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# REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

## on the application of Directive (EU) 2021/555 of the European Parliament and of the Council of 24 March 2021 on control of the acquisition and possession of weapons

# 1. INTRODUCTION

The 2020-2025 EU action plan against firearms trafficking[1] adopted in July 2020 flags the full implementation of the Firearms Directive as a top priority, and the Counter-Terrorism Agenda of December 2020[2] confirmed this.

This report provides an assessment of the application of the Council Directive 91/477/EEC of 18 June 1991 on control of the acquisition and possession of weapons (hereafter the "Firearms Directive"), as required by its article 17 after its latest amendment in 2017.[3] In the meantime, the Firearms Directive and its subsequent amendments where replaced and repealed by, and codified in Directive (EU) 2021/555 of the European Parliament and of the Council of 24 March 2021.[4] For the sake of clarity, unless otherwise stated, the numbering of articles mentioned in the report refer to the numbers of Directive (EU) 2021/555 currently in force.

Pursuant to Article 17 (now 24), the report must notably examine the categories of firearms and issues related to the implementation of the system for the European firearms pass, to marking and to the impacts of new technologies such as 3D printing, the use of QR code and the use of radio-frequency identification (RFID). As announced by the EU Strategy to tackle Organised Crime 2021-2025,[5] this report also identifies initial means of improving the legal framework. In preparing this report, the Commission relied primarily on the transposition measures notified by Member States, as well as on publically available information.

In addition, in November 2019, the Commission circulated to Member States a detailed questionnaire dealing with the topics mentioned in Article 17 (now 24), to which 19 Member States replied. The Commission presented a summary of these replies during the meeting of the Firearms Committee on 18 December 2019 and held preliminary discussions in the Committee on that basis.

Furthermore, the Commission has been actively participating in the Firearms priority of the European Multidisciplinary Platform Against Criminal Threats[6] (hereafter "the Firearms platform") and in the European Firearms Expert group,[7] which helped identify the current and potential firearms threats and the impact in the criminal activity.

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1 COM(2020) 608 final

2 COM(2020) 795 final

3 OJ L 137, 24.05.2017 p.22-39

4 OJ L 115, 6.4.2021, p.1-25

5 COM(2021) 170 final

6 EMPACT (https://www.consilium.europa.eu/es/documents-publications/publications/empact/) is a platform which enable the structured cooperation between law enforcement agencies, customs, tax authorities, magistrates of Member States, European Institutions and Agencies and, where relevant, third countries, international organisations and the private sector in operational cycles of four years.

7 Sub-group of the law enforcement working party (LEWP), within the Council of the European Union. https://www.consilium.europa.eu/en/council-eu/preparatory-bodies/law-enforcement-working-party/

However, due to severe delays of transposition at national level[8] the Commission could not carry out a full conformity assessment of national laws and practices.

In July 2020, the United Nations Office on Drugs and Crime published an Issue Paper entitled "Illicit Trafficking in Firearms, their Parts, Components and Ammunition to, from and across the European Union", which provides important considerations and policy recommendations on the current threats and legal loopholes in the control of firearms at global level.[9]

## 2. IMPLEMENTATION OF THE FIREARMS DIRECTIVE

The Firearms Directive regulates the acquisition, possession, and the commercial exchange within the EU of civilian firearms (e.g. firearms used for sport shooting and hunting). It sets common minimum standards, which all Member States have to transpose in their national weapon laws, and aims at balancing internal market objectives (i.e. the cross-border movement of firearms) and security policy objectives (i.e. the high level of security and protection against criminal acts and illicit trafficking) within the EU. This Directive constitutes a development of the Schengen *acquis*, as it is part of the common set of EU rules which enable the free movement of persons.

