EUROPEAN COMMISSION

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PUBLIC VERSION

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus […]. Where possible the information omitted has been replaced by ranges of figures or a general description.

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Subject: **Case M.11663 – NOKIA / INFINERA**
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]

Dear Sir or Madam,

(1) On 22 January 2025, the European Commission ('**Commission**') received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which Nokia Corporation ('**Nokia**' or the '**Notifying Party**', Finland) will acquire within the meaning of Article 3(1)(b) of the Merger Regulation sole control of the whole of Infinera Corporation ('**Infinera**', United States) by way of purchase of shares (the '**Transaction**').[3] Nokia and Infinera are collectively referred to as the '**Parties**'.

1. THE PARTIES

(2) **Nokia** is a publicly traded company active globally in the provision of network infrastructure, technology and software services.

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1 OJ L 24, 29.1.2004, p. 1 (the '**Merger Regulation**'). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ('**TFEU**') has introduced certain changes, such as the replacement of 'Community' by 'Union' and 'common market' by 'internal market'. The terminology of the TFEU will be used throughout this decision.

2 OJ L 1, 3.1.1994, p. 3 (the '**EEA Agreement**').

3 OJ C, C/2025/802, 30.1.2025.

(3) **Infinera** is a publicly traded company active globally in the supply of networking solutions, comprising networking equipment, optical semiconductors, software and services.

2. THE CONCENTRATION

(4) The Transaction consists in the acquisition of sole control by Nokia over Infinera, pursuant to an agreement and plan of merger dated 27 June 2024, according to which Nokia will acquire 100% of the outstanding shares of Infinera.

(5) Therefore, the Transaction constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

3. UNION DIMENSION

(6) The undertakings concerned have a combined aggregate worldwide turnover of more than EUR 2 500 million (Nokia: EUR 20 880 million; Infinera: 1 492 EUR million).[4] The combined aggregate turnover of the undertakings concerned exceeds EUR 100 million in at least three Member States, including Belgium ([…]), Germany ([…]) and Italy ([…]). The Parties' individual aggregate turnover exceeds EUR 25 million in each of the same three Member States. Nokia and Infinera do not achieve more than two-thirds of their aggregate Union-wide turnover in one and the same Member State.

(7) Therefore, the Transaction has a Union dimension pursuant to Article 1(3) of the Merger Regulation.

4. INDUSTRY OVERVIEW

(8) The products relevant for the assessment of the Transaction in this decision ('**Decision**') are optical transport equipment. Optical transport equipment is used to transmit data over an optical fibre network. An optical fibre network is a communication system that uses light signals to transmit data through optical fibre cables over distances ranging from a few kilometres to across continents.

(9) The predominant technology currently used to transmit data through optical fibre cables is called Wavelength Division Multiplexing ('**WDM**'). Light has different wavelengths. WDM systems consolidate multiple wavelengths into a single fibre to increase the capacity of the network. Further, the introduction of the so-called coherent WDM technology has enabled greater volumes of data to be transmitted at higher speeds and over longer distances.[5]

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4 Turnover calculated in accordance with Article 5 of the Merger Regulation.

5 Coherent WDM technology uses processors to digitally counter the effects of signal degradation that occurs when light is sent through optical fibre over long distances or at very high speeds.

4.1. WDM system components and architectures

(10) An optical fibre network typically consists of a physical optical fibre cable[6] and optical transport equipment that enables the transmission of data through the cable. Optical transport equipment includes: (i) transponders, which are situated at each end of the cable to receive, convert, and send optical signals,[7] as well as (ii) other components, which optimise the passage of the optical signal through the cable (so-called optical line system components). Optical line components include multiplexers (MUX), demultiplexers (DeMUX), optical amplifiers, and reconfigurable optical add/drop multiplexers (ROADM).[8] Traditionally, all elements of these components are integrated (embedded) into a single chassis,[9] which is supplied by a single vendor as a full end-to-end solution.

(11) However, recent technological developments have resulted in the possibility of disaggregating the optical fibre network through the use of new types of optical transport equipment, in particular 'pluggable transceiver modules'. Similarly to transponders, pluggable transceiver modules can receive, convert, and send optical signals. However, unlike transponders that are integrated (embedded) into a chassis with other network components, pluggable transceiver modules are sold on a standalone basis and can be plugged into the ports of a chassis. Such disaggregated solutions allow customers to source different components from different vendors. Furthermore, pluggable transceiver modules tend to be smaller in size and consume less power compared to embedded transponders.[10]

(12) Accordingly, WDM systems may either use an embedded transponder incorporated into the chassis in the form of a line card (so-called integrated or closed WDM systems), or a pluggable transceiver module plugged into the chassis' ports (so-called disaggregated or open WDM systems).

(13) Moreover, pluggable transceiver modules can be plugged directly into a switch or a router.[11] That is called 'coherent routing'. Coherent routing enables an alternative network architecture connecting these modules directly into switches/routers and thereby bypassing the need for transponders embedded in a chassis. According to the Parties, due to the elimination of the transponders and associated chassis (which represent a significant portion of system cost), coherent routing can lead to the simplification of the optical network and a reduction of the overall network costs.[12]

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6 The Parties do not supply optical fibre cables. Therefore, they are not discussed further in this Decision.

7 The Parties do not sell transponders on a standalone basis to third parties. More generally, embedded transponders are not sold on a standalone basis (Form CO, paragraph 124).

8 The Parties do not supply such components on a standalone basis and, therefore, they are not discussed further in this Decision (Form CO, paragraph 297).

9 Chassis is a frame/housing for mounting the components.

10 Form CO, paragraph 146.

11 A switch connects multiple devices to create a network. A router connects multiple switches, and their respective networks, to form an even larger network.

12 Form CO, paragraphs 161-62.

4.2. Applications of WDM systems

(14) Optical transport equipment is commonly distinguished, based on the distance covered, between (i) regional or metropolitan ('**metro**'), or (ii) long-haul. Furthermore, based on the application served, optical transport equipment can be categorized as (iii) terrestrial, (iv) subsea, or (v) data centre interconnect ('**DCI**'):

- Metro networks provide high-speed connectivity within a specific geographic area, typically a metropolitan area or a region. Metro networks were traditionally designed to transmit data over distances typically covering ranges up to 1 000 kilometres.[13]

- Long-haul networks provide high-bandwidth connectivity over countries or even continents typically covering ranges from 1 000 kilometres.[14]

- Terrestrial networks enable the transmission of data through fibre optic cables laid across land, connecting countries, cities, towns, and even rural areas.

- Subsea networks enable submarine cable data transmission in long-haul networks.[15]

- DCI networks enable high-speed connectivity between two or more data centres. DCI networks may directly connect two data centres (point-to-point), connect several data centres in a closed loop (ring), or connect them with multiple links (mesh). One of the key features of DCI networks is their capacity and speed to meet high data traffic demands.[16]

5. RELEVANT MARKETS

5.1. Introduction

(15) The Transaction concerns the market for optical transport equipment.

(16) In determining the relevant markets, the Notifying Party provided its views on the product and geographic market definitions considered in previous Commission decisions.

(17) For the purpose of this Decision, the Commission carried out its competitive assessment on the basis of the narrowest possible market segments identified by the Notifying Party that are 'affected'[17] based on the most recent annual market share

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13 Form CO, paragraph 165.
14 Form CO, paragraph 165.
15 Form CO, paragraph 166.
16 Form CO, paragraph 166.
17 Affected markets in the meaning of recital 25(g) in Annex I (Form CO) to the Commission's Implementing Regulation (EU) 2023/914 of 20 April 2023 implementing Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings and repealing Commission Regulation (EC) No 802/2004, OJ L 119, 5.5.2023, p. 22 ('**Implementing Regulation'**): '*Affected markets are all relevant product and geographic markets, as well as plausible alternative relevant product and geographic markets, where the parties' activities overlap horizontally or are vertically related and which do not meet the conditions for review under point 5 of the Notice on Simplified Procedure and do not benefit from the flexibility clauses of point 8 of the Notice on Simplified Procedure*'.

data available at the time of notification of the Transaction, as set out in Table 16 of this Decision.

5.2. Product market definition

(18) Nokia and Infinera both supply optical transport equipment.

(19) Nokia supplies optical transport equipment, including its 1830 PSS, 1830 PSS-X, 1830 OLS, 1830 PSI, 1830 ONE, 1830 PSD, 1830 LX, 1830 VWM, and Wavelite series.[18] Nokia does not sell pluggable transceiver modules on a standalone basis to third parties.[19]

(20) Infinera supplies optical transport equipment, including its 7300, FlexILS, GX, Cloud Xpress, and XT series.[20] Further, Infinera offers pluggable transceiver modules through its ICE-X series, which can be plugged into Infinera's or third parties' optical transport equipment, or directly into routers.[21]

5.2.1. Commission's precedents

(21) In case M.4003 *Ericsson / Marconi* the Commission considered that optical transport equipment can be segmented into three categories based on the functions performed by devices in each category: (i) bandwidth management devices situated at the core of the optical network;[22] (ii) aggregation devices situated at the edge of the optical network and used to aggregate customers into the core network;[23] and (iii) WDM systems.[24] In case M.4214 *Alcatel / Lucent Technologies* the Commission also considered the above-mentioned segmentation but ultimately left the market definition open.[25]

(22) In addition, in M.4003 *Ericsson / Marconi* and M.4214 *Alcatel / Lucent Technologies* the Commission also considered whether WDM systems can be further segmented into metro, long-haul and multi-reach, but ultimately left the market definition open.

5.2.2. The Notifying Party's views

(23) The Notifying Party submits that for assessing the Transaction it is appropriate to identify a single market for all optical transport equipment, including (i) bandwidth management devices, (ii) aggregation devices, (iii) WDM systems encompassing all distances and applications (metro, long-haul, terrestrial, subsea and DCI, described in Section 4.2 of this Decision), as well as (iv) pluggable transceiver modules (described in Section 4.1).[26]

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18 Form CO, paragraphs 172-75.

