



EUROPEAN COMMISSION
Competition DG

CASE AT.40608 - Broadcom

(Only the English text is authentic)

ANTITRUST PROCEDURE

Council Regulation (EC) 1/2003

Article 8 Regulation (EC) 1/2003

Date: 16/10/2019

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Brussels, 16.10.2019
C(2019) 7406 final

COMMISSION DECISION

of 16.10.2019

relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union, Article 54 of the EEA Agreement and Article 8 of Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty

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THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,¹

Having regard to the Agreement on the European Economic Area, and in particular Article 54 thereof,

Having regard to Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty,² and in particular Articles 8 and 24 thereof,

Having regard to Council Regulation (EC) No 2894/94 of 28 November 1994 concerning arrangements for implementing the Agreement on the European Economic Area, and in particular Article 5 thereof,

Having regard to the Commission Decision of 26 June 2019 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission pursuant to Article 27(1) of Regulation (EC) No 1/2003 and Article 12 of Commission Regulation (EC) No 773/2004 of 7 April 2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the Treaty,³

After consulting the Advisory Committee on Restrictive Practices and Dominant Positions,

¹ OJ C 115, 9.5.2008, page 47.

² OJ L 1, 4.1.2003, page 1. With effect from 1 December 2009, Articles 81 and 82 of the EC Treaty have become Articles 101 and 102, respectively, of the Treaty on the Functioning of the European Union (“TFEU”). The two sets of provisions are, in substance, identical. For the purposes of this Decision, references to Articles 101 and 102 of the TFEU should be understood as references to Articles 81 and 82, respectively, of the EC Treaty when where appropriate. The TFEU also introduced certain changes in terminology, such as the replacement of “Community” by “Union” and “common market” by “internal market”. Where the meaning remains unchanged, the terminology of the TFEU will be used throughout this Decision.

³ OJ L 123, 27.4.2004, page 18.

Having regard to the final report of the hearing officer in these interim measures proceedings,

Whereas:

1. INTRODUCTION

- (1) This Decision sets out the European Commission's (the "Commission") findings that the conduct of Broadcom Inc. is *prima facie* breaching Article 102 of the Treaty on the Functioning of the European Union ("TFEU") and Article 54 of the Agreement on the European Economic Area ("EEA Agreement") and that the likely damage resulting from such infringement is such as to give rise to a situation of urgency justifying the adoption of interim measures pursuant to Article 8 of Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty ("Regulation (EC) No 1/2003"). Broadcom Inc., together with its subsidiaries and, where relevant, its legal predecessor's subsidiaries, are referred to in this Decision as "Broadcom".
- (2) This Decision is structured as follows:
 - (a) In section 2, the Commission outlines the undertaking concerned by the Decision;
 - (b) In section 3, the Commission describes the procedural steps it followed in these proceedings;
 - (c) In section 4, the Commission describes the products concerned by the Decision, namely Systems-on-a-Chip ("SoCs") for incorporation into set-top boxes ("STBs") and/or residential gateways;
 - (d) In section 5, the Commission describes the market dynamics, customers and applications at stake, and in particular the role of SoC suppliers, original equipment manufacturers ("OEMs") and service providers;
 - (e) In section 6, the Commission describes certain agreements entered into between Broadcom and six OEMs (the "Agreements");
 - (f) In section 7, the Commission outlines the conditions for adopting interim measures;
 - (g) In section 8, the Commission concludes on the basis of its preliminary factual and legal analysis that Broadcom is *prima facie* infringing Article 102 TFEU and Article 54 of the EEA Agreement.⁴ In particular, the Commission concludes that, *prima facie*, Broadcom is dominant in: (i) SoCs for STBs; (ii) SoCs for fibre residential gateways; and (iii) SoCs for xDSL⁵ residential gateways. It also concludes that the Agreements contain provisions which *prima facie* have the object or effect of forcing or inducing customers to obtain all or almost all of their requirements for SoCs for STBs and SoCs for cable, fibre and xDSL residential gateways from Broadcom, in particular by means of (quasi-) exclusivity arrangements or leveraging restrictions. These provisions will hereinafter be referred to as the "exclusivity-inducing provisions";

⁴ Unless otherwise stated, references to Article 102 TFEU also cover Article 54 of the EEA Agreement.

⁵ "xDSL" is the umbrella term covering all types of DSL technology such as ADSL and VDSL.

- (h) In section 9, the Commission concludes that if Broadcom's ongoing conduct were allowed to continue, it would likely lead to serious and irreparable damage to competition in the markets for (i) SoCs for STBs; (ii) SoCs for cable residential gateways; (iii) SoCs for fibre residential gateways; and (iv) SoCs for xDSL residential gateways, notably in the form of the potential exit or marginalisation of Broadcom's competitors from these markets;
- (i) In section 10, the Commission outlines the interim measures adopted by means of this Decision. In particular, the Commission requires Broadcom: (i) to unilaterally cease to apply with immediate effect the exclusivity-inducing provisions identified in sections 8.5.2.1.A and 8.5.2.1.B below contained in the Agreements concerning [OEM A]'s, [OEM B]'s, [OEM C]'s, [OEM D]'s, [OEM E]'s and [OEM F]'s purchases of SoCs for STBs and SoCs for cable, fibre or xDSL residential gateways (as appropriate) from Broadcom. Broadcom shall, without delay, (a) inform the contracting parties of the Agreements of such disapplication and (b) notify the Commission that it has put this measure into effect, such notification to be accompanied by supporting documentation; and (ii) to refrain from agreeing the same exclusivity-inducing provisions or provisions having an equivalent object or effect as those identified in sections 8.5.2.1.A and 8.5.2.1.B below in any future contracts or agreements (written or otherwise) with [OEM A], [OEM B], [OEM C], [OEM D], [OEM E] and [OEM F], and refrain from implementing punishing or retaliatory practices having an equivalent object or effect;
- (j) In section 11, the Commission explains the reasons why the interim measures are proportionate and take into due account Broadcom's legitimate interests;
- (k) In section 12, the Commission explains why it is necessary to foresee periodic penalty payments pursuant to Article 24(1)(b) of Regulation (EC) No 1/2003 and Article 5 of Regulation (EC) No 2894/94 of 28 November 1994 concerning arrangements for implementing the Agreement on the European Economic Area ("Regulation (EC) No 2894/94"),⁶ if Broadcom were to fail to comply with the interim measures;
- (l) In section 13, the Commission sets out the grounds upon which it has jurisdiction to impose interim measures in this case;
- (m) In section 14, the Commission indicates the addressee of this Decision; and
- (n) In section 15, the Commission presents its conclusions.

2. THE UNDERTAKING CONCERNED BY THE DECISION

- (3) Broadcom Inc. is the ultimate parent company of a group of companies active in the semiconductor and software solutions space, that is headquartered in San Jose, California, United States. Broadcom has design, product and software development engineering resources in the United States, Asia, Europe and Israel.⁷ In 2018, Broadcom's turnover was USD 20.9 billion.⁸

⁶ OJ L 305, 30.11.1994, pages 6–8.

⁷ Broadcom's reply of 18 March 2019 to question 1 of Article 18(3) Decision of 17 December 2018, Doc ID 1244, page 1.

⁸ Minutes of meeting with Broadcom of 21 March 2019, Doc ID 1352, page 1.

- (4) Broadcom has three main business divisions: semiconductor solutions, infrastructure software and IP licensing.⁹ Broadcom's products are used in end products such as enterprise and data centre networking, home connectivity, STBs, broadband access devices (*i.e.* residential gateways), telecommunication equipment, smartphones and base stations, data centre servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays.¹⁰
- (5) Broadcom is the world's largest designer, developer and provider of integrated circuits for wired communication applications and the worldwide leader in SoC solutions for STBs for video delivery.¹¹
- (6) The substantial majority of Broadcom's semiconductor sales is accounted for by sales to OEMs, or their contract manufacturers and distributors.¹²

3. PROCEDURE

- (7) In the course of 2018, the Commission received market information that Broadcom may be imposing exclusivity or quasi-exclusivity restrictions on its customers for certain types of integrated circuits for incorporation into STBs and residential gateways, amongst others.
- (8) Between 24 October 2018 and 27 August 2019, the Commission sent requests for information pursuant to Articles 18(2) and 18(3) of Regulation (EC) No 1/2003 to Broadcom, its direct and indirect customers and its competitors.
- (9) On 21 March 2019 and on 25 June 2019, the Commission met with Broadcom representatives in the context of its preliminary investigation.
- (10) On 26 June 2019, the Commission decided to initiate proceedings in the present case within the meaning of Article 2(1) of Regulation (EC) No 773/2004.¹³ On the same day, the Commission adopted a Statement of Objections ("SO") addressed to Broadcom outlining the Commission's preliminary conclusions as regards imposing interim measures pursuant to Article 8 of Regulation (EC) No 1/2003 relating to specific aspects of Broadcom's behaviour that was subject to the Commission's investigation.
- (11) On 23 July 2019, Broadcom submitted a response to the SO ("SO Response"), contesting the Commission's preliminary findings on interim measures.¹⁴

⁹ Broadcom's reply of 18 March 2019 to question 1 of Article 18(3) Decision of 17 December 2018, Doc ID 1244, page 2.

¹⁰ Broadcom's reply of 18 March 2019 to question 1 of Article 18(3) Decision of 17 December 2018, Doc ID 1244, pages 1-2.

¹¹ Broadcom website at <https://www.broadcom.com/products/broadband/set-top-box/>, printed on 14 June 2019, Doc ID 1613.

¹² Broadcom's reply of 18 March 2019 to question 1 of Article 18(3) Decision of 17 December 2018, Doc ID 1244, page 2.

¹³ Commission Regulation (EC) No 773/2004 of 7 April 2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the EC Treaty: OJ L 123, 27.4.2004, pages 18–24.

¹⁴ Doc ID 1843-15.

- (12) On 1 August 2019, the Commission sent Broadcom a letter (“Letter of Facts”) to inform it about evidence that the Commission considered may be relevant to corroborate and support the preliminary conclusions reached in the SO.¹⁵
- (13) On 20 August 2019, an Oral Hearing took place upon Broadcom’s request (“Oral Hearing”).
- (14) On 22 August 2019, Broadcom submitted its comments on the Letter of Facts (“Comments on the Letter of Facts”).¹⁶
- (15) On 26 August 2019, Broadcom submitted a written response to two of the questions that the Commission had posed during the Oral Hearing.¹⁷
- (16) On 7 October 2019, an Advisory Committee meeting took place.
- (17) On 10 October 2019, the Commission met with Broadcom representatives in order to provide an advance notice as to the possible adoption of this Decision.

4. THE PRODUCTS CONCERNED BY THE DECISION

- (18) This Decision concerns certain types of integrated circuits (“ICs”) incorporated into network access equipment that is installed at customer premises (so-called customer premises equipment, “CPE”), namely STBs and residential gateways.
- (19) An STB is a hardware device that converts external source signals into video content on television. STBs are used to enable consumers to watch on television the video content transmitted via various technologies, such as cable, satellite and Internet Protocol Television (“IPTV”).
- (20) A residential gateway is a hardware device that connects one or more electronic devices to a single Internet access point.¹⁸ Residential gateways do so by combining modem functionality (*i.e.*, a component that converts analog signals from service providers into digital signals suitable for computers and *vice versa*¹⁹) with a wireless router (*i.e.*, a centralised network device that allows, manages and secures Internet access for multiple wireless access points).²⁰ Residential gateways allow access to the Internet by means of three main technologies: xDSL, cable and fibre.²¹
- (21) More specifically, the products concerned by this Decision are SoCs, namely chipsets combining electronic circuits of various components in a single unit, which constitute the core IC of an STB or residential gateway.

¹⁵ Doc ID 1955.

¹⁶ Doc ID 2154.

¹⁷ Doc ID 2167.

¹⁸ Annex 3 to Broadcom’s partial reply of 22 January 2019 to Article 18(3) Decision of 17 December 2018, Doc ID 846. For the avoidance of doubt, standalone fixed line modems (*i.e.* modems that are not incorporated into residential gateways and which would require an additional piece of equipment (*i.e.* a router) to distribute Internet access over a local area network (LAN) are also concerned by the Decision and included in the definition of residential gateways for all purposes, unless stated otherwise.

¹⁹ Annex 3 to Broadcom’s partial reply of 22 January 2019 to Article 18(3) Decision of 17 December 2018, Doc ID 846.

²⁰ Annex 3 to Broadcom’s partial reply of 22 January 2019 to Article 18(3) Decision of 17 December 2018, Doc ID 846.

²¹ Annex 3 to Broadcom’s partial reply of 22 January 2019 to Article 18(3) Decision of 17 December 2018, Doc ID 846. On the basis of 2018 figures, fibre gateways represented approximately [35-45]% of worldwide sales, while each of cable and xDSL gateways represented approximately [25-35]%.

- (22) In STBs, SoCs function as the “brain” of the system. SoCs are the most important component of an STB and often an expensive one.²² SoCs can provide high video security and high privacy protection for STBs, features that are particularly important for OEMs supplying network service providers in EU/EEA and the United States.²³
- (23) In residential gateways, SoCs also represent the core component of the system, allowing the device to manage connectivity access for other devices.

5. MARKET DYNAMICS, CUSTOMERS AND APPLICATIONS

- (24) The manufacturing of SoCs for STBs and residential gateways is concentrated in the hands of a limited number of large players, with other smaller producers accounting for a negligible portion of the supply of these components. The industry is highly cyclical²⁴ and characterised by high barriers to entry and expansion – notably as a result of the substantial initial and ongoing R&D investment required to supply SoCs and the other factors described in section 8.4.4 below.
- (25) Chipset suppliers sell their SoCs to OEMs, which assemble them together with other components to manufacture STBs and residential gateways. Many OEMs, such as [OEM A], [OEM D] and [OEM E], typically supply both STBs and residential gateways.
- (26) OEMs sell STBs and residential gateways to so-called service providers, *i.e.* providers of broadcasting and Internet connectivity services such as telecoms operators and cable service providers. Procurement at the level of service providers typically takes place by means of tender processes, also referred to as selection processes.²⁵ In the EEA, tenders typically cover a service provider’s demand for products in multiple EU Member States, or even in both EEA and non-EEA countries.²⁶
- (27) The usual length of a product cycle is long, with several years between the order and delivery of ICs. Competitive bid selection processes (“tenders”) are generally organised by service providers roughly every 1.5 to 2 years.²⁷ The tender process itself

²² Minutes of meeting with Broadcom of 21 March 2019, Doc ID 1352, page 2.

²³ Minutes of meeting with Broadcom of 21 March 2019, Doc ID 1352, page 2.

²⁴ See Broadcom’s form 10-K of fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1> on 13 June 2019, Doc ID 1574, page 18. See *e.g.* Global STB Revenue and Growth Rate Forecast (2018-2025) contained in Annex 8 to Broadcom’s partial reply of 11 February 2019 to Article 18(3) Decision of 17 December 2018, titled “BiS Global Market Research Report 2018”, Doc ID 1064.

²⁵ See, *e.g.*, Deutsche Telekom’s reply of 14 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1194, page 5; Intel’s supplemental reply of 21 December 2018 to question 5 of Article 18(3) Decision of 26 October 2018, Doc ID 1739, pages 5-20; Liberty Global’s reply of 14 November 2018 to question 3 of Article 18(3) Decision of 24 October 2018, Doc ID 1205-1, pages 3-4; MediaTek’s submission of 8 April 2019, Doc ID 1741, paragraphs 53-56; Proximus’ reply of 14 November 2018 to question 5 of Article 18(3) Decision of 24 October 2018, Doc ID 306, page 3; [...].

²⁶ MediaTek’s submission of 8 April 2019, Doc ID 1741, paragraphs 60-61.

²⁷ MediaTek explained that the usual length of a product cycle from order to delivery is between 1 and 2 years for STBs and around 4 years for residential gateways, although new tenders for gateways are organised every 1.5 years given that there are several different product lines (MediaTek’s submission of 8 April 2019, Doc ID 1741, paragraph 54; see also MediaTek’s observations on the SO of 26 July 2019, Doc ID 1889, paragraph 56). As a result, once a tender is lost, chipset suppliers do not have an opportunity to compete for a customer’s demand for another 1.5 to 2 years. According to Intel, average product lifecycles are around 4 to 5 years long for both cable and DSL modems (see Notes of a meeting between Intel and the Commission’s services on 19 February 2019, Doc ID 1516, page 2). For the avoidance of

is typically lengthy and, as a result, requires chipset suppliers to dedicate significant development expenditures and engineering resources to assist OEMs in the tender process in an attempt to have the OEM's solution incorporating the chipset supplier's products selected by service providers, thereby obtaining a so-called "design win". The failure to win a particular tender not only excludes a chipset supplier and OEM from competing for that service provider's demand until a subsequent tender takes place, but it will typically continue to affect those suppliers for several years after a new tender has been held as "*operators may continue to use legacy products for several years*".²⁸ Moreover, failure to win a particular tender may prevent chipset suppliers from winning tenders in subsequent generations of a particular product.²⁹ This can result in lost revenue and can weaken a chipset supplier's position in future competitive selection processes.³⁰

6. BROADCOM'S AGREEMENTS

(28) This section briefly describes the six OEMs that entered into the Agreements with Broadcom and the scope of each Agreement.³¹

6.1. Introduction to Broadcom's Agreements

(29) Broadcom admits to pursuing "*a form of partial vertical integration by contract, using a closer, more integrated relationship with key OEMs*."³² Concretely, Broadcom explains, this involves the use of a variety of contractual mechanisms with OEMs falling under what Broadcom describes as its "*Strategic Partnership Strategy*".³³

(30) According to Broadcom, "*the concept [of the Strategic Partnership Agreements, "SPAs"] was to identify a small handful of strategic OEM partners in which Broadcom would concentrate its bid support efforts. [...] Broadcom's SPA partners would receive distinct, appreciably higher levels of bid support*."³⁴

(31) More in detail, according to Broadcom, so-called "*Strategic Partners*" may be offered "*price concessions, better supply chain lead time, a direct purchasing relationship (OEMs do not have to go through vendors) and other forms of support*."³⁵ Hence, several of the Agreements feature *inter alia* one or more of the following: (i) "*pricing*

doubt, it is noted that each tender launched by a service provider does not necessarily aim at replacing all CPE deployed by that service provider. Hence, only part of the installed basis of a service provider is normally put on tender every 1.5 to 2 years.

²⁸ MediaTek's submission of 8 April 2019, Doc ID 1741, paragraph 54.

²⁹ Broadcom's Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1>) on 13 June 2019, Doc ID 1574, page 18.

³⁰ Broadcom's Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1>) on 13 June 2019, Doc ID 1574, page 18.

³¹ The Commission cannot exclude at this stage that Broadcom might have entered into agreements – or other formal or informal arrangements - with other customers that contain clauses having the same object as those described in this section.

³² Broadcom presentation of 21 March 2019 titled "*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom's Strategic Partnerships*", Doc ID 1285, page 21.

³³ Broadcom presentation of 21 March 2019 titled "*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom's Strategic Partnerships*", Doc ID 1285, pages 21-26.

³⁴ Broadcom's SO Response, Doc ID 1843-15, paragraph 56. Note also the indicative list of SPA advantages contained in this paragraph, namely: [...].

³⁵ Minutes of meeting with Broadcom of 21 March 2019, Doc ID 1352, page 4.

advantages”;³⁶ (ii) the granting to the OEM of “[e]arly access to Broadcom technology to accelerate OEM development,”³⁷ [...] ³⁸ [...]; and (iii) [...] ³⁹ [...] ⁴⁰ together with Broadcom.

- (32) In its presentation of 21 March 2019 to the Commission,⁴¹ Broadcom only referred to the existence of three SPAs, which had been entered into with [OEM A], [OEM D] and [OEM E].
- (33) In the course of its investigation, however, the Commission became aware of the existence of additional Agreements including exclusivity-inducing provisions.⁴² These include the Agreements with [OEM B],⁴³ [OEM C]⁴⁴ and [OEM F].⁴⁵
- (34) In its SO Response, Broadcom referred to these additional Agreements as “*Broadcom’s TPA [i.e., Technology Partnership Agreement] partnerships and related agreements*” (the “TPAs”).⁴⁶ Broadcom describes these agreements as “*smaller-scale bid support agreements [...]. In each case, the OEM in question tends to focus on one or two specific end-product segments, and the OEM approached Broadcom looking for some form of additional bid support in that business.*”⁴⁷
- (35) While the terminology presented by Broadcom is not always used consistently across the Agreements described in sections 6.2 to 6.7 below, the Commission considers that all the clauses identified in sections 8.5.2.1.A and 8.5.2.1.B below contain exclusivity-inducing provisions.⁴⁸
- (36) In addition, it should be noted already at this stage that while Broadcom considers the SPAs (and indeed all the Agreements) to be “*short term arrangements with OEM*

³⁶ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 23.

³⁷ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 23.

³⁸ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 24.

³⁹ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 23.

⁴⁰ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 24.

⁴¹ “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285.

⁴² Broadcom did not submit in response to a request for information pursuant to Article 18(3) of Regulation 1/2003, the Agreements with [OEM B], [OEM C] and [OEM F]. The Commission reserves its right to assess at a later stage whether the failure to submit such Agreements may constitute a breach of Broadcom’s procedural obligations.

⁴³ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573.

⁴⁴ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489.

⁴⁵ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999

⁴⁶ Broadcom’s SO Response, Doc ID 1843-15, section 2.4(b).

⁴⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraph 63.

⁴⁸ This is the case even among the Agreements that were identified by Broadcom. While it appears on the basis of its presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, that Broadcom considers as SPAs both the [OEM A] Corporate Supply Agreement Addendum Term Sheet and the [OEM D] Non-binding Memorandum of Understanding, neither of these agreements are named as SPA.

“outs”⁴⁹ that “[...]”,⁵⁰ the Commission disagrees with this interpretation. Rather, and for the reasons described in more detail in section 8.5 below, the Commission considers that the Agreements amount *prima facie* to an abuse of Broadcom’s dominant position.

6.2. [OEM A]

(37) [OEM A] is a [...] group, [...].⁵¹

(38) [OEM A] is an OEM which manufactures and supplies a broad range of CPE, including residential gateways and STBs.⁵² [...].⁵³

(39) In 2017, according to industry benchmarking company IHS Markit (“IHS”), [OEM A] represented [20-30]% of the value of sales of STBs at global level.⁵⁴ With regard to residential gateways, according to IHS, [OEM A] represented [10-20]% of all global sales, with [40-50]% for cable and [5-10]% for xDSL.⁵⁵ At present, [OEM A] [...] fibre residential gateways.

(40) Broadcom and [OEM A] entered into an agreement in [...] 2019 (the [OEM A]-Broadcom Corporate Supply Agreement Addendum Term Sheet, “[OEM A] CSA”)⁵⁶ for a term of one year, which commenced with effect from [...] 2019,⁵⁷ and covering *inter alia* SoCs for STBs, SoCs for xDSL residential gateways, SoCs for fibre residential gateways, SoCs for cable residential gateways.⁵⁸ The [OEM A] CSA is an addendum to an overarching agreement entered into in [...] 2008, and replaced a

⁴⁹ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 26.

⁵⁰ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 27.

⁵¹ [...].

⁵² [OEM A]’s reply of [...] to question 2 of Article 18(3) Decision of [...], page 3.

⁵³ See, for example, [OEM A]’s Form 10-K for the fiscal year 2017, printed from [...] on 14 June 2019, Doc ID 1622, pages 5 and 6.

⁵⁴ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 18 to MediaTek’s supplementary reply of 14 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1645.

⁵⁵ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁵⁶ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...].

⁵⁷ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 10.4.