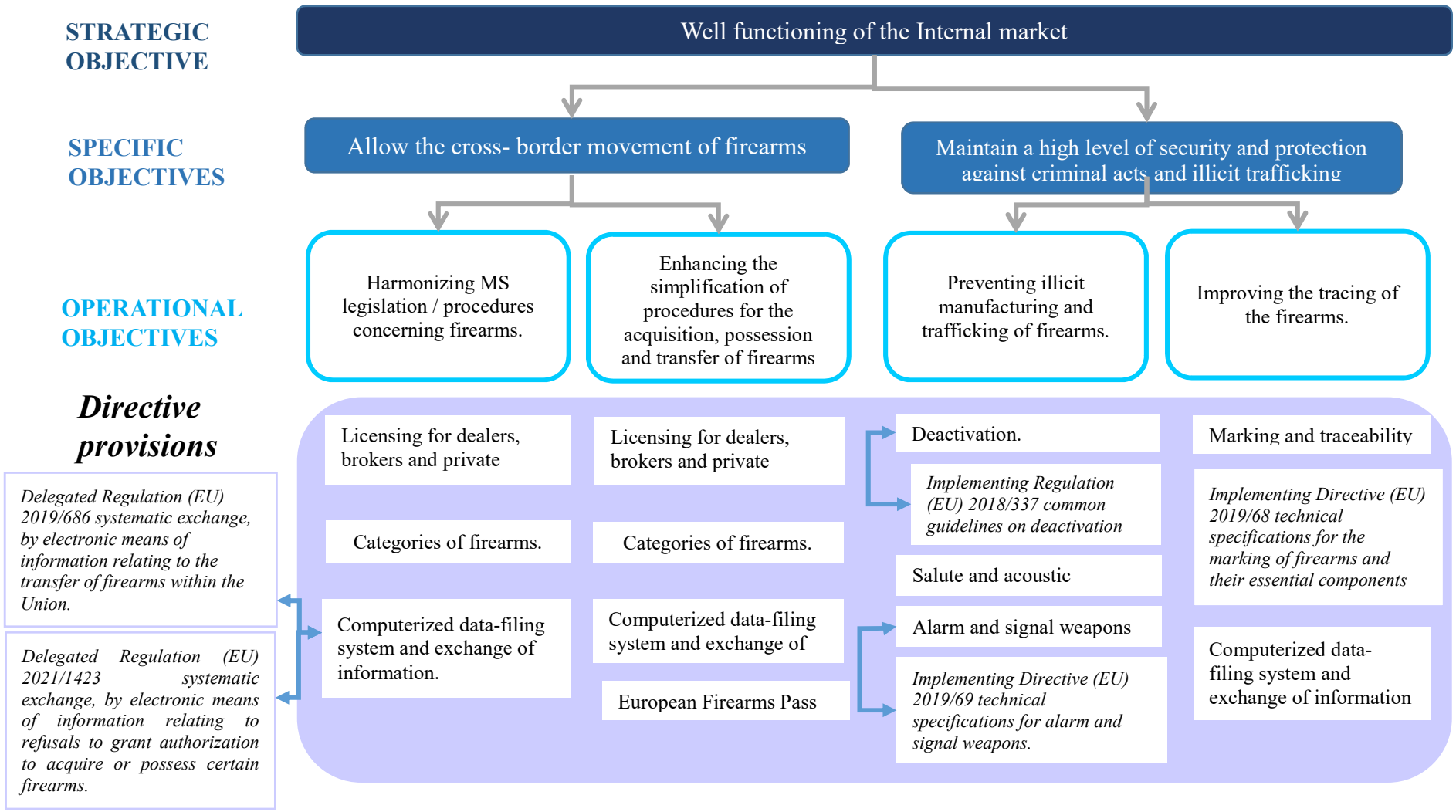
The Directive was revised after the entry into force of the United Nations Protocol against the illicit manufacturing on firearms (the Firearms Protocol) in 2005[10] and then in 2017, in the aftermath of the terrorist attacks of 2015.

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8 The Commission opened infringements proceedings for lack of transposition of the Firearms Directive against 25 Member States and against 20 Member States for two Implementing Directives on marking and alarm and signal weapons – see section 2.2 for more details

9 United Nations, Vienna, 2020. https://www.unodc.org/documents/firearms-protocol/2020/UNODC-EU-Report-A8_FINAL.pdf

10 Transposed in the EU legal order by Council Decision 2014/164/EU of 11 February 2014 on the conclusion, on behalf of the European Union, of the Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, supplementing the United Nations Convention against Transnational Organized Crime (OJ L 89, 25.3.2014, p. 7).




Visual representation of the Firearms Directive

## 2.1. Tasks of the Commission

The Firearms Directive requires the Commission to adopt both implementing and delegated acts. Therefore, since its entry into force the Commission, adopted:

1. On 5 March 2018 (pursuant to Article 15(2)), Implementing Regulation (EU) 2018/337, amending Implementing Regulation (EU) 2015/2403, which establishes common **guidelines on deactivation standards** and techniques for ensuring that deactivated firearms are rendered irreversibly inoperable.
2. On 16 January 2019 (pursuant to Article 4(3)), Implementing Directive (EU) 2019/68, establishing technical specifications for the **marking of firearms** and their essential components under Council Directive 91/477/EEC on control of the acquisition and possession of weapons (see section 5.4.2).
3. On 16 January 2019 (pursuant to Article 14(3)), Implementing Directive (EU) 2019/69, laying down technical specifications for **alarm and signal weapons** under Council Directive 91/477/EEC on control of the acquisition and possession of weapons.
4. On 16 January 2019 (pursuant to Articles 18(4) and 21(5)), Commission Delegated Regulation (EU) 2019/686, laying down the detailed arrangements under Council Directive 91/477/EEC for the **systematic exchange, by electronic means, of information relating to the transfer of firearms** within the Union. (see section 5.4.1)
5. On 21 May 2021 the Commission Delegated Regulation (EU) 2021/1423 on the **refusals to grant authorisations to acquire or possess certain firearms**.
6. Two pilot projects to implement the administrative cooperation in relation to the two Commission Delegated Regulations above (according to Article 4 of Regulation (EU) No 1024/2012 which regulates the Internal Market Information System)

## 2.2. Transposition of the Directive and secondary legislation by the Member States.

The Firearms Directive as amended in 2017 had to be transposed by 14 September 2018, except Articles 4(4) on the regulation of arms dealers and brokers and 4(5) on the establishment of the data-filing system, which had to be transposed by 14 December 2019.

In July 2019, the Commission sent a reasoned opinion to 20 Member States with respect to the first deadline,[11] and sent on 24 January 2020 letters of formal notice to 17 Member States[12] with respect to the second deadline, for failure to notify the national transposing measures.

[11] All but AT, BG, FR, LV, MT.

[12] All but IT, HR, BG, LV, LT, MT, NL, AT, PT, RO and FI.

The transposition deadline of the two Commission Implementing Directives on marking and for alarm and signal weapons was on 17 January 2020. On 28 May 2020, the Commission opened infringement cases against 19 Member States (on marking)[13] and 17 Member States (for alarm and signal weapons).[14]

As of 15 August 2021, there were 80 open infringement cases relating to the firearms directive and secondary legislation. All these cases related to non-communication of transposition measures. In the meantime, the Commission received notifications of full transposition from several Member States. Therefore it is expected that several cases will be closed in the coming months.

The Commission carried out the transposition check and analysed whether the Member States have completely transposed Union law within their legal systems, including the Member States, which have notified the national transposition measures on time. The Commission also examined non-notified measures to assess the completeness of transposition.

The initial assessment described below focuses on the most important changes to the Directive introduced in 2017 and the two implementing Directives in 2019.

Article 1 of the Directive includes 15 **definitions**, of which 5 are completely new and other have been updated. They notably ensure that the substantive scope (e.g. alarm and signal weapons, salute and acoustic weapons), and the personal scope (e.g. collectors, museums, brokers) of the directive are applied in a consistent manner across the EU.

22 Member States have transposed all definitions (Austria, Belgium, Bulgaria, Cyprus Czech Republic, Germany, Denmark, Estonia, Greece, Spain, Finland, France, Croatia, Hungary, Ireland, Italy, Lithuania, Latvia, Malta, Poland, Portugal and Romania), three Member States transposed only part of the definitions (the Netherlands, Sweden and Slovakia) and two Member States did not notify any transposition measures (Luxemburg and Slovenia).

The Firearms Directive introduced new provisions on the activities of the **dealers and brokers** (Articles 1(1), 4(4), 4(5) and 13(2)). All Member States except three (Denmark, Luxemburg and Slovenia) transposed all the provisions.

Articles 4(1) and 4(2) substantially amended the rules on **marking**. All Member States except two (Luxemburg and Slovenia) transposed all the provisions.

Besides, 18 Member States transposed the provisions of Implementing Directive (EU) 2019/68 related to marking (Austria, Belgium, Cyprus, Czech Republic, Germany, Denmark, Estonia, Greece, Spain, France, Croatia, Hungary, Lithuania, Latvia, Malta, the Netherlands, Portugal and Slovakia), and 9 Member States did not notify any measure or the transposition is not complete (Bulgaria, Finland, Ireland, Italy, Luxemburg, Poland, Romania, Sweden and Slovenia).

Articles 4(5) and 18(4) of the 2017 revision of the Firearms Directive improve the quantity and the quality of the records held in the **data-filing systems as well as the**

[13] All but DK, EE, FR, LT, LV, MT, NL, PT and SK.

[14] All but AT, BE, DE, DK, EE, FR, LT, LV, MT, PT and SK.

**exchange of information** with and between national competent authorities. 23 Member States have fully transposed those provisions (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Estonia, Greece, Spain, Finland, France, Croatia, Hungary, Italy, Lithuania, Latvia, Malta, the Netherlands, Poland, Portugal, Romania, Sweden and Slovakia), and four Member States did not notify any measure or the transposition is not complete (Denmark, Ireland, Luxemburg and Slovenia).