19 Form CO, paragraphs 147, 176.

20 Form CO, paragraphs 220-23.

21 Form CO, paragraphs 224-26.

22 Bandwidth management devices manage the transmission of the light waves and help optimise the flow of information that traverse an optical network (such as cross-connects).

23 Aggregation devices bundle together data from an access network into a larger data flow for onward transport to the core network, and vice versa (such as optical edge devices).

24 Commission decision of 20 December 2005 in case M.4003 – *Ericsson / Marconi*, paragraph 13.

25 Commission decision of 24 July 2006, in case M.4214 – *Alcatel / Lucent Technologies*, paragraph 11.

26 Form CO, paragraphs 233 et seq.

(24) The Notifying Party submits that the optical network industry has evolved significantly since the Commission's 2006 decision in M.4214 *Alcatel / Lucent Technologies*. In particular, the Notifying Party submits that:

(a) Bandwidth management devices and aggregation devices would today be considered as legacy categories of products that have almost entirely been replaced by WDM systems.[27] Accordingly, the industry typically would distinguish between: (i) WDM systems and (ii) non-WDM or legacy products comprising both bandwidth management devices and aggregation devices. From a demand-side perspective, these legacy products would perform the same function of optimising and managing optical networks. From a supply-side perspective, most vendors would manufacture and sell both bandwidth management devices as well as aggregation devices.[28]

(b) The introduction of coherent WDM technology has brought about convergence such that the same WDM systems can be used for various distances and applications, blurring the distinction between metro, long-haul, terrestrial, subsea and DCI. As a result, numerous vendors traditionally operating in the metro segment would now be capable of reaching long-haul distances. Similarly, suppliers would increasingly refer to their optical transport systems as 'multi-haul', meaning that they can be deployed and tuned to serve a variety of applications and distances.[29]

(c) The Commission's assessment in its previous decisions focused on traditional integrated WDM systems with embedded transponders. However, in recent years, pluggable transceiver modules would be increasingly disrupting/replacing traditional embedded transponders. Customers may favour pluggable transceiver modules over embedded transponders, because pluggable modules (i) are easier to replace and thus less costly to switch out when making upgrades, (ii) can be used interchangeably on different systems depending on the vendor's specifications, thus enabling greater vendor interoperability, (iii) are smaller, consume less power and are more cost-effective than embedded transponders, and (iv) can be deployed as a flexible 'pay-as-you-grow' model. Therefore, pluggable transceiver modules would offer a competitive alternative to traditional embedded optical transport equipment.[30]

(25) In light of the above, the Notifying Party submits that the multiple elements of the technology developments in the optical networking industry, when considered in combination, indicate that the Transaction should be assessed on the basis of a

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27 The Notifying Party submits that the sales of aggregation devices and bandwidth management devices have been declining steadily over recent years (Form CO, paragraphs 241-42).

28 Form CO, paragraphs 237-43.

29 Form CO, paragraphs 235(a) and 508. The Notifying Party submitted that the 'multi-reach' distance mentioned in the M.4214 *Alcatel / Lucent Technologies* decision of the Commission no longer reflects the technological developments and the competitive dynamics in the optical networks industry. In particular, the Notifying Party submitted that '*[t]he advancement of optical transport technology, and in particular the improvement of pluggable technology, has significantly increased the capacity-reach of optical transport products. As a result, both metro and long-haul distances can typically be reached with the same technology under the appropriate configuration (delivering higher bit rates over shorter distances or lower bit rates over longer distances) [and] most optical network products can typically reach both metro and long-haul distances. [Further], [t]hird-party analysts do not typically use the term "multi-reach", but distinguish between metro and long-haul networks*' (Notifying Party's reply of 18 February 2025 to request for information ('**RFI**') 8).

30 Form CO, paragraphs 145-46 and 235(c).

single market for all optical transport equipment. According to the Notifying Party, an assessment based on the Commission's previous decisions would otherwise ignore the developments in the optical networking industry and the associated competitive pressures.[31]

5.2.3. The Commission's assessment

(26) In the market investigation, the Commission assessed whether it would be appropriate to identify a single market for the supply of optical transport equipment,[32] whether to distinguish between different types of devices (bandwidth management devices, aggregation devices and WDM systems), and, if so, whether WDM systems should be further segmented by application (metro, long-haul, terrestrial, subsea and DCI). The Commission has also assessed whether there are reasons to broaden the scope of the relevant product market to include standalone sales of pluggable transceiver modules.

5.2.3.1. Potential segmentation by type of device (bandwidth management devices, aggregation devices and WDM systems)

(27) The results of the market investigation are inconclusive as to whether the relevant market for the supply of optical transport equipment must be further segmented by type of device (into bandwidth management devices, aggregation devices and WDM systems). The feedback received from market participants during the market investigation confirmed that, despite the ongoing technological advancements in the market for the supply of optical transport equipment, the market transformation is still in progress. Thus, although there is a technological shift that has led to increased use of WDM systems, bandwidth management devices and aggregation devices are still relevant for the assessment.

(28) First, the responses to the market investigation confirmed that the Commission's past decisional practice is still relevant, as the vast majority of both competitors and customers having expressed a view submitted that the segmentation of the market for the supply of optical transport equipment between (i) bandwidth management devices, (ii) aggregation devices, and (iii) WDM systems, still reflects market reality.[33]

(29) Second, the responses to the market investigation also confirmed that, whereas this segmentation (between bandwidth management devices, aggregation devices and WDM systems) is still relevant today, the use of the first two types of devices, *i.e.*, aggregation devices and bandwidth management devices (jointly referred to as 'non-WDM devices') is declining.

(30) In this respect, the vast majority of competitors having expressed a view and the majority of customers having expressed a view confirmed that non-WDM devices are generally viewed as legacy products, and have been replaced to a large extent by WDM devices.[34] Notably, even some competitors and customers who replied that the segmentation by type of device remains valid still today, acknowledged that the use and relevance of non-WDM devices is declining.

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31 Form CO, paragraphs 235-36.

32 As submitted by the Notifying Party.

33 Replies to Questionnaire to Competitors and Questionnaire to Customers, question C.2.

34 Replies to Questionnaire to Competitors and Questionnaire to Customers, question C.4.

(31) For instance, some competitors stated that, although they agree with this segmentation, '*[WDM systems] is now the mainstream'*, *'SDH/SONET*[35] *plays bno[sic] role anymore'*, *'Sonet/SDH are a quickly declining market'*, and *'SDH/SONET is gradually being phased out'*.[36] Similarly, customers submitted that '*SDH/SONET is a dying technology*', and that '*Sonet and SDH has a very small footprint these days. Majority is DWDM*[37] *systems*'. Another customer explained that '*[t]here are efforts to consolidate the bandwidth management devices and WDM systems, but WDM Systems will be still required in the core networks. There are also efforts to consolidate aggregation devices with WDM devices or aggregation devices with bandwidth management systems, but there are still important gaps in these solutions*'.[38]

(32) Third, the responses to the market investigation also confirmed, however, that there is currently no full substitutability based on product characteristics, prices and intended use between non-WDM devices (bandwidth management devices and aggregation devices) and WDM systems. Out of the total number of market participants having expressed a view (both customers and competitors), one third of the market respondents consider that these products are not substitutable, one third submitted that they are only partially substitutable, and one third consider that they are fully substitutable.[39]

(33) More specifically, more customers among those having expressed a view consider that the relevant products are not substitutable,[40] whereas more competitors among those having expressed a view regard these products as only partially substitutable.[41] For instance, a market respondent submitted that '*these 3 technologies are not interchangeable since they don't focus on the same use case*';[42] another respondent submitted that '*[g]iven their unique roles, these devices are not interchangeable. Bandwidth management devices focus on optimizing existing bandwidth, aggregation devices combine multiple connections, and WDM systems enhance fiber optic capacity. Their prices and intended uses also vary significantly, reflecting their specialized functions*'.[43] At the same time another respondent submitted that '*while distinct in their primary functions, [these products] can exhibit some degree of interchangeability*' and that '*those three products are becoming fairly substitutable and interchangeable*'.[44]

(34) In conclusion, the results of the market investigation are inconclusive as to whether the relevant market for the supply of optical transport equipment must be further segmented by type of device (into bandwidth management devices, aggregation devices and WDM systems). Whereas the market investigation confirms the technological evolution from legacy non-WDM devices (*i.e.*, bandwidth management devices and aggregation devices) to WDM systems, the former are still relevant in the current competitive landscape.

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35 Synchronous Optical Network ('**SONET**') and Synchronous Digital Hierarchy ('**SDH**') are legacy standards used in optical fibre communications, thus relevant for non-WDM devices.

36 Replies to Questionnaire to Competitors, question C.2.1.

37 Dense WDM ('**DWDM**') is the standard technology used today and can transmit at least 96 simultaneous wavelength channels.

38 Reply to Questionnaire to Customers, question C.2.1.

39 Replies to Questionnaire to Competitors and Questionnaire to Customers, question C.3.

40 Replies to Questionnaire to Customers, question C.3.

41 Replies to Questionnaire to Competitors, question C.3.

42 Reply to Questionnaire to Customers, question C.3.1.

43 Reply to Questionnaire to Competitors, question C.3.1.

44 Reply to Questionnaire to Customers, question C.3.1.

(35) In any event, the Commission considers that, for the purpose of this Decision, the exact product market definition with regard to the potential market segmentation into bandwidth management devices, aggregation devices and WDM systems can be left open, as the Transaction does not raise serious doubts as to its compatibility with the internal market, irrespective of the exact product market definition.

5.2.3.2. Potential segmentation of WDM systems by distance and/or application (metro, long-haul, terrestrial, subsea, DCI)

(36) The results of the market investigation are equally inconclusive as to whether the potential segment of WDM systems should be further sub-segmented based on its distance/application (described in Section 4.2 of this Decision). While the market investigation confirmed that the market is undergoing a technological evolution enabling the same WDM system to be deployed for use in different applications, certain specificities by distance/application remain.

