken together, these show a significant record of engagement with the Government of Iran in military or military-related fields that constitute support to the Government of Iran.	8.11.2014
▼M8				
162.	[redacted]	[redacted]	[redacted]	[redacted]
▼M25				
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▼M50				
163.	Petropars Iran Company a.k.a. PPI	Address: No. 9, Maaref Street, Farhang Blvd, Saadet Abad, Tehran, Iran. Address: No. 33, Farhang Blvd, Sa'adat-Abad, Tehran, Iran Tel (+98) (21) 22372340	Petropars Iran Company (PPI) is a wholly-owned subsidiary of Petropars Ltd (PPL), which in turn is a wholly-owned subsidiary of Naftiran Intertrade Company Ltd (NICO). NICO belongs to the National Iranian Oil Company (NIOC). NIOC is a State-owned entity, which provides support to the Government of Iran. Petropars Iran Company (PPI) is responsible for carrying out projects in petroleum, gas and petrochemical industries, and serving as an engineering, procurement, management and construction contractor on behalf of Petropars Ltd. Therefore, Petropars Iran Company is owned or controlled by an entity providing support to the Government of Iran.	29.9.2025

▼M50

	Name	Identifying information	Reasons	Date of listing
164.	Petropars Oilfield Services Company (aka: POSCO)	Address: Kish harbor, PPI Bldg,	Petropars Oilfield Services Company (POSCO) is a wholly-owned subsidiary of Petropars Iran, which is in turn a wholly-owned subsidiary of Petropars Ltd (PPL). PPL is wholly-owned by Naftiran Intertrade Company Ltd (NICO), which belongs to the National Iranian Oil Company (NIOC). NIOC is a State-owned company which provides support to the Government of Iran. POSCO is responsible for the management of drilling operations by Petropars Ltd and has also provided consultancy services to NIOC and NISOC. Therefore, POSCO is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025 (8.6.2013, suspended since 16.1.2016)

▼M9

165.	[redacted]	[redacted]	[redacted]	[redacted]
166.	[redacted]	[redacted]	[redacted]	[redacted]

▼M50

166.	Petropars Resources Engineering Ltd	Address: 4th Floor, No. 19, 5th St., Gandi Ave., Tehran, 1517646113, Iran	Petropars Resources Engineering Ltd (PRE) is a wholly-owned subsidiary of Petropars Iran, which in turn is a wholly-owned subsidiary of Petropars Ltd (PPL). PPL is wholly owned by Naftiran Intertrade Company Ltd (NICO), which belongs to the National Iranian Oil Company (NIOC), which is a State-owned company providing support to the Government of Iran. PRE is responsible for management and engineering services and providing human resources for oil and gas projects and associated needs in the areas of electricity, mechanics and instruments. Therefore, PRE is owned and controlled by an entity providing support to the Government of Iran.	29.9.2025

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	Name	Identifying information	Reasons	Date of listing
▼M25 ———				
▼M50 168.	Post Bank of Iran a.k.a. Post Bank Iran a.k.a. Post Bank	237, Motahari Ave., Tehran, 1587618118, Iran Registration number: IRFEB57517 Website: www.postbank.ir	Post Bank of Iran is an Iranian bank, which is majority-owned and controlled by the Government of Iran. Therefore, Post Bank of Iran provides support to the Government of Iran.	29.9.2025 (16.11.2013, suspended since 16.1.2016)
169.	Iran Insurance Company a.k.a. Bimeh Iran	Address: No. 51, South Shiraz Street, South Brazil Street, Vanak Square, Tehran, Iran Address: 21st Floor, City Tower 2 Opposite Future Museum Sheikh Zayed Road, Dubai Address: PO Box 2004, Dubai, UAE Address: 2nd Floor, Al Awtad Building Near Al Maha Petrol Station, Watt Ayah PO Box 417, Postal Code 100, Muscat, Oman Address: 2nd Floor, Gumran Butti Suweidi Al Dhahi Building Opposite Hamdan Center, Hamdan Street PO Box 3281, Abu Dhabi, UAE	Iran Insurance Company is a public Iranian entity working in the field of insurance, wholly owned by the Iranian government. Iran Insurance Company holds a significant share of the national Iranian insurance market. It provides reinsurance services to companies in the oil and gas sector. Therefore, Iran Insurance Company is owned or controlled by the Government of Iran.	29.9.2025 (16.11.2013, suspended since 16.1.2016)
170.	Export Development Bank of Iran (EDBI)	Address: Export Development Building, 21st floor, Tose'e tower, 15th st, Ahmad Qasir Ave, Tehran, Iran Address: 15138-35711 next to the 15th Alley, Bokharest Street, Argentina Square, Tehran, Iran Address: Tose'e Tower, corner of 15th St, Ahmad Qasir Ave., Argentine Square, Tehran, Iran Address: No. 129, 21 's Khaled Eslamboli, No. 1 Building, Tehran, Iran; C.R. No. 86936	The Export Development Bank of Iran (EDBI) is a state-owned Iranian bank. Therefore, EDBI provides support to the Government of Iran.	29.9.2025 (16.11.2013, suspended since 16.1.2016)
171.	Persia International Bank Plc	6 Lothbury, London Post Code: EC2R 7HH, United Kingdom	Persia International Bank PLC is an entity owned and controlled by Bank Mellat and Bank Tejarat. Tejarat Bank and Bank Mellat are partially owned and controlled by the Government of Iran. Furthermore, they provide financial support to the Government of Iran and entities controlled by the Government of Iran. Therefore, Persia International Bank is owned or controlled by entities providing support to the Government of Iran.	29.9.2025 (16.11.2013, suspended since 16.1.2016)