Article 9(1) of the Firearms Directive lays down stricter rules concerning the most dangerous firearms, bringing them under **category A**, where those firearms are, with some limited and duly reasoned exceptions, not allowed to be acquired, possessed or traded. All Member States except two (Luxemburg and Slovenia) transposed Article 9(1).

The Firearms Directive updated several articles related to the **European Firearms Pass**, including the definition, the obligation to include a statement in the European Firearms pass and to inform the other Members States when a weapon of category B or C is subject to authorisation or prohibited. All Member States except two (Luxemburg, and Slovenia) transposed all the provisions.

Some **alarm and signal weapons** could also easily be converted into lethal firearms with simple tools and minimum knowledge. This modus operandi was identified as a particular threat by the competent authorities of the Member States and the Commission[15], which led to the introduction of new provisions into the Firearms Directive (Article 1(1), Article 14 and Annex I). All Member States except four (Luxemburg, Sweden, Slovenia and Slovakia) transposed all the provisions.

13 Member States transposed implementing Directive (EU) 2019/69 laying down technical specifications for alarm and signal weapons (Austria, Cyprus, Germany, Denmark, Estonia, Spain, Finland, France, Hungary, Lithuania, Latvia, Portugal and Slovakia), and 14 Member States did not notify any transposing measure or the transposition is incomplete (Belgium, Bulgaria, Czech Republic, Greece, , Croatia, Ireland, Italy, Luxemburg, Malta, the Netherlands, Poland, Romania, Sweden and Slovenia).

**Salute and Acoustic Weapons** are original lethal purpose firearms that have been modified in such a way that they cannot discharge a projectile, but only blank rounds of ammunition. As modifications are typically made only to the chamber and barrel, any person with minimum knowledge and common tools could illegally convert them back into lethal firearms. The 2017 revision of the Firearms Directive also addressed this threat, by ensuring that they remain in their original category (Article 1(1) and Annex I). All Member States except five (Luxemburg, the Netherlands, Sweden, Slovenia and Slovakia) transposed all the provisions.

Article 1(1) and Article 15 of the Firearms Directive, provide since 2017 for new rules on **deactivated firearms**, notably subjecting them to declaration, and specific rules for their verification, marking and transfers.

[15] From 2016 to 2020, 15 949 alarm and signal weapons of the brands Ekol, Zoraki and Bruni were seized by the Member States, most of them within the Firearms platform, with contribution of Europol.

All Member States except three (Luxemburg, Sweden and Slovenia) transposed all the provisions.

As of 15 August 2021, the Commission can therefore conclude that only 10 Member States completed the transposition of the provisions analysed in this report and that represent the main changes introduced by the Firearms Directive in 2017 and the two Implementing Directives (Austria, , Cyprus, Germany, Estonia, Spain, France, Hungary, Lithuania, Latvia and Portugal), 15 Member States did not transpose some of the provisions (Belgium, Bulgaria, Czech Republic, Denmark, Greece, Finland, Croatia, Ireland, Italy, Malta, the Netherlands, Poland, Romania, Sweden and Slovakia) and two Member States did not notify any measure (Luxemburg and Slovenia).

The initial assessment described above is without prejudice to the position of the Commission in ongoing or future infringement proceedings. Neither does it amount to a judgement on the conformity assessment of the transposing national laws, which the Commission has yet to complete. In the initial phase of the assessment, the Commission already identified instances of incorrect transposition in several Member States.

The Commission will therefore step up its monitoring of the implementation in Member States, and will make full use of the powers conferred upon it by the Treaty whenever necessary.

# 3. FOCUS ON SPECIFIC ISSUES

## 3.1. Weapon categories.

### 3.1.1. General categorisation issues

The analysis of the transposition of the provisions, which represent the most important changes to the Directive introduced in 2017, reflect the complex challenges of transposition of some definitions, of the firearms categories in Annex I and of the multiple exceptions reflected in several articles of the Firearms Directive.

The Firearms Directive has added new firearms to the list of prohibited (category A) weapons. At the same time, it introduced a long list of exceptions to this prohibition, and submitted those firearms to authorisation in well-defined circumstances.

In addition, alarm and signal weapons are not considered firearms, since they are considered as “not capable of being converted”, while deactivated firearms remain subject to declaration. Also, firearms that are converted to salute and acoustic weapons in a way that make them permanently unfit to fire a projectile remain classified in their original category, despite the fact they could be as safe as genuine alarm and signal weapons.