(37) From a demand-side perspective, most customers having expressed a view state that the same WDM system can only partially be used across a range of different applications.[45] Similarly, the majority of competitors having expressed a view consider that WDM systems can only partially be used for a variety of applications.[46] In this respect, a customer stated that '*[t]he reuse of a system in a different domain will depend on the specific product and its configuration. For example, it is generally accepted that terrestrial solutions cannot be reused for repeated submarine cables*'.[47] A competitor submitted that '*[d]ifferent network applications have some different specific requirements to WDM system, especially subsea networks. But in general, there is not significant difference in technology. Maybe price factor matters more*'.[48]

(38) From a supply-side perspective, the majority of competitors having expressed a view submitted that a supplier of WDM systems used in one application cannot easily switch to develop and sell WDM systems intended for the use in another application, within a short period of time and without incurring significant costs.[49] In this respect, one competitor submitted that '*[i]t takes experience and time to develop competitive solutions for other market segments*'. Another competitor stated that *'[t]he more advanced applications (sub-sea and long haul) require different technology (DSP*[50] *and PIC*[51] *technology). Although such technology to an extent is available as merchant silicon, it requires significant investments to move from e.g. metro to sub-sea'.* Nonetheless, a competitor acknowledged that, despite switching may not be easy and quick, '*[t]here is some ability to expand into other segments. For example, a vendor that is strong in metro might be able to increase their share in long haul by shifting their product development focus*'.[52]

45 Replies to Questionnaire to Customers, question C.5.
46 Replies to Questionnaire to Competitors, question C.5.
47 Reply to Questionnaire to Customers, question C.5.1.
48 Reply to Questionnaire to Competitors, question C.5.1.
49 Replies to Questionnaire to Competitors, question C.6.
50 Digital signal processing ('**DSP**') refers to various techniques for improving the accuracy and reliability of digital communications.
51 A photonic integrated circuit ('**PIC**') is a chip that contains photonic components that work with light (photons).
52 Replies to Questionnaire to Competitors, question C.6.1.

(39) In conclusion, in view of the above, the Commission considers that the results of the market investigation are inconclusive as to whether the potential segment of WDM systems should be further sub-segmented based on its distance/application.

(40) In any event, the Commission considers that, for the purpose of this Decision, the exact product market definition with regard to potential market segmentation of WDM systems by application can be left open, as the Transaction does not raise serious doubts as to its compatibility with the internal market, irrespective of the exact product market definition.

5.2.3.3. Potential inclusion of pluggable transceiver modules into the market for optical transport equipment

(41) The market investigation yielded mixed feedback on whether pluggable transceiver modules (described in Section 4.1 of this Decision) should be included in the market for the supply of optical transport equipment. The responses to the market investigation confirmed that, whereas the market is undergoing a technological evolution, closed/integrated (excluding pluggable transceiver modules) and open/disaggregated WDM systems (including pluggable transceiver modules) are not fully substitutable at present.

(42) From a demand-side perspective, it cannot be concluded that integrated and disaggregated WDM systems fully compete within the same product market and that the relevant market should therefore include pluggable transceiver modules.

(43) Specifically, most customers having expressed a view responded that integrated and disaggregated systems currently are *only partially* substitutable based on product characteristics, prices and intended use.[53] For instance, one customer submitted that '*[t]he two models are not yet fully interchangeable because differences in performance optimization and operational complexity…*'.[54] Similarly, the majority of competitors having expressed a view also submitted that integrated and disaggregated WDM systems are *only partially* substitutable.[55] One competitor explained that '*[w]hile there may be some overlap in functionality, they are not typically considered fully substitutable or interchangeable based on product characteristics, prices, and intended use. While there is a trend towards open and disaggregated systems in the industry, the transition from integrated to disaggregated systems is not always straightforward. It depends on factors such as the specific network requirements, the level of vendor support, the need for customization, and the existing infrastructure*'.[56]

(44) In addition, half of the customers having expressed a view submitted that they either have already switched from integrated to disaggregated systems or are considering switching within the next three to five years.[57] One customer explained that '*..already started switiching[sic] to open optical transport systems to avoid depenency[sic] on one particular vendor for one specific system*'.[58] Nonetheless, this does not appear to be a uniform trend in the market as more than a third of the customers having expressed a view submitted that they have not switched and do

53 Replies to Questionnaire to Customers, question C.6.
54 Reply to Questionnaire to Customers, question C.6.1.
55 Replies to Questionnaire to Competitors, question C.7.
56 Reply to Questionnaire to Competitors, question C.7.1.
57 Replies to Questionnaire to Customers, question C.7.
58 Reply to Questionnaire to Customers, question C.7.1.

not consider switching in the next three to five years.[59] Thus, whereas the market is technologically evolving towards this substitutability, it cannot be concluded at this stage that integrated and disaggregated systems will be fully substitutable within the next three to five years.

(45) Furthermore, the market investigation indicated that pluggable transceiver modules can generally be used across different distances and applications, but that some particularities still remain. The majority of market participants having expressed a view submitted that pluggable transceiver modules can be effectively used in metro and DCI applications. After metro and DCI, long-haul and terrestrial applications are the most selected options. Nevertheless, the market investigation revealed that pluggable transceiver modules cannot be effectively used in subsea applications.[60] For example, one competitor submitted that '*Pluggable transceivers are most widely utilized in shorter metro reaches, but that is changing over time. Today, some customers are utilizing pluggable transceivers in long-haul, as well. Subsea use cases prioritize solutions that maximize the capacity that can be deployed even if it is less power and cost efficient, so subsea has not widely adopted pluggable transceiver technology*'.[61]

(46) From a supply-side perspective, it cannot be confirmed that integrated and disaggregated WDM systems are fully substitutable. The vast majority of competitors having expressed a view submitted that a supplier of embedded transponders would not be able to start developing and selling pluggable transceiver modules easily, in a short period of time and without incurring significant costs.[62] In this respect, one competitor submitted that '*... for a company ... that has only ever developed embedded transponders to switch to developing pluggable transceivers would require a complete redesign of all existing systems along with an entirely new business model for the company. While the underlying technologies are the same, the form factors, power consumption and thermal requirements are all different...*' and another competitor submitted that *'embedded high-end transponders and pluggable transceivers have some common technical points, but their price range, volume, and mounting technology are very different, and new technologies and trial and error are required in design and manufacturing*'.[63]

(47) In conclusion, in view of the above, the Commission considers that the responses to the market investigation are inconclusive as to whether pluggable transceiver modules must be included in the relevant product market. Whereas the market investigation clearly indicates that the market is undergoing a technological evolution that results in the gradual replacement of integrated systems by disaggregated systems, such evolution is ongoing.

(48) In any event, the Commission considers that, for the purpose of this Decision, the exact product market definition can be left open, as the Transaction does not raise serious doubts as to its compatibility with the internal market, irrespective of the exact product market definition. The competitive assessment will consider market

59 Replies to Questionnaire to Customers, question C.7.
60 Replies to Questionnaire to Competitors and Questionnaire to Customers, question C.8.
61 Reply to Questionnaire to Competitors, question C.8.1.
62 Replies to Questionnaire to Competitors, question C.9.
63 Replies to Questionnaire to Competitors, question C.9.1.

shares that do not include pluggable transceiver modules but will consider their presence as a possible constraint on the Parties.

5.2.4. Conclusion

(49) In view of the foregoing, the Commission considers that, for the purpose of this Decision, the exact product market definition with regard to the supply optical transport equipment can be left open, given that the Transaction would not raise serious doubts as to its compatibility with the internal market, even on the narrowest plausible product market definition.

(50) The competitive assessment will consider the following product market and its potential segments that are affected as set out in Table 16 of this Decision (excluding pluggable transceiver modules, though considering such modules as a possible constraint): (1) overall optical transport equipment, (2) WDM systems (all applications), (3) WDM systems for metro applications, (4) WDM systems for long-haul applications, (5) WDM systems for terrestrial applications, (6) WDM systems for subsea applications, (7) WDM systems for DCI applications, and (8) legacy (non-WDM) devices.

5.3. Geographic market definition

5.3.1. Commission's precedents

(51) In M.4003 *Ericsson / Marconi* and M.4214 *Alcatel / Lucent Technologies*,[64] the Commission considered that the geographic market for optical transport equipment, and its possible segments, is at least EEA-wide, if not broader, for various reasons. These include customers and suppliers having an EEA (if not worldwide) presence, the evolution of IP technology and EEA/worldwide standardisation, the fact that prices and tenders for these products are normally negotiated on an EEA (if not worldwide) basis and that transport costs are not a determining factor when considering suppliers. Ultimately, the Commission left the exact geographic market definition open.

5.3.2. The Notifying Party's views

(52) The Notifying Party submits that the geographic market for optical transport equipment is worldwide in scope. More specifically, the Notifying Party notes that: (i) manufacturers of optical transport equipment use production facilities that serve the entire globe across various geographic regions; (ii) competition between suppliers takes place at a worldwide level both for existing and new products; (iii) there are no significant regulatory barriers for selling transceiver modules on a worldwide level; (iv) transportation costs are low and account for less than 1% of the product-value; and (v) price differences across regions are small.[65]

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64 Commission decision of 20 December 2005 in case M.4003 – *Ericsson / Marconi*, paragraphs 15-16; Commission decision of 24 July 2006, in case M.4214 – *Alcatel / Lucent Technologies*, paragraphs 36-38.

65 Form CO, paragraphs 272-78.

5.3.3. The Commission's assessment

(53) In the market investigation, the vast majority of customers and competitors having expressed a view indicated that competition in the market for the supply of optical transport equipment takes place at worldwide level.[66] Customers indicated that competition '*takes place at worldwide level because of the existence of international standards, the lack of significant transport costs, the existence of global trade-flows and the presence of large equipment manufacturers that are active on a worldwide basis with research and development centers and global commercial presence*'. Furthermore, '*optical transport equipment providers are selling or trying to sell their products all over the world, and currently there are almost no technical specifications differences between geographies*'.[67] Notwithstanding these responses, the Commission notes that a several customers and competitors submitted that competition for the supply of optical transport equipment takes place at the EEA level.