▼M50

	Name	Identifying information	Reasons	Date of listing
172.	Iranian Offshore Engineering & Construction Co a.k.a. IOEC	Address: 18 Shahid Dehghani Street, Qarani Street, Tehran 19395-5999, Iran Address: No.52 North Kher-admand Avenue (Corner of 6th Alley) Tehran, Iran Web: http://www.ioec.com/	The Iranian Offshore Engineering & Construction Company is a subsidiary of the National Iranian Oil Company (NIOC). NIOC is a State-owned and operated entity providing substantial financial resources to the Government of Iran. NIOC holds the production, sale and export monopoly for Iranian oil. The revenue generated by NIOC's oil sales plays a significant role in funding Iran's military and the IRGC. Therefore, the Iranian Offshore Engineering & Construction Company is owned or controlled by an entity which provides support to the Government of Iran.	29.9.2025 (16.11.2013, suspended since 16.1.2016)
173.	Bank Refah Kargaran (a.k.a. Bank Refah)	Address: Moffettah No. 125, P.O. Box 15815-1866, Tehran, Iran Address: No.125 – Mofatteh Cross- Taleghani Ave. – Tehran, Iran Address: 40, North Shiraz Street, Mollasadra Ave., Vanak Sq., Tehran, Iran Address: No.186 – North Shiraz St – Mollasadra Ave – Vanak Sq – Tehran, 1991756783, Iran Address: Shahid Mofatteh Building, 125, Moffateh Crossroad, Talleghani Ave., Tehran, Iran ►C7 Swift: REFAIRTH ◄	Bank Refah Kargaran is an Iranian bank with links to the Government of Iran. It cooperates with, among others, the Ministry of Defense and Armed Forces Logistics (MODAFL), including by facilitating the purchase of weapons. It also cooperates with the Ministry of Economy and Finance and the Ministry of Health. Bank Refah Kargaran is owned by the Government of Iran. Thus, Bank Refah Kargaran is controlled by and providing support to the Government of Iran.	29.9.2025 (16.11.2013, suspended since 16.1.2016);

▼M51

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▼M55

204.	MAPNA Group	Address: No. 231, Mirdamad Blvd., 1918953651, Tehran, Iran Registration number: 99134 National ID: 10101431259 Economic code: 411111477788 Website: www.mapnagroup.com	The MAPNA Group is a key player in the Iranian energy, oil and gas sector. It is owned or controlled by the EU-listed Ministry of Energy of Iran (MOE). In cooperation with State actors and State-owned entities, such as the Ministry of Petroleum and the National Iranian Oil Company, the MAPNA Group is involved in the exploration of gas and oil fields and therefore contributes to Iran's oil revenues. A significant part of those revenues is allocated to the armed forces, including the Islamic Revolutionary Guard Corps (IRGC), and to the Organisation of Defensive Innovation and Research (SPND). Therefore, the MAPNA Group provides support to the Government of Iran. In addition, the MAPNA Group is providing support for Iran's proliferation-sensitive nuclear activities.	30.7.2026

▼M29

(1) In accordance with Council Implementing Regulation (EU) 2016/603, this entry shall apply until 22 October 2016.