Finally, law enforcement authorities have observed a surge in seizure of airsoft weapons (shooting plastic pellets propelled by compressed gas) converted to fire ammunition. Although such weapons are regulated as firearms in several EU Member States, they are currently excluded from the scope of the Directive.

Therefore, the Commission will assess the impact of clarifying the **distinction between prohibited firearms and firearms subject to authorisation**, to ensure that prohibited firearms can only be possessed in very exceptional cases. A potential assessment could also ensure that **all weapons, which are unfit to fire a projectile** (either after deactivation or by their manufacture) but could be converted to fire a projectile with specialised tools and knowledge are at least subject to declaration.

### 3.1.2. Firearms firing small-calibre 'Flobert' ammunition

Flobert ammunition and related weapons were developed in the 19th century for indoor shooting. They shoot percussion caps filled with a small projectile and a small amount of powder. Flobert ammunition is characterised by relatively low pressure and muzzle velocity and is nowadays advertised as firearms for target practice.

Some firearm manufacturers in several EU Member States[16] started producing some of firearms models in a Flobert calibre. Based on information and reports provided by national law enforcement agencies and EUROPOL, there are essentially two types of firearms, which can shoot Flobert ammunition. In their "classic design", following the standards of original versions of Flobert firearms, the internal mechanism and design of the barrel cannot be modified to shoot a different, more lethal kind of calibre.

In their "modern design", they are mostly rifles, shotguns, sub-machine guns and short firearms and their internal mechanism is still capable of shooting 9 mm or similar calibre. In that case, only the barrel is modified by the installation of an inner barrel inside the original one, narrowed to be suitable for 4 or 6 mm Flobert ammunition, and welded to the original one at the muzzle.

Taking advantage of the delayed or incorrect transposition of the Firearms Directive, lethal-calibre firearms categorized under category B or C are sometimes converted to Flobert calibre, in the Member States where these types of firearms are still subject to declaration or even less restrictive conditions.

The 2021 EU Serious and Organised Crime Threat Assessment,[17] as well as several reports by EUROPOL have highlighted the threat of the illegal conversion of the "modern design" Flobert firearms, which led to thousands of seizures across the European Union.

Pursuant to the Firearms Directive, those weapons are firearms, as the percussion caps are a kind of combustible propellant. Neither the definition of firearm nor the different categories make a reference to the size of the calibre or the muzzle energy, which are therefore irrelevant considerations to determine whether a Flobert weapon is a firearm, or of which category.

The Commission calls on all Member States to properly transpose the Firearms Directive in this respect by **properly classifying the weapons which can expel Flobert ammunition as firearms according to Annex I of the Firearms Directive.**

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16 So far detected in Slovakia and Czech Republic.

17 SOCTA 2021 EU restricted version.

### 3.1.3. Antique firearms

Firearms that could potentially qualify as "antique weapons" are sometimes used in criminal activities, as shown for instance by the 2018 terror attack in Strasbourg where nine people were killed and 11 were wounded. Nevertheless, Annex I, part III of the Firearms Directive, provides that objects that are regarded as "antique weapons" are excluded from the definition of "firearms" and therefore out of the scope of the Directive where these have not been included in the categories of the Directive and are subject to national laws.

During the meeting of the Firearms committee of 18 December 2019, a majority of Member States pointed out that they would be in favour of harmonising the rules on antique weapons at EU level. Some of them questioned the very relevance of exempting antique firearms from the requirements of the Firearms Directive based on their year of manufacture rather than their capacity to cause harm.

The Commission will assess the impact to **include antique weapons in the scope of the Directive**, in order to harmonise the rules across the Member States.

## 3.2. Illicit manufacturing – 3D printing and semi-finished components

3D printing, also known as additive manufacturing, "refers to the various processes used in the manufacture of products, by depositing or fusing materials layer by layer".[18]

The advent of 3D-printable firearms and the possibility of using them for criminal purposes has spurred a debate on gun control legislation around the world, including in the European Union.

EUROPOL warned[19] that technological progress would make 3D printing widely available in the future, and that this would also offer opportunities for the illicit production of and trade in firearms. On 9 October 2019, two people were shot dead in Halle (Germany), with the perpetrator using a homemade weapon, based on a blueprint downloaded from the Internet to manufacture the weapon partly with a 3D printer.[20] There is a slow but permanent increase in the number of seizures of such kind of firearms, including illegal manufacture of essential components.[21]

The threat of the illegal manufacturing of firearms or essential components with 3D printers derives from the relative affordability of the technology and the availability of

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[18] Source: Digital transformation monitor, The Disruptive nature of 3D printing, January 2017, https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/DTM_The%20disruptive%20nature%20of%203D%20printing%20v1.pdf

[19] Source: Triggering Terror - Illicit Gun Markets and Firearms Acquisition of Terrorist Networks in Europe. Published 17/04/2018, available at: https://vlaamsvredesinstituut.eu/en/report/triggering-terror-illicit-gun-markets-and-firearms-acquisition-of-terrorist-networks-in-europe/ ; Europol (2015), Exploring tomorrow's organised crime, The Hague: Europol, p. 41.