(54) In any event, the Commission considers that, for the purpose of this Decision, the exact geographic market definition regarding the supply of optical transport equipment can be left open, as the Transaction would not raise serious doubts as to its compatibility with the internal market irrespective of whether worldwide or EEA-wide markets are considered.

(55) The competitive assessment will consider both the worldwide level and the EEA level in order to assess the effects of the Transaction on competition on a conservative basis, including by assessing the presence of non-EEA players in the EEA.

6. MARKET SHARES

(56) According to the Horizontal Merger Guidelines, in the assessment of the effects of a merger, market shares constitute a useful first indication of the structure of the markets at stake and of the competitive importance of the relevant market players.[68]

(57) In this Section, the Commission presents the market shares of the Parties and their main competitors in all market segments listed in Section 5 above where the Parties have horizontally overlapping activities giving rise to affected markets at worldwide and/or at EEA-wide level, as set out in Table 16 of this Decision.[69]

(58) The Notifying Party has put forward market shares from different third-party providers: Omdia, Cignal AI, Dell'Oro, 650 Group, and LightCounting. For the purpose of this Decision, horizontally affected markets at worldwide level have

66 Replies to Questionnaire to Competitors and Questionnaire to Customers, question C.1.

67 Replies to Questionnaire to Customers, question C.1.1.

68 Guidelines on the assessment of horizontal mergers under the EU regulation on the control of concentrations between undertakings, OJ C 31, 2004/C 31/03, 5.2.2004, p. 5 ('**Horizontal Merger Guidelines**'), paragraph 14.

69 The Notifying Party identified three vertical relationships between the Parties' products. However, these relationships do not give rise to vertically affected markets in the meaning of recital 25(g) in Annex I (Form CO) to the Implementing Regulation. The Notifying Party also identified one conglomerate relationship between the Parties' products. However, the Parties' individual and combined market shares do not exceed 30% in neither of the relevant neighbouring markets.

been identified on the basis of market shares included in third-party reports.[70] In cases where two or more reports include (differing) shares for the same relevant market segment, the tables below present the range between the lowest and highest reported shares.

(59) In view of the fact that third-party reports segment the supply of optical transport equipment geographically by reference to EMEA – Europe, the Middle East and Africa (and not by reference to the EEA), for the purpose of this Decision horizontally affected markets at EEA-wide level have been identified on the basis of the Parties' best estimates.

(60) The share data presented in the tables below has been prepared in line with the Commission's decision M.4214 *Alcatel / Lucent Technologies*,[71] namely it is broken down by type of optical transport equipment devices (WDM systems and non-WDM devices) and by distance/application (long-haul, metro, terrestrial, subsea, DCI), and excludes standalone sales of pluggable transceiver modules.[72] Hence, it presents the narrowest – and thus most conservative – possible view of the relevant product markets.

[70] Form CO, Annex 6.031 (Omdia, Optical Networking – Q2 2024 Market Share), Annex 6.035 (CignalAI, Transport Hardware Report – 2Q24 Preliminary), Annex 6.036 and Annex 6.037 (650 Group, Optical Transport Quarterly Market and Long-Term Forecast Report – 2Q24 and associated dataset), Annex 6.038 (Dell'Oro, Optical Transport Quarterly Report 2Q24), Annex 6.039 (Dell'Oro, Market share data for the total optical transport market), Annex 6.040 (Dell'Oro, Market share data for WDM systems), Annex 6.044 (Dell'Oro, Market share data for DCI). The only worldwide market segment for which the Parties' best estimates have been used – instead of third-party report data – is the potential segment for the supply of WDM systems for subsea applications. This is in order to take into account the recent divestment by Nokia of the majority of its subsea business to the French State (see Table 11 of this Decision).

[71] Commission decision of 24 July 2006, in case M.4214 – *Alcatel / Lucent Technologies*, paragraph 11.

[72] Given that the available volume data (based on port shipments) for optical transport equipment, includes sales of pluggable transceiver modules offered on a standalone basis, this Decision does not present volume data for optical transport equipment.

(61) Table 1 and Table 2 provide an overview of the Parties' and their main competitors' market shares for 2022, 2023 and the first half ('**H1**') of 2024 on the overall market for optical transport equipment, at worldwide and EEA-wide level, respectively.

Table 1: Optical transport equipment (overall) – Worldwide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%-[10-20]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
Infinera	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[5-10]%-[5-10]%
Combined	***[10-20]%-[20-30]%***	***[20-30]%-[20-30]%***	***[10-20]%-[10-20]%***
Huawei	[20-30]%-[30-40]%	[20-30]%-[30-40]%	[20-30]%-[30-40]%
Ciena	[10-20]%-[10-20]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
ZTE	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[10-20]%-[10-20]%
Fiberhome	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[0-5]%-[5-10]%
Fujitsu	[5-10]%-[5-10]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Cisco	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Ribbon	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Adtran	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
NEC	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Raisecom	[0-5]%	[0-5]%	[0-5]%
SubCom	[0-5]%	[0-5]%	[0-5]%
Tejas	[0-5]%-[0-5]%	[0-5]%	[0-5]%-[0-5]%
Padtec	[0-5]%	[0-5]%	[0-5]%
Smartoptics	[0-5]%	[0-5]%	[0-5]%
Ekinops	[0-5]%	[0-5]%	[0-5]%
Packetlight	[0-5]%	[0-5]%	[0-5]%
Ericsson	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%
Mitsubishi	[0-5]%	[0-5]%	[0-5]%
White Box Others	[5-10]%	[5-10]%	[5-10]%
Others	[0-5]%-[10-20]%	[0-5]%-[5-10]%	[0-5]%-[5-10]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 9, 29-31, 35-37, 48-50

Table 2: Optical transport equipment (overall) – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%	[10-20]%	[10-20]%
Infinera	[10-20]%	[10-20]%	[10-20]%
Combined	***[30-40]%***	***[30-40]%***	***[20-30]%***
Huawei	[30-40]%	[30-40]%	**[20-30]%**
Ciena	[10-20]%	[10-20]%	**[20-30]%**
ZTE	[0-5]%	[0-5]%	**[0-5]%**
Cisco	[0-5]%	[0-5]%	**[0-5]%**
Ribbon	[0-5]%	[0-5]%	**[0-5]%**
Adtran	[10-20]%	[10-20]%	**[5-10]%**
Others	[5-10]%	[0-5]%	**[0-5]%**
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

(62) Table 3 and Table 4 provide an overview of the Parties' and their main competitors' market shares for 2022, 2023 and H1 2024 on the potential market segment for WDM systems (across applications), at worldwide and EEA-wide level, respectively.

Table 3: WDM systems (across applications) – Worldwide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%-[10-20]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
Infinera	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[5-10]%-[5-10]%
Combined	***[20-30]%-[20-30]%***	***[20-30]%-[20-30]%***	***[10-20]%-[10-20]%***
Huawei	[30-40]%-[30-40]%	[30-40]%-[30-40]%	[30-40]%-[30-40]%
Ciena	[10-20]%-[10-20]%	[10-20]%-[20-30]%	[10-20]%-[10-20]%
ZTE	[5-10]%-[10-20]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
Fiberhome	[0-5]%-[0-5]%	[5-10]%-[5-10]%	[0-5]%-[0-5]%
Fujitsu	[5-10]%-[5-10]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Cisco	[0-5]%-[0-5]%	[0-5]%	[0-5]%-[0-5]%
Ribbon	[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Adtran	[0-5]%-[0-5]%	[0-5]%	[0-5]%-[0-5]%
NEC	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Raisecom	[0-5]%	[0-5]%	[0-5]%
Tejas	[0-5]%	[0-5]%	[0-5]%
Padtec	[0-5]%	[0-5]%	[0-5]%
Ericsson	[0-5]%	[0-5]%	[0-5]%
Others	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 11, 42-44

Table 4: WDM systems (across applications) – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%	[10-20]%	[10-20]%
Infinera	[10-20]%	[10-20]%	[10-20]%
Combined	***[30-40]%***	***[30-40]%***	***[20-30]%***
Huawei	[30-40]%	[30-40]%	[30-40]%
Ciena	[10-20]%	[10-20]%	[20-30]%
ZTE	[0-5]%	[0-5]%	[0-5]%
Cisco	[0-5]%	[0-5]%	[0-5]%
Ribbon	[0-5]%	[0-5]%	[0-5]%
Adtran	[10-20]%	[10-20]%	[5-10]%
Others	[0-5]%	[0-5]%	[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

(63) Table 5 and Table 6 provide an overview of the Parties' and their main competitors' market shares for 2022, 2023 and H1 2024 on the potential market segment for WDM systems for metro applications, at worldwide and EEA-wide level, respectively.

Table 5: WDM systems for metro applications – Worldwide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%-[10-20]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
Infinera	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[5-10]%-[5-10]%
Combined	***[10-20]%-[20-30]%***	***[20-30]%-[20-30]%***	***[10-20]%-[10-20]%***
Huawei	[20-30]%-[20-30]%	[20-30]%-[30-40]%	[20-30]%-[30-40]%
Ciena	[5-10]%-[5-10]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
ZTE	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[10-20]%-[10-20]%
Fiberhome	[0-5]%-[5-10]%	[0-5]%-[5-10]%	[0-5]%-[5-10]%
Fujitsu	[10-20]%-[10-20]%	[5-10]%-[5-10]%	[5-10]%-[5-10]%
Cisco	[5-10]%-[5-10]%	[0-5]%-[0-5]%	[5-10]%-[5-10]%
Ribbon	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Adtran	[5-10]%	[5-10]%-[5-10]%	[0-5]%-[0-5]%
NEC	[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Raisecom	[0-5]%	[0-5]%	[0-5]%
Tejas	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Padtec	[0-5]%	[0-5]%	[0-5]%
Smartoptics	[0-5]%	[0-5]%	[0-5]%
Ekinops	[0-5]%	[0-5]%	[0-5]%
Packetlight	[0-5]%	[0-5]%	[0-5]%
Ericsson	[0-5]%-[0-5]%	[0-5]%	[0-5]%
Mitsubishi	[0-5]%	-	-
Others	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 13, 29-31, 42-44

Table 6: WDM systems for metro applications – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%	[10-20]%	[10-20]%
Infinera	[5-10]%	[5-10]%	[5-10]%
Combined	***[20-30]%***	***[20-30]%***	***[20-30]%***
Huawei	[30-40]%	[30-40]%	[20-30]%
Ciena	[5-10]%	[5-10]%	[10-20]%
ZTE	[0-5]%	[0-5]%	[0-5]%
Cisco	[0-5]%	[5-10]%	[5-10]%
Ribbon	[0-5]%	[0-5]%	[0-5]%
Adtran	[20-30]%	[20-30]%	[10-20]%
Others	[5-10]%	[5-10]%	[5-10]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

(64) Table 7 and Table 8 provide an overview of the Parties' and their main competitors' market shares for 2022, 2023 and H1 2024 on the potential market segment for WDM systems for long-haul applications, at worldwide and EEA-wide level, respectively.