▼B

II. ►C1 Iranian Revolutionary Guard Corps (IRGC) ◄

A. *Persons*

	Name	Identifying information	Reasons	Date of listing
▼M41				
1.	IRGC Brigadier-General Javad DARVISH-VAND		Former Deputy Minister of Defence and Inspector General of MODAFL.	23.6.2008
▼M48				
2.	Ali FADAVI	DOB: 13.3.1961 POB: Ardestan, Iran Function: Deputy Commander of the Islamic Revolutionary Guard Corps (IRGC) Rank: Rear Admiral Nationality: Iranian Gender: male	Rear Admiral Ali Fadavi is Deputy Commander of the Islamic Revolutionary Guard Corps (IRGC) and was temporarily acting Commander of the IRGC. He is the former Commander of the IRGC Navy.	26.7.2010
3.	Parviz FATAH	DOB: 1961 POB: Anzal, West Azerbaijan Province, Iran Nationality: Iranian Gender: male Passport no.: 6379886494	Parviz Fatah is Head of the Execution of Imam Khomeini's Order (EIKO) and a former member of the Islamic Revolutionary Guard Corps (IRGC). EIKO is an economic conglomerate under the direct supervision of the Supreme Leader. EIKO, together with two other organisations, is estimated to control more than half of the Iranian economy. Parviz Fatah is therefore providing support to the Government of Iran.	26.7.2010
▼M46				
4.	IRGC Brigadier-General Seyyed Mahdi FARAHI		Deputy Minister of Defence and Armed Forces Support since 2021. Previously Deputy Minister of Defence and Industrial Affairs of the Ministry of Defence, head of the Defence Industries and Aerospace Organizations of the Ministry of Defence, as well as commander of the Armed Forces Personnel Training Camp. Former head of Iran's Aerospace Industries Organisation (AIO) and former managing director of the EU-designated Defence Industries Organisation (DIO). Member of the IRGC.	23.6.2008
▼M48				
5.	Ali HOSEYNITASH	Rank: Brigadier-General Nationality: Iranian Gender: male	Islamic Revolutionary Guard Corps (IRGC) Brigadier-General Ali Hoseynitash has been the Head of the Strategic Directorate of the Supreme National Security Council since his appointment in 2013. The Supreme National Security Council shapes and coordinates the defence and security policies of Iran, including major decisions regarding Iran's nuclear programme. Ali Hoseynitash is therefore involved in nuclear and ballistic missile activities and provides support to the Government of Iran.	23.6.2008

▼M48

	Name	Identifying information	Reasons	Date of listing
▼M41				
6.	Mohammad Ali JAFARI		Former Commander of the IRGC. Currently head of the Hazrat Baqiatollah al-Azam Cultural and Social Headquarters.	23.6.2008
▼M48				
7.	Mostafa Mohammad NAJJAR	DOB: 2.12.1956 POB: Tehran, Iran Rank: Brigadier-General Nationality: Iranian Gender: male	Brigadier-General Mostafa Najjar has been a senior advisor to the Chief of General Staff of the Armed Forces on Knowledge and Technology Industry since September 2013. He is the former Minister for the Interior (2009-2013) and former Minister of the Ministry of Defense for Armed Forces Logistics (MODAFL) (2005-2009), responsible for all military programmes, including ballistic missiles programmes. Member of the Islamic Revolutionary Guard Corps (IRGC).	23.6.2008
▼M45				
8.	Mohammad Reza NAQDI (محمد رضا نقدی) (a.k.a. Mohammad-Reza NAQDI; Mohammad Reza NAGDI; Gholamreza NAQDI)	POB: Tehran, Iran Function: Islamic Revolutionary Guard Corps (IRGC) Deputy Commander Rank: Brig. General Nationality: Iranian Gender: male	Mohammad Reza Naqdi is a Deputy Commander and Brigadier General within the IRGC and is therefore a member of the Islamic Revolutionary Guard Corps (IRGC).	26.7.2010 (UN: 3.3.2008)
▼M54	_____			
▼M43	_____			
▼M54	_____			
▼M48				
12.	Ali SHAMSHIRI	Function: Deputy Assistant and Advisor to the Supreme Leader Rank: Brigadier-General Nationality: Iranian Gender: male	Islamic Revolutionary Guard Corps (IRGC) Brigadier-General Ali Shamshiri is Deputy Assistant and Advisor to the Supreme Leader in his role as Commander in Chief. Furthermore, he has held senior roles in the Ministry of Defense for Armed Forces Logistics (MODAFL), as head of the Intelligence Protection Organisation of MODAFL.	23.6.2008

▼M48

	Name	Identifying information	Reasons	Date of listing
13.	Ahmad VAHIDI	DOB: 27.6.1958 POB: Shiraz, Iran Rank: Brigadier-General Nationality: Iranian Gender: male	Brigadier-General Ahmad Vahidi has been a prominent member of the Islamic Revolutionary Guard Corps (IRGC) since 1979. He was appointed as Deputy Chief for Intelligence in 1981, played a role in organising the Ministry of Intelligence, became the first commander of the IRGC Quds Force in 1988 and was in charge of the IRGC Intelligence Unit. He further set up a number of IRGC garrisons that are responsible for organising terrorist activities. In 1997, he was transferred to the Ministry of Defense. He has been nominated as Defence Minister in 2009 and served in this post until 2013. He is still a high-ranking figure within the IRGC.	23.6.2008