⁵⁸ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], “*Products*” definition and Clause 5.2. See also (i) [OEM A]’s revised reply of [...] to question 3 of Article 18(2) request for information of [...]; and (ii) [OEM A]’s reply of [...] to questions 1 and 2 of Article 18(2) request for information of [...], page 1.

previous addendum of substantially the same scope, which was entered into in [...] 2016.⁵⁹ The geographic scope of the [OEM A] CSA is worldwide.⁶⁰

6.3. [OEM B]

(41) [OEM B] is a [...] company and one [...] STB and residential gateway OEMs.⁶¹ [OEM B] currently supplies all types of STBs, as well as cable residential gateways.⁶²

(42) In 2017, according to IHS, [OEM B] represented [5-10]% of the value of sales of STBs⁶³ and [0-5]% of the total value of sales of residential gateways at global level (but [0-5]% of sales of cable residential gateways, [...]).⁶⁴

(43) [OEM B] has a [...] business relationship with Broadcom going back [...].⁶⁵ In [...] 2017, Broadcom and [OEM B] concluded a “*Technology Partnership Agreement*” (“[OEM B] TPA”)⁶⁶ for an initial three-year term, with the option of a renewal for a further two years,⁶⁷ and covering a variety of Broadcom Products - notably SoCs for STBs, SoCs for cable residential gateways, and also additional products falling into the catch-all categorisation “*Other Video Ecosystem (including without limitation, any product for which Broadcom has a solution)*.”⁶⁸ The geographic scope of the [OEM B] TPA is worldwide.⁶⁹

6.4. [OEM C]

(44) [OEM C] is a [...] OEM that manufactures a variety of network equipment, which it distributes in approximately [...] countries.⁷⁰

⁵⁹ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2016, included as Attachment 3 to [OEM A]’s reply of [...] to Article 18(3) Decision of [...]. See also [OEM A]’s revised reply of [...] to questions 1 and 3 of Article 18(2) request for information of [...].
⁶⁰ The [OEM A] CSA does not contain any provision limiting the geographic scope of the agreement. Hence, the Commission considers that the geographic scope of this agreement is worldwide.

⁶¹ [OEM B]’s reply of [...] to question 1 of Article 18(3) Decision of [...], page 2.

⁶² [OEM B]’s reply of [...] to question 2 of Article 18(3) Decision of [...], page 2.

⁶³ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 18 to MediaTek’ s supplementary reply of 14 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1645.

⁶⁴ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’ s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁶⁵ [OEM B]’s reply of [...] to question 2 of Article 18(3) Decision of [...], page 1.

⁶⁶ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573.

⁶⁷ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause B.

⁶⁸ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clauses A and D. See also [OEM B]’s reply of [...] to question 3.5.a of Article 18(2) request for information of [...], pages 3 and 4.

⁶⁹ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause D.1. This clause refers to [...].

⁷⁰ [OEM C]’s reply of [...] to question 3.1 of Article 18(3) Decision of [...], pages 1 and 2.

- (45) In 2017, according to IHS, [OEM C] represented [5-10]% of residential gateways at global level⁷¹ (but [10-20]% of fibre residential gateways, [...]).⁷²
- (46) On [...] 2017, Broadcom and [OEM C] concluded a Technology Partnership Agreement (“[OEM C] TPA”)⁷³ for a term of two years, six months⁷⁴ and covering SoCs for fibre residential gateways.⁷⁵ The geographic scope of the [OEM C] TPA is worldwide except China.⁷⁶

6.5. [OEM D]

- (47) [OEM D] is a [...] OEM that is active in more than [...] countries. It is a [...] manufacturer of communication terminals, including STBs and residential gateways.⁷⁷
- (48) In 2017, according to IHS, [OEM D] represented [5-10]% of sales of STBs⁷⁸ and [5-10]% of sales of residential gateways at global level ([5-10]% of cable, [10-20]% of xDSL and [0-5]% of fibre residential gateways).⁷⁹
- (49) On [...] 2017, Broadcom and [OEM D] concluded a “*Non-binding Memorandum of Understanding*” (“[OEM D] MoU”) for an initial period of two years, tacitly renewable for further periods of one year,⁸⁰ and covering *inter alia* SoCs for STBs and SoCs for cable residential gateways, xDSL residential gateways and fibre residential gateways.⁸¹ The [OEM D] MoU was amended on [...] 2019 by means of an

⁷¹ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁷² Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁷³ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489. See also [OEM C]’s reply of [...] to questions 1 and 2 of Article 18(2) Request for Information of [...].

⁷⁴ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause B.

⁷⁵ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clauses A, C.1 and C.2.

⁷⁶ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause A. Clause A defines “[OEM C] Products” as “[...] PON (10GPON and GPON) CPE Products sold by the [OEM C] BU outside of China markets.”

⁷⁷ [OEM D]’s reply of [...] to question 1 of Article 18(3) Decision of [...], page 2.

⁷⁸ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 18 to MediaTek’s supplementary reply of 14 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1645.

⁷⁹ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁸⁰ “*Non-Binding Memorandum of Understanding*” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 8. The Commission understands that the agreement has indeed been tacitly renewed upon expiration, given that neither Broadcom nor [OEM D] stated in the context of the proceedings that the contract has expired. In addition, Broadcom and [OEM D] entered on [...] 2019 in an amendment to the [OEM D] MoU, confirming the fact that they see the [OEM D] MoU as still in force.

⁸¹ “*Non-Binding Memorandum of Understanding*” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, initial recitals and Clause 1.A. See also [OEM D]’s reply of [...] to question 4 of Article 18(2) request for information of [...], page 2.

Amendment to Non-Binding Memorandum of Understanding (the “[OEM D] MoU Amendment”).⁸² The geographic scope of the [OEM D] MoU is worldwide.⁸³

6.6. [OEM E]

- (50) [OEM E] is a [...] company active in [...] countries worldwide. [OEM E] is an OEM which manufactures and supplies a complete portfolio of CPE, including residential gateways and STBs.⁸⁴
- (51) In 2017, according to IHS, [OEM E] represented [10-20]% sales of STBs⁸⁵ and [5-10]% sales of residential gateways at global level⁸⁶ [20-30]% of cable residential gateways, [5-10]% of xDSL residential gateways and [0-5]% of fibre residential gateways).⁸⁷
- (52) On [...] 2017, Broadcom and [OEM E] entered into an SPA (“[OEM E] SoC SPA”).⁸⁸ It is supplementary to an overarching agreement concluded in December 2009.⁸⁹ The [OEM E] SoC SPA was concluded for an initial three-year term, with an option to renew for a further two years, and covering SoCs for STBs as well as for xDSL and fibre (so-called “telco”) as well as cable residential gateways.⁹⁰
- (53) The geographic scope of the [OEM E] SoC SPA is worldwide.⁹¹

6.7. [OEM F]

- (54) [OEM F] is a [...] OEM that manufactures a variety of network equipment, which it distributes to over 150 markets worldwide.⁹²

⁸² Doc ID 2223-181.

⁸³ The [OEM D] MoU does not contain any provision limiting the geographic scope of the agreement. Hence, the Commission considers that the geographic scope of this agreement is worldwide.

⁸⁴ [OEM E]’s reply of [...] to question 2 of Article 18(3) Decision of [...]; Annex 28 to [OEM E]’s reply of 21 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1068-10.

⁸⁵ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 18 to MediaTek’s supplementary reply of 14 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1645.

⁸⁶ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁸⁷ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁸⁸ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...].

⁸⁹ See [OEM E]’s reply of [...] to question 3 of Article 18(2) request for information of [...], page 2.

⁹⁰ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], second bullet point. See also [OEM E]’s reply of [...] to question 3 of Article 18(2) request for information of [...], page 3.

⁹¹ The agreements do not contain any provision limiting their geographic scope. Hence, the Commission considers that the geographic scope of these agreements is worldwide.

⁹² [OEM F] website, printed from [...], on 26 April 2019, Doc ID 1614.

- (55) In 2017, according to IHS, [OEM F] represented [0-5]% of the total value of sales of residential gateways⁹³ at global level (but [5-10]% of the total value of sales of xDSL residential gateways, [...]).⁹⁴
- (56) On [...] 2018, Broadcom and [OEM F] concluded a Letter of Intent (the “[OEM F] LoI”)⁹⁵ for an initial three-year term, renewable “*as may be reasonably required*”,⁹⁶ and covering SoCs for xDSL and fibre residential gateways.⁹⁷ The geographic scope of the [OEM F] LoI includes “[...] *North America, Mexico, all the member countries of the European Union, Nordic Countries, Switzerland, Russia, Turkey, Japan, Singapore, Australia, New Zealand, UAE, and Saudi Arabia* [...]”.⁹⁸

7. CONDITIONS FOR ADOPTING INTERIM MEASURES

- (57) It is essential that the Commission’s power to take decisions finding an infringement of Articles 101 or 102 TFEU and requiring that such infringement be brought to an end is exercised in the most effective manner best suited to the circumstances of each given situation.⁹⁹
- (58) Interim measures are conceived to prevent that the Commission’s exercise of the power to make decisions finding that there is an infringement of Articles 101 or 102 TFEU becomes ineffective because of the action of certain undertakings.¹⁰⁰
- (59) Pursuant to Article 8(1) of Regulation (EC) No 1/2003, there are two cumulative conditions to be met for adopting interim measures, namely:
- (a) the finding of a *prima facie* infringement of competition rules, and
 - (b) the urgent need for interim measures due to the risk of serious and irreparable damage to competition.
- (60) According to Article 8(2) of Regulation (EC) No 1/2003, a decision ordering interim measures shall apply for a specified period of time and may be renewed in so far as this is necessary and appropriate.
- (61) Section 8 below sets out the Commission’s conclusions regarding the *prima facie* finding of an infringement of EU competition rules by Broadcom. Section 9 below sets out the Commission’s conclusions regarding the urgent need for interim measures due to the risk of serious and irreparable damage to competition.

⁹³ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁹⁴ Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

⁹⁵ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999.

⁹⁶ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Clause 5, page 2.

⁹⁷ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, page 3.

⁹⁸ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, Clause 1, page 3.

⁹⁹ Case C-792/79 R *Camera Care v Commission*, EU:C:1980:18, paragraph 17.

¹⁰⁰ Case C-792/79 R *Camera Care v Commission*, EU:C:1980:18, paragraph 18.

8. **PRIMA FACIE FINDING OF AN INFRINGEMENT OF ARTICLE 102 TFEU AND ARTICLE 54 OF THE EEA AGREEMENT**

8.1. **Principles**

(62) By its very nature, the finding of a *prima facie* infringement is not based on a full and final appreciation of the facts and law in question,¹⁰¹ but rather on a factual and legal analysis indicating “*at first sight*” that the undertaking subject to the investigation exceeded the limits allowed to it by the applicable EU competition rules, thus giving rise to serious doubts as to the compatibility of its conduct with those provisions.¹⁰² Therefore, the requirement of a *prima facie* infringement cannot be placed on the same footing as the requirement of certainty that a final decision must satisfy.¹⁰³ In this vein, the case-law has held that the finding of a *prima facie* infringement does not correspond to the finding of a “*clear and flagrant infringement*”,¹⁰⁴ nor to the existence of a *prima facie* violation of the European Union competition rules “*as a matter of probability*”.¹⁰⁵

8.2. **Application to this case**

(63) On the basis of the preliminary factual and legal analysis in sections 8.3 to 8.6 below, the Commission considers that in this case, *prima facie*, Broadcom is infringing Article 102 TFEU and Article 54 of the EEA Agreement.

(64) During the Oral Hearing, Broadcom contested the legal test applied by the Commission for finding a *prima facie* infringement of Article 102 TFEU. In particular, Broadcom claims that there must not be a serious dispute regarding the correctness of the fundamental legal conclusion underpinning the contested decision, essentially meaning that if the subject matter of the interim measures is disputed, interim measures cannot be adopted.¹⁰⁶ Broadcom also alleges that the Commission’s reference to an assessment “*at first sight*” would imply a lowering of the standard for the substantive legal and factual assessment in interim measures cases to whatever is apparent or conceivable “*at first sight*”.¹⁰⁷

(65) Broadcom’s claims are flawed and need to be rejected.

(66) First, Broadcom’s claim that there must not be a serious dispute regarding the correctness of the fundamental legal conclusion underpinning the contested decision cannot be accepted. The Commission is required to establish the existence of a *prima facie* infringement as described in recital (62) above. It cannot be considered that if the dominant company disputes the existence of an infringement, the Commission is unable to impose interim measures. This interpretation would unduly limit the Commission’s power and result in any dominant company being able to prevent the imposition of interim measures by simply disputing the legal conclusion of the Commission.

¹⁰¹ Case T-184/01 R *IMS Health v Commission*, EU:T:2001:259, paragraph 68.

¹⁰² Case T-23/90 *Peugeot v Commission*, EU:T:1991:45, paragraphs 21, 63.

¹⁰³ Case T-23/90 *Peugeot v Commission*, EU:T:1991:45, paragraph 61; Case T-44/90 *La Cinq v Commission*, EU:T:1992:5, paragraph 61.

¹⁰⁴ Case T-44/90 *La Cinq v Commission*, EU:T:1992:5, paragraph 62.

¹⁰⁵ Case T-184/01 R *IMS Health v Commission*, EU:T:2001:259, paragraph 68.

¹⁰⁶ Broadcom’s presentation during the closed session of the Oral Hearing, Doc ID 2203, page 22.

¹⁰⁷ Broadcom’s presentation during the closed session of the Oral Hearing, Doc ID 2203, page 23.

- (67) Second, the use of the phrase “*at first sight*” by the Commission does not refer to a standard different from a *prima facie* assessment nor is it intended to establish such; simply, the phrase “*at first sight*” is a literal translation of the Latin term “*prima facie*”, as it is evident from the quoted judgment in case T-23/90 *Peugeot v Commission*,¹⁰⁸ where these two phrases appear to be used interchangeably.

8.3. Market Definition

8.3.1. Principles

- (68) The definition of the relevant markets derives from an identification of the relevant competitive constraints in terms of demand-side and supply-side substitutability.
- (69) From an economic point of view, for the definition of the relevant market, demand-side substitution constitutes the most immediate and effective disciplinary force on the suppliers of a given product.¹⁰⁹ From a demand-side perspective, a relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products’ characteristics, their prices and their intended use.
- (70) However, supply-side substitutability may also be taken into account when defining markets in those situations in which its effects are equivalent to those of demand-side substitution in terms of effectiveness and immediacy. There is supply-side substitution when suppliers are able to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices. When these conditions are met, the additional production that is put on the market will have a disciplinary effect on the competitive behaviour of the companies involved.¹¹⁰
- (71) The relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different.¹¹¹
- (72) The definition of the geographic market does not require the conditions of competition between traders or providers of services to be perfectly homogeneous. It is sufficient that they are similar or sufficiently homogeneous, and accordingly, only those areas in which the conditions of competition are ‘heterogeneous’ may not be considered to constitute a uniform market.¹¹²

¹⁰⁸ Case T-23/90 *Peugeot v Commission*, EU:T:1991:45, paragraphs 21, 25, 37, 62 and 63.

¹⁰⁹ Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03), paragraph 13.

¹¹⁰ Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03), paragraph 20.

¹¹¹ See Commission Decisions in case COMP/37451, *Deutsche Telekom AG*, paragraphs 92-93; and case COMP/38.233, *Wanadoo Interactive*, paragraph 205. See also Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 44; Case C-322/81 *Michelin v Commission*, EU:C:1983:313, paragraph 26; Case 247/86 *Alsatel v Novasam*, paragraph 15.

¹¹² See Case T-229/94 *Deutsche Bahn v Commission*, paragraph 92. See also Case T-139/98, *AAMS v Commission*, paragraph 39.

8.3.2. Relevant Product Market

- (73) The Commission’s preliminary factual and legal analysis in this section indicates that there are separate markets for:
- (a) STB SoCs;
 - (b) SoCs for cable residential gateways;
 - (c) SoCs for fibre residential gateways; and
 - (d) SoCs for xDSL residential gateways.

8.3.2.1. Distinction between SoCs, FE chips and WiFi chipsets

- (74) The preliminary factual and legal analysis set out in this section indicates that SoCs do not belong to the same product market as other STB and residential gateways components, notably FE chips and WiFi chipsets.¹¹³
- (75) From a demand-side perspective, the responses to the Commission’s requests for information indicate that there are separate markets for SoCs, FE chips and WiFi chipsets. Respondents, both chip suppliers and customers, have confirmed that these chips have different functions and are not substitutable.¹¹⁴ For example, Intel describes these different categories of chips as “*distinct from one another [and that they] do not share a common technological base*”¹¹⁵ and MediaTek indicates that “*they have different functionalities, which are not interchangeable*”.¹¹⁶ While some respondents noted that FE chips or WiFi chipsets may be incorporated into a SoC, they also confirm that these components are complements rather than substitutes.¹¹⁷
- (76) From the supply-side, the Commission tested whether SoCs suppliers could switch to FE chips or WiFi chipsets and vice-versa without incurring significant additional investments or risks.
- (77) Among chip suppliers, only Broadcom considers that such switching is conceivable. Nonetheless, even Broadcom acknowledges that, for suppliers to switch production, would involve (i) investing “*meaningful resources*” into chip design R&D; (ii) costs associated with ensuring that the integrated circuit interacts appropriately with other components in the system design; (iii) costs associated with securing services of a third-party foundry; (iv) incremental marketing and selling expenses; and (v) costs associated with securing intellectual property rights for its designs.¹¹⁸

¹¹³ Front End chips are integrated circuits which translate analogue input into a digital output which can then be processed by the SoC; WiFi Chipsets are chipsets which enable STBs or residential gateways to deploy wireless local area networks based on the IEEE 802.11 standards.

¹¹⁴ Replies to questions 6 and 6.1 of Article 18(2) request for information chip suppliers of 18 December 2018 and to questions 5 to 22 of Article 18(2) request for information to OEMs of 18 December 2018

¹¹⁵ Intel’s reply of 24 January 2019 to question 6.1 of Article 18(2) request for information to OEMs of 20 December 2018, Doc ID 1541.

¹¹⁶ MediaTek’s reply of 31 January 2019 to question 6.1 of Article 18(2) request for information of 20 December 2018, Doc ID 1619.

¹¹⁷ Intel’s reply of 24 January 2019 to question 5.1 of Article 18(2) request for information to OEMs of 20 December 2018, Doc ID 1541.

¹¹⁸ Broadcom’s reply of 6 February 2019 to questions 6 to 8 of Article 18(2) request for information to chip suppliers of 20 December 2018, Doc ID 1028.

(78) Other chip suppliers unanimously stated that developing SoCs, FE chips and WiFi chipsets requires significantly different expertise, techniques and assets.¹¹⁹ Respondents indicate that several factors would impede supply-side substitution, including (i) investment in engineering design resources; (ii) the acquisition and development of relevant integrated circuit designs; (iii) IP licensing costs and (iv) costs and time associated with certification and validation processes. Chip suppliers indicate that the necessary investments would be “*very heavy*”¹²⁰ and that the requirements for switching production would be “*virtually identical from a technology development standpoint as those for de novo entry*”.¹²¹

8.3.2.2. Distinction between STB SoCs and residential gateway SoCs

(79) The preliminary factual and legal analysis set out in this section indicates that STB SoCs and residential gateway SoCs do not belong to the same product market.

(80) The results of the Commission’s investigation indicate that demand-side considerations justify segmenting the relevant market according to SoCs’ end-applications, namely SoCs for STBs and SoCs for residential gateways. In response to the Commission’s requests for information, OEM customers consistently explained that because STBs and residential gateways have different functionalities and the SoC is the main chip determining that functionality, they are not substitutable. As [...] explains, “*SoCs for residential gateways and SoCs for STBs are different components that enable different functions and features. They are not compatible, either in terms of hardware or software, and cannot be substituted*”.¹²² Examples of differences include the presence of a video and graphics processor¹²³ and HDMI interface¹²⁴ in SoCs for STBs, neither of which are incorporated into SoC for residential gateways.¹²⁵

(81) From the supply-side, the vast majority of chipset suppliers also stated that significant additional investments or risks would be required to switch production in a short time frame between SoCs for STBs and for residential gateways. Barriers identified include R&D efforts for technologies not common to both products, different testing environments and the possible need to contract a new foundry.¹²⁶

8.3.2.3. Distinction between STB SoCs according to technology

(82) The preliminary factual and legal analysis set out in this section indicates that SoCs for STBs of different technologies belong to the same product market, with the exception of SoCs for retail over-the-top STBs (“retail OTT STBs”).

¹¹⁹ Replies to questions 6 to 8 of Article 18(2) request for information chip suppliers of 18 December 2018.
¹²⁰ Quantenna’s reply of 28 January 2019 to question 6.1 of Article 18(2) request for information to chip suppliers of 20 December 2018, Doc ID 952.

¹²¹ Intel’s reply of 24 January 2019 to question 6.1 of Article 18(2) request for information to OEMs of 20 December 2018, Doc ID 1541.

¹²² [...]’s reply of 21 February 2019 to question 6.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 1380.

¹²³ [...]’s reply of 21 January 2019 to question 6.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 848.

¹²⁴ Arcadyan’s reply of 28 January 2019 to question 6.1 of Article 18(2) request for information to OEMs of 10 January 2019, Doc ID 938.

¹²⁵ Replies to questions 6 and 6.1 of Article 18(2) request for information to OEMs of 18 December 2018.

¹²⁶ Replies to questions 9 and 9.1 of Article 18(2) request for information chip suppliers of 18 December 2018.

- (83) STBs enable consumers to watch on television the video content transmitted by service providers via various technologies, namely cable, satellite, Internet Protocol Television (“IPTV”) and digital terrestrial television (“DTT”). Retail OTT STBs, on the other hand, are dongles or other pieces of hardware that are available for purchase through retail channels and that allow consumers to watch TV content over the Internet without a service provider delivering such content (*e.g.* Amazon Fire TV or Apple TV STBs).
- (84) From the demand-side, in response to the Commission’s requests for information, the majority of OEMs indicated that the same type of SoC can be incorporated into STBs regardless of the underlying technology (cable, IPTV, satellite and DTT) since only the FE chip component would differ.¹²⁷ This is because the type of technology an SoC is used for is determined by the FE chip incorporated. In theory the same generic SoC chip could be used and the FE chip changed according to the technology. Others also suggest that there are SoCs that include the interface for more than one type of technology. As [...] explains, “*the same type of SoC can be used for all types of STB platform/technology, as the SoC performs the same base functions in all cases. It is the addition of the FE to the SoC that allows the STB to tune and decode a cable, satellite or DTT signal for video output to a television. The same SoC can also output IP video (IPTV) to a television without the need for a separate FE*”.¹²⁸
- (85) Although these considerations apply to cable, IPTV, satellite and DTT STBs, the results of the Commission’s investigation indicates that the same is not true for SoCs for retail OTT STBs. The majority of OEMs consider that SoCs for retail OTT STBs cannot be used for other STBs.¹²⁹ [...] thus explains that “*it can be said (...) that SoCs for STBs can work for OTT whereas the contrary is not true*” because retail OTT STB SoCs do not meet the content security and conditional access specifications required of most other types of STBs.¹³⁰ This view has been confirmed by other OEMs.¹³¹
- (86) From the supply-side, most STB SoC suppliers consider that they are unable to switch from one technology (cable, IPTV, satellite, DTT) to another without incurring significant investment and risks.¹³² However, in its submission, STMicroelectronics distinguishes between SoCs that integrate an FE chip and those that do not: “*in case the front-end demodulator is integrated inside the SoC, a full development is required*

¹²⁷ Replies to questions 9 and 9.1 of Article 18(2) request for information to OEMs of 18 December 2018. It should be noted that [...] and Sky appear to have erroneously replied "no" to question 9 (asking whether different STB SoCs are interchangeable) since their response to question 9.1 point to the opposite. In addition, five OEMs that replied "no" to question 9 in fact explain in response to question 9.1 that they are not active in this field and have no expertise. Overall, 8 out of 12 respondents with expertise in this field concurred that different STB SoCs are interchangeable.

¹²⁸ [...]’s reply of 21 January 2019 to question 9.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 848.

¹²⁹ Replies to questions 10 and 10.1 of Article 18(2) request for information to OEMs of 18 December 2018. It should be noted that [...] and Sky appear to have erroneously replied "no" to question 10 (asking whether OTT and other STB SoCs are interchangeable) since their response to question 10.1 point to the opposite.

¹³⁰ [...]’s reply of 21 February 2019 to question 10.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 1380.

¹³¹ Arcadyan’s and [...]’s replies to question 10.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc IDs 938 and 848.

¹³² Replies to questions 12 and 12.1 of Article 18(2) request for information chip suppliers of 18 December 2018.

(...). *In case the FE chips is outside the SoC, no switch will be required (...)*.¹³³ This is consistent with explanations provided by OEMs. Consequently, as indicated in recital (84) above, the key differentiating factor lies in the FE chip component and not in the SoC itself. Accordingly, the results of the Commission’s investigation in relation to STB SoC suppliers also supports the conclusion that STB SoCs, with the exception of retail OTT STB SoCs, belong to the same product market.