Table 7: WDM systems for long-haul applications – Worldwide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%-[10-20]%	[10-20]%-[10-20]%	[5-10]%-[10-20]%
Infinera	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[5-10]%-[5-10]%
Combined	***[10-20]%-[10-20]%***	***[10-20]%-[20-30]%***	***[10-20]%-[10-20]%***
Huawei	[30-40]%-[30-40]%	[30-40]%-[30-40]%	[30-40]%-[30-40]%
Ciena	[20-30]%-[20-30]%	[20-30]%-[20-30]%	[20-30]%-[20-30]%
ZTE	[10-20]%-[10-20]%	[10-20]%-[10-20]%	[10-20]%-[10-20]%
Fiberhome	[5-10]%-[5-10]%	[5-10]%-[10-20]%	[0-5]%-[5-10]%
Fujitsu	[0-5]%-[0-5]%	[0-5]%	[0-5]%-[0-5]%
Cisco	[0-5]%-[0-5]%	[0-5]%	[0-5]%-[0-5]%
Ribbon	[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Tejas	[0-5]%	-	-
Padtec	[0-5]%-[0-5]%	[0-5]%	[0-5]%-[0-5]%
Mitsubishi	[0-5]%	[0-5]%	[0-5]%
Others	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 15, 29-31, 42-44

Table 8: WDM systems for long-haul applications – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[20-30]%	[20-30]%	[10-20]%
Infinera	[10-20]%	[10-20]%	[10-20]%
Combined	***[30-40]%***	***[30-40]%***	***[30-40]%***
Huawei	[30-40]%	[30-40]%	[30-40]%
Ciena	[10-20]%	[20-30]%	[20-30]%
ZTE	[0-5]%	[0-5]%	[0-5]%
Cisco	[0-5]%	[0-5]%	[0-5]%
Ribbon	[0-5]%	[0-5]%	[0-5]%
Others	[0-5]%	[0-5]%	[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

(65) Table 9 and Table 10 provide an overview of the Parties' and their main competitors' market shares for 2022, 2023 and H1 2024 on the potential market segment for WDM systems for terrestrial applications, at worldwide and EEA-wide level, respectively.

Table 9: WDM systems for terrestrial applications – Worldwide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%	[10-20]%	[10-20]%
Infinera	[5-10]%	[5-10]%	[5-10]%
Combined	***[10-20]%***	***[20-30]%***	***[10-20]%***
Huawei	[30-40]%	[30-40]%	[30-40]%
Ciena	[10-20]%	[10-20]%	[10-20]%
ZTE	[10-20]%	[10-20]%	[10-20]%
Fiberhome	[0-5]%	[5-10]%	[0-5]%
Fujitsu	[5-10]%	[0-5]%	[0-5]%
Cisco	[0-5]%	[0-5]%	[0-5]%
Ribbon	[0-5]%	[0-5]%	[0-5]%
Adtran	[0-5]%	[0-5]%	[0-5]%
NEC	[0-5]%	[0-5]%	[0-5]%
Tejas	[0-5]%	[0-5]%	[0-5]%
Padtec	[0-5]%	[0-5]%	[0-5]%
Raisecom	[0-5]%	[0-5]%	[0-5]%
Others	[0-5]%	[0-5]%	[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Table 17

Table 10: WDM systems for terrestrial applications – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%	[10-20]%	[10-20]%
Infinera	[10-20]%	[10-20]%	[10-20]%
Combined	***[30-40]%***	***[20-30]%***	***[20-30]%***
Huawei	[30-40]%	[30-40]%	[30-40]%
Ciena	[10-20]%	[10-20]%	[10-20]%
ZTE	[0-5]%	[0-5]%	[0-5]%
Cisco	[0-5]%	[0-5]%	[0-5]%
Ribbon	[0-5]%	[0-5]%	[0-5]%
Adtran	[10-20]%	[10-20]%	[5-10]%
Others	[0-5]%	[0-5]%	[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

(66) Table 11 provides an overview of the Parties' and their main competitors' market shares for 2023 on the potential market segment for WDM systems for subsea applications at worldwide level. The market shares included in Table 11 present Nokia's estimated market share following the divestment by Nokia of its Alcatel Submarine Networks ('**ASN**') business (the '**ASN Divestment**') to the French state. The ASN Divestment closed on 31 December 2024.[73]

Table 11: WDM systems for subsea applications – Worldwide market shares by revenue

Company	2023
Nokia	[0-5]%
Infinera	[20-30]%
Combined	***[20-30]%***
Ciena	[50-60]%
ASN	[5-10]%
Fujitsu	[0-5]%
Cisco	[0-5]%
NEC	[5-10]%
Others	[0-5]%
Total	**100%**

Source: Form CO, Table 21

(67) Table 12 provides an overview of the Parties' and their main competitors' market shares for 2023 and H1 2024 on the potential market segment for WDM for subsea applications, at EEA-wide level (following the ASN Divestment).

Table 12: WDM systems for subsea applications – EEA-wide market shares by revenue

Company	2023	H1 2024
Nokia	[5-10]%	[5-10]%
Infinera	[10-20]%	[10-20]%
Combined	***[20-30]%***	***[20-30]%***
Ciena	[40-50]%	[60-70]%
ASN	[10-20]%	[5-10]%
Cisco	[0-5]%	[0-5]%
Others	[5-10]%	[0-5]%
Total	**100%**	**100%**

Source: Form CO, Table 22; Reply to RFI 6, Table 1

[73] Nokia's press release, 3 January 2025, https://www.nokia.com/about-us/news/releases/2025/01/03/nokia-completes-its-sale-of-leading-submarine-networks-business-asn-alcatel-submarine-networks-to-the-french-state/#:~:text=Espoo%2C%20Finland%20%E2%80%93%20Nokia%20today%20announces,completed%20on%2031%20December%202024.

(68) Table 13 and Table 14 provide an overview of the Parties' and their main competitors' market shares for 2022, 2023 and H1 2024 on the potential market segment for WDM for DCI applications, at worldwide and EEA-wide level, respectively.

Table 13: WDM systems for DCI applications – Worldwide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[5-10]%-[10-20]%	[5-10]%-[5-10]%	[5-10]%-[5-10]%
Infinera	[10-20]%-[20-30]%	[10-20]%-[20-30]%	[10-20]%-[20-30]%
Combined	***[20-30]%-[30-40]%***	***[20-30]%-[30-40]%***	***[20-30]%-[30-40]%***
Huawei	[5-10]%-[10-20]%	[10-20]%-[10-20]%	[5-10]%-[5-10]%
Ciena	[20-30]%-[30-40]%	[30-40]%-[40-50]%	[30-40]%-[40-50]%
ZTE	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Fiberhome	[0-5]%-[0-5]%	[0-5]%-[0-5]%	[0-5]%-[0-5]%
Fujitsu	[0-5]%-[5-10]%	[0-5]%-[5-10]%	[0-5]%-[5-10]%
Cisco	[10-20]%-[10-20]%	[5-10]%-[5-10]%	[10-20]%-[10-20]%
Adtran	[5-10]%-[5-10]%	[5-10]%-[5-10]%	[0-5]%-[0-5]%
Raisecom	[0-5]%	[0-5]%	[0-5]%
NEC	[0-5]%	[0-5]%	[0-5]%
Others	[0-5]%	[0-5]%	[0-5]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 23, 48-50

Table 14: WDM systems for DCI applications – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[20-30]%	[20-30]%	[20-30]%
Infinera	[0-5]%	[0-5]%	[0-5]%
Combined	***[30-40]%***	***[30-40]%***	***[20-30]%***
Huawei	[0-5]%	[0-5]%	[0-5]%
Ciena	[20-30]%	[20-30]%	[40-50]%
ZTE	[0-5]%	[0-5]%	[0-5]%
Cisco	[10-20]%	[5-10]%	[10-20]%
Adtran	[20-30]%	[20-30]%	[10-20]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

(69) Table 15 provides an overview of the Parties' and their main competitors' market shares for 2022, 2023 and H1 2024 on the potential EEA market segment for legacy (non-WDM) devices.[74] The Transaction does not give rise to an affected market in the potential worldwide market segment for the supply of legacy (non-WDM) devices.

Table 15: Legacy (non-WDM) devices – EEA-wide market shares by revenue

Company	2022	2023	H1 2024
Nokia	[10-20]%	[5-10]%	[0-5]%
Infinera	[10-20]%	[10-20]%	[20-30]%
Combined	***[20-30]%***	***[20-30]%***	***[20-30]%***
Huawei	[0-5]%	[0-5]%	[0-5]%
Ribbon	[20-30]%	[20-30]%	[30-40]%
Others	[40-50]%	[40-50]%	[30-40]%
Total	**100%**	**100%**	**100%**

Source: Form CO, Tables 64-66

7. COMPETITIVE ASSESSMENT

7.1. Introduction

(70) As set out in Section 6 above, the Parties' activities give rise to a number of horizontally affected markets/segments within the meaning of recital 25(g) of Annex I to the Implementing Regulation.[75]

7.2. Horizontal effects

7.2.1. Legal framework

(71) The Horizontal Merger Guidelines[76] describe two main ways in which horizontal mergers may significantly impede effective competition. In particular, the proposed concentration might be creating or strengthening a dominant position: (i) by eliminating important competitive constraints on one or more firms, which consequently would have increased market power, without resorting to coordinated behaviour (unilateral or non-coordinated effects); and (ii) by changing the nature of competition in such a way that firms that previously were not coordinating their behaviour, are significantly more likely to coordinate and raise prices or otherwise harm effective competition (coordinated effects).