▼M3

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▼M35

15.	Abolghassem Mozaffari SHAMS		Former head of Khatam al-Anbiya Construction Headquarters.	1.12.2011

▼M3

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▼M41

17.	Ali Ashraf NOURI		Head of the Basij Islamic Revolution Art Educational and Research Complex. Formerly IRGC Deputy Commander, IRGC Political Bureau Chief.	23.1.2012
18.	Hojatoleslam Ali SAIDI (a.k.a. Hojjat- al-Eslam Ali Saidi or Saeedi)		Since March 2017, head of the ideological and political bureau of the Supreme Leader in his role as Commander-in-chief. Previously representative of the Supreme Leader to the IRGC.	23.1.2012

▼M54

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▼M51

▼C6

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▼B

B. *Entities*

	Name	Identifying information	Reasons	Date of listing
1.	►C1 Iranian Revolutionary Guard Corps ◄ (IRGC)	Tehran, Iran	Responsible for Iran's nuclear programme. Has operational control for Iran's ballistic missile programme. Has undertaken procurement attempts to support Iran's ballistic missiles and nuclear programmes	26.7.2010
▼M46 2.	IRGC Air Force		Operates Iran's inventory of short and medium range ballistic missiles.	23.6.2008
3.	IRGC-Air Force Al-Ghadir Missile Command		The IRGC-Air Force Al-Ghadir Missile Command is a specific element within the IRGC Air Force that has been working with EU-designated SBIG, with the FATEH 110, short range ballistic missile as well as the Ashura medium range ballistic missile. This command appears to be the entity that actually has the operational control of the missiles.	26.7.2010
▼B 4.	Naserin Vahid		Naserin Vahid produces weapons parts on behalf of the IRGC. An IRGC front company.	26.7.2010
▼M46 5.	IRGC Qods Force	Tehran, Iran	Iran's Islamic Revolutionary Guard Corps (IRGC) Qods Force is responsible for operations outside Iran and is Tehran's principal foreign policy tool for special operations and support to terrorists and Islamic militants abroad. Hizballah used Qods Force-supplied rockets, anti-ship cruise missiles (ASCMs), man-portable air defense systems (MANPADS), and unmanned aerial vehicles (UAVs) in the 2006 conflict with Israel and benefited from Qods Force training on these systems, according to press reporting. According to a variety of reports, the Qods Force continues to re-supply and train Hizballah on advanced weaponry, anti-aircraft missiles, and long-range rockets. The Qods Force continues to provide limited lethal support, training, and funding to Taliban fighters in southern and western Afghanistan including small arms, ammunition, mortars, and short-range battlefield rockets.	26.7.2010

▼B

	Name	Identifying information	Reasons	Date of listing
▼M45				
6.	Sepanir Oil and Gas Energy Engineering Company (a.k.a. Sepah Nir; SEPANIR; SepanirCompany; Sepanir Oil & Gas Energy Eng. Co.; Sepanir Oil and Gas Energy Eng. Co SSK)	Address No 1: No 216 (Former 319) Bahonar Avenue (Niavaran), Tehran, Iran Address No 2: P.O. Box 19575/657, Tehran, Iran Telephone no.: +98 21 22833960; +98 22 833960 (10 lines) Telefax no.: +98 2122 833970 Website: www.sepanir.com Type of entity: public company Place of registration: Iran Date of registration: 2006 Principal place of business: Iran Associated entities: Islamic Revolutionary Guard Corps (IRGC); Khatam al-Anbiya Construction Headquarters (KAA)	Sepanir Oil and Gas Energy Engineering Company is an oil and gas company and a subsidiary of Khatam al-Anbiya Construction Headquarters (KAA) and is therefore controlled by the IRGC.	26.7.2010 (UN: 9.6.2010)
▼M48				
7.	Bonyad Taavon Sepah (a.k.a. IRGC Cooperative Foundation; Bonyad-e Ta'avon-Sepah; Sepah Cooperative Foundation)	Address: Niayes Highway, Seoul Street, Tehran, Iran	Bonyad Taavon Sepah, also known as the IRGC Cooperative Foundation, was formed by the Commanders of the EU-listed Islamic Revolutionary Guard Corps (IRGC) to structure the IRGC's investments and to provide the IRGC's permanent personnel with financial loans, mortgages, business loans, as well as with land and construction materials. It is controlled by the IRGC. Bonyad Taavon Sepah's Board of Trustees is composed of nine members, eight of whom are IRGC members. These officers include the IRGC's Commander in Chief, who is the Chairman of the Board of Trustees, the Supreme Leader's representative to the IRGC, the Basij commander, the IRGC Ground Forces commander, the IRGC Air Force commander, the IRGC Navy commander, the head of the IRGC Information Security Organisation, a senior IRGC officer from the Armed Forces General Staff and a senior IRGC officer from the Ministry of Defense for Armed Forces Logistics (MODAFL).	23.5.2011