- (87) As concerns the distinction between SoCs for retail OTT STBs and other types of STBs, suppliers like MaxLinear, STMicroelectronics and MediaTek highlighted significant differences between retail OTT and other STB SoCs.¹³⁴ MediaTek explained that “[f]rom a product development perspective, they involve different technologies, different optimization, and different cost/performance considerations” and described retail OTT STB SoCs as “typically lack[ing] conditional access security” common to other STB SoCs.¹³⁵ These views are confirmed by MaxLinear¹³⁶ and STMicroelectronics, which emphasize the “massive investment” required from a retail OTT SoC supplier to develop STB SoCs.¹³⁷

8.3.2.4. Distinction between residential gateway SoCs according to technology

- (88) The preliminary factual and legal analysis set out in this section indicates that SoCs for residential gateways of different technologies belong to different product markets.
- (89) From the demand-side, in response to the Commission’s requests for information, the vast majority of OEMs indicated that different residential gateway SoCs are required depending on the underlying technology of the modem (xDSL, cable, fibre). In particular, OEMs explain that residential gateway SoCs embed features and functionalities (interface, circuitry, safety qualifications, etc.) that are dependent on the different underlying technologies.¹³⁸ As [...] explains, “in practice, SoCs are normally dedicated to their own specific platforms/technologies as the xDSL/DOCSIS/Fibre FE is embedded in the SoC. As a result, it is not possible to use the same SoC for different underlying platforms or technologies”.¹³⁹ Differences between residential gateway SoCs according to different underlying technologies are not limited to the FE chip. Arcadyan thus indicates that “[t]he front end hardware interface of xDSL/Fiber/Cable is different. The MAC (media access control address) of xDSL/Fiber/Cable is different. As we know, there is no SoC to support xDSL/cable/fiber all-in-one technology in the market”.¹⁴⁰

¹³³ STMicroelectronics’ reply of 21 January 2019 to question 12.1 of Article 18(2) request for information chip suppliers of 18 December 2018, Doc ID 811.

¹³⁴ Replies to questions 13.1 of Article 18(2) request for information chip suppliers of 18 December 2018.

¹³⁵ MediaTek’s reply of 31 January 2019 to question 13.1 of Article 18(2) request for information of 20 December 2018, Doc ID 1619.

¹³⁶ MaxLinear’s reply of 23 January 2019 to question 13.1 of Article 18(2) request for information to OEMs of 20 December 2018, Doc ID 851.

¹³⁷ STMicroelectronics’ reply of 20 January 2019 to question 13.1 of Article 18(2) request for information of 20 December 2018, Doc ID 811.

¹³⁸ Replies to questions 7 and 7.1 of Article 18(2) request for information to OEMs of 18 December 2018.

¹³⁹ [...]’s reply of 21 January 2019 to question 7.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 848.

¹⁴⁰ Arcadyan’s reply of 28 January 2019 to question 7.1 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 938. DOCSIS is an international telecommunications standard on which cable gateways are based.

(90) In response to the Commission’s requests for information, chip suppliers unanimously indicated the lack of supply-side substitutability between SoCs for different residential gateway technologies.¹⁴¹

8.3.2.5. Possible further segmentation within STB and residential gateway SoCs

(91) SoCs for STBs and residential gateways are highly differentiated products based on the supplier, device and customers.¹⁴² Broadcom thus distinguishes low- from high-end SoCs.

(92) In particular, in relation to STB SoCs, Broadcom indicated that it “focuses on high-end SoCs which provide high video security and high privacy protection for STBs. These security features are particularly important for Original Equipment Manufacturers (“OEMs”) supplying service providers in Europe and the US, [...]. The main differences between high-end and low-end chipsets come from quality, features, technical support provided, software, privacy and content security.”¹⁴³

(93) Other suppliers have confirmed that SoCs, including STB and residential gateway SoCs, are differentiated in performance, features and price.¹⁴⁴ The existence of such differences is supported, for example, by the following statements and data submitted in response to the Commission’s requests for information:

(a) Broadcom’s statement that: “[...] prices for ICs, and SoCs/FEs for STB in particular, are highly differentiated based on the supplier, device, the IC technology, the customer [...]”;¹⁴⁵

(b) MediaTek’s statement that: “more developed regions (e.g. Western Europe and N. America) generally use higher priced, higher performance SoCs, FE chips, and WiFi modules/chips, whereas less developed regions (e.g. Eastern Europe, Latin America, China) generally use lower priced, lower performance SoCs, FE chips, and WiFi modules/chips. Thus, prices differ because specifications of the end-products are different. For example, as regards STBs, the price between an SoC for a low-end device could be half of the price of an SoC for a high-end device, although it is difficult to generalize across different products and regions”;¹⁴⁶

(c) Intel’s statement that: “In some regions of the world, particularly South America, China, and Southeast Asia, products¹⁴⁷ may be sold for a lower price than in

¹⁴¹ Replies to questions 10.2 and 10.2.1 of Article 18(2) request for information chip suppliers of 18 December 2018.

¹⁴² Broadcom’s reply to questions 4 and 5 of Article 18(2) request for information chip suppliers of 17 December 2018, footnote 8.

¹⁴³ Minutes of meeting with Broadcom of 21 March 2019, paragraph 7, Doc ID 1352. See also Broadcom’s presentation to the Commission of 21 March 2019, slide 9, Doc ID 1285.

¹⁴⁴ MediaTek’s reply of 31 January 2019 to question 29.2 of Article 18(2) request for information of 20 December 2018, Doc ID 1619 and Intel’s reply of 24 January 2019 to question 29.3 of Article 18(2) request for information of 20 December 2018, Doc ID 1541.

¹⁴⁵ Broadcom’s reply of 18 March 2019 to request for information dated 17 December 2018 questions 4 and 5, page 7, Doc ID 1420.

¹⁴⁶ MediaTek’s reply of 31 January 2019 to question 29.2 of Article 18(2) request for information of 20 December 2018, Doc ID 1619.

¹⁴⁷ The term "products" in this response covers SoCs for STBs and residential gateways, FE chips and WiFi chipsets indistinctly as Intel did not consider that these components present different characteristics in

Europe or North America because there is less demand for certain high performing features. The lower-priced products sold in those regions usually have the same die as the higher-priced products sold in other regions but have some higher-end features fused off. The lower-priced products are therefore functionally different from their higher end counterparts”;¹⁴⁸ and

- (d) Data obtained from the main SoC suppliers showing that Broadcom’s and its competitors’ average price per unit differs greatly. For example, [...].¹⁴⁹
- (94) At this stage of the investigation, the Commission does not conclude that high and low-end SoCs form distinct product markets within STB SoCs or within the markets for cable, xDSL or fibre residential gateway SoCs. However, the Commission cannot exclude the possibility that the markets concerned would need to be segmented further so as to take account of the different competitive dynamics within each relevant market. Accordingly, for the purposes of this Decision, the Commission conducts its substantive assessment with respect to Broadcom’s market position and its conduct at the overall market level for SoCs for STBs and SoCs for xDSL, fibre residential gateways while still taking into account the fact that the high-end part of the market constitutes the principal focus of Broadcom’s activities in each of these markets.

8.3.3. *Relevant Geographic Market*

- (95) The factual and legal analysis set out in this section indicates that each of the markets for (i) STB SoCs; (ii) cable residential gateway SoCs; (iii) fibre residential gateway SoCs; and (iv) xDSL residential gateway SoCs identified in section 8.3.2 above are worldwide. In particular, there are no differences between these products that would result in a narrower market definition for any of the corresponding product markets.
- (96) First, in response to the Commission’s requests for information, OEMs and chip suppliers indicated that there are no barriers to trade and more specifically to importing products into the EEA.¹⁵⁰
- (97) Second, the vast majority of customers indicate that, despite the existence of some specific difference in standards applicable in certain countries / geographic regions, such geography-specific specifications do not result in appreciable differences in the technical specifications of STB and residential gateway SoCs. As stated for example by Hitron, “*There are differences on frequency steps and output power level...etc and some further configur[ation] or [software] customiz[ation], but [hardware] wise, in general, the technical specification are very similar*”.¹⁵¹
- (98) Third, while chip suppliers indicate that there are differences in prices depending on the geographic areas where the end-devices using particular SoCs are sold, these differences are driven by higher specifications or performance required in certain regions, with more expensive high-end SoCs being integrated in end-devices destined

this regard (see Intel’s reply of 24 January 2019 to question 29.3 of Article 18(2) request for information of 20 December 2018, Doc ID 1541).

¹⁴⁸ Intel’s reply of 24 January 2019 to question 29.3 of Article 18(2) request for information of 20 December 2018, Doc ID 1541.

¹⁴⁹ See data provided by SoC suppliers referred to in recitals (114) and (130) below.

¹⁵⁰ Replies to questions 25 of Article 18(2) request for information to OEMs of 18 December 2018 and to question 30 of Article 18(2) request for information to chip suppliers of 18 December 2018.

¹⁵¹ Hitron’s reply of 21 January 2019 to question 23.3 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 829.

for sale in the US and Europe and less expensive low-end SoCs integrated in end-devices destined for sale in South America, China and South East Asia.¹⁵² As such, they appear to be the result of differentiated product markets (see recital (93) above) rather than a geographic market narrower than worldwide.

8.4. Dominance

8.4.1. Principles

- (99) According to settled case law, dominance is “a position of economic strength enjoyed by an undertaking, which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of consumers.”¹⁵³
- (100) The existence of a dominant position derives in general from a combination of several factors which, taken separately, are not necessarily determinative.¹⁵⁴ One important factor is the existence of very large market shares, which are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position.¹⁵⁵ That is the case where an undertaking has a market share of 50% or above.¹⁵⁶
- (101) Market shares may be calculated both in terms of the volume and value of sales. However, in cases of differentiated products, sales in value and their associated market share will usually be considered to better reflect the relative position and strength of each supplier.¹⁵⁷
- (102) A decline in market shares which are still very large cannot in itself constitute proof of the absence of a dominant position, particularly when the market shares are still in fact very high at the end of the infringement period.¹⁵⁸ In the same vein, whilst the retention of market share may show the existence of a dominant position, a decline in market shares that are still very large cannot in itself constitute proof of the absence of a dominant position.¹⁵⁹
- (103) Other important factors when assessing dominance are the existence of countervailing buyer power and barriers to entry or expansion, preventing either potential competitors from having access to the market or actual ones from expanding their activities on the market.¹⁶⁰ Such barriers may result from a number of factors, including exceptionally large capital investments that competitors would have to match, network externalities

¹⁵² Replies to question 29 of Article 18(2) request for information to chip suppliers of 18 December 2018.

¹⁵³ See Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 65.

¹⁵⁴ Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 66.

¹⁵⁵ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 41; and Case T-65/98 *Van den Bergh Foods v Commission*, EU:T:2003:281, paragraph 154.

¹⁵⁶ Case C-62/86 *Akzo v Commission*, EU:C:1991:286, paragraph 60; Case T-340/03 *France Télécom SA v Commission*, EU:T:2007:22, paragraph 100; and Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 150.

¹⁵⁷ Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ C 372, 9.12.1997, pages 5–13, paragraph 55.

¹⁵⁸ Case T-219/99, *British Airways v Commission*, EU:T:2003:343, paragraphs 223-224; Case T-340/03, *France Télécom v Commission*, EU:T:2007:22, paragraph 104.

¹⁵⁹ Joined Cases T-24/93 to T-26/93 and T-28/93, *Compagnie maritime belge transports and Others v Commission*, EU:T:1996:139, paragraph 77.

¹⁶⁰ Case T-79/12 *Cisco Systems, Inc. and Messagenet SpA v European Commission*, EU:T:2013:635, paragraph 69.

that would entail additional cost for attracting new customers, economies of scale from which newcomers to the market cannot derive any immediate benefit and the actual costs of entry incurred in penetrating the market.¹⁶¹

- (104) The ability to act independently of competitors, which is a special feature of dominance,¹⁶² is related to the level of competitive constraints facing the undertaking in question. It is not required for a finding of dominance that the undertaking in question has eliminated all opportunity for competition on the market.¹⁶³ However, for dominance to exist, the undertaking concerned must have substantial market power so as to have an appreciable influence on the conditions under which competition will develop.¹⁶⁴

8.4.2. Application to this case

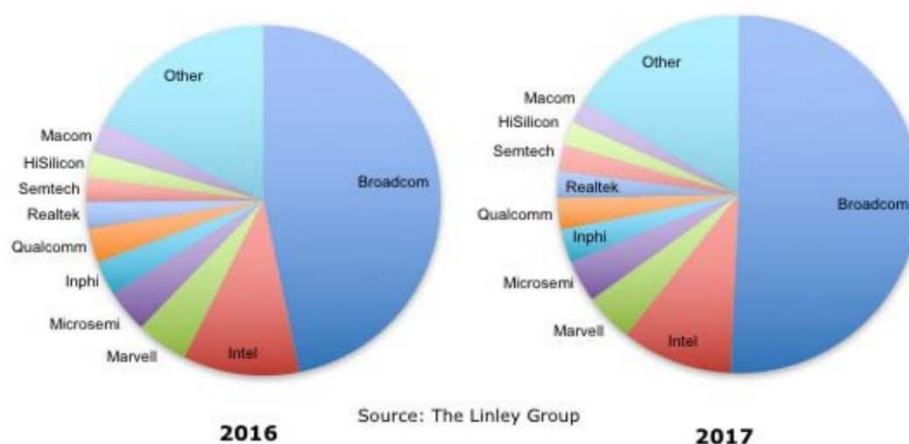
- (105) The preliminary factual and legal analysis set out in sections 8.4.3 to 8.4.5 below indicates that Broadcom holds a dominant position in the markets for STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs.

8.4.3. Market structure and market shares

8.4.3.1. Introduction

- (106) Broadcom is the world's largest designer, developer and provider of integrated circuits for wired communication applications,¹⁶⁵ including SoCs for STBs and residential gateways. As indicated in the graph below, it accounts for roughly half of the whole industry's global sales.

Figure 1 – Worldwide revenue market share (top 10 vendors of wired-communications application-specific standard parts) – Linley Group Communications Semiconductor Market Share 2017 (April 2018), p. 7



¹⁶¹ Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraphs 91 and 122.

¹⁶² See Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraphs 42-48.

¹⁶³ See Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 113.

¹⁶⁴ See Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 39.

¹⁶⁵ Integrated circuits for wired communication applications covers, in addition to broadband ICs, processors (Network processors, embedded processors, integrated base-station processors and server procesors), all ethernet ICs and other networking application-specific standard products (ASSPs).

(107) Broadcom observes that in recent years a large number of chipset suppliers have exited the relevant markets at stake, noting that “[o]ver 35 SoC suppliers have exited the STB or Gateway market over last 20 years due to low [return on investment]”.¹⁶⁶ In STB SoCs, Broadcom describes itself as “the only high-end STB SoC supplier left” on the market.¹⁶⁷ In respect of residential gateway SoCs, Broadcom states that it faces only one competitor in cable (Intel); for xDSL and fibre, Broadcom states that its main competitors other than Intel are Chinese suppliers (Huawei/HiSilicon and ZTE), who focus on sales in China.¹⁶⁸

8.4.3.2. Market shares

(108) Broadcom’s market shares in the markets for STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs are indicative of dominance in these markets.

(109) As part of its market investigation, the Commission asked Broadcom to provide its estimates on market shares for the products concerned. Broadcom only provided market shares based on volume and stated that it was unable to provide market share figures based on value.

(110) In respect of STBs, Broadcom noted that the estimated volumes of global STB shipments significantly differ across third party reports. However, Broadcom considers that one report, the IHS Markit Report (the “IHS Report”),¹⁶⁹ is consistent with its own “impression” of total STB shipments. Consequently, on the basis of the IHS Report, Broadcom estimates its 2018 market share by volume for global STB SoCs to amount to [20-30]%.

(111) In respect of residential gateways, Broadcom also considers that the IHS data is comparatively more reliable than other sources.¹⁷⁰ As such, on the basis of the IHS Report, Broadcom estimates its 2018 market share by volume to amount to [40-50]% in fibre gateways and [50-60]% in xDSL gateways.

(112) However, in light of the Commission’s findings in recitals (93) to (94) above, and in particular the elements set out at recital (93), concerning the price differences applicable to SoCs for STBs and residential gateways, and Broadcom’s focus on the high-end (*i.e.* more expensive) SoCs, the Commission considers that market shares by value provide a better indication of competitive constraints and Broadcom’s market power than market shares by volume.

(113) In light of these considerations, the Commission requested that the main players active in the markets for STB and residential gateway SoCs provide the Commission with their sales data, so as to enable the Commission to calculate the market shares for Broadcom and its competitors by value. The assessment below is based on the information supplied by these players.

¹⁶⁶ Broadcom’s presentation to the Commission of 21 March 2019, slide 15, Doc ID 1285.

¹⁶⁷ Minutes of meeting with Broadcom of 21 March 2019, paragraph 12, Doc ID 1352.

¹⁶⁸ Broadcom’s presentation to the Commission of 21 March 2019, slides 10, 11 and 19, Doc ID 1285.

¹⁶⁹ IHS Markit report titled “Set-Top Box Intelligence Market Monitor”, dated Q2 2018 (Broadcom’s reply of 18 March 2019 to request for information dated 17 December 2018 questions 4 and 5, page 7, Annex 9).

¹⁷⁰ Broadcom’s reply of 18 March 2019 to request for information dated 17 December 2018 questions 4 and 5, page 16, Doc ID 1244.

- (A.) Market shares in the market for STB SoCs
- (114) As regards **the worldwide market for STB SoCs**, the Commission obtained yearly sales figures from the main suppliers of STB SoCs, namely ALi,¹⁷¹ Huawei,¹⁷² Intel,¹⁷³ Marvell,¹⁷⁴, MediaTek¹⁷⁵ and STMicroelectronics¹⁷⁶ and ZTE.¹⁷⁷
- (115) In addition, Orange provided a third party study listing STB SoC vendors and their respective estimated revenues for the years 2016 and 2017 (the “2018 IHS STB SoC Vendor Report”).¹⁷⁸ This study lists additional SoC suppliers, namely Amlogic, Novatek, Sigma Designs and “others”.
- (116) In order to reconstruct the size of the relevant market, at this stage the Commission includes the sales of all the main vendors of STB SoCs for the purpose of calculating market shares. It therefore relies on (i) actual sales figures directly provided by the main suppliers (listed in recital (114) above) and complements this data with (ii) estimated sales figures provided in the 2018 IHS STB SoC Vendor Report for other suppliers.¹⁷⁹ The market share of STB SoC vendors with negligible volumes (*e.g.*, ZTE) is also included under the category “others”.
- (117) The following Table presents Broadcom and its competitors’ market shares by value in STB SoCs, excluding the captive sales of vertically integrated companies.¹⁸⁰

Table 1: Set-top box SoC market shares, worldwide, 2015-2018 (USD)¹⁸¹

Vendors	2015	2016	2017	2018
ALi	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Amlogic	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Broadcom	[50-60]%	[50-60]%	[60-70]%	[50-60]%
HiSilicon	[5-10]%	[10-20]%	[10-20]%	[10-20]%
Intel	[0-5]%	[0-5]%	[0-5]%	[0-5]%
MediaTek	[5-10]%	[10-20]%	[10-20]%	[10-20]%

¹⁷¹ Ali’s reply of 27 May 2019 to the request for information 8 March 2019, Doc ID 1467.

¹⁷² Huawei’s reply to information requests of 24 October 2018, 20 March 2019 and 28 March 2019, Doc ID 1616-3, and Huawei’s reply to information request of 15 March 2018, Doc ID 1653.

¹⁷³ Intel’s response to the request for information of 7 March 2019, Doc ID 1500.

¹⁷⁴ Marvell’s response to the request for information of 4 February 2019, Doc ID 1137.

¹⁷⁵ MediaTek’s response to the request for information of 4 April 2019, Doc ID 1426.

¹⁷⁶ STMicroelectronics’ response to the request for information of 2 April 2019, Doc ID 1323.

¹⁷⁷ ZTE’s reply of 23 April 2019 to Article 18(2) request for information of 3 April 2019, Doc ID 1400.

¹⁷⁸ Orange’s response to the request for information of 24 October 2018, Annex 4(c), IHS Markit Set-top Box Intelligence Service, Doc ID 1509.

¹⁷⁹ For additional SoC vendors listed in the 2018 IHS STB SoC Vendor Report, although 2018 sales were not covered by the Report, for the purpose of market share calculations, the Commission will assume that 2018 sales are equal to 2017 sales. This is the most favourable approach to Broadcom since overall sales of STB SoCs have decreased in 2018 according to the main vendors’ data.

¹⁸⁰ The Commission considers that it is justified to exclude captive sales of vertically integrated suppliers, namely Huawei and ZTE, given that those sales do not pose a direct competitive constraint on STB SoC suppliers active in the merchant market. ZTE’s merchant sales are negligible. In relation to Huawei (*i.e.* the only player with a non-negligible production of STB SoCs for captive purposes), the fact that [...]. In any event, even if Huawei’s and ZTE’s captive sales were included, Broadcom’s market share would differ only slightly and amount to [50-60]% in 2015, [50-60]% in 2016, [50-60]% in 2017 and [40-50]% in 2018.

¹⁸¹ Figures between brackets are based on non-confidential ranges provided by respondents in the course of the Commission’s investigation. [...].

Novatek	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Sigma Designs	[0-5]%	[0-5]%	[0-5]%	[0-5]%
STMicroelectronics	[5-10]%	[5-10]%	[5-10]%	[5-10]%
Synaptics (Marvell)	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Others	[0-5]%	[0-5]%	[0-5]%	[0-5]%

- (118) It results from the above that Broadcom’s market shares have remained above [50-60]% throughout the 2015-2018 period. As such, they constitute evidence of the existence of a dominant position under the *Akzo* case-law.¹⁸²
- (119) Moreover, these market shares are likely to underestimate Broadcom’s market power, in particular in the EEA, for three main reasons.
- (120) First, several STB SoC suppliers have recently exited the market. Intel has ceased developing STB SoCs in 2015 and STMicroelectronics, Broadcom’s “*closest competitor*”, exited this market in 2016.¹⁸³ Intel’s and STMicroelectronics’ subsequent market shares merely reflect revenues from sales of legacy products. These suppliers no longer compete for customer opportunities and have ceased developing their activities in the relevant markets. They are therefore unlikely to be able to exert any meaningful competitive constraints on Broadcom going forward.¹⁸⁴ If Intel’s and STMicroelectronics’ sales are excluded, Broadcom represents [50-60]% of the STB SoCs market in 2018, its main competitors being HiSilicon ([10-20]%) and MediaTek ([10-20]%).
- (121) Second, HiSilicon, the second largest supplier of STB SoCs globally, [...] and has virtually no direct sales in the EEA. As Broadcom explained, “*Huawei [i.e. HiSilicon] is not actively promoting its SoC solutions in Europe, where it has achieved limited success in broadband modems but no success in STBs, mostly due to service providers’ security concerns*”.¹⁸⁵ [...].¹⁸⁶ Huawei also confirmed that only between 1% and 6% of its total STB chipset production in 2017 and 2018 is estimated to be incorporated in STBs sold in the EEA.¹⁸⁷ Therefore, [...], despite its market share, the Commission considers that HiSilicon likely exercises only a limited competitive constraint on Broadcom.
- (122) Third, Broadcom focuses on the high-end of the market and serves the European and US markets where customers require high video security and high privacy protection. Broadcom recognizes that its closest competitor in high-end STB SoCs was STMicroelectronics, which exited the market in 2016. Broadcom further indicates that “[l]ower-end SoCs suppliers (...) include Huawei/HiSilicon, Amlogic, MediaTek and RealTek” and that they “are not considered as credible alternatives by European OEMs

¹⁸² Case C-62/86 *Akzo v Commission*, EU:C:1991:286, paragraph 60; Case T-340/03 *France Télécom SA v Commission*, EU:T:2007:22, paragraph 100; and Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 150.

¹⁸³ Broadcom’s presentation to the Commission of 21 March 2019, slide 9, Doc ID 1285.

¹⁸⁴ Intel’s response to the request for information of 26 October 2018, question 3.2, Doc ID 1739; STMicroelectronics’ response to the request for information of 24 October 2018, question 3.2, Doc ID 264.