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74 The Parties do not distinguish between aggregation devices or bandwidth management devices, but consider these to be part of a single category of legacy (non-WDM) products. Furthermore, the Parties are unaware of any third-party market reports covering bandwidth management devices separately from aggregation devices. Therefore, the market shares presented in Table 15 include both aggregation devices and bandwidth management devices (Form CO, paragraphs 240 and 300). In any event, the Notifying Party submitted that the Parties no longer sell bandwidth management devices and have only limited EEA revenues from (legacy) aggregation devices, which exclusively relate to installed-base maintenance and upgrades (Notifying Party's reply of 18 February 2025 to RFI 8).

75 These markets do not meet the conditions for review under point 5 or benefit from the flexibility clauses of point 8 of the Commission Notice on a simplified treatment for certain concentrations under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings OJ C 160, 2023/C 160/01, 5.5.2023, p. 1.

76 Horizontal Merger Guidelines, paragraph 22.

(72) A merger giving rise to horizontal unilateral effects might significantly impede effective competition by creating or strengthening the dominant position of a single firm, one which, typically, would have an appreciably larger market share than the next competitor post-merger. Moreover, also mergers that do not lead to the creation of or the strengthening of a single firm's dominant position may create competition concerns under the substantive test set out in Article 2(2) and Article 2(3) of the Merger Regulation. Regarding mergers in oligopolistic markets, the Merger Regulation clarifies that '*under certain circumstances, concentrations involving the elimination of important competitive constraints that the merging parties exerted upon each other, as well as a reduction of competitive pressure on the remaining competitors, may, even in the absence of a likelihood of coordination between the members of the oligopoly, result in a significant impediment to effective competition*'.[77]

(73) The Horizontal Merger Guidelines list a number of factors which may influence whether or not significant horizontal unilateral effects are likely to result from a merger, such as: the large market shares of the merging firms, the fact that the merging firms are close competitors, the limited possibilities for customers to switch suppliers, or the fact that the merger would eliminate an important competitive force. Not all those factors need to be present to make significant non-coordinated effects likely and it is not an exhaustive list.[78]

[77] Merger Regulation, recital 25. Similar wording is also found in paragraph 25 of the Horizontal Merger Guidelines.

[78] Horizontal Merger Guidelines, paragraph 26.

7.2.2. *Horizontally affected markets*

(74) Based on the 2023 market share data set out in Section 6, the Parties' combined market shares exceed 20% in the market segments illustrated in Table 16 below.[79]

Table 16: Horizontally affected market segments – Revenue – 2023

Market segment	Geographic scope	Combined share
Optical transport equipment (overall)	Worldwide	[20-30]%-[20-30]%
	EEA	[30-40]%
WDM systems (across applications)	Worldwide	[20-30]%-[20-30]%
	EEA	[30-40]%
WDM systems for metro applications	Worldwide	[20-30]%-[20-30]%
	EEA	[20-30]%
WDM systems for long-haul applications	Worldwide	[10-20]%-[20-30]%
	EEA	[30-40]%
WDM systems for terrestrial applications	Worldwide	[20-30]%
	EEA	[20-30]%
WDM systems for subsea applications	Worldwide	[20-30]%
	EEA	[20-30]%
WDM systems for DCI applications	Worldwide	[20-30]%-[30-40]%
	EEA	[30-40]%
Legacy (non-WDM) devices	EEA	[20-30]%

7.2.3. *Optical transport equipment and its potential segments*

(75) The Commission's competitive assessment in this Section applies to the overall market for the supply of optical transport equipment as well as to its potential narrower segments (that are affected as set out in Table 16 above).

(76) Any different market conditions between the overall market and its potential segments will, in any event, be presented and assessed separately in this Section. This approach is based on the narrowest – and thus most conservative – possible view of the relevant product markets, as it does not fully account for the ongoing technological swift towards (i) the gradual replacement of legacy non-WDM devices by WDM systems; and (ii) the increased use of the same WDM systems across different applications and distances.

7.2.3.1. Notifying Party's views

(77) The Notifying Party considers that the Transaction will not give rise to competition concerns in the market for the supply of optical transport equipment or any of its potential segments, at worldwide or EEA-wide level, for the following reasons.

(78) First, the combined market shares of the Parties would remain moderate (below or around 30%) in all relevant market segments regardless of the approach to market definition, given the Parties' limited position.[80]

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[79] The Transaction also results in horizontal overlaps in a number of other markets. However, none of these overlaps give rise to affected markets in the meaning of recital 25(g) Annex I to the Implementing Regulation. Therefore, these overlaps will not be analysed in this Decision.

[80] Form CO, paragraph 544. Specifically, cconcerning legacy devices, the Notifying Party submits that the Parties' market shares are less relevant in the competitive assessment of the Transaction. In this respect, the Notifying Party submitted that the Parties no longer sell bandwidth management devices and have only limited EEA revenues from (legacy) aggregation devices, which exclusively relate to installed-base maintenance and upgrades. Further, the Notifying Party expects that these revenues will decrease further in the future as the Parties' legacy aggregation devices are being replaced with

(79) In this respect, the Notifying Party notes that combined market shares calculated on an embedded-system basis overstate the Parties' market position by excluding the sales of pluggable transceiver modules, which are replacing or at least competitively constraining embedded transponders.[81]

(80) Second, in the affected market segments the merged entity would continue to be constrained by a number of effective and innovative established players, including Ciena, Cisco, Adtran, Ribbon, Fujitsu, ZTE and Huawei, as well as by a long tail of new entrants that offer pluggable transceiver modules, including Coherent, Lumentum, Innolight and Marvell.[82]

(81) Furthermore, the Notifying Party submits that, despite the current geopolitical developments, competitors established in China (such as Huawei and ZTE) are not expected to exit or significantly reduce their presence in the EEA market in the foreseeable future. In particular, the Notifying Party submits that aside from certain perspective regulatory plans, there is currently no formal national regulation in place that would force Chinese suppliers of optical transport equipment to cease their operations in the EEA, or would restrict customers' ability to invite Chinese suppliers to bid for contracts and/or enter into supply contracts with them for optical transport equipment. In this respect, the Notifying Party notes that Huawei still actively competes for, and wins, opportunities in the EEA. Last, the Notifying Party states that in the unlikely scenario where Chinese players would exit certain EEA countries, a considerable number of other non-Chinese suppliers would, in any event, remain active in the relevant market segments and would continue to exert competitive pressure upon the merged entity.[83]

(82) Third, customers of optical transport equipment (telecommunication providers and webscalers) would be large and sophisticated buyers with considerable internal expertise and strong bargaining power. Customers would procure equipment through highly competitive requests for proposals and tender processes. Moreover, the disaggregation of the optical networks would allow customers to multi-source their requirements from different vendors of optical transport equipment.[84]

(83) Fourth, the Parties' activities would be complementary:[85]

(a) The Parties would focus on different customers: Infinera predominately serves webscalers, whereas Nokia's main customers are telecommunication network providers.

(b) The Parties would focus on different products: Nokia has been focused on traditional integrated optical transport systems, whilst Infinera has more recently been focused on disaggregated optical transport systems and pluggable transceiver modules.

WDM devices. Last, the Notifying Party submitted that aggregation and bandwidth management devices are no longer actively sold in the EEA, and that it is not aware of any new (or recent) tenders for legacy aggregation and bandwidth management devices in the EEA (Notifying Party's reply of 18 February 2025 to RFI 8)

81 Form CO, paragraphs 471-74.

82 Form CO, paragraphs 409-59 and 471-74.

83 Form CO, paragraphs 460-70, 506.

84 Form CO, paragraphs 24-5, 142, 235(b) and 493-98.

85 Form CO, paragraphs 16 and 24.

(c) The Parties would focus on different geographies: Infinera has a larger presence in the United States, whereas Nokia is primarily present in the EEA, Middle East, Asia-Pacific, and Latin America.

(84) Lastly, the Notifying Party submits that the Transaction will allow the merged entity to attain the requisite scale in its optical networking business to accelerate its product roadmap and drive innovation to compete more vigorously with larger competitors in the market.[86] According to the Notifying Party, combining Nokia's and Infinera's scale would improve each company's standalone operating margins and thus enable it to achieve the R&D levels of other large players such as Ciena and Huawei, so that it would be able to deliver faster innovation at an improved cost structure.[87]

7.2.3.2. The Commission's assessment

(85) The Commission considers that, for the reasons set out below, the Transaction does not raise serious doubts as to its compatibility with the internal market as a result of horizontal effects in the market for the supply of optical transport equipment or any of its potential segments, at worldwide or EEA-wide level.

(86) The Commission's competitive assessment presented in this Section applies equally to the overall market for the supply of optical transport equipment and its potential narrower segments. Where market conditions differ between segments, these are presented and assessed separately.