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	Name	Identifying information	Reasons	Date of listing
8.	Ansar Bank (a.k.a. Ansar Finance and Credit Fund; Ansar Financial and Credit Institute; Ansae Institute; Ansar al-Mojahedin No-Interest Loan Institute; Ansar Saving and Interest Free-Loans Fund)	No. 539, North Pasdaran Avenue, Tehran; Ansar Building, North Khaje Nasir Street, Tehran, Iran	Bonyad Taavon Sepah created Ansar Bank to provide financial and credit services to IRGC personnel. Initially, Ansar Bank operated as a credit union and transitioned in to a fully fledged bank in mid 2009, upon receiving a licence from Iran's Central bank. Ansar Bank, formerly known as Ansar al Mojahedin, has been linked to the IRGC for over 20 years. IRGC members received their salaries through Ansar bank. In addition, Ansar bank provided special benefits to IRGC personnel, includingreduced rates for home furnishings and free, or reduced-cost, health care.	23.05.2011
▼M41				
9.	Mehr Bank (a.k.a Mehr Finance and Credit Institute; Mehr Interest-Free Bank)	No. 182, Shahid Tohidi St, 4th Golsetan, Pasdaran Ave, Tehran 1666943, Iran	Mehr Bank is controlled by Bonyad Taavon Sepah and the IRGC. Mehr Bank provides financial services to the IRGC. According to an open source interview with the then head of Bonyad Taavon Sepah, Parviz Fatah, Bonyad Taavon Sepah created Mehr Bank to serve the Basij (paramilitary arm of the IRGC).	23.05.2011
▼M9				
▼M48				
11.	Behnam Sahriyari Trading Company	Postal address: Ziba Building, 10th Floor, Northern Sohrevardi Street, Tehran, Iran	Behnam Sahriyari Trading Company is owned by Behnam Sahriyari, who leads the Islamic Revolutionary Guard Corps (IRGC) Quds Force Unit 190, which conducts arms smuggling operations. He uses his company as a front for IRGC weapons transfers. Therefore, Behnam Sahriyari Trading Company is involved in the shipment of arms on behalf of the IRGC.	23.1.2012
▼M41				
12.	Etemad Amin Invest Co Mobin (a.k.a.: Etemad Amin Investment Company Mobin; Etemad-e Mobin; Etemad Amin Invest Company Mobin; Etemad Mobin Co.; Etemad Mobin Trust Co.; Etemade Mobin Company; Mobin Trust Consortium; Etemad-e Mobin Consortium)	Pasadaran Av. Tehran, Iran	A company owned or controlled by IRGC that contributes to financing the strategic interests of the regime.	26.7.2010
▼M51				
▼C6				

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III. **Islamic Republic of Iran Shipping Lines (IRISL)**

A. *Person*

	Name	Identifying information	Reasons	Date of listing
▼M25				
▼M53				
▼B				
	2. [redacted]	[redacted]	[redacted]	[redacted]
	3. [redacted]	[redacted]	[redacted]	[redacted]
▼M53				
▼B				
	4. [redacted]	[redacted]	[redacted]	[redacted]
	5. [redacted]	[redacted]	[redacted]	[redacted]
▼M9				
	6. [redacted]	[redacted]	[redacted]	[redacted]
▼B				
	7. [redacted]		[redacted]	[redacted]
▼M25				
▼M53				

▼B

	Name	Identifying information	Reasons	Date of listing
9.	[redacted]	[redacted]	[redacted]	[redacted]
10.	[redacted]	[redacted]	[redacted]	[redacted]
▼M9 11.	[redacted]	[redacted]	[redacted]	[redacted]
▼B 12.	[redacted]	[redacted]	[redacted]	[redacted]
13.	[redacted]	[redacted]	[redacted]	[redacted]
▼M12 14.	[redacted]	[redacted]	[redacted]	[redacted]

▼B

B. *Entities*

	Name	Identifying information	Reasons	Date of listing
1.	[redacted]	[redacted]	[redacted]	[redacted]