¹⁸⁵ Minutes of meeting with Broadcom of 21 March 2019, paragraph 14, Doc ID 1352.

¹⁸⁶ Huawei’s response to the requests of information of 15 March 2018, Doc ID 1653.

¹⁸⁷ See Huawei’s response of 14 March 2019, Doc ID 1616-1. The figures amount to 0 for the years before 2017.

and service providers”.¹⁸⁸ Broadcom stated that it does not even monitor the behaviour of these players in the market.¹⁸⁹ These suppliers only exercise a limited degree of competitive pressure on Broadcom’s dominance, in particular as regards sales of SoCs for incorporation in products sold in the EEA.¹⁹⁰

- (123) Finally, the fact that Broadcom’s market share appears to have dropped between the years 2017 and 2018 does not alter the Commission’s finding. Third party reports show a decrease in US STB shipments in 2018, a slowing down of the rate of growth of STB sales in Europe and significantly higher growth rates in China and Southeast Asia.¹⁹¹ These market trends contribute to explaining the relative evolution of Broadcom’s sales at global level as it focuses on sales of SoCs to be incorporated in end-products sold in the US and EEA.¹⁹²
- (124) In its SO Response and its Comments on the Letter of Facts, Broadcom claims to be the only company capable of supplying high-end STB SoCs¹⁹³ and not to be an unavoidable trading partner for the share of demand that other suppliers compete for, *i.e.* the lower end of the market.¹⁹⁴ Moreover, Broadcom maintains that the exit of certain players from the industry occurred before it concluded the targeted SPAs and TPAs.¹⁹⁵ Finally, Broadcom submits that there is no basis for disregarding HiSilicon and ZTE only because they focus on China. Broadcom maintains that, if the relevant geographic market is worldwide, China should not be disregarded.¹⁹⁶
- (125) These claims should be rejected for the following reasons.
- (126) First, the Commission notes that Broadcom’s argument that no other player is capable of supplying high-end STB SoCs appears to be based on an exaggerated and distorted representation of market conditions. This Decision considers an overall STB SoC market for the purposes of the market definition, as shown in Table 1 above. At this level, a number of competitors are active. While the Commission does not dispute that these players currently only exercise a limited constraint on Broadcom’s position, this is not the same as arguing that Broadcom is not facing any competition whatsoever. This is demonstrated by evidence in the file which shows that service providers in the EU have in certain instances considered switching part of their requirements to alternative suppliers (see footnote 190).

¹⁸⁸ Minutes of meeting with Broadcom of 21 March 2019, paragraph 7, Doc ID 1352.

¹⁸⁹ Minutes of meeting with Broadcom of 21 March 2019, paragraph 22, Doc ID 1352.

¹⁹⁰ Evidence on file shows that certain service providers in the EU have sought to experiment switching part of their requirements to some of these players (see [ANONYMOUS SERVICE PROVIDER 1]’s reply to question [CONFIDENTIAL] of Article 18(3) Decision of 24 October 2018, Doc ID 1680, page 1; Orange’s reply of 19 November 2018 to question 10 of Article 18(3) Decision of 24 October 2018, Doc ID 1612, page 2; [...]). As such, while in general it appears that Broadcom does not face strong competition in the high-end segment, it would also seem plausible that in some specific circumstances (*e.g.*, customers’ willingness to select lower-end SoCs or lower-end suppliers’ developing higher-end SoCs) players such as HiSilicon and MediaTek would be capable of satisfying the needs of service providers in the EU.

¹⁹¹ 2018 IHS Markit Set-Top Box Intelligence Market Monitor, page 16, Doc ID 1065; and BiS Global Set-Top Box (STB) Market Research Report 2018, pages 8, 9, 10 and 13, Doc ID 1064.

¹⁹² BiS Global Set-Top Box (STB) Market Research Report 2018, pages 8 and 10, Doc ID 1064.

¹⁹³ Broadcom’s SO Response, Doc ID 1843-15, paragraph 95, and Broadcom’s Response to the Letter of Facts, paragraph 4, letter c) point 2 (page 10) Doc ID 2154.

¹⁹⁴ Broadcom’s SO Response, Doc ID 1843-15, paragraph 97.

¹⁹⁵ Broadcom’s SO Response, Doc ID 1843-15, paragraph 98.

¹⁹⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraph 99.

- (127) In this regard, MediaTek showed that its STB SoCs have been seriously considered or used by service providers active in the EU and the US.¹⁹⁷ MediaTek’s capability to satisfy at the very least in certain circumstances EU services providers needs is confirmed by the fact that Sky, [...], considers that MediaTek is a “top supplier” together with Broadcom (and HiSilicon).¹⁹⁸ Moreover, the SO Response also shows that the boundaries between the high and the low end of the market may not be as defined as submitted by Broadcom, as Broadcom itself defines MediaTek, AMLogic and HiSilicon, and others listed in recital 111 of the SO, as “*highly capable low-end*” chip suppliers.¹⁹⁹
- (128) Second, the reasons why certain players might have exited the market recently do not affect the consideration of Broadcom as dominant. The Commission does not allege that market exit was due to Broadcom’s dominance.
- (129) Third, Broadcom’s allegations regarding HiSilicon and ZTE are without merit, given that both HiSilicon’s and ZTE’s sales are included in Table 1 at recital (117) above with the market share calculation. Moreover, as explained in footnote 170 to the SO, which is included also in footnote 180 above, it is justified to exclude captive sales of vertically integrated suppliers, namely Huawei and ZTE, given that those sales do not pose a direct competitive constraint on STB SoC suppliers active in the merchant market. Broadcom does not contest that captive sales should be excluded from the market.
- (B.) Market shares in the markets for xDSL and fibre residential gateways SoCs
- (130) As regards **xDSL and fibre residential gateway SoCs**, the Commission obtained yearly sales figures from the main suppliers of residential gateway SoCs, namely Huawei,²⁰⁰ Intel,²⁰¹ MediaTek²⁰² Qualcomm²⁰³ and ZTE.²⁰⁴
- (131) The following Table presents Broadcom’s and its competitors’ market shares in terms of value for these residential gateway SoCs (excluding captive sales).²⁰⁵

¹⁹⁷ Statement by MediaTek during the Oral Hearing, Doc ID 2130-2, minute 12:10 until minute 27:59, where MediaTek submits that it “*can and does compete at the high-end*” (minute 21:32) after providing several examples of it.

¹⁹⁸ Sky’s reply of 31 January 2019 to question 4 of Article 18 (3) Decision of 24 October 2018, Doc 1035-4, paragraph 19. Sky refers to MStar, a company acquired by MediaTek. [...].

¹⁹⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 95.

²⁰⁰ Huawei’s reply to information requests of 24 October 2018, 20 March 2019 and 28 March 2019, Doc ID 1616-3.

²⁰¹ Intel’s reply of 16 April 2019 to Article 18(2) request for information of 11 April 2019, Annex 1, Doc ID 1501.

²⁰² MediaTek’s reply of 23 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1418-1.

²⁰³ Qualcomm’s reply of 22 February 2019 to Article 18(2) request for information of 1 February 2019, Annex 1, Doc ID 1142.

²⁰⁴ ZTE’s reply of 23 April 2019 to Article 18(2) request for information of 3 April 2019, Doc ID 1400.

²⁰⁵ The Commission considers that it is justified to exclude captive sales given that those sales do not pose a direct competitive constraint on gateway SoC suppliers active in the merchant market. Furthermore, the fact that Huawei and ZTE (*i.e.* the main captive producers) [...].

Table 2: Residential gateway SoCs market shares, worldwide, 2015-2018 (USD)²⁰⁶

xDSL				
	2015	2016	2017	2018
Broadcom	[70-80]%	[80-90]%	[80-90]%	[80-90]%
MediaTek	[5-10]%	[0-5]%	[0-5]%	[0-5]%
Intel	[10-20]%	[10-20]%	[5-10]%	[10-20]%
Qualcomm	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Fibre				
	2015	2016	2017	2018
Broadcom	[70-80]%	[70-80]%	[50-60]%	[50-60]%
MediaTek	[5-10]%	[10-20]%	[30-40]%	[30-40]%
Intel	[0-5]%	[0-5]%	[0-5]%	[0-5]%
HiSilicon	[10-20]%	[0-5]%	[0-5]%	[5-10]%
ZTE	0%	0%	[0-5]%	[0-5]%

- (132) Broadcom considers itself to be dominant with respect to both xDSL and fibre residential gateways. In a promotional presentation to [...] prepared by Broadcom, it is stated that “[...] in xDSL, EPON, and GPON [*i.e.* fibre²⁰⁷] SoCs”.²⁰⁸
- (133) As is clear from Table 2 above, Broadcom indeed faces competition only from a handful of suppliers in these markets.
- (134) In xDSL residential gateway SoCs, all competitors except Intel have shares below 10%.²⁰⁹
- (135) In fibre residential gateway SoCs, although it has decreased in recent years, Broadcom’s market share remains high, and, in any event, above [50-60]%. As such, they constitute evidence of the existence of a dominant position under the *Akzo* case-law.²¹⁰ Furthermore, the Commission considers that the above market shares likely underestimate Broadcom’s dominance in fibre residential gateways for the following reasons.
- (136) First, similar to the situation described at recitals (121) and (122) above with respect to STB SoCs, Chinese suppliers like HiSilicon and ZTE only exercise a limited competitive constraint on Broadcom despite their market shares. Both HiSilicon and ZTE have confirmed that they did not have any direct sales of residential gateway

²⁰⁶ Sales to third parties, excluding Huawei’s and ZTE’s captive sales. If these captive sales were included, Broadcom’s 2018 market share in fibre gateway SoCs would amount to [30-40]%, with Huawei/HiSilicon holding [20-30]%, ZTE [10-20]%, MediaTek [20-30]% and Intel [0-5]%. Broadcom’s market shares in DSL residential gateways would remain unaffected. Figures between brackets are based on non-confidential ranges provided by respondents in the course of the Commission’s investigation. No brackets are included for figures for which no confidentiality was claimed and Broadcom’s market share estimates.

²⁰⁷ The term "EPON" stands for Ethernet Passive Optical Network and "GPON" stands for Gigabyte Passive Optical Network, both fibre-based technologies.

²⁰⁸ [...]’s reply to the Commission’s request for information of 24 October 2018, Exhibit 14, Doc ID 1605-37.

²⁰⁹ Broadcom does not contest that it is dominant in high-end SoCs for xDSL residential gateways. Broadcom’s SO Response, Doc ID 1843-15, paragraph 105. Intel’s market share, *i.e.* the closest competitor to Broadcom, is one fourth of Broadcom’s market share.

²¹⁰ Case C-62/86 *Akzo v Commission*, EU:C:1991:286, paragraph 60; Case T-340/03 *France Télécom SA v Commission*, EU:T:2007:22, paragraph 100; and Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 150.

SoCs into the EEA in the past 5 years.²¹¹ Competition from these players is at best localised and focused on specific areas. In addition, both companies estimate that in 2017 and 2018 none, or only a very limited part of their total production was incorporated in residential gateways sold in the EEA.²¹²

- (137) Second, as regards MediaTek, its increase in global sales in recent years is also mostly due to increased sales in China rather than in the EEA. MediaTek's shipments and sales of fibre residential gateway SoCs have thus continuously increased throughout the 2013-2018 period as demand for fibre residential gateway SoCs grew in China and Asia.²¹³
- (138) Furthermore, Intel, which, like Broadcom, focusses its activities on the supply of high-end SoCs, has only a very low market share that has been static in the preceding four years with respect to fibre residential gateway SoCs. This indicates, *prima facie*, that any loss to Broadcom's market share in respect of fibre residential gateway SoCs has not been due to an increase in competition with respect to high-end SoCs. Rather, and consistent with this conclusion, the evidence that the Commission has collected at this stage of its investigation indicates that competitors' market share growth is due to increased sales of low-end SoCs destined for the Chinese market, and, as such, is unlikely to constrain Broadcom's conduct in respect of high-end SoCs required by European (and US) based OEMs and service providers.
- (139) Broadcom disputes the Commission's findings concerning the market for fibre residential gateway SoCs.
- (140) First, Broadcom argues that its market share has been declining over the last years. In this regard, it maintains that the loss of market share is more pronounced than in the *British Airways* case and that, therefore, it cannot be considered dominant. It also submits a table with market shares calculated by volume to claim that it is not dominant.²¹⁴
- (141) Second, Broadcom submits that its average selling price has [...]over the period of infringement. To support this statement, it provides a table comparing the value-based shares against the volume-based shares. Broadcom maintains that its fibre gateway SoCs have [...] compared to those of its competitors.²¹⁵
- (142) Third, Broadcom maintains that the Commission wrongly concluded in the SO that the market shares relied on likely underestimate its dominance in fibre gateways. It also submits that if Chinese suppliers indeed do not compete meaningfully with Broadcom, they are at no risk of being foreclosed. Besides, Broadcom argues that it only faces competition from Intel at the high-end of the market. Broadcom further claims that, by

²¹¹ Huawei's reply of 28 March 2019 to the request of information, Doc ID 1616-3. ZTE's 28 May 2019 reply to the request for information of 18 May 2019, Doc ID 1481.

²¹² Huawei's reply of 30 April 2019 to the request for information of 24 October 2018, Doc ID 1616-1; ZTE's reply of 28 May 2019 to the request for information of 18 May 2019, Doc ID 1481.

²¹³ Annex 1 of MediaTek's reply of 23 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1418-1, and 24 May 2018 IHS Markit Home Networks Intelligence Service, Doc ID 1287-16, reporting the significant growth of demand in Asia, with the region accounting for between [60-80]% of global demand over the period 2015-2018.

²¹⁴ Broadcom's SO Response, Doc ID 1843-15, paragraphs 106-107 with reference to Case T-219/99, *British Airways v Commission*, EU:T:2003:343, paragraphs 223-224.

²¹⁵ Broadcom's SO Response, Doc ID 1843-15, paragraph 108.

defining the market so broadly, *i.e.* including also Asian suppliers, the Commission understated Intel's market share.²¹⁶

- (143) Fourth, Broadcom dismisses its own power point presentation in which it presents itself as [...] and maintains that it does not provide a reliable basis for [...].²¹⁷
- (144) Fifth, Broadcom claims that, even if it were to be found dominant in fibre gateway SoCs, there is no infringement because the agreements targeted by the Commission do not target a significant share of demand.²¹⁸
- (145) Broadcom's allegations are unfounded.
- (146) First, as regards the drop in Broadcom's market share in recent years, according to established case-law, a decline in market shares which are still very large cannot in itself constitute proof of the absence of a dominant position.²¹⁹ Broadcom's market shares have been up to [70-80]% and, in any event, consistently above 50% during the entire infringement period. Additionally, it is worth noting that the finding of dominance in *British Airways* was always based on market shares below 50%, that is of 40% or even less, *i.e.* a much lower market share than in the present case.²²⁰ In any event, as stated in recitals (135) to (138) above, in themselves, the market shares presented in table 2 (recital (131)) likely underestimate Broadcom's dominance in fibre residential gateways.
- (147) With regard to the tables with market shares submitted by Broadcom, given that market shares by value provide a better indication of competitive constraints and Broadcom's market power than market shares by volume,²²¹ which Broadcom has not sought directly to contest, it is unclear why in this case market shares by volume should be considered as providing a more meaningful indication of Broadcom's market power than market shares calculated by value.
- (148) Second, as regards Broadcom's claim that its average selling price has [...], even on the basis of Broadcom's own data²²², such [...] appears to take place mostly between [...] and not between 2015 and 2018 (*i.e.* the time period taken into account by the Commission), when prices [...]. In addition, Broadcom provides no evidence showing that it has "[...] compared to its competitors".
- (149) Third, Broadcom's claims in paragraphs 109 and 110 of the SO Response about the competitive constraint posed by Chinese suppliers and the inclusion of certain players in the market are also unsubstantiated. Contrary to Broadcom's interpretation, the Commission does not state that Chinese companies do not compete with Broadcom, but rather that they do not exercise on it a strong degree of competitive pressure.
- (150) Moreover, as regards the claims submitted by Broadcom concerning Intel and its presence in the high-end, it must be noted that Intel's market share in fibre gateway SoCs is below 5%, while Broadcom's is at least [50-60]% or above. If, as submitted

²¹⁶ Broadcom's SO Response, Doc ID 1843-15, paragraphs 109-110.

²¹⁷ Broadcom's SO Response, Doc ID 1843-15, paragraph 111.

²¹⁸ Broadcom's SO Response, Doc ID 1843-15, paragraphs 112-113.

²¹⁹ T-340/03 - *France Télécom v Commission*, EU:T:2007:22, paragraph 104.

²²⁰ Commission Decision of 14 July 1999 relating to a proceeding under Article 82 of the EC Treaty (IV/D-2/34.780 - *Virgin/British Airways*) (notified under document number C(1999) 1973), Commission Decision 2000/74/EC; Official Journal L 030, 04/02/2000, p. 0001 – 0024.

²²¹ See recital (112) above.

²²² Broadcom's SO Response, Doc ID 1843-15, paragraph 108.

by Broadcom, it were to be considered that the only players in the market are Broadcom and Intel, Broadcom would hold a [90-100]% market share, while Intel's market share would be around [0-10]%.

- (151) Fourth, concerning Broadcom's presentation cited at recital (132) above, contrary to Broadcom's arguments (see recital (143)), the fact that a company regards itself as holding the #1 market share and being "*dominant*" is a factor that the Commission may legitimately take into account when assessing that company's market power.²²³
- (152) Fifth, Broadcom's arguments in paragraphs 112 and 113 of the SO Response on the lack of infringement in case it were to be found dominant, will be addressed in the abuse section of this Decision.

8.4.4. *Barriers to entry*

- (153) The preliminary factual and legal analysis set out in this section indicates that there are high barriers to entry in the markets for STB SoCs, xDSL gateway SoCs and fibre gateway SoCs.²²⁴
- (154) First, significant R&D expenditure is necessary to develop a meaningful presence in the industry. For example, Broadcom invests more than EUR [...] million per year in R&D for SoCs (as well as FE chips and WiFi chipsets).²²⁵ Broadcom has also stated that "*semiconductors markets are characterized by customers requiring high levels of investment and uncertain returns*".²²⁶ According to Broadcom, these challenges are particularly stringent in STB and residential gateway SoCs due to the markets' maturity and, in the case of STB SoCs, alleged diminishing demand.²²⁷ Broadcom considers that high development costs are the main reason for a number of consolidations and market exits, in particular the exit of STMicroelectronics, Broadcom's closest competitor in STB SoCs.²²⁸

²²³ Case C-62/86 - *AKZO v Commission*, EU:C:1991:286, paragraph 61.

²²⁴ As outlined in the SO, the same finding extends to the market for cable residential gateway SoCs.

²²⁵ Broadcom claims that it cannot provide separate estimates for SoCs, FE chips and WiFi chipsets, so these figures cover all these products (see Broadcom's reply of 6 February 2019 to question 42 of Article 18(2) request for information to chip suppliers of 18 December 2018, Doc ID 1029, pages 26-27).

²²⁶ Minutes of meeting with Broadcom of 21 March 2019, Doc ID 1352, paragraph 4.

²²⁷ Broadcom's presentation to the Commission of 21 March 2019, slides 5, 15 and 19.

²²⁸ Broadcom's presentation to the Commission of 21 March 2019, slide 18, citing IHS Markit's publication of 12 February 2016 titled "Market Insight: STMicroelectronics to discontinue STB and home gateway SoC research & development as part of a restructuring move", available at <https://technology.ihs.com/573340/stmicroelectronics-to-discontinue-stb-and-home-gateway-soc-research-development-as-part-of-a-restructuring-move> noting that "[t]he crux of the issue [for STMicroelectronics' STB SoCs business] is the cost required to remain competitive in this market climate. STMicroelectronics is feeling this pressure from both a high and low-end perspective. Firstly, competition from Asian SoC vendors such as Ali, HiSilicon and MediaTek has placed downward pressure on the company's profit margins. Meanwhile, in advanced markets such as the US, the demand for high-end integrated circuits (IC), integrating the latest video, broadband and home networking technologies, drives up R&D costs. STMicroelectronics has succeeded in winning major deals for next generation STB designs [...], but fundamentally STMicroelectronics has been unable to grow amongst the competition. It's the second largest STB system-on-chip (SoC) maker behind Broadcom, but has experienced declining revenue since 2011, with its STB SoC and home gateway business' performance and prospects being the least auspicious. It reported a loss of \$250 million, in its STB and home gateway products in 2015, down 36.9% from 2014 year previous, a gross margin that's about half the average of STMicroelectronics' other product lines".

- (155) Second, there is a scarcity of specialised engineering and other talented employees in the semiconductor sector, including in SoCs.²²⁹ As such, even if a company were committed to investing resources in R&D, it may still find it challenging to find the workforce required to develop SoCs.
- (156) Third, respondents noted that gaining access to the IP rights that cover SoCs and other components constitutes a significant barrier to entry and indicated that Broadcom is a significant patent holder.²³⁰ Moreover, several market participants have pointed to tactics by Broadcom in the licencing policy to its IP as exacerbating these barriers to entry. Intel explained that it is aware that “*Broadcom has threatened bringing patent claims against companies considering entry into the STB silicon market,*²³¹ *in which Broadcom possess a market share of nearly 100%.*”²³² MediaTek confirmed that “*Broadcom (and its predecessor entity Avago before it) has introduced several litigations against MediaTek and a number of other electronics companies in the US and Europe, including several of MediaTek’s customers*” [...].²³³ Broadcom’s own patent ownership and licensing conduct therefore contributes to elevating barriers to entry.
- (157) Fourth, respondents indicated that economies of scale are important to profitably start or continue supplying SoCs for STBs and residential gateways. Economies of scale are important, in particular, to be able to spread the material research and development costs associated with developing these products.²³⁴ This factor, therefore, reinforces established positions and compounds barriers to entry.
- (158) Fifth, respondents indicated that having an established relationship with customers can provide an advantage to existing suppliers.²³⁵ Accordingly, new suppliers or suppliers seeking to expand sales with new customers must overcome customers’ preference for incumbent suppliers, making new entry or expansion less likely.
- (159) Sixth, the fact that the markets at stake are unlikely to expand significantly in the future²³⁶ increases the importance of the barriers to entry above, given that it makes entry relatively less attractive.

²²⁹ See, e.g., Qualcomm’s Form 10-K for the fiscal year 2018, printed from <https://investor.qualcomm.com/static-files/bde24726-605c-4118-92db-7190e0f58e53> on 13 June 2019, Doc ID 1603, page 35. See also Broadcom’s Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1>) on 13 June 2019, Doc ID 1574, which states, on page 16: “*If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.*”

²³⁰ Replies to questions 34 to 36 of Article 18(2) request for information to chip suppliers of 18 December 2018.

²³¹ In this quote, “silicon” can be intended as synonymous for SoC.

²³² Intel’s reply of 24 January 2019 to question 34.1 of Article 18(2) request for information to chip suppliers of 20 December 2018, Doc 1541.

²³³ MediaTek’s reply of 31 January 2019 to question 34.1 of Article 18(2) request for information of 20 December 2018, Doc ID 1619.

²³⁴ Replies to question 49 of Article 18(2) request for information to chip suppliers of 18 December 2018.

²³⁵ Replies to question 50 of Article 18(2) request for information to chip suppliers of 18 December 2018.

²³⁶ See forecasts in BiS Global STB Market Research Report 2018, Doc ID 1064, and IHS Q2 2018 Set-Top Box Intelligence Market Monitor, Doc ID 1065.