(87) First, the Parties' 2023 combined shares in the overall market for the supply of optical transport equipment, as well as in its potential narrower segments will remain moderate, ranging from [20-30]% to [30-40]% at worldwide level, and from [20-30]% to [30-40]% at EEA-wide level. More specifically, as set out in Table 16 of this Decision:

(a) optical transport equipment (overall): [20-30]%-[20-30]% worldwide and [30-40]% in the EEA;

(b) WDM systems (across applications): [20-30]%-[20-30]% worldwide and [30-40]% in the EEA;

(c) WDM systems for metro applications: [20-30]%-[20-30]% worldwide and [20-30]% in the EEA;

(d) WDM systems for long-haul applications: [10-20]%-[20-30]% worldwide and [30-40]% in the EEA;

(e) WDM systems for terrestrial applications: [20-30]% worldwide and [20-30]% in the EEA;

(f) WDM systems for subsea applications: [20-30]% worldwide and [20-30]% in the EEA;

(g) WDM systems for DCI applications: [20-30]%-[30-40]% worldwide and [30-40]% in the EEA with a negligible increment of below [0-5]% in the EEA;

(h) legacy (non-WDM) devices: [20-30]% in the EEA, to be considered also in light of the fact that these devices have been replaced to a large extent by WDM devices (see paragraph 30).

86 Form CO, paragraphs 573-86.

87 Form CO, paragraph 582.

(88) The Parties' combined market shares thus remain moderate, even on the narrowest possible market segmentations, which – as explained in paragraph 60 – have been calculated on a conservative basis by segmenting the market for the supply of optical transport equipment by type of device, by application, and excluding sales of pluggable transceiver modules.

(89) Moreover, in H1 2024 the Parties' combined share decreased in all relevant market segments at worldwide level[88] (notably: from [30-40]% to [30-40]% in WDM systems for DCI applications). Moreover, the Parties' combined share decreased between 2022, 2023 and H1 2024 in most relevant market segments at EEA-wide level[89] (notably: from [30-40]% to [30-40]% in WDM systems for long-haul applications).

(90) During the same timeframe that the Parties' combined share decreased, the market shares of the Parties' competitors Ciena and Ribbon have increased in all potential market segments, and Cisco in most market segments. In particular, the market shares of competitors in the EEA increased from 2022 to H1 2024 as follows:

(a) for WDM systems for metro applications: Ciena from [5-10]% to [10-20]%, Cisco from [0-5]% to [5-10]%, Ribbon from [0-5]% to [0-5]% and ZTE from [0-5]% to [0-5]% (see Table 6);

(b) for WDM systems for long-haul applications: Huawei from [30-40]% to [30-40]%, Ciena from [10-20]% to [20-30]%, Ribbon from [0-5]% to [0-5]% (see Table 8);

(c) for WDM systems for terrestrial applications: Ciena from [10-20]% to [10-20]%, Cisco from [0-5]% to [0-5]%, Ribbon from [0-5]% to [0-5]% (see Table 10);

(d) for WDM systems for subsea applications, Ciena from [40-50]% in 2023 to [60-70]% in H1 2024 (see Table 12; see also paragraph 91);

(e) for WDM systems for DCI applications, Ciena's from [20-30]% to [20-30]% in 2023 to [40-50]% and Cisco from [10-20]% to [10-20]% in H1 2024 in WDM systems for DCI applications) (see Table 14).

(91) The Parties' combined shares will remain moderate also in the potential segment for WDM systems for subsea applications following the recent ASN Divestment (see paragraph 66). Furthermore, in the EEA Ciena will remain the largest supplier (around [40-50]%), the merged entity will have around [20-30]% ([…][90]), the French State (ASN) will have around [10-20]% and other competitors will also be present, including Cisco (see Table 12).

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88 The combined market shares have decreased in the overall market for optical transport equipment ([20-30]% to [10-20]%), WDM systems across applications ([20-30]% to [10-20]%), WDM systems for metro applications ([20-30]% to [10-20]%), WDM systems for long-haul applications ([20-30]% to [10-20]%), WDM systems for terrestrial applications ([20-30]% to [10-20]%), and WDM systems for DCI applications ([30-40]% to [30-40]%).

89 The combined market shares decreased in the overall market for optical transport equipment ([30-40]% to [30-40]% in 2023 and to [20-30]% in H1 2024), WDM systems across applications ([30-40]% to [30-40]% in 2023 and to [20-30]% in H1 2024), WDM systems for long-haul applications ([30-40]% to [30-40]% in 2023 and to [30-40]% in H1 2024), WDM systems for terrestrial applications ([30-40]% to [20-30]% in 2023 and to [20-30]% in H1 2024), WDM systems for subsea applications ([30-40]% to [20-30]% in 2023 to [20-30]% in H1 2024), and WDM systems for DCI applications ([30-40]% to [30-40]% in 2023 to [20-30]% in H1 2024).

90 […].

(92) Second, the merged entity will continue to face competition from several suppliers post-Transaction. Respondents to the market investigation identified a wide range of companies that compete with the Parties.[91] The majority of customers and competitors having expressed a view consider that such suppliers include Ciena, Huawei, Cisco, Adtran, Ribbon, ZTE, Fujitsu and Ekinops. The market investigation indicated that Ciena, Huawei and Cisco compete more closely with Nokia than Infinera. On the other hand, the market also considers that Ciena and Huawei are competing more closely with Infinera than Nokia.[92] For example, one respondent submitted that '*Ciena is definitely main competitor in Europe*';[93] another respondent stated that '*Ciena is the biggest supplier and the most innovative*';[94] a further respondent submitted that '*Adtran is … strong in Europe*'.[95]

(93) In addition, a significant number of customers and competitors having expressed a view identified further suppliers such as SmartOptics, Juniper Networks, NEC, Ericsson, Coherent, Padtec, PacketLight, Tejas, Fiberhome and Arista.

(94) The respondents to the market investigation listed these competitors in relation to the overall market for the supply of optical transport equipment. For example, one customer explained that it '*produced the competitors' ranking by comparing suppliers of overall WDM system across all applications (metropolitan, regional, national), in particular taking into account the suppliers with the largest market shares*'.[96] Market respondents have generally not referred to any specific potential segments when listing the above-mentioned competitors, with one exception: a customer specifically added that Adtran/Adva is a major competitor for WDM systems for DCI applications.[97]

(95) Third, market participants consider the Parties to focus on different customers, geographies or use cases and, in any event, their products do not have any unique characteristics or functionalities which rivals do not offer or cannot match.

(96) In the market investigation, while the majority of market respondents having expressed a view consider that Nokia and Infinera compete in the market for the supply of optical transport equipment amongst other players such as Ciena, Cisco and Huawei,[98] several market respondents submitted that the Parties' products focus on different customers, geographies or use cases. For example, a market respondent submitted that '*Nokia has a carrier-centric customer, while Infinera has a data center operator-centric customer [base]*';[99] another respondent stated that '*Infinera has more self-developed high-speed coherent pluggables business than Nokia*';[100] a further respondent noted that '*while they both have similar*

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91 Replies to Questionnaire to Customers, questions D.1 and D.2. The 27 listed competitors are (from the most- to the least-nominated): Ciena, Huawei, Cisco, Adtran/ADVA, ZTE, Ribbon, Fujitsu Ekinops, SmartOptics, Juniper Networks, NEC, Ericsson, Coherent, Arista, Lumentum, PacketLight, ProLabs Tejas, Mitsubishi, Fiberhome, Marvell, E-Optolink, Padtec, Raisecom, SubCom, Innolight.

92 Replies to Questionnaires to Customers, question D.1.1. Customers rank the following companies as competitors of Nokia: Ciena, Huawei, Cisco, Infinera and Adtran. Customers rank the following companies as competitors of Infinera: Ciena, Huawei, Nokia, Cisco and Adtran.

93 Replies to Questionnaire to Customers, question D.1.2.

94 Replies to Questionnaire to Customers, question D.1.2.

95 Replies to Questionnaire to Competitors, question D.2.2.

96 Reply to Questionnaire to Customers, question D.1.2. (Commission's translation into English).

97 Reply to Questionnaire to Customers, questions D.1.2. and D.2.2.

98 Replies to Questionnaire to Customers and Competitors, question D.3.

99 Reply to Questionnaire to Competitors, question D.3.1.

100 Reply to Questionnaire to Competitors, question D.2.2.

solutions, Nokia seem to focus on the Telecom market and Infinera seem to focus on the Datacentre market';[101] another respondent submitted that '*Infinera is less globally oriented, fully focussed on the West and cloud/DCI more than service providers*';[102] another respondent stated that the Parties '*have different regional focuses. Infinera is more focused on North America while Nokia is more focused on EMEA*';[103] last, a further respondent noted that unlike Infinera '*Nokia has been less successful addressing hyper scale customers ... Infineras XR pluggable optics is a very different technology that Nokia cannot offer'*.[104]

(97) In addition, the majority of market participants having expressed a view submitted that the Parties do not supply products with specific characteristics or functionalities which cannot be replicated, or are difficult to replicate, by competitors.[105] For instance, one market respondent submitted that '*Infinera used to be unique but nowadays they are all very similar*'; another respondent submitted that '*for a short time could be, that a supplier is the first having a specific functionality, however short after, the other suppliers provide the same functionality as well*'; a further respondent noted that '*all vendors are currently capable of providing the functionality required by the market. Consequently, while recognizing some preferential characteristics for individual vendors (e.g. speed of evolution, performance, etc.), they cannot be considered as non-replicable or extremely innovative*'.[106]

(98) In the market investigation, respondents did not generally refer to specific potential segments of the market for the supply of optical transport equipment when discussing the different players competing with the Parties.

(99) Fourth, the Commission investigated whether the competitive structure in the market for optical transport equipment in the EEA is likely to undergo significant changes in the future.