[20] EUROPOL report 2019.RESTRICTED

[21] Bulletin EMPACT FIREARMS number 10 and 12. RESTRICTED

the blueprints on the Internet, including metallic 3D-printing that is becoming less expensive,[22] notably with techniques such as direct metal laser melting.[23]

Currently, the most dangerous threat is the manufacture of so called hybrid 3D-printing weapons, which rely on both 3D-printed parts and readily available components that are globally unregulated, such as steel tubing, metal bar stock, and springs.[24]

Private 3D printing of firearms is already covered by the existing legal framework, as the Firearms Directive applies equally to all firearms, whether 3D-printed or not: they can only be manufactured by licensed dealers, and are subject to restrictions, such as authorisation before private acquisition.

The Commission will assess the need for specific rules on the **possession and trafficking of blueprints for 3D printing**, including the prohibition of possession, publicity and distribution of digital blueprints and their hard copies by non-authorised arms dealers, which have been proven to enable manufacturing of essential components of firearms.

In addition, both the 2014 evaluation of the Firearms Directive[25] and recent contributions from Member States to EUROPOL and the Firearms Platform[26] highlighted cases of import from some non-EU countries of semi-finished essential components (usually 80% finished polymer frames of handguns or 80% finished metal barrel of long firearms). They are not declared as essential components of firearms and usually enter the European Union via fast parcel and carrier services. They are accompanied with instructions on how to complete their transformation with ordinary tools.

The Commission and the Member States will discuss **the issue of semi-finished firearms** and essential components in the context of the Firearms Committee. It will also assess regulatory solutions in the future modernisation of the **Regulation (EU) 258/2012 establishing export authorisation, and import and transit measures for firearms**.[27]

## 3.3. European Firearms Pass

The European firearms pass, issued on request by Member States to legal owners of a firearms, enables hunters and historical re-enactors (for category C firearms), and target shooters (for category A, B or C), to travel with their weapon through two or more

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22 Source: https://www.law.kuleuven.be/citip/blog/warning-toner-low-3d-printed-guns-and-the-law/

23 Source: Metal 3D Printing in Firearms: Real-World Case Studies; Published 18/01/2018. https://news.3deo.co/metal-3d-printing-firearms-case-studies

24 Source: ARES. Research Report number 8. Desktop Firearms: emergent small arms craft production Technologies. March 2020. https://armamentresearch.com/wp-content/uploads/2020/03/ARES-Research-Report-8-Desktop-Firearms.pdf

25 Source: Technopolis Consulting Group Belgium, Study on the Evaluation on the Firearms Directive, December 2014, Annex. https://ec.europa.eu/docsroom/documents/8385?locale=en

26 EMPACT bulletin number 6. September 2018. RESTRICTED.

27 Source:https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12855-Firearms-review-of-export-rules-and-import-&-transit-measures_en

Member States without prior authorisation. Where a Member State has informed the other Member States that the possession of certain firearms is prohibited or subject to authorisation, statements to that effect must be added to the European firearms pass.

During the evaluation of the Firearms Directive in 2014,[28] the implementation of the European Firearms pass was assessed as positive by the Member States and associations, as it reduces the bureaucratic and economic burden for the users, especially for hunters, sport shooters and participants in historic reproduction events.

After the revision of the Directive in 2017, during the consultations in the framework of the Firearms Committee and in complaints received by the Commission, stakeholders raised several issues:

- the European Firearms Pass does not appear to be fully recognised in all Member States, which sometimes require additional prior authorisations to enable movements of firearms;
- controlling movements with the pass may be more difficult than for permanent transfers - there is therefore a risk of abuses by people who illicitly use the European Firearms Pass when moving permanently to another country;
- there is the need to harmonise the list of items that have to be mentioned in the European Firearms Pass due to differences of classification of firearms or their components from one Member State to another.

Those aspects often result in the absence or incompleteness of the required statements on the pass. The development by the Commission of an **EU Firearms Reference Table**, as announced the EU action plan on firearms trafficking 2020-2025, will help in bringing more clarity into this issue. The need for a fully digitalised European Firearms Pass, to ensure better exchanges of information between national authorities, will also need to be assessed.