- (160) In its SO Response, Broadcom recognises some of the industry features included in the description above but claims that the Commission does not recognise the alleged efficiencies brought about by the agreements (see in this regard Section 8.5.2.3).
- (161) Broadcom admits that the industry is characterised by high fixed costs and claims that it makes investments when they are underpinned by a degree of certainty about future order volumes.²³⁷ According to Broadcom, the high fixed-costs in the industry have led Broadcom and partner OEMs to collaborate in order to reduce them and create a basis for timely delivery of new products.²³⁸
- (162) Broadcom further disputes its interference with other market players and maintains that this is not sufficiently substantiated. Moreover, it also maintains that if its IP is essential to compete in its market segment, the incremental effect of its conduct on rivals' ability to compete would be minimal.²³⁹
- (163) The Commission notes that Broadcom's allegations confirm the description of the barriers to entry of the SO and the substantial investment required. Broadcom does not dispute that there are staff shortages in the market, one of the aspects identified as a barrier to entry.
- (164) Broadcom's allegation about the existence of high costs in the industry does not dispute the relevance of economies of scale in the market, but rather attempts to provide a justification to its conduct. Such alleged justification does not alter the finding of dominance and will be assessed as part of the Commission's analysis of objective justification (see section 8.5.2.3 below).
- (165) Finally, Broadcom's claim that the allegations on access to IP rights are not sufficiently substantiated cannot be accepted. There are several references to comments submitted by different market players in recital (156) of this Decision. As indicated in that same recital, on a prima facie basis, Broadcom is one of the most significant owners of IP rights in the industry and these IP rights (which Broadcom vigorously enforces) operate as a barrier to entry or to expansion.²⁴⁰

8.4.5. *Countervailing buyer power*

- (166) The preliminary factual and legal analysis set out in this section indicates that Broadcom's customers have insufficient countervailing bargaining power.²⁴¹
- (167) First, the downstream markets are fragmented. For STBs, as indicated in section 6 above, the main four OEMs accounted for approximately half of the global sale revenues at the end of 2017, with significant discrepancies in shares: [OEM A] [20-30]%, [OEM E] [10-20]%, [OEM B] [5-10]% and [OEM D] [5-10]%. The rest of the market is accounted for by a large number of smaller players. For residential gateways, these four players accounted for approximately two fifths of the market in 2017: [OEM A] [20-30]%, [OEM E] [5-10]%, [OEM B] [0-5]% and [OEM D] [5-10]%. Chinese manufacturers and a large number of small players accounted for the rest of the market.
- (168) Second, there are few alternatives to Broadcom in both STB and residential gateway SoCs and Broadcom enjoys significantly broader scale than its competitors. The

²³⁷ Broadcom's SO Response, Doc ID 1843-15, paragraphs 117-118.

²³⁸ Broadcom's SO Response, Doc ID 1843-15, paragraph 120.

²³⁹ Broadcom's SO Response, Doc ID 1843-15, paragraph 120.

²⁴⁰ MediaTek's reply of 31 January 2019 to question 34.1 of Article 18(2) request for information of 20 December 2018, Doc ID 1619.

²⁴¹ As outlined in the SO, the same finding extends to the market for cable residential gateway SoCs.

customers' ability to exercise commercial pressure on Broadcom when selecting chipset suppliers is therefore limited.

- (169) Most OEMs have confirmed having insufficient buyer power to impose their requests on Broadcom. OEMs have indicated that this is the result of a number of factors including Broadcom's leadership and unique position enabling it to ensure timely technical and engineering support and delivery, the limited number of alternative suppliers available and Broadcom's established relations with service providers.²⁴² OEMs have indicated that their position in this respect concerns all SoCs and applies both to SoCs for STBs and for residential gateways.²⁴³ For example, [...] mentioned that "*Broadcom has a strong market position with close working relationships with operators and OEMs. Broadcom is often the incumbent and specified by the operators in their RFQs. This often leaves little room to negotiate with Broadcom*".²⁴⁴
- (170) Broadcom argues that the SO's failure to take into account the role of service providers undermines the dominance assessment for all product lines. Broadcom describes service providers as "kingmakers" in the industry and argues that each of them represents a significant source of demand from the perspective of the OEMs and also for the SoCs and their products. It therefore considers that service providers can credibly threaten to delay or reduce orders to obtain better pricing terms.²⁴⁵
- (171) Broadcom's claims are unfounded. The role of Service Providers has been sufficiently assessed throughout the SO and in this Decision.²⁴⁶ In any event, the Commission notes that in stark contrast with market concentration at the level of SoCs, service provider demand at global level is highly fragmented. In the EEA alone, there are a minimum of 120 Internet service providers.²⁴⁷ Even assuming that the largest among those service providers had a certain degree of market power, which Broadcom has failed to demonstrate, there would remain a large number of small to medium-sized service providers, which are not able to counteract the market power of Broadcom.²⁴⁸
- (172) Finally, there are limited alternatives to Broadcom in each of the concerned markets and Broadcom enjoys broader scale than other players. Broadcom is the leading company in all markets concerned with a considerable distance to the other market players. This is evidenced by the tables in recitals (117) and (131), where Broadcom's edge over its competitors is shown.

²⁴² Replies to questions 39.1 and 39.2 of Article 18(2) request for information to OEMs of 18 December 2018.

²⁴³ Replies to question 39.1 of Article 18(2) request for information to OEMs of 18 December 2018.

²⁴⁴ [...]’s reply of 21 January 2019 to question 39.2 of Article 18(2) request for information to OEMs of 18 December 2018, Doc ID 1546.

²⁴⁵ Broadcom's SO Response, Doc ID 1843-15, paragraphs 114 to 116.

²⁴⁶ See for instance Section 7 of this Decision, which includes an assessment of the role played by Service Providers. See also recitals (266) and (267) below, which address the role of Service Providers. Additionally, Recital (370) below includes several examples rebutting Broadcom's claim that Service Providers are "kingmakers".

²⁴⁷ See MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 70, with reference to a *Study for EC: Fixed Broadband Prices*, empirica and TÜV Rheinland, SMART 2016/0044, available at: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=49386.

²⁴⁸ See Case T-228/97 *Irish Sugar v Commission*, EU:T:1999:246, paragraphs 97-98: "*despite presence of two large customers, the demand side is composed of a number of buyers which are not equally strong and which cannot be aggregated to conclude that they may constrain the market power of the supplier with over 90 % of the market*".

8.4.6. Conclusion on dominance

- (173) In light of the preliminary factual and legal analysis set out above, the Commission concludes that Broadcom is *prima facie* dominant in the following worldwide markets:
- (a) STB SoCs;²⁴⁹
 - (b) SoCs for xDSL residential gateways;²⁵⁰ and
 - (c) SoCs for fibre residential gateways.

8.5. Abuse

8.5.1. Principles

- (174) The fact that an undertaking holds a dominant position is not in itself contrary to the competition rules. However, an undertaking enjoying a dominant position is under a special responsibility, irrespective of the causes of that position, not to allow its conduct to impair genuine undistorted competition on the internal market.²⁵¹
- (175) The concept of abuse is an objective concept relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, as a result of the very presence of the undertaking in question, the degree of competition is weakened and which, through recourse to methods different from those which condition normal competition in products or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition.²⁵²
- (176) For the purposes of establishing an infringement of Article 102 TFEU, it is not necessary to demonstrate that the abuse in question had a concrete effect on the markets concerned. It is sufficient in that respect to demonstrate that the abusive conduct of the undertaking in a dominant position is capable of having such an effect.²⁵³
- (177) It follows from the nature of the obligations imposed by Article 102 TFEU that, in specific circumstances, undertakings in a dominant position may be deprived of the right to adopt a course of conduct or take measures which are not in themselves abuses and which would even be unobjectionable if adopted or taken by non-dominant undertakings.²⁵⁴ In addition, the strengthening of the position of an undertaking may

²⁴⁹ Broadcom has not contested its dominance in the high-end of this market, see Broadcom's SO Response, Doc ID 1843-15, paragraphs 9 and 105.

²⁵⁰ Broadcom has not contested its dominance in the high-end of this market, see Broadcom's SO Response, Doc ID 1843-15, paragraph 105.

²⁵¹ See Case C-322/81 *Michelin v Commission*, EU:C:1983:313, paragraph 57; Case T-301/04 *Clearstream*, EU:T:2009:317, paragraph 132.

²⁵² Case C-85/76, *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 91.

²⁵³ See, to that effect, Case C-413/14 P *Intel v Commission*, EU:C:2017:632, paragraph 138.

²⁵⁴ See, to that effect, case C-322/81 *Michelin v Commission*, EU:C:1983:313, paragraph 57, and case T-111/96, *ITT Promedia v Commission*, EU:T:1998:183, paragraph 139; Case T-301/04 *Clearstream*, EU:T:2009:317, paragraph 133.

be an abuse and prohibited under Article 102 TFEU, regardless of the means and procedure by which it is achieved, and even irrespective of any fault.²⁵⁵

- (178) Article 102 TFEU is aimed not only at practices which may cause prejudice to consumers or individual competitors directly, but also at those which are detrimental to them through their impact on an effective competition structure.²⁵⁶ This is because the competition rules laid down in the Treaty aim to protect not only the interests of competitors or of consumers, but also the structure of the market and, in so doing, competition as such.²⁵⁷
- (179) However, not every exclusionary effect is necessarily detrimental to competition. Competition on the merits may, by definition, lead to the departure from the market or the marginalisation of competitors that are less efficient and so less attractive to consumers from the point of view of, among other things, price, choice, quality or innovation.²⁵⁸
- (180) The list of abusive practices contained in Article 102 TFEU does not exhaust the possible methods of abusing a dominant position prohibited by the TFEU.²⁵⁹ For the purposes of this case, the following two sets of principles are particularly relevant.
- (181) First, an undertaking which is in a dominant position on a market and ties purchasers – even if it does so at their request – by an obligation or promise on their part to obtain all or most of their requirements exclusively from the said undertaking abuses its dominant position within the meaning of Article 102 TFEU, whether the obligation in question is stipulated without further qualification or whether it is undertaken in consideration of the grant of a rebate. The same applies if the said undertaking, without tying the purchasers by a formal obligation, applies, either under the terms of agreements concluded with these purchasers or unilaterally, a system of exclusivity rebates, that is to say discounts conditional on the customer's obtaining all or most of its requirements from the undertaking in a dominant position.²⁶⁰
- (182) In that context, it should be recalled that an undertaking in a dominant position may not justify the grant of a rebate subject to a quasi-exclusive purchase condition by a customer in a certain segment of a market by the fact that that customer remains free to obtain supplies from competitors in other segments.²⁶¹ The customers on the foreclosed part of the market should have the opportunity to benefit from whatever degree of competition is possible on the market and competitors should be able to compete on the merits for the entire market and not just for a part of it.²⁶²

²⁵⁵ See Case C-6/72 *Europemballage Corporation and Continental Can Company v Commission*, EU:C:1973:22, paragraphs 27 and 29; Case T-128/98 *Aéroports de Paris v Commission*, EU:T:2000:290, paragraph 170.

²⁵⁶ Case C-95/04 *British Airways*, EU:C:2007:166, paragraphs 106-107 and in Case C-6/72 *Europemballage Corporation and Continental Can Company v Commission*, EU:C:1973:22, paragraph 26.

²⁵⁷ See Joined Cases C-501/06 P, C-513/06 P, C-515/06 P and C-519/06 P *GlaxoSmithKline Services and others v Commission and others*, EU:C:2009:610, paragraph 63. See also case C-8/08 *T-Mobile Netherlands and Others*, EU:C:2009:343, paragraphs 38 and 39.

²⁵⁸ See Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 134.

²⁵⁹ See joined cases C-395/96 P and C-396/96 P *Compagnie Maritime Belge Transports a.o. v Commission*, EU:C:2000:132, paragraph 112.

²⁶⁰ Case C-85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 89. See also Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 137.

²⁶¹ See Case T-286/09 *Intel v Commission*, EU:T:2014:547, paragraph 132, annulled but not on this point.

²⁶² Case C-549/10 P *Tomra and Others v Commission*, EU:C:2012:221, paragraph 42.

- (183) As regards the threshold for a purchase condition to be qualified as a quasi-exclusivity condition, it is recalled that the percentage of 80% is sufficient to constitute “most” of a company’s requirements but that also lower purchasing obligations have already been found to constitute quasi-exclusivity conditions.²⁶³
- (184) Second, Article 102 TFEU and Article 54 of the EEA Agreement prohibit not only practices by an undertaking in a dominant position which tend to strengthen that position,²⁶⁴ but also the conduct of an undertaking with a dominant position in a given market that tends to extend that position to a neighbouring but separate market by distorting competition.²⁶⁵ Therefore, the fact that a dominant undertaking’s abusive conduct has its adverse effects on a market distinct from the market where it is dominant does not preclude the application of Article 102 TFEU or Article 54 of the EEA Agreement.²⁶⁶ It is not necessary that the dominance, the abuse and the actual or potential effects of the abuse are all in the same market.
- (185) It is open to a dominant undertaking to show that its conduct is objectively necessary or that the potential foreclosure effect that it brings about may be counterbalanced, or outweighed, by advantages in terms of efficiencies that also benefit consumers.²⁶⁷
- (186) Although the burden of proof of the existence of circumstances that constitute an infringement of Article 102 TFEU is borne by the Commission, it is for a dominant undertaking to raise any plea of objective justification or efficiency defence and to support it with arguments and evidence.²⁶⁸

8.5.2. Application to this case

- (187) For the reasons set out below, the Commission concludes that, *prima facie*, Broadcom’s conduct breaches Article 102 TFEU and Article 54 of the EEA Agreement, thus giving rise “*at first sight*” to serious doubts as to its compatibility with those provisions.

8.5.2.1. Legal qualification of Broadcom’s conduct

- (188) In the sections that follow, the Commission will present its assessment as regards the reasons why certain provisions included in the Agreements can be considered as

²⁶³ See Case T-286/09 *Intel v Commission*, EU:T:2014:547, paragraph 135, annulled but not on this point; Case C-85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 83. In Case C-85/76 *Hoffmann-La Roche v Commission*, obligations for customers to purchase 75% of their requirements exclusively from the dominant undertaking were found to constitute quasi-exclusivity conditions.

²⁶⁴ Case C-6/72, *Europemballage Corporation and Continental Can Company Inc. v Commission*, EU:C:1973:22, paragraph 26; Case C-85/76, *Hoffmann-La Roche & Co. AG v Commission*, EU:C:1979:36, paragraph 91; Case C-322/81, *NV Nederlandsche Banden Industrie Michelin v Commission*, EU:C:1983:313, paragraph 57.

²⁶⁵ Case C-311/84, *Centre belge d’études de marché - Télémarketing (CBEM) v SA Compagnie luxembourgeoise de télédiffusion (CLT) and Information publicité Benelux (IPB)*, EU:C:1985:394, paragraph 27; Case C-333/94 P, *Tetra Pak v Commission*, EU:C:1996:436, paragraph 25; Case T-228/97, *Irish Sugar plc v Commission*, EU:T:1999:246, paragraph 166; Case T-201/04, *Microsoft v Commission*, EU:T:2007:289, paragraph 1344.

²⁶⁶ Case C-333/94 P, *Tetra Pak v Commission*, EU:C:1996:436, paragraph 25; Case C-52/09, *Konkurrensverket v TeliaSonera Sverige AB*, EU:C:2011:83, paragraph 85.

²⁶⁷ Case C-95/04 P *British Airways v Commission*, EU:C:2007:166, paragraphs 85-86; Case C-209/10 *Post Danmark*, EU:C:2012:172, paragraphs 40 and 41. See also Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 140.

²⁶⁸ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 688; Case C-209/10 *Post Danmark*, EU:C:2012:172, paragraph 42.

amounting to exclusivity-inducing provisions. These exclusivity-inducing provisions can be grouped into two different types of restrictions of competition, namely: (i) exclusivity and quasi-exclusivity arrangements; and (ii) leveraging restrictions. Each of these types of restriction will be discussed in sections 8.5.2.1.A and 8.5.2.1.B below. In Section 8.5.2.1.C below, the Commission addresses Broadcom's arguments on the legal qualification of the Agreements. The Commission's conclusions as regards the *prima facie* legal qualification of Broadcom's conduct are set out in section 8.5.2.1.D below.

(A.) Exclusivity and quasi-exclusivity arrangements

(189) The Commission considers that all of the Agreements contain exclusivity or quasi-exclusivity arrangements. That is: (i) obligations or promises to obtain products in which Broadcom is dominant exclusively or almost exclusively from Broadcom ("exclusive purchasing arrangements"); or (ii) provisions that make the granting of certain advantages conditional on the customer obtaining products in which Broadcom is dominant exclusively or almost exclusively from Broadcom ("advantages conditional on exclusivity").

(190) Subsections A.i to A.vi below explain why the Commission considers that certain provisions within each of the Agreements constitute, *prima facie*, exclusivity or quasi-exclusivity arrangements. Subsection A.vii sets out the Commission's provisional conclusions as regards these exclusivity and quasi-exclusivity arrangements.

(191) As a preliminary remark, the Commission considers at this stage that the various provisions described in sections A.i. to A.vi. below amount to a system of exclusivity and quasi-exclusivity arrangements, capable of restricting competition (see further section 8.5.2.2 below). As such, it is neither necessary nor practical definitively to categorise each individual provision as either an exclusive purchasing arrangement or a provision granting advantages conditional on exclusivity since many of the Agreements described below establish arrangements that are capable of being considered as both exclusive purchasing arrangements and advantages conditional on exclusivity.²⁶⁹

(A.i.) [OEM A] CSA

(192) Under the [OEM A] CSA, [OEM A] commits to certain arrangements with respect to three product markets in which Broadcom is *prima facie* dominant: (i) STB SoCs, (ii) xDSL residential gateway SoCs and (iii) fibre residential gateway SoCs.

(193) In particular, [OEM A] commits to purchase from Broadcom [80-100]% of its requirements for three products in which Broadcom is *prima facie* dominant: (i) SoCs for 4K STBs;²⁷⁰ (ii) SoCs for xDSL residential gateways;²⁷¹ and (iii) SoCs for fibre

²⁶⁹ See for example the [OEM D] MoU, which contains both a promise to "*promote and use*" or to "*promote and demonstrate*" only Broadcom-based products and price as well as non-price advantages that are conditional on [OEM D] complying with such promise (see "*Non-Binding Memorandum of Understanding*" entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clauses 1.A and 1.B as well as the [OEM D] MoU Amendment, Doc ID 2223-181).

²⁷⁰ Referred to in the [OEM A] CSA as "*4K STB video silicon*." "4K" refers to a horizontal display resolution of approximately 4,000 pixels. See also footnote 394 below.

²⁷¹ Referred to in the [OEM A] CSA as "*DSL [...] silicon*" (see footnotes 5 and 394).

residential gateways.²⁷² This clause therefore amounts to a promise by [OEM A] to obtain exclusively its requirements from Broadcom in the case of SoCs for xDSL and fibre residential gateways and to obtain (at least) almost exclusively its requirements from Broadcom in the case of STB SoCs, given that 4K STBs amounted to [80-100]% of [OEM A]’s sales of STBs in the years 2017-2019.²⁷³

- (194) Under the [OEM A] CSA, [OEM A] also commits “to bid [to service providers] only Broadcom video and broadband solutions with [OEM A] CPE Customers”²⁷⁴ and “[to bid] only Broadcom [video and Broadband CPE portfolio] Products to Service Providers.”²⁷⁵
- (195) Given that the STB and residential gateway industry is based on OEMs submitting tenders to service providers (see recital (26) above), the commitment to “*bid*” exclusively Broadcom-based products effectively has equivalent effects to a promise to obtain exclusively (or at least almost exclusively) [OEM A]’s requirements from Broadcom.
- (196) Furthermore, given that the scope of these provisions relates, respectively, to “*Broadcom video and broadband solutions with CPE Customers*” and “*video and Broadband CPE portfolios*” - and is therefore not limited to any specific product - it should be interpreted, unless otherwise inferred from other provisions of the [OEM A] CSA,²⁷⁶ as a promise which covers at least STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs. That is, it should ordinarily be interpreted as a promise that applies to three products in which the Commission has found Broadcom to be *prima facie* dominant.
- (197) The termination clause stipulated in the overarching agreement to which the [OEM A] CSA is an addendum,²⁷⁷ foresees that Broadcom can terminate the overarching agreement in the event that [OEM A] does not comply with its commitments under the [OEM A] CSA. Notably, the termination events stipulated within the overarching agreement include “[the breach by either party of] *a material obligation under this agreement, [which] continues uncured for thirty (30) days after receiving written*

²⁷² “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 5.2. For the avoidance of doubt, it should be noted that Clause 5.2(c) refers to “[80-100]% PON silicon”. While PON does not cover all existing fibre technologies (the alternative fibre technology to PON is Point-to-Point (P2P)), [OEM A] confirmed, not contested by Broadcom, that the [OEM A] CSA covers SoCs for fibre modems, see [OEM A]’s revised reply of [...] to question 3 of Article 18(2) request for information of [...], page 4.

²⁷³ See [OEM A]’s reply of [...] to question 2 of Article 18(2) request for information of [...], page 2.

²⁷⁴ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 4.1.

²⁷⁵ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 4.6.

²⁷⁶ While such provision could also be intended as covering SoCs for cable residential gateways, the Commission does not pursue interim measures with regard to the effect of this specific clause for SoCs for cable residential gateways. This is because possible deviations to the exclusivity for cable residential gateways appear to be explicitly foreseen by Article 5.2.a of the [OEM A] CSA, which only sets a minimum purchasing threshold of [50-60]% for cable residential gateway SoCs.

²⁷⁷ See [OEM A]’s reply of [...] to question 3 of Article 18(2) request for information of [...], page 5.

*notice of the breach.*²⁷⁸ In light of the explicit commitment in the [OEM A] CSA that [OEM A] will purchase STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs exclusively (or almost exclusively) from Broadcom, such clauses appear, *prima facie*, and in the absence of any counter-indication in the [OEM A] CSA, to constitute material obligations. The possibility, therefore, for Broadcom to (at the very least) threaten to terminate the contract for failure to respect the exclusivity requirements, is likely to strengthen the exclusivity-inducing effect of the clause.

- (198) Under the [OEM A] CSA, upon the condition that [OEM A] complies with the promises described at recitals (193) and (194) above,²⁷⁹ [OEM A] benefits from preferential pricing from Broadcom, consisting of (i) [...];²⁸⁰ (ii) [...];²⁸¹ (iii) [...];²⁸² as well as related benefits such as (iv) [...].²⁸³
- (199) Under the [OEM A] CSA, [OEM A] also benefits from other advantages, including: (i) [...];²⁸⁴ and (ii) [...].²⁸⁵ [OEM A]’s access to these advantages does not appear to be explicitly preconditioned upon compliance with commitments contained elsewhere within the [OEM A] CSA but would be lost in the event of termination of the [OEM A] CSA for failure to comply with a material obligation (see recital (197) above).
- (200) In light of the above, the [OEM A] CSA contains promises on behalf of [OEM A] to obtain exclusively (or at least almost exclusively) from Broadcom its requirements of STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs. It also grants advantages to [OEM A] that are conditional on [OEM A] obtaining exclusively (or at least almost exclusively) from Broadcom its requirements with respect to the same products, in which Broadcom is *prima facie* dominant as set out in section 8.4 above. Hence, the Commission considers that these provisions *prima facie* amount to exclusivity or quasi-exclusivity arrangements.

²⁷⁸ “Corporate Supply Agreement” entered into between Broadcom and [...], Doc ID 814-3, Clause 2.2.a. [OEM A] [...].

²⁷⁹ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 4.6.

²⁸⁰ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s supplemental reply of [...] to Article 18(2) request for information of [...], Clause 6.1.

²⁸¹ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 6.2. Note also [OEM A]’s revised reply of [...] to question 4 of Article 18(2) request for information of [...], paragraph 4.3 on page 6: [...].

²⁸² “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 6.1.

²⁸³ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 4.4.

²⁸⁴ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 2.3.

²⁸⁵ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 2.3.