(100) On the basis of the results of the market investigation set out below, the Commission considers that a significant market change is unlikely to occur in the short to medium term, *i.e.*, in the next five years. More specifically:

(a) In the market investigation, when competitors and customers were asked whether any of the Parties' existing competitors are expected to exit the market for optical transport equipment in the EEA, or to significantly reduce their presence in the EEA, within the next five years, the vast majority of competitors and customers having expressed a view submitted that they do not anticipate any exit and that existing competitors are expected to continue being active in the EEA in a similar way as today.[107]

(b) Specifically about players established in China, one respondent submitted that '*it depends on further regulatory trends and risks*';[108] another respondent submitted that '*currently, because WDM technology is considered*

101 Reply to Questionnaire to Customers, question D.3.
102 Reply to Questionnaire to Competitors, question D.2.2.
103 Reply to Questionnaire to Competitors, question D.3.1.
104 Reply to Questionnaire to Competitors, question D.3.1.
105 Replies to Questionnaire to Customers and Competitors, question D.4.
106 Replies to Questionnaire to Customers, question D.4.1.
107 Replies to Questionnaires to Customers, question D.5. and to Competitors, question D.5.
108 Reply to Questionnaire to Customers, question D.13.1.

reasonably 'safe', the big Chinese players are still major competitors';[109] yet another respondent submitted that '*external factor like geopolitical shift, rules changes or market demand could affect the strategies of networks company but a full exit from the EEA market seems impossible*'.[110]

(c) Furthermore, market respondents submitted that customers do equally consider Chinese vendors if they participate in a tender process. For example, one respondent submitted that '*the choice of our suppliers is the result of our calls for tenders according to European public procurement rules*'; and another respondent submitted that it '*will apply European public procurement law ... That means … to equally consider Chinese vendors if they participate in a tender process*'.[111]

(d) Moreover, one market respondent submitted that Chinese suppliers are still participating in EEA tenders maintaining pricing pressure on the other competitors, thus including the merged entity.[112]

(101) Fifth, while the Commission, on a conservative basis, based its competitive assessment in this Decision on a potential market for optical transport equipment excluding pluggable transceiver modules, as discussed in Section 5.2.3.3 in more detail, the market investigation revealed indications that pluggable transceiver modules are increasingly replacing embedded transponders, thereby forming a constraint on the Parties.

(102) The market investigation indicated that pluggable transceiver modules can generally be used across applications, with the exception of subsea applications (see paragraph 45),[113] such that pluggable transceiver modules can be expected to constraint the Parties in almost all potential market segments.

(103) In addition, the market investigation highlighted some recent entrants and expected entry and expansion, suggesting at least some dynamism and increased competition constrains caused by the uptake of pluggable transceiver modules. When asked about expected entry or expansion in the next five years, customers submitted that '*[w]e can always expect new companies to innovate and enter the market*', and '*[i]nnovation and new technology will be the major cause of expansion of the market in the next 5 years*'.[114] A competitor submitted that '*[a]s consumption models evolve, it's possible that more plug[gable] and semi players could enter the market*'.[115] Another competitor submitted that '*challengers may also grow (Ekinops, Packetlight and Ribbon)*'.[116] Furthermore, a customer submitted that '*open systems, rather than closed systems, and pluggable optics provide opportunities for competition between vendors*'.[117]

(104) Sixth, customers multi-source and can switch between different suppliers of optical transport equipment.

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109 Reply to Questionnaire to Customers, question D.1.2.
110 Reply to Questionnaire to Customers, question D.5.1.
111 Replies to Questionnaire to Customers, question D.13.1.
112 Call with a competitor on 21 November 2024.
113 Replies to Questionnaire to Customers and Competitors, question C.8.
114 Replies to Questionnaire to Customers, question D.8.1.
115 Reply to Questionnaire to Competitors, question D.8.1.
116 Reply to Questionnaire to Competitors, question D.8.1.
117 Call with a customer on 16 December 2024.

(105) The vast majority of competitors and customers having expressed a view indicated that customers commonly multi-source their requirements for optical transport equipment from more than one supplier.[118] For example, a respondent submitted that it '*is pursuing a multi-vendor strategy. One of the key reasons to decrease risk of dependency both on a commercial and technical level*'; another respondent explained that customers multi-source because '*[e]ngaging multiple suppliers can create a competitive environment, allowing customers to negotiate better pricing, terms, and conditions. It can help optimize costs and ensure the best value for the investment*'.[119]

(106) In addition, all competitors and the majority of customers having expressed a view submitted that, in practice, customers switch between different suppliers of optical transport equipment.[120] For example, one market respondent submitted that '*[p]rice plays a very important role. If a new tender is issued and another supplier provides better pricing, customer switch the supplier*'. Another respondent noted that '[*d]ue to the (current) basic nature of WDM solutions, switching suppliers is a lifecycle choice, where every 5-10 years, a telco gets to start from scratch*'.[121] In this respect, the vast majority of competitors and the majority of customers having expressed view explained that although switching from one supplier to another may be technically complex and require some time, it remains a real option.[122]

(107) The responses to the market investigation did not reveal that customers in the different potential market segments employ different sourcing strategies. As regards switching, market respondents submitted that a longer time and higher costs may be required to switch suppliers of a large-scale optical network compared to a smaller-size network. For instance, a competitor noted that '*[t]he time cost and investment is directly related the to the size and extent of the network*'; similarly, a customer stated that '*[t]he time and cost involved in switching a network depends on the size and scope of the network to be swapped*'.[123]

(108) Seventh, the vast majority of competitors having expressed a view indicated that customers of optical transport equipment would be able to react in case of a price increase of the Parties' products.[124] For example, one customer submitted that '*prices have dropped by more than 95% over the last 20 years on a unit basis and there is still ongoing competition within the optical transport equipment space which means that customers could technically switch in case of price increase*';[125] another customer submitted that '*[c]ustomers of optical transport equipment do possess bargaining power to react to potential price increases from suppliers like Nokia and Infinera*';[126] a further customer submitted that '*[t]here are enough DWDM vendors in the market to trigger a reaction*'.[127]

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118 Replies to Questionnaire to Competitors and Questionnaire to Customers, question D.9.
119 Replies to Questionnaire to Customers, question D.9.1.
120 Replies to Questionnaire to Competitors and Questionnaire to Customers, question D.10.
121 Replies to Questionnaire to Customers, question D.10.1.
122 Replies to Questionnaire to Competitors and Questionnaire to Customers, question D.11.
123 Replies to Questionnaire to Competitors and Questionnaire to Customers, question D.11.1.
124 Replies to Questionnaire to Competitors and Questionnaire to Customers, question D.12.
125 Reply to Questionnaire to Customers, question D.12.1.
126 Reply to Questionnaire to Customers, question D.12.1.
127 Reply to Questionnaire to Customers, question D.12.1.

(109) The responses to the market investigation did not reveal that customers in different potential market segments enjoy a different ability to switch to alternative vendors.

(110) Eighth, the vast majority of customers and competitors having expressed a view consider that the Transaction will have a neutral impact on their company and on competition on the market for optical transport equipment in the EEA,[128] whereas several market participants indicated the impact of the Transaction would be positive.[129] For example, one market respondent submitted that '*we welcome this Transaction*';[130] another respondent stated that '*Nokia would be strengthened in its product range, its know-how as well as in the means that can be made available to its customers. This would also improve Nokia's capacity for innovation vis-à-vis the competition (notably Huawei)*';[131] a further respondent submitted that '*[c]onsolidation which has been ongoing over the past decades in this space (e.g. Nortel/Cinea, Coriant / Infinera, Alcatel/Nokia, Adtran/Adva) made these companies more capable in their offering without altering competition. Infinera and Nokia are complementary in their geographic footprint (Infinera focused on North America, Nokia more on EMEA) increasing the chances they remain relevant actors in this space and provide stable supply for their customers over the coming years*'.[132] Another respondent submitted that '*this transaction will fill gaps in the portfolios of the two companies and this is good news for the customers*';[133] a further respondent noted that '*[t]he market is still with a lot of competitors*';[134] another respondent submitted that '*[a] significant transaction within the optical transport equipment market in the EEA such as this one is likely to positively impact pricing dynamics and innovation*'.[135]

(111) Finally, very few customers are concerned that if Nokia were to discontinue or de-prioritize one of the two product lines of the Parties post-Transaction, their business could be potentially disrupted.[136] Based on submissions made by the Notifying Party, reliability and security of supply are important elements in customers' purchasing decisions and the Parties will have an incentive to maintain that trust with customers of both Parties during the post-Transaction transition period. In any case, as confirmed by the Notifying Party, any discontinuation of the sale and support of any of the Parties' existing products post-Transaction would be subject to substantial transitional periods and compliance with contractual protections and phase-out processes for product supply and support, aiming to ensure a smooth transition to new products and technologies.[137] Therefore, the

128 Replies to Questionnaire to Customers, questions E1 and E2.
129 Replies to Questionnaire to Customers, questions E1 and E2.
130 Reply to Questionnaire to Customers, question F.1.
131 Reply to Questionnaire to Customers, question E.1.1. Courtesy translation.
132 Reply to Questionnaire to Customers, question E.1.1.
133 Reply to Questionnaire to Customers, question E.1.1.
134 Reply to Questionnaire to Customers, question E.2.1.
135 Reply to Questionnaire to Customers, question E.2.1.
136 Replies to Questionnaire to Customers, questions E.1.1. and E.2.1.
137 Notifying Party's reply of 11 February 2024 to RFI 7. Nokia customer agreements typically include (i) a continuity of supply commitment for […]; (ii) as regards specific product lines, a […] phase-out process (whereby Nokia only stops taking new orders […] after 'end-of-marketing' announcement and only stops making deliveries after […]); and (iii) a structured phase-out model following the 'end-of-marketing' announcement, whereby it provides product support, […]. Infinera has (i) a baseline policy to offer at least […] of support when customers purchase a new product, and also has a continuity of supply commitment; and (ii) an 'end of life' policy that guarantees customers an additional […] of support, followed by another […] of extended supply.

Commission considers that the Transaction is unlikely to lead to any disruptions outside the normal course of business.

7.2.3.3. Conclusion

(112) For all the above reasons, the Commission concludes that the Transaction would not raise serious doubts as to its compatibility with the internal market as a result of horizontal effects on the market for optical transport equipment or any of its potential segments (*i.e.*, WDM systems for all applications, WDM systems for metro applications, WDM systems for long-haul applications, WDM systems for terrestrial applications, WDM systems for subsea applications, WDM systems for DCI applications, and legacy non-WDM devices), at worldwide or EEA-wide level.

8. CONCLUSION

(113) For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This Decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)
Teresa RIBERA
Executive Vice-President