▼B

	Name	Identifying information	Reasons	Date of listing
	[redacted]	[redacted]	[redacted]	[redacted]
▼M25	———			
▼B	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]
▼M50				
1. (c)	Hanseatic Trade Trust & Shipping (HTTS) GmbH	Postal address: Schottweg 7, 22087 Hamburg, Germany; Opp 7th Alley, Zarafshan St, Eivanak St, Qods Township; HTTS GmbH, Iran	Hanseatic Trade Trust & Shipping GmbH (HTTS) is a Hamburg-based company owned by IRISL Europe, which is in turn a company owned by IRISL. HTTS plays a significant role in facilitating operations for Iran's state-owned shipping conglomerate, the Islamic Republic of Iran Shipping Lines (IRISL). Therefore, HTTS is owned and controlled by IRISL and is providing essential services to IRISL, or to entities owned or controlled by it or acting on its behalf.	29.9.2025 (26.7.2010, suspended since 16.1.2016)

▼B

	Name	Identifying information	Reasons	Date of listing
▼M50 1. (k)	IRITAL Shipping SRL	Via Gerolamo Morone 6, 20121 Milan, Italy Registration number: IT03329300101 Date of registration: 12.3.1992	IRITAL Shipping SRL is owned and controlled by Islamic Republic of Iran Shipping Lines (IRISL). It is involved in Iran's proliferation efforts by transporting components for its ballistic missile programme. Therefore, IRITAL Shipping SRL is owned by IRISL, and it is involved in Iran's nuclear proliferation's activities.	29.9.2025 (26.7.2010, suspended since 16.1.2016)
▼M25 ———				
▼B 25.	[redacted]	[redacted]	[redacted]	[redacted]
26.	[redacted]	[redacted]	[redacted]	[redacted]
26.a.	[redacted]	[redacted]	[redacted]	[redacted]
26.b.	[redacted]	[redacted]	[redacted]	[redacted]
26.c.	[redacted]	[redacted]	[redacted]	[redacted]
26.d.	[redacted]	[redacted]	[redacted]	[redacted]
27.	[redacted]	[redacted]	[redacted]	[redacted]

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	Name	Identifying information	Reasons	Date of listing
▼M25 _____				
▼M4 _____				
▼M25 _____				
▼M50 36.	E-Sail a.k.a. E-Sail Shipping Company a.k.a. Rice Shipping a.k.a. Santex Lines Limited	Address: Suite 1501, Shanghai Zhong Rong Plaza, 1088 Pudong South Road, Shanghai, China Registration number: 1429927	E-Sail, alias IRISL Shipping Company Limited, is a company acting on behalf of IRISL, and is active in transporting sensitive cargo linked to Iran's nuclear and ballistic missile programmes.	29.9.2025 (1.12.2011, suspended since 16.1.2016)
37.	IRISL Maritime Training Institute	No 115, Ghaem Magham Farahani St. P.O. Box 15896-53313, Tehran, Iran	IRISL Maritime Training Institute is a leading maritime education institution and a subsidiary of Islamic Republic of Iran Shipping Lines (IRISL). Therefore, it is owned or controlled by IRISL.	29.9.2025 (8.4.2015, suspended since 16.1.2016)
39.	Kheibar Company a.k.a. Khaybar Company	Address: 16th Kilometre Old Karaj Road, 13861 Tehran, Iran	Kheibar Company is a subsidiary of Islamic Republic of Iran Shipping Lines (IRISL). Kheibar Company provides spare parts for shipping vessels and supplies mining and construction machinery. Therefore, Kheibar Company is owned or controlled by IRISL.	29.9.2025 (8.4.2015, suspended since 16.1.2016)
▼M53 43.	Good Luck Shipping Company	Address: Office 206/207 Malik Saeed, Ahmad Ghabbash, Bur Dubai, Dubai, United Arab Emirates Address: P.O. Box 5562, Dubai, United Arab Emirates Address: P.O. Box: 8486, Dubai, United Arab Emirates Address: P.O. Box 8486, Office 206/207, Ahmad Ghubash Building, Oud Mehta, Bur Dubai, United Arab Emirates	Good Luck Shipping provides shipping and logistical services to Hafiz Darya Shipping Lines (HDSL), a designated entity affiliated with the Islamic Republic of Iran Shipping Lines (IRISL), as well as to Petrochemical Commercial Company (PCC), a company owned by Iran's Ministry of Petroleum.	29.9.2025 (1.12.2011, suspended since 16.1.2016)
▼M25 _____				
▼M4 _____				
▼M25 _____				
▼M1 _____				