- (A.ii.) [OEM B] TPA
- (201) Under the [OEM B] TPA, [OEM B] commits to certain arrangements with respect to STB SoCs, a product market in which Broadcom is *prima face* dominant.
- (202) In particular, [OEM B] commits (i) to “promote/propose/submit only Broadcom-based solutions for all Operator²⁸⁶ opportunities [...] and non-Operator opportunities of significant volume worldwide,” with any exceptions needing “to be agreed upon in writing by the [OEM B] [...] and Broadcom’s [...]”;²⁸⁷ and (ii) to “only promote and demonstrate Broadcom-based solutions”.²⁸⁸
- (203) Given that the STB and residential gateway industry is based on OEMs submitting tenders to service providers (see recital (26) above), commitments to “*promote/propose/submit*” or to “*promote and demonstrate*” only Broadcom-based products effectively have equivalent effects to a promise to obtain STB SoCs exclusively (or at least almost exclusively) from Broadcom.
- (204) This conclusion is not affected by the fact that the commitment above does not apply to “*non-Operator opportunities*” which are not of “*significant volume worldwide*”, because the fact that this exception is limited to opportunities involving insignificant volumes of products indicates that the purchasing requirements necessarily apply to nearly all of [OEM B]’s requirements. Indeed, [OEM B] explains that the term “*significant volume*” has to be interpreted as ““*meaningful volume*” from Broadcom’s perspective to determine whether certain business opportunity is sizable enough” but that “*Broadcom has never mentioned exact volume or amount, nor did it provide any guidance on what it meant*” and that it “*was a rather subjective expression.*”²⁸⁹ [OEM B] also confirms that, in practice, [OEM B] submitted justifications for non-operator volumes it considered to be insignificant such that the relevant commitment would not apply, thus effectively seeking Broadcom’s approval, which Broadcom granted.²⁹⁰
- (205) In addition, [OEM B]’s obligation under the [OEM B] TPA to “[...]”²⁹¹ reinforces the exclusivity-inducing effects of the provisions identified in recitals (201) to (204) above [...].
- (206) Under the [OEM B] TPA, [OEM B] benefits from a number of advantages,²⁹² including: (i) “[...] pricing” ([...]); (ii) [...]; (iii) [...]; (iv) [...]; and (v) [...].”
- (207) In this regard, [OEM B] explains that it was unsure of the precise meaning of the term “[...] pricing” and that it was “[...]”.²⁹³ This means that Broadcom has ample leverage in tailoring the amount of the rebate so as to maximise the loyalty-inducing effect thereof (for example, by increasing it in situations where Broadcom is aware of

²⁸⁶ Here, “*Operator*” refers to service providers, *i.e.* the largest buyers in the downstream portion of the market (see further section 5 above).

²⁸⁷ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause D.1.

²⁸⁸ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause D.2.

²⁸⁹ [OEM B]’s reply of [...] to question 3.3 of Article 18(2) request for information of [...], page 2.

²⁹⁰ [OEM B]’s reply of [...] to question 3.3 of Article 18(2) request for information of [...], pages 2-3.

²⁹¹ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause D.3.

²⁹² “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause C.

²⁹³ [OEM B]’s reply of [...] to question 3.1 of Article 18(2) request for information of [...], page 2.

potential competitive alternatives to its products and reducing it in situations where Broadcom is confident of the lack of alternatives).

- (208) The termination clause stipulated in the [OEM B] TPA foresees that Broadcom can “*terminate with immediate effect upon written notice*” the [OEM B] TPA in the event that [OEM B] commits a “*material breach*” that goes unremedied for 30 days.²⁹⁴ In light of the explicit commitment in the [OEM B] TPA that [OEM B] will “*promote/propose/submit*” and “*promote and demonstrate*” only Broadcom-based solutions for STB SoCs, and in the absence of any counter-indication in the [OEM B] TPA, failure to comply with these commitments would appear, *prima facie*, to constitute a material breach. The possibility, therefore, for Broadcom to (at the very least) threaten to terminate the contract for failure to respect the exclusivity requirements, is likely to strengthen the exclusivity-inducing effect of the clauses.
- (209) Even though the [OEM B] TPA does not provide any explicit stipulations as to the interrelation between its different clauses, the Commission considers that, *prima facie*, it is likely that [OEM B]’s access to the advantages described above is preconditioned on its compliance with its commitments to “*promote/propose/submit*” and to “*promote and demonstrate*” only Broadcom STB SoCs.²⁹⁵ This is for the following reasons:
- (a) The purpose of the [OEM B] TPA is to set out the terms governing the supply of *inter alia* these products;
 - (b) The advantages would be lost in the event of termination of the [OEM B] TPA for failure to comply with a material obligation (see recital (208) above);
 - (c) Contrary to Broadcom’s contentions (see further recital (309)(b) below), [OEM B] has made a number of statements confirming that it perceives there to be a general relationship of conditionality spanning all the obligations and advantages in the [OEM B] TPA – namely: (i) “*Should Broadcom consider that with the loss of exclusivity, it cannot uphold its commitments under the current agreements, that is the preferred pricing and technical support, it would take time to renegotiate a new agreement with properly balanced parameters [...]*”;²⁹⁶ and (ii) “*A business relationship is always a give and take. If one element in a commercial arrangement falls, the counterpart may also fall [...]*”;²⁹⁷ and
 - (d) Contrary to Broadcom’s contentions, Broadcom itself has also made a number of statements confirming that it perceives there to be a general relationship of conditionality spanning all the obligations and advantages in the [OEM B] TPA (see further recital (309)(c) below).

²⁹⁴ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clause B.

²⁹⁵ In any event, it does not matter from a legal point of view whether the obligation or promise to obtain all or most of the requirements from the dominant undertaking is stipulated without further qualification or undertaken in consideration of the grant of rebates or other benefits (see Case C-85/76 *Hoffmann-La Roche & Co. AG v Commission*, EU:C:1979:36, paragraph 89 and T-155/06 *Tomra v Commission*, EU:T:2010:370, paragraph 208).

²⁹⁶ [OEM B]’s Interested Third Party Submission of 5 August 2019, Doc ID 2005, page 2.

²⁹⁷ Oral statement of [OEM B] during the Oral Hearing, Doc ID 2130-2, minute 1:32:11 to 1:32:21 of the recording.

- (210) In light of the above, the Commission considers that the [OEM B] TPA contains promises on behalf of [OEM B] to obtain exclusively (or at least almost exclusively) from Broadcom its requirements of STB SoCs and grants advantages to [OEM B] that are conditional on [OEM B] obtaining exclusively (or at least almost exclusively) from Broadcom its requirements with respect to the same products, for which Broadcom is *prima facie* dominant. Hence, the Commission considers that these provisions *prima facie* amount to exclusivity or quasi-exclusivity arrangements.
- (A.iii.) [OEM C] TPA
- (211) Under the [OEM C] TPA, [OEM C] commits to certain arrangements with respect to one product market in which Broadcom is *prima facie* dominant, namely SoCs for fibre residential gateways.
- (212) In particular, [OEM C] commits to purchase certain amounts of Broadcom SoCs for incorporation in GPON- and 10GPON-compliant fibre residential gateways – namely, by either (i) purchasing [80-100]% of [OEM C]’s global demand (excluding China) from Broadcom; or (ii) purchasing specified minimum volumes from Broadcom. These purchase commitments are valid for calendar years 2018 and 2019.²⁹⁸
- (213) [OEM C] has confirmed that in 2018 it complied with the above provision by purchasing more than [80-100]% of its demand from Broadcom rather than by purchasing specific minimum volumes from Broadcom. Furthermore, [OEM C] confirmed that its fibre residential gateway offering is overwhelmingly (approximately [80-100]%) centred upon fibre residential gateways that are compliant with the GPON and 10GPON standards.²⁹⁹ The provision described at recital (212) therefore amounts, *de jure* or *de facto*, to a promise by [OEM C] to purchase its requirements of fibre residential gateway SoCs almost exclusively from Broadcom.
- (214) Under the [OEM C] TPA, [OEM C] also commits to ensure that all “[...]”³⁰⁰ In addition, [OEM C] commits to provide Broadcom with “*a right of first and last refusal to secure opportunity/design wins on new opportunities/designs requiring Broadcom products not included herein*”.³⁰¹ Given the breadth of these clauses, the Commission considers that these obligations reinforce [OEM C]’s commitment to purchase [80-100]% of its global demand (excluding China) for the relevant products from Broadcom.
- (215) The termination clause stipulated in the [OEM C] TPA foresees that Broadcom can terminate “*with immediate effect upon written notice*” the [OEM C] TPA in the event that [OEM C] commits a “*material breach*” that goes unremedied for 30 days.³⁰² In light of the explicit commitment in the [OEM C] TPA that [OEM C] will purchase fibre residential gateway SoCs almost exclusively from Broadcom, and in the absence of any counter-indication in the [OEM C] TPA, failure to comply with that commitment would appear, *prima facie*, to constitute a material breach. The

²⁹⁸ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clauses C.2.i and 2.ii.

²⁹⁹ [OEM C]’s response of [...] to question 3 of Article 18(2) Request for Information of [...], page 2.

³⁰⁰ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.2.iii.

³⁰¹ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.2.1.iv.

³⁰² “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause B.

possibility, therefore, for Broadcom to (at the very least) threaten to terminate the contract for failure to respect the quasi-exclusivity requirements, is likely to strengthen the exclusivity-inducing effect of the clauses.

- (216) Upon the explicit condition that [OEM C] comply with all its commitments as identified above, [OEM C] benefits from preferential pricing from Broadcom, consisting of: (i) [...];³⁰³ [...], (ii) [...];³⁰⁴ and (iii) [...].³⁰⁵
- (217) Under the [OEM C] TPA, [OEM C] also benefits from various other advantages, including: (i) [...];³⁰⁶ and (ii) [...].³⁰⁷ The Commission considers that [OEM C]'s access to the benefits described above is likely preconditioned on its compliance with its commitments as described above insofar as Broadcom could terminate the [OEM C] TPA - thereby depriving [OEM C] of these advantages - in the event of [OEM C]'s non-compliance with material obligations stipulated in the [OEM C] TPA (see recital (215) above).
- (218) In light of the above, the Commission considers that the [OEM C] TPA contains promises on behalf of [OEM C] to obtain almost exclusively from Broadcom its requirements of SoCs for fibre residential gateways. It also grants advantages to [OEM C] that are conditional on [OEM C] obtaining almost exclusively from Broadcom its requirements of SoCs for fibre residential gateways, for which Broadcom is *prima facie* dominant. Hence, the Commission considers that these provisions *prima facie* amount to quasi-exclusivity arrangements.
- (A.iv.) [OEM D] MoU
- (219) Under the [OEM D] MoU, [OEM D] commits to certain arrangements with respect to three product markets in which Broadcom is *prima facie* dominant: (i) STB SoCs, (ii) xDSL residential gateway SoCs; and (iii) fibre residential gateway SoCs.
- (220) In particular, [OEM D] commits: (i) to “*promote and use Broadcom solutions exclusively to answer RFP/RFQ in relation to [inter alia STB SoCs,³⁰⁸ xDSL residential gateway SoCs³⁰⁹ and fibre residential gateway SoCs³¹⁰]*” except where Broadcom is unable to provide the solution and a “*Bid Escalation Process*” (a procedure involving escalation of the matter [...] within Broadcom and [OEM D]) has

³⁰³ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.1.i, Clause C.1.ii and Appendix 1.

³⁰⁴ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.1.iii.

³⁰⁵ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.1.iii.

³⁰⁶ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause D.

³⁰⁷ “*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause E.

³⁰⁸ Referred to in the [OEM D] MoU as “*video [...] SoCs*” (Clause 1.A(i)) and “*STB*” (preamble).

³⁰⁹ Referred to in the [OEM D] MoU as “*DSL [...] SoCs*” (Clause 1.A(i)) and “*DSL*” (preamble). See further footnote 5 above.

³¹⁰ Referred to in the [OEM D] MoU as “*PON [...] SoCs*” (Clause 1.A(i)) and “*PON*” (preamble). See further footnote 272 above (in relation to the [OEM A] CSA).

been complied with;³¹¹ and (ii) to “solely promote and demonstrate Broadcom based products”.³¹²

- (221) Given that the STB and residential gateway industry is based on OEMs submitting tenders to service providers (see recital (26) above), commitments to “promote and use” or to “promote and demonstrate” only Broadcom-based products effectively have equivalent effects to promises on behalf of a customer to obtain exclusively (or at least almost exclusively) its requirements from Broadcom.
- (222) The termination clause stipulated in the [OEM D] MoU foresees that Broadcom can terminate “immediately upon written notice” the [OEM D] MoU in the event that [OEM D] commits a “material breach” that goes unremedied for 30 days.³¹³ In light of the explicit commitment in the [OEM D] MoU that [OEM D] will “promote and use Broadcom products exclusively” and “solely promote and demonstrate Broadcom-based products” with respect to STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs, and in the absence of any counter-indication in the [OEM D] MoU, failure to comply with those commitments would appear, *prima facie*, to constitute a material breach. The possibility, therefore, for Broadcom to (at the very least) threaten to terminate the contract for failure to respect the exclusivity requirements, is likely to strengthen the exclusivity-inducing effect of the clauses.
- (223) Under the [OEM D] MoU, [OEM D] benefits from various other advantages,³¹⁴ including: (i) [...] price advantage [...]; (ii) [...]; (iii) [...]; (iv) [...]; and (v) [...]. The Commission considers that [OEM D]’s access to these benefits is likely preconditioned on its compliance with its commitments above.³¹⁵ In any event, the advantages would be lost in the event of termination of the [OEM D] MoU for failure to comply with a material obligation (see recital (222) above).
- (224) In addition, until [...] 2019,³¹⁶ under the [OEM D] MoU, upon the condition that [OEM D] complied with its commitments as expressed elsewhere in the [OEM D] MoU (as indicated by the stipulation “Agreed Pricing Changes to support this MoU” within the “Price” clause³¹⁷), [OEM D] obtained various preferential pricing arrangements, including with respect to *inter alia* (i) SoCs for STBs [...],³¹⁸ and (ii) unspecified products for xDSL and fibre residential gateways [...].³¹⁹

³¹¹ Note that [OEM D] is required to “provide constant and proactive communication and full transparency with Broadcom” on the Bid Escalation Process (“Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 1.A.ii).

³¹² “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 1.A.

³¹³ “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 8.

³¹⁴ “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clauses 1.B and 3.

³¹⁵ Broadcom has made statements confirming that it perceives there to be a general relationship of conditionality spanning all obligations and advantages contained within the Agreements (see recital (309)(d) below).

³¹⁶ The [OEM D] MoU Amendment of [...] 2019 deleted the relevant parts of Clause 6 within the [OEM D] MoU. See further recital (224) below.

³¹⁷ “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 6.

³¹⁸ “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 6.A(i).

³¹⁹ “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 6.A(iii).

- (225) The [OEM D] MoU Amendment of [...] 2019 removes the price advantages set out at Clause 6 with respect to the products covered in this Decision. The exclusivity commitment in Clause 1.A remains unaltered, however, and in Clause 1.B(i) of the [OEM D] MoU, [...]. The [OEM D] MoU Amendment specifies that “*all other terms and conditions of the MoU [i.e. those not mentioned in the [OEM D] MoU Amendment] shall remain in full force and effect*”. As the [OEM D] MoU Amendment does not alter the relationship between Clause 1.A and Clause 1.B(i) of the [OEM D] MoU, the [OEM D] MoU Amendment does not alter the Commission’s conclusions as set out in recital (226) below.
- (226) In light of the above, the [OEM D] MoU contains promises on behalf of [OEM D] to obtain exclusively (or at least almost exclusively) from Broadcom its requirements of STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs. It also grants advantages to [OEM D] that are conditional on [OEM D] obtaining exclusively (or at least almost exclusively) from Broadcom its requirements with respect to the same products, for which Broadcom is *prima facie* dominant. Hence, the Commission considers that these provisions *prima facie* amount to exclusivity or quasi-exclusivity arrangements.
- (A.v.) [OEM E] SoC SPA
- (227) Under the [OEM E] SoC SPA, [OEM E] commits to certain arrangements with respect to three product markets in which Broadcom is *prima facie* dominant: (i) STB SoCs; (ii) fibre residential gateway SoCs; and (iii) xDSL residential gateway SoCs.
- (228) In particular, [OEM E] commits to an “*Overall Guaranteed Broadcom minimum market share: [80-100]% (w/o China) (Measured in units)*” – with more detailed requirements for certain products,³²⁰ including: (i) a [90-100]% purchase commitment for STB SoCs; (ii) an [80-90]% purchase commitment for xDSL residential gateway SoCs; and (iii) an [80-90]% purchase commitment for fibre residential gateway SoCs.³²¹ This clause therefore amounts to a promise by [OEM E] to obtain exclusively its requirements from Broadcom in the case of STB SoCs and to obtain almost exclusively its requirements from Broadcom in the case of xDSL residential gateway SoCs and fibre residential gateway SoCs.

³²⁰ For an explanation of the term “telco” employed in the [OEM E] SoC SPA and its relationship to the products within the scope of this Decision, see section 6.6 above.

³²¹ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], second bullet point.

- (229) Under the [OEM E] SoC SPA, [OEM E] benefits from several advantages, including: (i) [...];³²² (ii) [...];³²³ (iii) [...];³²⁴ (iv) [...];³²⁵ (v) [...];³²⁶ (vi) [...];³²⁷ and (vii) [...].³²⁸
- (230) The Commission considers that [OEM E]’s access to these advantages is preconditioned on its compliance with its purchasing commitments above insofar as the [OEM E] SoC SPA takes the form of a bullet point list in which [OEM E]’s commitments are followed by the advantages granted by Broadcom.
- (231) In any event, in light of the widely-framed termination events stipulated in the overarching agreement to which the [OEM E] SoC SPA is a supplement,³²⁹ Broadcom could foreseeably terminate the overarching agreement - thereby depriving [OEM E] of these advantages, in the event of [OEM E]’s non-compliance with the commitments stipulated in the [OEM E] SoC SPA. Notably, the termination events stipulated within the overarching agreement include circumstances where either party “*materially fails to perform or comply with this Agreement or any provision hereof, provided the Party claiming breach notifies the other Party and such breach is not remedied within 30 days [or within a longer mutually-agreed period in certain circumstances].*”³³⁰
- (232) In light of the above, the Commission concludes that the [OEM E] SoC SPA contains promises on behalf of Techicolor to obtain exclusively (or at least almost exclusively) from Broadcom its requirements of STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs. It also grants advantages to [OEM E] that are conditional on [OEM E] obtaining exclusively (or at least almost exclusively) from Broadcom its requirements with respect to the same products, for which Broadcom is *prima facie* dominant. Hence, the Commission considers that these provisions *prima facie* amount to exclusivity or quasi-exclusivity arrangements.

³²² Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], fourth bullet point.

³²³ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], third bullet point.

³²⁴ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], fifth bullet point. [OEM E] explains that this means a [...] (see [OEM E]’s reply of [...] to question 7 of Article 18(2) request for information of [...], page 4).

³²⁵ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], sixth bullet point. [OEM E] explains that this means a [...] (see [OEM E]’s reply of [...] to question 8 of Article 18(2) request for information of [...], page 4).

³²⁶ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], seventh bullet point.

³²⁷ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], ninth bullet point.

³²⁸ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], tenth bullet point.

³²⁹ “Preferred Supplier Framework Purchase Agreement” entered into between Broadcom and [...] on [...] 2009, Doc ID 1068-16, [...] being [OEM E]’s previous name. See further [OEM E]’s reply of [...] to question 3(a) of Article 18(2) request for information of [...], page 2.

³³⁰ “Preferred Supplier Framework Purchase Agreement” entered into between Broadcom and [...] on [...] 2009, Doc ID 1068-16, [...] being [OEM E]’s previous name, Clause 17.1.a.

- (A.vi.) [OEM F] LoI
- (233) Under the [OEM F] LoI, [OEM F] commits to certain arrangements with respect to two product markets in which Broadcom is *prima facie* dominant, namely xDSL residential gateway SoCs and fibre residential gateway SoCs.
- (234) In particular, [OEM F] commits to “use Broadcom as the exclusive supplier [for xDSL residential gateway SoCs and fibre residential gateway SoCs] in North America, Mexico, all the member countries of the European Union, Nordic countries, Switzerland, Russia, Turkey, Japan, Singapore, Australia, New Zealand, UAE, and Saudi Arabia if the annual revenue (for the [Total Available Market] of the chipset) of an RFP released during the term of the LOI is more than \$[...] US Dollars.”³³¹ This clause therefore amounts to a promise by [OEM F] to obtain exclusively (or at least almost exclusively) from Broadcom its requirements of xDSL residential gateway SoCs and fibre residential gateway SoCs for all projects above a certain monetary threshold.
- (235) This conclusion is not altered by the fact that the scope of the [OEM F] LoI is limited to certain countries indicated above. This is because the fact that the commitment extends to *all the member countries of the European Union* means that the whole territory of the EU is covered. Furthermore, the countries covered by the [OEM F] LoI (which include the EU and the US) are likely to represent a sizeable portion of worldwide sales of xDSL residential gateway SoCs and fibre residential gateway SoCs and therefore are likely to account for a significant and strategic portion of [OEM F] sales.
- (236) In addition, this conclusion is not altered by the fact that RFPs generating annual revenues below USD [...] million are excluded from the above commitment. This is because these sales are negligible in value and likely to constitute sales to small and non-strategic customers. More specifically, given that, according to IHS data,³³² [OEM F] xDSL residential gateway sales accounted in 2017 to approx. USD [...] million, an RFP generating annual revenues of USD [...] million would amount to less than [0-5]% of [OEM F]’s yearly sales.
- (237) Moreover, the termination clause stipulated in the [OEM F] LoI foresees that Broadcom can terminate the [OEM F] LoI “*at any time, with or without cause*”.³³³ The possibility, therefore, for Broadcom to (at the very least) threaten to terminate the contract for failure by [OEM F] to respect the exclusivity requirements relative to xDSL residential gateway SoCs and fibre residential gateway SoCs, is likely to strengthen the exclusivity-inducing effect of the clauses.
- (238) In light of the above, the Commission concludes that the [OEM F] LoI contains promises on behalf of [OEM F] to obtain exclusively (or at least almost exclusively) from Broadcom its requirements of SoCs for xDSL and fibre residential gateways, for which Broadcom is *prima facie* dominant. Hence, the Commission considers that these provisions *prima facie* amount to exclusivity or quasi-exclusivity arrangements.

³³¹ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, page 3.

³³² Figures as of year 2017 calculated by the industry benchmarking company IHS – included as Annex 13.4 to Telefonica’s reply of 30 November 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1287-16.

³³³ “*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Clause 5.

(A.vii.) Conclusions on exclusivity and quasi-exclusivity arrangements

(239) In light of the foregoing, the Commission concludes that the various exclusive purchasing arrangements and/or advantages conditional on exclusivity described in sections A.i to A.vi above *prima facie* amount to a system of exclusivity and quasi-exclusivity arrangements.

(B.) Leveraging restrictions

(240) Five of the Agreements contain provisions that leverage Broadcom's market power from one or more product markets to one or more adjacent but separate product markets ("leveraging restrictions").

(241) In certain instances, such leveraging is achieved by means of advantages granted in markets in which Broadcom is *prima facie* dominant, which are conditional on customers buying exclusively or almost exclusively products from Broadcom in a market in which Broadcom is not *prima facie* dominant. This conduct has the likely effect of extending Broadcom's dominance from one or more markets to a different market. This Decision considers this type of restrictions with regard to leveraging from the markets for STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs into the market for cable residential gateways SoCs.

(242) In other cases, Broadcom engages in cross-leveraging, meaning that Broadcom leverages market power within a certain portfolio composed of markets in which it is *prima facie* dominant. This is done by means of advantages granted in markets in which Broadcom is *prima facie* dominant, which are conditional on customers buying exclusively or almost exclusively products from Broadcom in markets in which Broadcom is also *prima facie* dominant. This conduct has the likely effect of strengthening Broadcom's dominance in the markets in which Broadcom is *prima facie* dominant. This Decision considers this type of restrictions with regard to leveraging from and into the markets for STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs.

(243) Sections B.i to B.v below explain why certain obligations within each of the five Agreements in question constitute leveraging restrictions. Section B.vi below sets out the Commission's provisional conclusion as regards Broadcom's leveraging restrictions.

(B.i.) [OEM A] CSA

(244) Under the [OEM A] CSA, [OEM A] commits to purchase STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs – products in which Broadcom is *prima facie* dominant - exclusively (or at least almost exclusively) from Broadcom.³³⁴

(245) In return, [OEM A] receives the advantages described in recital (198) above, which relate *inter alia* to STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs, products in which Broadcom is *prima facie* dominant. Given that access to these benefits is likely preconditioned on [OEM A]'s compliance with its commitments to purchase SoCs in all other markets covered by the [OEM A] CSA (see recital (198) above), the Commission considers that, *prima facie*, the [OEM A] CSA enables Broadcom to cross-leverage its market power between STB SoCs, xDSL

³³⁴ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]'s revised reply of [...] to Article 18(2) request for information of [...], Clauses 4.6 and 5.2.

residential gateway SoCs and fibre residential gateway SoCs, insofar as it makes the advantages granted in one product market conditional on [OEM A]’s commitment to obtain exclusively (or at least almost exclusively) its requirements from Broadcom in another.