## 3.4. Tracing of firearms

### 3.4.1. Electronic exchange of information on transfer of firearms

In parallel to Delegated Regulation (EU) 2019/686 on exchange of information relating to the transfer of firearms (see point 3 of this report), the Commission adopted Implementing Decision (EU) 2019/689 on a pilot project to implement certain administrative cooperation provisions set out in Council Directive 91/477/EEC by means of the Internal Market Information System,[29] thus creating a temporary legal basis for the use of this system.

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28 *Study on the Evaluation on the Firearms Directive,* op. cit.

29 The Internal Market Information System was established by the Regulation (EU) No 1024/2012. It is a software application that is accessible via the internet and was developed by the Commission, in cooperation with the Member States, to help Member States comply with information exchange requirements in Union acts by providing a centralised communication mechanism to facilitate the cross-border exchange of information and mutual assistance.

The Commission notes that the extent of its delegated powers only focused on exchanges of information on transfer authorisations. The Commission could therefore not require the Member States of residence of the buyer to upload the authorisations to acquire firearms in the system. Neither could it require all authorities issuing transfer authorisations to have a direct connection to the system. Both issues hindered effective exchanges of information.

There might therefore be a need to assess the impact of creating an express legal basis for the use of Internal Market Information System in the Firearms Directive itself and to clarify further the responsibilities of national authorities.

### 3.4.2. Marking

Proper marking of firearms increases their traceability and that of their essential components. To that purpose, implementing Directive (EU) 2019/68 on marking lays down a minimum font size, a common marking method on non-metallic materials, and sets down the types of alphabet and numeral system used in the marking.

Prior to adopting the implementing Directive, the Commission indicated that the issue of the depth of marking would be assessed within one year after its transposition deadline, with a view to introducing a requirement on this aspect into the Implementing Directive if appropriate.

There was no consensus among Member States on minimum depths, which range from 0.02 mm to 0.08 mm, mostly for commercial reasons. Neither the Firearms Directive nor the Implementing Directive on marking provide for a specific marking technology. Therefore, all technologies ensuring that the marking is “clear, permanent and unique” (e.g. mechanical engraving, laser engraving or stamping) can be compatible with the Directive.

A common EU approach would ensure that erased marking can be recovered and that no unjustified technical barriers are placed to the legal trade of firearm between Member States. The Commission will therefore rely on technical reports of national ballistic departments and proofing houses, and assess the pros and cons of the different options. Discussions will continue within the Firearms Committee, in view of assessing the impact of updating the Implementing Directive (EU) 2019/68.

### 3.4.3. Technology to improve the tracing, the safety and security of the acquisition and possession of weapons.

**QR (Quick-Response) codes** is a type of two-dimensional barcode able to store information in a machine-readable optical marking. QR codes allow the collection of a wider number of data compared to unidimensional bar codes.

The cost of QR codes is relatively low. At present, they are mainly applied on firearms for inventory purposes, notably on QR-style stickers.[30]

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[30] Source: https://www.smallarmssurvey.org/sites/default/files/resources/SAS-HB-06-Weapons-ID-ch3.pdf

**Data Matrix codes**, like QR codes, are composed by black and white modules ordered in a square pattern form.

They provide a unique serial number and the manufacturer identification. When the code is damaged, the data of Data Matrix codes have a higher ability of being restored than the data of QR codes.[31] Data Matrix are identified as the best at storing information in very small spaces.[32]

To date, the Commission has no knowledge of Member States that are using QR codes and/or Data Matrix codes to monitor and to track firearms.

Security concerns could represent an obstacle to the uptake of QR codes in the firearms market as they can be hacked and enable the infection of the reading devices and networks. Therefore, these systems do not always generate trust from both firms and consumer's perspective.

Besides, as a QR code is not directly legible and information cannot be extracted without a reading device, questions might be raised on the practicability of this technology for law enforcement authorities seizing firearms (police, customs, border guards, etc.).

**Radio Frequency identification (RFID)** appears as a firearm-tracing alternative or reinforcement to classical marking. RFID enables the transfer of data to automatically identify and track tags attached to objects. This technology would establish a relationship between a firearm and an object that activates it when close to it.

Some tests seemed to demonstrate that the use of miniature low-cost RIFD tags on metal is also functional for tracking firearms[33]. Besides, RFID technology together with a specific software is able to track the position of firearms, records of firearms maintenance and monitor the changes in the firearm custody.[34]

There are concerns related to the use of this technology, as it may be used to collect information that is directly or indirectly linked to an identifiable or identified person.[35] Another risk is that the system is considered as hackable.