▼B

	Name	Identifying information	Reasons	Date of listing
▼M25				
▼M21				
▼M8				
▼M25				
▼M21				
▼M25				
▼M9				
▼M25				
▼M21				
▼M25				
▼M1				
▼M25				
▼M21				

▼B

	Name	Identifying information	Reasons	Date of listing
▼M25				
▼M21				
▼M25				
▼M12				
	154. [redacted]	[redacted]	[redacted]	[redacted]
▼M25				
▼M50				
	156. Islamic Republic of Iran Shipping Lines (IRISL)	Address: Pasadaran Street/Shahid Lavasani, Asman Tower, No. 523, P.O. Box 1311-19395, Tehran, Iran	Islamic Republic of Iran Shipping Lines (IRISL) is a public shipping company, co-owned by the Government of Iran, that has been involved in the shipment of military-related cargo from Iran to several other countries. It supports IRGC naval operations by providing ships, which it also deploys for reconnaissance missions. IRISL is connected to Iran's proliferation efforts by transporting components for its ballistic missile programme. Therefore, IRISL provides support for Iran's proliferation-sensitive nuclear activities. Furthermore, it provides support to the Government of Iran.	29.9.2025 (27.11.2013, suspended since 16.1.2016)
▼M53				
	158. Hafiz Darya Shipping Lines (HDSL) (a.k.a. HDS Lines)	Address: No. 60, Ehteshamiyeh Square, 7th Neyestan Street, Pasdaran Avenue, Tehran, Iran Business registration document # 5478431, issued March 2009 IMO number: 5878431; established in 2009	Hafiz Darya Shipping Lines (HDSL) acts as a shell company for IRISL. It owns or operates vessels for which the Islamic Republic of Iran Shipping Line's (IRISL) is identified as the beneficial owner. Therefore, HDSL is acting on behalf of IRISL.	29.9.2025 (27.11.2013, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
159.	Irano Misr Shipping Company (a.k.a. Nefertiti Shipping)	Address: 6, El Horeya Rd., El Attarein, Alexandria, Egypt Address: Inside Damietta Port, New Damietta City, Damietta, Egypt Address: 403, El NahdaSt., Port Said, Port Said, Egypt	Irano MISR Shipping Company is a subsidiary of EU-listed IRISL in Egypt, providing services in Egyptian ports. Irano MISR Shipping Company is therefore an entity owned or controlled by IRISL.	29.9.2025 (27.11.2013, suspended since 16.1.2016)
162.	IRISL Europe GmbH (Hamburg)	Address: Schottweg 5, 22087 Hamburg, Germany Registration Number: HRB 81573	IRISL Europe GmbH (Hamburg) is owned by IRISL.	29.9.2025 (27.11.2013, suspended since 16.1.2016)
163.	IRISL Marine Services and Engineering Company	Address: No. 221, Northern Iranshahr St., Karimkhan Ave., Tehran, Iran Address: Sarbandar Gas Station, PO Box 199, Bandar Imam Khomeini, Iran Address: Karim Khan Zand Avenue (or: Karimkhan Avenue), Iran Shahr Shomai (or: Northern Iranshahr Street), No 221, Tehran, Iran Address: Shahaid Rajaee Port Road, Kilometer of 8, Before Tavanir Power Station, Bandar Abbas, Iran	IRISL Marine Services and Engineering Company is a subsidiary of and is controlled by IRISL.	29.9.2025 (27.11.2013, suspended since 16.1.2016)
167.	Safiran Payam Darya (SAPID) Shipping Company (a.k.a. Safiran Payam Darya Shipping Lines, a.k.a. SAPID Shipping Company; a.k.a. SAFID Shipping)	Asseman Tower, Pasdaran Street, Shahid Sayyade Shirazee Square, Tehran, Iran Registration number: IR0015973950 Date of registration: 2009	Safiran Payam Darya Shipping Company (Sapid Shipping Company) is an Iranian shipping company owned and controlled by Islamic Republic of Iran Shipping Lines (IRISL), performing various services for the entity.	29.9.2025 (27.11.2013, suspended since 16.1.2016)
169.	Soroush Saramin Asatir (SSA) (a.k.a. Soroush Sarzamin Asatir Ship Management Company, Rabbaran Omid Darya Ship Management Company, Sealeaders)	No 14 (alt. 5), Shabnam Alley, Fajr Street, Shahid Motahhari Avenue, PO Box 196365-1114, Tehran, Iran	Soroush Saramin Asatir (SSA) operates and manages a number of Islamic Republic of Iran Shipping Lines (IRISL) vessels. Accordingly, it acts on behalf of IRISL and provides essential services to it.	29.9.2025 (27.11.2013, suspended since 16.1.2016)