(246) In light of the above, the Commission considers that the [OEM A] CSA contains provisions which *prima facie* amount to leveraging restrictions. These restrictions likely enable Broadcom to cross-leverage its market power between STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs.

(B.ii.) [OEM B] TPA

(247) Under the [OEM B] TPA, [OEM B] commits to purchase cable residential gateway SoCs exclusively (or at least almost exclusively) from Broadcom. This is because the commitments described in section A.ii above apply equally to these products.³³⁵

(248) In return, [OEM B] receives the advantages described in recital (206) above, which relate *inter alia* to STB SoCs, products in which Broadcom is *prima facie* dominant. The Commission considers that [OEM B]’s access to these benefits is likely preconditioned on its compliance with its commitments to purchase cable residential gateway SoCs exclusively (or at least almost exclusively) from Broadcom for the same reasons as those set out in recitals (208) and (209) above.

(249) In light of the above, the Commission considers that the [OEM B] TPA contains provisions which *prima facie* amount to leveraging restrictions. These restrictions likely enable Broadcom to leverage its market power from STB SoCs into cable residential gateway SoCs.

(B.iii.) [OEM D] MoU

(250) Under the [OEM D] MoU (including under the [OEM D] MoU Amendment), [OEM D] commits to purchase cable residential gateway SoCs exclusively (or at least almost exclusively) from Broadcom. This is because the commitments described in section A.iv above apply equally to these products.³³⁶

(251) In return, [OEM D] received until [...] 2019³³⁷ the advantages described in recital (224) above, and continues to receive the advantages described in recital (223) above - which all relate *inter alia* to STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs, products in which Broadcom is *prima facie* dominant. The Commission considers that [OEM D]’s access to these benefits is likely preconditioned on its compliance with its commitments to purchase cable residential gateway SoCs exclusively (or at least almost exclusively) from Broadcom for the same reasons as those set out in recitals (222) and (223) above.

(252) In addition, under the [OEM D] MoU (including under the [OEM D] MoU Amendment), [OEM D] commits to purchase STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs – products in which Broadcom is *prima facie* dominant - exclusively (or at least almost exclusively) from Broadcom (see recitals (219) to (221)). The Commission considers that, *prima facie*, the [OEM D] MoU enables Broadcom to cross-leverage its market power between STB SoCs, xDSL

³³⁵ “Technology Partnership Agreement” entered into between Broadcom and [OEM B] on [...] 2017, Doc ID 573, Clauses D.1. and D.2.

³³⁶ “Non-Binding Memorandum of Understanding” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 1.A.

³³⁷ The [OEM D] MoU Amendment deleted the relevant parts of Clause 6, which contained these advantages.

residential gateway SoCs and fibre residential gateway SoCs, insofar as it makes the advantages granted in one product market conditional on [OEM D]'s commitments to obtain exclusively (or at least almost exclusively) its requirements from Broadcom in another for the same reasons as discussed in recital (251) above.

(253) In light of the above, the Commission considers that the [OEM D] MoU contains provisions which *prima facie* amount to leveraging restrictions. These restrictions likely enable Broadcom to leverage its market power from STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs into cable residential gateway SoCs. In addition, they likely enable Broadcom to also cross-leverage its market power between STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs.

(B.iv.) [OEM E] SoC SPA

(254) Under the [OEM E] SoC SPA, [OEM E] commits to purchase cable residential gateway SoCs – products in which Broadcom is not *prima facie* dominant - exclusively from Broadcom. This is because pursuant to the terms of the [OEM E] SoC SPA, [OEM E] commits to purchase [80-100]% of cable residential gateway SoCs from Broadcom.³³⁸

(255) In return, [OEM E] receives the advantages described in recital (229) above, which relate *inter alia* to STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs, products in which Broadcom is *prima facie* dominant. The Commission considers that [OEM E]'s access to these benefits is likely preconditioned on its compliance with its commitments to purchase cable residential gateway SoCs exclusively from Broadcom for the same reasons as those set out in recitals (230) and (231) above.

(256) In addition, under the [OEM E] SoC SPA, [OEM E] commits to purchase STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs – products in which Broadcom is *prima facie* dominant - exclusively (or at least almost exclusively) from Broadcom (see recitals (227) and (228)). The Commission considers that, *prima facie*, the [OEM E] SoC SPA enables Broadcom to cross-leverage its market power between STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs, insofar as it makes the advantages granted in one product market conditional on [OEM E]'s commitments to obtain exclusively (or at least almost exclusively) its requirements from Broadcom in another for the same reasons discussed in recital (255) above.

(257) In light of the above, the Commission considers that the [OEM E] SoC SPA contains provisions which *prima facie* amount to leveraging restrictions. These restrictions likely enable Broadcom to leverage its market power from STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs into cable residential gateway SoCs. In addition, they likely also enable Braodcom to cross-leverage market power between STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs.

³³⁸ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]'s reply of [...] to Article 18(3) Decision of [...], second bullet point.

- (B.v.) [OEM F] LoI
- (258) Under the [OEM F] LoI, [OEM F] commits to purchase xDSL and fibre residential gateway SoCs – products in which Broadcom is *prima facie* dominant - exclusively (or at least almost exclusively) from Broadcom.
- (259) Even if [OEM F] does not obtain any specific advantage from the [OEM F] LoI for respecting the exclusivity inducing provisions, the Commission considers that, *prima facie*, the [OEM F] LoI enables Broadcom to cross-leverage its market power between xDSL residential gateway SoCs and fibre residential gateway SoCs, insofar as it could (at the very least) threaten to terminate the contract and thereby, for example, threaten to retaliate with interrupting supplies, deteriorating technical assistance or increasing prices in one market for [OEM F] not fulfilling its commitment to obtain exclusively (or at least almost exclusively) its requirements from Broadcom in another.
- (260) In light of the above, the Commission considers that the [OEM F] LoI contains provisions which *prima facie* amount to leveraging restrictions. These restrictions likely enable Broadcom to cross-leverage its market power between xDSL residential gateway SoCs and fibre residential gateway SoCs.
- (B.vi.) Conclusions on leveraging restrictions
- (261) In light of the foregoing, the Commission concludes that the various provisions described in sections 8.5.2.1.B.i. to 8.5.2.1.B.v. above *prima facie* amount to leveraging restrictions.
- (C.) Broadcom’s arguments on the legal qualification of the Agreements
- (262) The Commission’s assessment in sections A. and B. above is not affected by Broadcom’s claims concerning the legal qualification of the Agreements.
- (263) Broadcom’s general claims concerning the legal qualification of the Agreements are addressed in section 8.5.2.1.C.i below. Broadcom’s specific claims concerning the legal qualification of individual Agreements are addressed in sections 8.5.2.1.C.ii to 8.5.2.1.C.vii below.
- (C.i.) Broadcom’s general claims on the legal qualification of the Agreements
- (264) Broadcom brought forward a number of general claims concerning the legal qualification of the Agreements. In particular, Broadcom submitted that:
- (a) None of the Agreements contains exclusivity-inducing provisions because service providers are kingmakers who exert insurmountable levels of influence in tender processes, including by determining specifications;³³⁹
 - (b) None of the Agreements contains exclusivity-inducing provisions because the benefits contained within the Agreements are not conditioned upon compliance with the clauses with which the Commission takes issue, but rather reflect Broadcom’s significant investment in its commercial relationships with the six OEMs and with service providers;³⁴⁰

³³⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 4, 122 to 126, 141, 143; Annex 1 to Broadcom’s SO Response titled “*Economic Considerations that Should be More Thoroughly Explored Before Interim Measures are Imposed Against Broadcom*”, Doc ID 1843-1, pages 2-3.

³⁴⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 129, 133, 134 and 142.

- (c) “*Escalation processes*” or “*opt outs*” in the Agreements allow OEMs to bid non-Broadcom solutions and preclude the conclusion that those Agreements contain exclusivity-inducing provisions. A number of Broadcom’s OEM partners have bid non-Broadcom components to service providers;³⁴¹
- (d) The Agreements simply concretise an already existing and entirely voluntary state of affairs in which OEMs’ perception of the quality of Broadcom’s offering and of Broadcom being a valued partner³⁴² has led to a longstanding commercial relationship with the relevant OEM, and a *de facto* exclusive or quasi-exclusive supply of Broadcom products. Given that other suppliers were not able to meet the OEM partners’ technology and service needs,³⁴³ the Agreements cannot be considered as containing exclusivity inducing provisions;³⁴⁴
- (e) Certain Agreements are designated as “*non-binding*” and/or contain wording obliging “*good faith*” or the use of “*best efforts*”. This precludes the conclusion that those Agreements contain exclusivity-inducing provisions;³⁴⁵ and
- (f) The lack of explicit stipulation as to the interrelation between contractual clauses within certain Agreements precludes the conclusion that there is cross-product conditionality.³⁴⁶

(265) Broadcom’s arguments should be rejected for the following reasons.

(266) First, with regard to the level of pressure exercised by service providers, as Broadcom is aware,³⁴⁷ the Commission appreciates the tender-driven nature of the markets in this case and the role that service providers play within that dynamic (see recital (26) above). It is precisely the tender-driven nature of the markets at stake that explains certain of the restrictions put in place by Broadcom through the Agreements (see for example recitals (202), (203) and (209) above, in which the Commission concludes that obligations to “promote/propose/submit” only Broadcom solutions constitute exclusivity and quasi-exclusivity arrangements). On the other hand, Broadcom’s arguments regarding the role of service providers are misplaced for the following reasons.

³⁴¹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 9 (generally), paragraphs 136 and 158 (concerning the [OEM A] CSA), paragraph 164 (concerning the [OEM D] MoU), and paragraph 174 (concerning the [OEM B] TPA); see also Broadcom’s Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, points 3 f., and g., page 5.

³⁴² Broadcom’s Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 3.e., pages 3-5.

³⁴³ Broadcom’s Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 3.c., pages 2-3.

³⁴⁴ Broadcom’s SO Response, Doc ID 1843-15, paragraph 191 (generally), paragraph 156 (concerning the [OEM A] CSA), paragraph 163 (concerning the [OEM D] MoU), paragraph 167 (concerning the [OEM E] SoC SPA), paragraphs 171 and 172 (concerning the [OEM B] TPA), paragraph 180 (concerning the [OEM C] TPA) and paragraph 184 (concerning the [OEM F] LoI).

³⁴⁵ See, for example, Broadcom’s SO Response, Doc ID 1843-15, paragraphs 4, 58 and 149 (generally), paragraphs 135, 155 and 157 (concerning the [OEM A] CSA), paragraph 203 (concerning the [OEM B] TPA) and paragraph 160 (concerning the [OEM D] MoU). See also Broadcom’s Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 3.d., page 3.

³⁴⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 190 to 192; Annex 1 to Broadcom’s SO Response titled “*Economic Considerations that Should be More Thoroughly Explored Before Interim Measures are Imposed Against Broadcom*”, Doc ID 1843-1, pages 3-4.

³⁴⁷ Broadcom SO Response recognises that the SO included a section entitled “*Market dynamics, customers and applications*”, which is reflected in section 5 of this Decision.

- (267) In the first place, Broadcom’s argument that service providers are “kingmakers” is overstated in light of the multiple service provider quotations at recital (370) and (395) below, which demonstrate that OEMs remained unwilling to propose non-Broadcom solutions despite explicit service provider requests for proposals that feature non-Broadcom solutions.
- (268) In addition, a Liberty Global Request for Proposal in the [...] project provides first-hand, contemporaneous evidence which confirms the fact that [...]. It states: “[...]”.³⁴⁸ The fact that Liberty Global, a large service provider, defines its final products on the basis of [...] underlines that [...].
- (269) In the second place, while Broadcom refers to a Vodafone RFI response in support of its argument, such RFI response does not support Broadcom’s conclusions and is in fact consistent with the Commission’s conclusion that the Agreements are capable of having a significant impact on the OEMs’ procurement choices. In the situation described by Vodafone, all OEMs involved in a particular Vodafone RFQ process proposed Broadcom solutions at final offer stage in April 2017. OEMs went as far as informing one of Broadcom’s competitors that Vodafone was allegedly asking for solutions only based on Broadcom’s SoCs, something that Vodafone describes as “*not [our] intention*”³⁴⁹ and which it had to clarify.
- (270) In the third place, Broadcom places emphasis on statements by [OEM A] to the effect that (i) service providers may specify which chips should be used in tender processes and that [OEM A] may switch suppliers accordingly;³⁵⁰ and (ii) Broadcom is often specified by service providers in RFQs (and hence OEMs have no flexibility on choosing Broadcom’s competitors).³⁵¹ However:
- (a) The fact that service providers may specify which chips should be used in tender processes does not mean that the Agreements leave the OEMs free to propose those solutions. This is because the “opt-outs” in the Agreements do not appear to offer a sufficient degree of autonomy to the OEMs (see recitals (273) to (277) below). Furthermore, there appear to be a significant number of service providers that do not specify which SoC supplier should be used to respond to calls for tenders (see recitals (370) and (395) below); and
 - (b) The quote concerning Broadcom being “*often*” specified by service providers in RFQs is selective and misleading. The quotation upon which Broadcom relies omits contextual references to Broadcom’s “*strong market position*”, “*close working relationships with operators and OEMs*” and its status as “*often the incumbent*” from the middle of a fuller quotation that featured in the SO. In any event, the use of the word “*often*” confirms that there are instances in which a service provider does not ask OEMs to submit offers based on Broadcom SoCs.
- (271) In the fourth place, Cable Europe could identify only one member in their membership that sets out specific functionality requirements in tender processes.³⁵²

³⁴⁸ Request for Proposal entitled [...], included as Annex 19 to Liberty Global’s reply of 14 November 2018 to the Article 18(3) Decision of 24 October 2018, Doc ID 1205-13, page 5.

³⁴⁹ Vodafone’s reply of 14 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1643, page 1.

³⁵⁰ [OEM A]’s reply of [...] to question 27.1 of the request for information of [...] [...].

³⁵¹ [OEM A]’s reply of [...] to question 39.2 of the request for information of [...] [...].

³⁵² See Cable Europe’s comments on the SO, Doc ID 2070, page 2.

- (272) Second, Broadcom’s argument that the Agreements are necessary to reflect Broadcom’s significant investment in its commercial relationships constitutes an attempt to present an objective justification for the targeted Agreements, which is addressed at recital (407) below.
- (273) Third, the “*escalation processes*” or “*opt outs*” in the Agreements do not effectively allow OEMs to bid non-Broadcom solutions. In particular, Broadcom’s portrayal of these mechanisms overlooks a number of general and specific characteristics of such mechanisms, which significantly restrict OEMs’ freedom of action for the following reasons.³⁵³
- (274) In the first place, the “*escalation processes*” generally stipulate one or both of the following as a precondition before an OEM may avail itself of such a mechanism: (i) [...];³⁵⁴ and (ii) [...].³⁵⁵ Such requirements drastically limit the events capable of triggering the application of an escalation process.
- (275) In the second place, the “*escalation processes*” or “*opt outs*” set up a series of procedural steps that must be complied with before sourcing from Broadcom’s competitors is possible and often stipulate a requirement to escalate to the level of very senior or specifically named individuals within Broadcom and the relevant OEM.³⁵⁶ In this respect, given the need for customers to engage in these processes and the time that this is likely to require,³⁵⁷ they tend to discourage, rather than facilitate, switching and multi-sourcing.
- (276) In the third place, the actual wording of every “*escalation process*” contained in the Agreements implies that cooperation by Broadcom in the process is always required. This means that the “*escalation processes*” or “*opt outs*” do not effectively allow unilateral deviations³⁵⁸ by OEMs.³⁵⁹ It does not, therefore, follow from the mere

³⁵³ Broadcom’s specific submissions on “*escalation processes*” – which pertain to the [OEM A] CSA, the [OEM B] TPA and the [OEM D] MoU - are addressed, respectively, in sections (C.ii), (C.iii) and (C.v).

³⁵⁴ This is true of the [OEM C] TPA (“*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.2(iii)) and the [OEM F] LoI (“*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, Clause 1.a)).

³⁵⁵ This is true of the [OEM C] TPA (“*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.2(iii)) insofar as, once a service provider has requested a non-Broadcom solution, one of the two circumstances in which it is permissible for [OEM C] to bid a non-Broadcom solution is where Broadcom is unable to satisfy the service provider’s request from a technological or volume perspective.

³⁵⁶ See for example Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], second bullet point.

³⁵⁷ In particular, by impeding competing chip suppliers’ ability jointly to develop products with OEMs prior to specific tenders until such time as Broadcom grants consent, Broadcom ensures that its competitors always remain one step behind.

³⁵⁸ Broadcom’s mention of the Commission’s favourable assessment of customers’ “*unilateral right to terminate*” in *Distrigas*, in the same breath as the “*opt-outs in the OEM partnerships*,” is therefore inconsistent with the “*escalation processes*” as characterised in the Agreements (see Broadcom’s SO Response, Doc ID 1843-15, paragraph 137).

³⁵⁹ The [OEM C] TPA requires active participation by Broadcom in the process (“*Technology Partnership Agreement*” entered into between Broadcom and [OEM C] on [...] 2017, Doc ID 1489, Clause C.2(iii)). The [OEM E] SoC SPA names individuals, presumably one from each of [OEM E] and Broadcom, who must agree on any exception (Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], second bullet point). The [OEM F] LoI requires Broadcom to participate actively in the process (“*Letter of Intent*” entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, Clause 1.a)).

inclusion of such a mechanism that the underlying obligation is materially affected – far less that the legal qualification of that (exclusivity or quasi-exclusivity) obligation should be altered.

- (277) In the fourth place, Broadcom has provided no evidence of the concrete functioning of the “*escalation processes*” and “*opt outs*”. Besides referring to statements provided by [OEM A] and [OEM D] in their submissions to the Commission following the issuance of the SO,³⁶⁰ Broadcom has not provided any substantiated examples of OEMs successfully requesting an exemption from the Agreements to ship a product incorporating a competing SoC.
- (278) Fourth, Broadcom’s claim that the Agreements simply concretise an already existing and entirely voluntary state of affairs is contradicted by evidence on the file, is at odds with other central Broadcom claims and is, ultimately, irrelevant.
- (279) In the first place, the evidence cited at recitals (364)(c) and (368) below demonstrates that Broadcom exerted pressure on certain OEMs in order to obtain their signature in the Agreements. In any event, the fact that other OEMs might have willingly entered into the Agreements is entirely consistent with the fact that they generally gain significant advantages compared to their rivals and share the benefits from Broadcom’s market power, at the expense of competitors and service providers.
- (280) In the second place, there is evidence in the file that the Agreements have led the OEMs to switch away from Broadcom’s competitors (see recitals (368) and (369) below).
- (281) In the third place, Broadcom’s claims that other suppliers were not able to meet the OEM partners’ technology and service needs are not supported by reliable evidence. Broadcom mainly refers to statements made by [OEM A], [OEM D] and [OEM E] in letters sent to the Commission following the adoption of the SO.³⁶¹ As is demonstrated in recitals (397) to (402) below, these statements lack credibility. In addition, they are not corroborated by other submissions by OEMs (including [OEM D] and [OEM E]), which suggest that OEMs could switch chip suppliers rather than being required to stay with one and the same chip supplier in the long term.³⁶²
- (282) In the fourth place, even if Broadcom’s claims were correct (which is not the case), the fact that the Agreements crystallise the *status quo* is, if anything, an element confirming that they tend to preserve (and even strengthen) through contractual

³⁶⁰ See Doc ID 1846, page 1 and Doc ID 1792, pages 1 and 2. These statements are also unsubstantiated and lack credibility for the reasons explained in recitals (397) to (400). These statements are referred to in paragraphs 3(a) to 3(i) of Broadcom’s Response to the Letter of Facts, Doc ID 2154 and in Broadcom’s presentations given at the Oral Hearing, see plenary session presentation, Doc ID 2204, slides 12, 18, 28, 30, 33, 58, and closed session presentation, Doc ID 2203, slides 4, 5, 6, 40, 48]

³⁶¹ See Doc IDs 1846, 1792 and 2057, respectively.

³⁶² [OEM D]’s reply of [...] to question 27 of Article 18(2) request for information of [...], page 9; [OEM E]’s reply of [...] to question 27 of Article 18(2) request for information [...], page 13; see also (i) [OEM B]’s observations on the SO, Doc ID 2005, page 2 - in which [OEM B] states that lifting the exclusivity would give [OEM B] more flexibility in sourcing its requirements. For the avoidance of doubt, the argument that service provider specifications constrain OEMs to use only Broadcom solutions is not sustainable in view of Cable Europe’s comments on the SO, Doc ID 2070, page 2 - in which Cable Europe states: (i) that its members consider it “*important to have multiple chipset suppliers*”; (ii) that one supplier has historically held a “*two OEM, two SoC policy [...] to mitigate risk*” and that cases where there is only one suitable option are “*exceptions*”; (iii) that one member “*has identified strategic, financial and operational risks to their dependency on one SOC provider*”; and (iv) that another member “*always seeks to maintain a diversity of supply of chipsets for both cable modems and set top boxes.*”

arrangements Broadcom's *prima facie* dominant positions in STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs.

- (283) In the fifth place, if Broadcom's claims in this regard were true, which is not the case, this invalidates Broadcom's attempt to present an objective justification for the the exclusivity-inducing provisions (see further section 8.5.2.3 below).
- (284) Fifth, Broadcom's argument that the fact that certain Agreements are designated as "*non-binding*" and/or contain wording obliging "*good faith*" or the use of "*best efforts*" precludes the existence of exclusivity-inducing provisions in those Agreements is not properly substantiated, contradicted by evidence on the file and in any event legally irrelevant for the reasons below.
- (285) In the first place, Broadcom repeatedly³⁶³ cites one particular example in support of this assertion. Not only is this example of questionable validity³⁶⁴, it also relates to a clause that is not within the scope of this Decision.³⁶⁵
- (286) In the second place, as regards Broadcom's reference to statements from [OEM A]³⁶⁶ and [OEM D]³⁶⁷ in its Comments on the Letter of Facts, the Commission reiterates that these statements lack credibility (see recitals (397) to (402) below).
- (287) In the third place, more generally, the Agreements, and the circumstances in which Broadcom obtained OEMs' assent to them, clearly create a *de jure* or *de facto* expectation of compliance, backed up by the prospect of negative consequences (see further the discussion of the language within the Agreements, the strong incentives contained within the Agreements and threatened reprisals for non-compliance with the Agreements at recitals (364)(c), (365) and (368) below). If that were not the case, it would be very difficult to explain why Broadcom would engage in lengthy negotiations³⁶⁸ with the OEMs to enter into agreements which have no practical effect.
- (288) In the fourth place, the OEMs confirmed that they generally comply with the terms of the Agreements (see recital (364)(a) below).
- (289) In the fifth place, it is legally irrelevant that the agreements are not legally binding or enforceable, given that at the very least they would still qualify as promises on behalf of Broadcom's customers to source all or most of their requirements from Broadcom. Furthermore, to the extent that the exclusivity provisions contained in the Agreements

³⁶³ See, for example, Broadcom's SO Response, Doc ID 1843-15, paragraphs 59, 150 and 157. In the SO Response, Broadcom also refers to this example in an attempt to support other arguments – see, for example, paragraph 27 (referring to the urgency of the Commission's intervention in this case) and paragraphs 219, 247 and 268 (referring to the capability of Broadcom's conduct to affect competition). See also Broadcom's presentation during the plenary session of the Oral Hearing, Doc ID 2204, slide 19; and Broadcom's presentation during the closed session of the Oral Hearing, Doc ID 2203, slide 37.

³⁶⁴ Broadcom has not substantiated its claim that the breach of [OEM A]'s [50-60]% share requirement relative to cable residential gateway SoCs had no consequences. See further sections C.ii, C.v and C.vi below as regards the examples that Broadcom advances in paragraph 201 of its SO Response.

³⁶⁵ This Decision does not pursue [OEM A]'s [50-60]% share commitment with respect to cable residential gateway SoCs, contained at Clause 5.2(a) of the [OEM A] CSA. See further section A.i above.

³⁶⁶ Doc ID 1846, page 2.

³⁶⁷ Doc ID 1792, page 1.