As things stand, this technology is not considered to be sufficiently safe to be rolled out at EU level.

There are currently **other possibilities** to improve the traceability of the weapons, such as the use of discreet or invisible marking with special inks. The use of secured inks has been proven for the traceability of banknotes[36] and this technology is used on metallic

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31 Source: https://blog.matthews.com.au/datamatrix-and-qr-codes-why-2d-codes-are-still-relevant-in-2016/

32 Source : https://www.camcode.com/asset-tags/barcodes-data-matrix-vs-qr-codes/

33 Source :https://www.conflictarm.com/technical/developing-rfid-solutions-in-support-of-stockpile-management-and-postdiversion-tracing/

34 Source: *Using RFID to Help Track Guns for Firearm Wholesalers and Distributors*. Published 2013.https://www.rfidworld.ca/rfid-to-help-track-guns-by-firearm-wholesalers-and-distributors/1365

35 Ibid.

36 Source:https://www.ecb.europa.eu/euro/banknotes/ink-stained/html/index.en.html

goods (such as consumer packaged goods)[37] and on non-metal materials by the pharmaceutical companies.[38] This technique could also be effective in the metallic and non-metallic components of firearms. The Commission will continue to monitor those techniques in the Firearms committee.

## 4. CONCLUSIONS AND WAY FORWARD.

All stakeholders agree that the Firearms Directive was instrumental in addressing the main threats identified in the reports of the Member States (mainly within the framework of the Firearms platform)[39], the Analysis project of weapons and explosives of EUROPOL and the EU Serious and Organised Crime Threat Assessment presented by EUROPOL in 2017 and 2021, including the use of automatic weapons, the reactivation of deactivated firearms, the conversion of salute and acoustic weapons and the of alarm and signal weapons.

The Commission notes that the Firearms Directive improved the categories of firearms, their traceability, exchanges of information and administrative procedures. At this stage, only 10 Member States have fully transposed the provisions analysed in this report and that represent the main changes introduced by the Firearms Directive in 2017 and the two Implementing Directives. Beyond notification of transposition, the Commission is also assessing the conformity of national laws with the Directive and has already identified instances of incorrect transposition in several Member States. This implies that the benefits of the Directive cannot be exploited to the fullest. The Commission will continue to support Member States in the implementation of the Firearms Directive, replying to requests for clarifications, and organising transposition workshops within the Firearms Committee, including technical meetings with specific Member States if necessary.

The Commission will also step up its monitoring of the implementation in Member States, and will make full use of the powers conferred upon it by the Treaty whenever necessary. It will notably give a particular attention to the issue of firearms firing small-calibre 'Flobert' ammunition and to the correct use and recognition of the European Firearms Pass.

In addition, the analysis conducted in this report demonstrates that there is room for further progress in the legal control of acquisition, possession and movements of civilian weapons. Options to explore to guarantee better legal control, could include:

- clarifying the distinction between prohibited firearms and firearms subject to authorisation;
- ensuring that all weapons which could be converted to fire a projectile even with specialised tools and knowledge are at least subject to declaration;

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37 Source: https://www.reiner.de/index.php?UV-ink-with-handheld-inkjet-printer, https://www.sicpa.com/sicpa-history

38 https://www.pharmtech.com/view/securing-the-pharmaceutical-supply-chain-with-full-traceability; https://www.pharmaceuticalprocessingworld.com/dna-marker-for-pharma-ink-ensures-traceability/

39 Firearms trafficking is a priority for the Member States since 2014 in the framework of the European Multidisciplinary Platform Against Criminal Threats (EMPACT)

- providing for a fully digitalised European Firearms Pass;
- keeping in their original category all firearms that have been legally converted and modified;
- harmonising the rules on antique firearms;
- prohibiting the acquisition, publicity and possession of blueprints for 3D printing of weapons by non-authorised arms dealers,
- giving an express legal basis to the use of Internal Market Information System in the Firearms Directive;
- clarifying further the responsibilities of national authorities in exchanges of information;
- defining a minimum depth for the marking of firearms and essential components.

The Commission will therefore conduct an impact assessment on the potential for modifications to the Firearms Directive. The Commission will also continue to monitor directly and by EU funded projects the technological developments and market uptakes to improve the traceability and stockpile control of firearms, using different technologies applicable to other industrial sectors.

These key actions will contribute to delivering on the objectives of the Firearms Directive: to allow the cross-border movement of firearms while maintaining a high level of security and protection against criminal acts and illicit trafficking of firearms.