▼**M50**

	Name	Identifying information	Reasons	Date of listing
170.	South Way Shipping Agency Co. Ltd a.k.a. South Shipping Line Iran a.k.a. Hoopad Darya Shipping Agent	Address: Qaem Magham Farahani St., Tehran, Iran Registration number: IR968053464	South Way Shipping Agency Co. Ltd is co-owned by the Islamic Republic of Iran Shipping Lines (IRISL) and acts for IRISL in Iranian ports overseeing tasks such as loading and unloading. It is also co-owned by the Government of Iran. Therefore, South Way Shipping Agency Co. Ltd is an entity owned and controlled by IRISL and by the Government of Iran.	29.9.2025 (27.11.2013, suspended since 16.1.2016)
171.	Valfajr 8th Shipping Line (a.k.a. Valjafr 8th Shipping Line, Valfajr)	No 119, Corner Shabnam Alley, Shoaa Square, Ghaem Magam Farahani, Tehran, Iran P.O. Box 15875/4155 Abyar Alley, Corner of Shahid Azodi St. & Karim Khan Zand Ave., Tehran, Iran Shahid Azodi St., Karim Khan Zand Ave., Abiar Alley, PO Box 4155, Tehran, Iran Registration number: IR30813GN	Valfajr 8th Shipping Line is owned and controlled by Islamic Republic of Iran Shipping Lines (IRISL).	29.9.2025 (27.11.2013, suspended since 16.1.2016).

▼M24

ANNEX X

Websites for information on the competent authorities and address for notification to the European Commission

▼M47

BELGIUM

https://diplomatie.belgium.be/en/policy/policy_areas/peace_and_security/sanctions

BULGARIA

https://www.mfa.bg/en/EU-sanctions

CZECHIA

www.financnianalytickyurad.cz/mezinarodni-sankce.html

DENMARK

https://um.dk/udenrigspolitik/sanktioner/ansvarlige-myndigheder

GERMANY

https://www.bmwi.de/Redaktion/DE/Artikel/Aussenwirtschaft/embargos-aussenwirtschaftsrecht.html

ESTONIA

https://vm.ee/sanktsioonid-ekspordi-ja-relvastuskontroll/rahvusvahelised-sanktsioonid

IRELAND

https://www.dfa.ie/our-role-policies/ireland-in-the-eu/eu-restrictive-measures/

GREECE

http://www.mfa.gr/en/foreign-policy/global-issues/international-sanctions.html

SPAIN

https://www.exteriores.gob.es/es/PoliticaExterior/Paginas/SancionesInternacionales.aspx

FRANCE

http://www.diplomatie.gouv.fr/fr/autorites-sanctions/

CROATIA

https://mvep.gov.hr/vanjska-politika/medjunarodne-mjere-ogranicavanja/22955

ITALY

https://www.esteri.it/it/politica-estera-e-cooperazione-allo-sviluppo/politica_europea/misure_deroghe/

CYPRUS

https://mfa.gov.cy/themes/

LATVIA

https://www.fid.gov.lv/en

LITHUANIA

https://www.urm.lt/en/lithuania-in-the-region-and-the-world/lithuanias-security-policy/international-sanctions/997

LUXEMBOURG

https://maee.gouvernement.lu/fr/directions-du-ministere/affaires-europeennes/organisations-economiques-int/mesures-restrictives.html

HUNGARY

https://kormany.hu/kulgazdasagi-es-kulugyminiszterium/ensz-eu-szankcios-tajekoztato

▼**M47**

MALTA

https://smb.gov.mt/

NETHERLANDS

https://www.rijksoverheid.nl/onderwerpen/internationale-sancties

AUSTRIA

https://www.bmeia.gv.at/themen/aussenpolitik/europa/eu-sanktionen-nationale-behoerden/

POLAND

https://www.gov.pl/web/dyplomacja/sankcje-miedzynarodowe

https://www.gov.pl/web/diplomacy/international-sanctions

PORTUGAL

https://portaldiplomatico.mne.gov.pt/politica-externa/medidas-restritivas

ROMANIA

http://www.mae.ro/node/1548

SLOVENIA

http://www.mzz.gov.si/si/omejevalni_ukrepi

SLOVAKIA

https://www.mzv.sk/europske_zalezitosti/europske_politiky-sankcie_eu

FINLAND

https://um.fi/pakotteet

SWEDEN

https://www.regeringen.se/sanktioner

Address for notifications to the European Commission:

European Commission

Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA)

Rue de Spa 2/Spastraat 2

B-1049 Bruxelles/Brussel,

E-mail: relex-sanctions@ec.europa.eu

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