³⁶⁸ See e-mail exchanges and mutual comments on various draft versions of the [OEM A] CSA in Doc IDs 1381-4 to 1381-54.

may be considered as exclusivity rebates, it should be noted that exclusivity rebates do not require that purchasers are bound by a formal obligation in order to be abusive.³⁶⁹

- (290) Sixth, Broadcom's claim that the lack of explicit stipulation as to the interrelation between contractual clauses within certain Agreements precludes the conclusion that there was cross-product conditionality is contradicted by evidence on the file and is at odds with other Broadcom claims.
- (291) In the first place, the Commission's interpretation concerning cross-product conditionality is based on both the wording of the Agreements and the other elements mentioned below in recitals (292) to (294). Broadcom's contrasting interpretation that there is no cross-product conditionality, however, is not based on any contractual wording included in the Agreements.
- (292) In the second place, in order to reach its conclusions on *prima facie* cross-product conditionality with regard to the clauses referred to in Sections B.i to B.v above, the Commission has taken account of: (i) the fact that certain Agreements contained explicit stipulations as to the interrelation between particular obligations in one product market and advantages provided in other product markets;³⁷⁰ (ii) the circumstances in which the Agreements were entered into;³⁷¹ (iii) how the clauses were interpreted or were liable to be interpreted by OEMs;³⁷² and (iv) the manner in which the Agreements were performed.³⁷³ These elements, taken together, point at the existence of cross-product conditionality in the instances specified by the Commission.
- (293) In the third place, the interpretation exercise carried out by the Commission is consistent with observations on Broadcom's market behaviour which can be found in contemporaneous documents of other market players. For example:

³⁶⁹ See Case C-85/76, *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraphs 89 and 111.

³⁷⁰ The Commission's investigation had regard to the presence or absence of explicit stipulation as to the interrelation between clauses. See SO, paragraphs 160 and 168 (pertaining, respectively, to the absence of explicit stipulation as to the interrelation between particular clauses in the [OEM A] CSA and the [OEM B] TPA), and paragraphs 159, 174 and 180 (pertaining, respectively, to the presence of explicit stipulation as to the interrelation between particular clauses in the [OEM A] CSA, the [OEM C] TPA and the [OEM D] MoU). See further recitals (199) and (209) (pertaining, respectively, to the absence of explicit stipulation as to the interrelation between particular clauses in the [OEM A] CSA and the [OEM B] TPA) and recitals (198), (216), (224) and (230) (pertaining, respectively, to the presence of explicit stipulation as to the interrelation between particular clauses in the [OEM A] CSA, the [OEM C] TPA, the [OEM D] MoU and the [OEM E] SoC SPA) of the present Decision.

³⁷¹ The Commission's investigation has had regard to general market dynamics, the contextualisations offered by Broadcom, and contemporaneous evidence of the nature of Broadcom's interaction with OEMs at the time of signature. See: (i) section 5 of the SO (entitled "*Market dynamics, customers and applications*"), which is reflected in section 5 of the present Decision; (ii) paragraphs 24 to 29 of the SO, which are now reflected in section 6.1 of the present Decision, entitled "*Introduction to Broadcom's Agreements*"; and (iii) recital (364)(c) below, which contains evidence that Broadcom exerted pressure on OEMs to enter into the Agreements.

³⁷² The Commission's investigation has had regard to contractual constructions that were open to different interpretations, and has sought to clarify these (see, e.g.: (i) [OEM A]'s revised reply of [...] to Article 18(2) request for information of [...]; (ii) [OEM A]'s reply of [...] to Article 18(2) request for information of [...]; (iii) [OEM B]'s reply of [...] to question 3.5.a of Article 18(2) request for information of [...]; (iv) [OEM C]'s reply of [...] to Article 18(2) Request for Information of [...]; and (v) [OEM D]'s reply of [...] to Article 18(2) request for information of [...], page 2).

³⁷³ The Commission's investigation has had regard to whether or not OEMs complied with the Agreements (see recital (364)(b) below, and in particular footnote 466).

- (a) In an internal presentation by Liberty Global of [...], it is stated: “[...].³⁷⁴ [...]”;³⁷⁵
 - (b) In an internal email submitted by Intel, an Intel employee stated in April 2017: “It seems that pressure from Broadcom is getting harder and harder to push [OEM B] to use Broadcom’s Docsis solution. What we heard is that Broadcom is talking about price increase of some items which [OEM B] is buying from Broadcom if [OEM B] does not accept Broadcom’s proposal. [OEM B] is still buying big amount of video chips from Broadcom for legacy set top box and any price increase will put big financial impact on [OEM B]”;³⁷⁶
 - (c) In an internal email submitted by Intel, an Intel employee stated in May 2018: “BRCM are exploiting their dominance in the STB market to push OEMs that have STB business to use their Docsis solution.”;³⁷⁷ and
 - (d) In an internal presentation submitted by Intel, it is written that “*BRCM [is] leveraging their ~200M\$ biz (STB+GW) with [OEM D] to keep us out*”.³⁷⁸
- (294) In the fourth place, Broadcom’s own position concerning the language included in the Agreements confirms the Commission’s interpretation. Notably:
- (a) Broadcom stressed on several occasions that the Agreements are not exemplars of technical drafting precision. If anything, the fact that the language of the Agreements is “*a little vague*”³⁷⁹ only leaves more room for Broadcom to interpret the clauses in an expansive way so as to enable it to leverage its position across product markets.
 - (b) Broadcom has also made a number of statements confirming that it perceives there to be a general relationship of conditionality spanning all the obligations and advantages contained within the Agreements, including: (i) a statement that [...] ³⁸⁰; and (ii) “*As [the [OEM B] CEO] just said, I think quite eloquently, he understands that, as a businessman, you cannot just say, ‘no longer count one commitment’, and expect the bargain to remain the same otherwise.*”³⁸¹
- (C.ii.) Broadcom’s claims on the [OEM A] CSA
- (295) With regard to the [OEM A] CSA, Broadcom claims the following:
- (a) The [OEM A] CSA does not contain exclusivity or quasi-exclusivity obligations because there is no conditionality between obligations and non-price advantages

³⁷⁴ In view of the markets in which Liberty Global is active, the Commission understands that: (i) [...]; and (ii) [...].

³⁷⁵ “BCM Negotiation Position Paper”, internal Liberty Global presentation, Doc ID 1205-11.

³⁷⁶ Intel internal e-mail of 25 April 2017 from [...] to [...], Doc ID 1538.

³⁷⁷ Intel internal e-mail of 25 April 2017 from [...], Doc ID 1094-7.

³⁷⁸ Intel internal presentation of September 2017 titled “[OEM D] Account Overview”, Doc ID 1537, page 8. In another presentation Intel referred to [OEM D] as having “quasi-exclusivity” with Broadcom, bidding Intel-based designs only when pressed to do so by a service provider, see Intel internal presentation of 4 June 2018 titled “CHD Design Win Status”, Doc ID 1536, page 8.

³⁷⁹ Oral statement of Broadcom during the Oral Hearing, Doc ID 2130-4, minute 46:34 to 46:38 of the recording.

³⁸⁰ Oral statement of Broadcom during the Oral Hearing, Doc ID 2130-2, minute 1:28:28 to 1:28:42 of the recording.

³⁸¹ Oral statement of Broadcom during the Oral Hearing, Doc ID 2130-2, minute 1:38:20 to 1:38:43 of the recording.

within the [OEM A] CSA.³⁸² Specifically, the fact that [...] contained in the [OEM A] CSA without consequences precludes a finding of exclusivity.³⁸³ In addition, under Clauses 5.2(d), 5.2(e) and 4.6 of the [OEM A] CSA, [OEM A] has “*the right to opt out*” the Agreement.³⁸⁴ Finally, [OEM A]’s statements submitted during the proceedings preclude a finding of exclusivity;³⁸⁵ and

(b) The [OEM A] CSA does not contain leveraging restrictions³⁸⁶ because the purchasing obligations within the [OEM A] CSA “*apply separately to each product*”. [OEM A] specifically states that the preferential pricing in Clause 6 of the [OEM A] CSA is not conditional upon compliance with the share requirements in Clause 5.2.³⁸⁷ Furthermore, the examples of “[...]”, which was “*designed by [OEM A]*” and “*uses Qualcomm Wi-Fi*”,³⁸⁸ and “[OEM A] + Intel + [...]”³⁸⁹ – which is cited among other examples of OEMs using a competing chip “*together with a Broadcom solution*” show that there are no leveraging restrictions.

(296) Broadcom’s arguments do not invalidate the Commission’s findings with regard to the [OEM A] CSA.

(297) First, Broadcom’s claim that the [OEM A] CSA does not contain exclusivity and quasi-exclusivity obligations is unfounded for the following reasons.

(298) In the first place, the Commission has decided not to pursue interim measures with regard to the requirement for [OEM A] to source [50-60]% of its cable gateway SoC requirements from Broadcom. As such, Broadcom’s arguments related to whether this clause was applied and on whether Broadcom has decided to punish [OEM A] for alleged lack of compliance are irrelevant. As this is the only example of non-compliance used by Broadcom to support its argument that the [OEM A] CSA does not contain exclusivity or quasi-exclusivity obligations, it does not invalidate the Commission’s conclusions with respect to the clauses identified in section A.i above. In any event, it follows from the case-law that allowing a certain flexibility in relation to the observance of targets does not diminish the foreclosure caused by an exclusivity-inducing provision.³⁹⁰

(299) In the second place, Broadcom’s claim that [OEM A] has “*the right to opt out*” under Clauses 5.2(d), 5.2(e) and 4.6 of the [OEM A] CSA is without merit due to the following reasons:

(a) As regards Clause 4.6, Broadcom’s argument and [OEM A]’s own RFI response referred to by Broadcom are both based on a previous iteration of the [OEM A] CSA, which contained the following sentence: “*If after the escalation discussions, [OEM A] concludes it will bid non-Broadcom, [OEM A] will lose [...]*.” The Commission notes in this regard that:

³⁸² Broadcom’s SO Response, Doc ID 1843-15, section 4.2(e)(i)(A).

³⁸³ Broadcom’s SO Response, Doc ID 1843-15, paragraph 157.

³⁸⁴ Broadcom’s SO Response, Doc ID 1843-15, paragraph 158.

³⁸⁵ Doc ID 1846, page 2.

³⁸⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 194 and 201.

³⁸⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 14 and 194.

³⁸⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 201.

³⁸⁹ Broadcom’s presentation during the open session of the Oral Hearing, Doc ID 2204, page 57.

³⁹⁰ See, to that effect, Case T-155/06 *Tomra v Commission*, EU:T:2010:370, paragraph 299.

- (1) [OEM A] interpreted the sentence at stake as implying that [OEM A] [...].³⁹¹ This interpretation is consistent with the Commission’s conclusions with regard to the existence of leveraging restrictions, and in particular that the consequences of a breach with regard to one specific product can extend to “other Broadcom products”, at least as far as those products are sourced for one single service provider. Even under [OEM A]’s RFI interpretation of the previous iteration of the [OEM A] CSA, therefore, the consequences for a breach of the exclusivity obligation may be very far-reaching, particularly when tenders launched by large service providers are at stake;
 - (2) The sentence quoted in sub-recital (a) above was deleted by Broadcom in the negotiations leading to the current [OEM A] CSA.³⁹² As such, the [OEM A] CSA that is in force at the time of adoption of this Decision does not contain any specific limitation as to the consequences for a breach of the exclusivity obligation; and
 - (3) The absence of such specific limitation leaves more room for Broadcom to punish [OEM A] for non-compliance with its obligations with retaliation extending beyond one single service provider.
 - (4) Retaliation by Broadcom beyond one single service provider for non-compliance with [OEM A]’s obligations is all the more likely considering that Clause 4.6 still features the formulation, “*The Parties acknowledge that during the Term, compliance to this differentiated pricing will be subject to [OEM A] bidding only Broadcom Products to Service Providers.*”³⁹³
- (b) As regards Clause 5.2(e), Broadcom’s claim is disingenuous. This clause does not contain any “*opt-out*” – rather an obligation on [OEM A] to try to grow “*silicon*”³⁹⁴ share to Broadcom’s favour; and
 - (c) As regards, Clause 5.2(d), this clause only applies to WiFi chipsets (which are not within the scope of this Decision) and cannot be used to infer the existence of any “*opt-out*” with regard to SoCs.
- (300) In the third place, the credibility of the statements by [OEM A] upon which Broadcom places considerable emphasis is questionable for the reasons outlined in recitals (397) to (402) below.
 - (301) Second, Broadcom’s claim that the [OEM A] CSA does not contain leveraging restrictions is unfounded due to the following reasons.
 - (302) In the first place, as already stated in recitals (291) to (294) above, Broadcom’s arguments concerning the lack of conditionality of the pricing concessions in the [OEM A] CSA on the exclusivity obligations therein contained are unconvincing.

³⁹¹ [OEM A]’s reply of [...] to Article 18(3) Decision dated [...], page 4.

³⁹² See red line of draft [OEM A] CSA, Doc ID 1381-22.

³⁹³ “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 4.6

³⁹⁴ [OEM A] confirmed that “[OEM A] has interpreted the reference to “*silicon*” in the CSA as referring to SOCs only” (see [OEM A]’s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1.

Clause 5.2 of the [OEM A] CSA, which outlines the exclusive purchasing obligations for [OEM A], stipulates explicitly that those provisions are “*consistent with the provisions in Section 4*”. This is in itself a strong indication of conditionality between section 5.2 and section 4. As confirmed by [OEM A],³⁹⁵ Clause 6 (which is entitled “*pricing*”) must effectively be seen as linked to Clause 4 (which is entitled “*differentiated pricing*”), also in view of the fact that Clause 4 does not in itself contain any indication on what the “*differentiated pricing*” would be. Hence, a systematic reading of the [OEM A] CSA confirms the existence of conditionality between the pricing conditions in Clause 6 and the exclusivity obligations in Clause 5.2 (which relate to STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs; and therefore amount to cross leveraging of Broadcom’s *prima facie* dominance across all of these markets – see further section 8.5.2.1.B.i) above). It is also worth noting that the final sentence of former Clause 4.6 as quoted in recital (299)(a) above cannot be found in the current version of the [OEM A] CSA. Thus, the [OEM A] CSA does not contain any clause limiting the loss of pricing benefits only to individual customers (which was already broad insofar as it entailed potential multi-product consequences).

(303) In the second place, the [...] example that Broadcom cites lacks validity insofar as it only relates to WiFi chips, which are outside of the scope of this Decision.

(304) In the third place, the [...] example lacks validity insofar as: (i) it lacks basic detail permitting its verification – it is, for example, undated such that it could pertain to a timeframe outside of the [OEM A] CSA’s application; and (ii) is likely to refer to cable gateways, for which the [OEM A] CSA only includes a [50-60]% share requirement, which is outside the scope of this Decision.

(C.iii.) Broadcom’s claims on the [OEM B] TPA

(305) With regard to the [OEM B] TPA, Broadcom claims the following:

(a) First, the [OEM B] TPA does not contain exclusivity or quasi-exclusivity obligations.³⁹⁶ [OEM B]’s commitments under the [OEM B] TPA are limited to demonstrating and promoting Broadcom based solutions to service providers.³⁹⁷ In addition, there is no conditionality between obligations and non-price advantages within the [OEM B] TPA.³⁹⁸ Finally, [OEM B] is “*free to supply [non-Broadcom products] subject to the escalation process in section D.1,*”. Specifically, Broadcom characterises this as an “*opt-out that enables [OEM B] to offer competing solutions*”³⁹⁹

(b) Second, that the [OEM B] TPA does not contain leveraging restrictions insofar as “*If an Operator wishes to “mix-and- match” and use, for instance, a Broadcom SoC but a third-party Wi-Fi chip in its STBs, Broadcom continues to support [OEM B] for the SoC portion of the STB opportunity.*”⁴⁰⁰

³⁹⁵ [OEM A]’s reply of [...] to Article 18(3) Decision dated [...], page 4.

³⁹⁶ Broadcom’s SO Response, Doc ID 1843-15, section 4.2(e)(i)(D).

³⁹⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraph 173.

³⁹⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 174.

³⁹⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 174.

⁴⁰⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 198.

- (306) The Commission’s conclusions as regards the legal qualification of the [OEM B] TPA are not affected by Broadcom’s claims.
- (307) First, Broadcom’s claim that the [OEM B] TPA does not contain exclusivity or quasi-exclusivity obligations is unfounded for the following reasons.
- (308) In the first place, [OEM B] stated: “[t]he obligations [in the [OEM B] TPA] *do not strictly speaking require [OEM B] to source products only or primarily from Broadcom*” [emphasis added].⁴⁰¹ While it is true that *strictly speaking* [OEM B] is not contractually required to source only from Broadcom, [OEM B]’s obligation to “*promote/propose/submit only Broadcom-based solutions*” has equivalent effects to a promise to obtain SoCs exclusively from Broadcom – especially in tender-driven markets such as those for STBs and residential gateways (see recitals (26) and (27) above).
- (309) In the second place, Broadcom’s claim that there is no conditionality between obligations and non-price advantages in the [OEM B] TPA is unfounded for the reasons below:
- (a) Pursuant to Clause B of the [OEM B] TPA, Broadcom can terminate the [OEM B] TPA in case of “*material breach*” of its terms on the side of [OEM B]. This means that Broadcom has effectively the possibility of withdrawing the favourable terms in the [OEM B] TPA in case [OEM B] were not to comply with the exclusivity obligations therein contained (see recitals (208) and (209) above);
 - (b) [OEM B] has made numerous statements confirming that it perceives there to be a general relationship of conditionality spanning all the obligations and advantages contained within the [OEM B] TPA, such as: (i) “*Should Broadcom consider that with the loss of exclusivity, it cannot uphold its commitments under the current agreements, that is [...], it would take time to renegotiate a new agreement with properly balanced parameters [...]*”;⁴⁰² and (ii) “*A business relationship is always a give and take. If one element in a commercial arrangement falls, the counterpart may also fall [...]*”;⁴⁰³
 - (c) Broadcom has also made a number of statements confirming that it perceives there to be a general relationship of conditionality spanning all the obligations and advantages contained within the [OEM B] TPA, including: (i) [...]⁴⁰⁴; and (ii) [...];⁴⁰⁵ and
 - (d) More in general, Broadcom stated in its Response to the SO that “Broadcom [...] for its OEM partners, [...] with its partners [...], and [...], among other things. [...] agreement reflects a careful balancing of Broadcom’s and the OEM’s needs. Adopting the SO’s proposed interim measures would force Broadcom to

⁴⁰¹ [OEM B]’s reply of [...] to question 7 of Article 18(3) Decision of [...], page 4.

⁴⁰² [OEM B]’s Interested Third Party Submission of 5 August 2019, Doc ID 2005, page 2.

⁴⁰³ Oral statement of [OEM B] during the Oral Hearing, Doc ID 2130-2, minute 1:32:11 to 1:32:21 of the recording.

⁴⁰⁴ Oral statement of Broadcom during the Oral Hearing, Doc ID 2130-2, minute 1:28:28 to 1:28:42 of the recording.

⁴⁰⁵ Oral statement of Broadcom during the Oral Hearing, Doc ID 2130-2, minute 1:38:20 to 1:38:43 of the recording.

renegotiate these agreements and likely would bring prior inefficiencies back [...].”⁴⁰⁶

- (310) In the third place, as regards the “*escalation process*” contained within section D.1 of the [OEM B] TPA, Broadcom’s characterisation of this as an “*opt-out*” leaving [OEM B] “*free to supply* [non-Broadcom products]” does not square with reality. In particular, such clause explicitly stipulates that Broadcom’s approval would be necessary for any exception requested by [OEM B]. In addition, the “*escalation process*” specifically requires the participation of [...] in both Broadcom and [OEM B], which further decreases the likelihood that [OEM B] would be able to avail itself of this mechanism successfully.⁴⁰⁷
- (311) Second, as to (305)(b) above, Broadcom’s claim that the [OEM B] TPA does not contain leveraging restrictions is unfounded for the same reasons described at recital (309) above. The Commission’s finding that [OEM B]’s obligations to “*promote/propose/submit only Broadcom-based solutions*” for STB SoCs - products in which Broadcom is *prima facie* dominant - amount to exclusivity or quasi-exclusivity (see section 8.5.2.1.A.ii above) remain well-founded for the reasons explained in recital (308) above. It necessarily follows that same obligation in relation to cable residential gateway SoCs - products in which Broadcom is not *prima facie* dominant - amounts to leveraging (see section 8.5.2.1.B.ii above).
- (C.iv.) Broadcom’s claims on the [OEM C] TPA
- (312) With regard to the [OEM C] TPA, Broadcom claims that the [OEM C] TPA does not contain exclusivity or quasi-exclusivity obligations.⁴⁰⁸ First, the exclusion of China from the geographic scope of the [OEM C] TPA precludes this finding.⁴⁰⁹ Second, Broadcom applied lower prices than those stipulated in the [OEM C] TPA, and [OEM C] did not comply with its obligations under the TPA “*in several cases*”.⁴¹⁰
- (313) The Commission’s conclusions as regards the legal qualification of the [OEM C] TPA are not affected by Broadcom’s claims to the contrary for the following reasons.
- (314) First, as to recital (312) above, the exclusion of China from the geographic scope of the [OEM C] TPA does not affect the Commission’s conclusions that it contains exclusivity and quasi-exclusivity arrangements. This is because the [OEM C] TPA still conditions the benefits listed at recitals (216) and (217) above upon [OEM C] sourcing a specific share of its requirements from Broadcom. Such condition is therefore capable of affecting [OEM C]’s freedom to source its requirements of SoCs for all geographic regions but China, insofar as it induces [OEM C] to source at least [80-90]% of its SoC requirements for that geographic area (which includes the EEA) from Broadcom.⁴¹¹
- (315) Second, as to recital (312) above, Broadcom has not provided any evidence in support of its claim that Broadcom applied lower prices than those stipulated in the [OEM C]

⁴⁰⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraph 31.

⁴⁰⁷ [OEM B] TPA, Doc ID 573, Clause D.1.

⁴⁰⁸ Broadcom’s SO Response, Doc ID 1843-15, section 4.2(e)(i)(E).

⁴⁰⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 182.

⁴¹⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraph 181.

⁴¹¹ See, to that effect, Case T-286/09 *Intel v Commission*, EU:T:2014:547, paragraphs 129-134, annulled but not on this point.

TPA, and that [OEM C] did not comply with its obligations under the TPA “*in several cases.*”

(C.v.) Broadcom’s claims on the [OEM D] MoU

(316) With regard to the [OEM D] MoU, Broadcom claims the following:

(a) The [OEM D] MoU does not entail exclusivity or quasi-exclusivity obligations⁴¹² because there is no conditionality between obligations and bid support advantages within the [OEM D] MoU.⁴¹³ [OEM D]’s RFI response⁴¹⁴ and a July 2019 [OEM D] submission⁴¹⁵ support this position. Furthermore, the “*escalation process*” in the [OEM D] MoU is straightforward, easy to use and systematically results in approval by Broadcom of [OEM D]’s use of competing solutions. Specifically, Broadcom states that “[...]”⁴¹⁶

(b) The [OEM D] MoU does not contain leveraging restrictions⁴¹⁷ as “*the pricing benefits in the Sagecmcom MoU are not leveraged across product categories*”.⁴¹⁸ The following examples⁴¹⁹ – cited from among a list of other examples of OEMs using a competing chip “*together with a Broadcom solution*” – confirm Broadcom’s claim: (i) “[...] *designed by [OEM D] uses Quantenna Wi-Fi and Broadcom 10G PON SoC*”; (ii) “[...] *designed by [OEM D] uses Quantenna Wi-Fi and Broadcom fibre SoC*”; and (iii) “[...] *gateway designed by [OEM D] uses Quantenna Wi-Fi.*”

(317) The Commission’s conclusions as regards the legal qualification of the [OEM D] MoU are not affected by Broadcom’s claims.

(318) First, Broadcom’s claim that the [OEM D] MoU does not contain exclusivity or quasi-exclusivity obligations is unfounded for the reasons below.

(319) In the first place, pursuant to Clause 8 of the [OEM D] MoU, Broadcom can terminate the [OEM D] MoU in case of “*material breach*” of its terms on the side of [OEM D]. This means that Broadcom has effectively the possibility of terminating the [OEM D] MoU in case [OEM D] were not to comply with the exclusivity obligations therein contained (see recital (222) above).⁴²⁰

(320) In the second place, the credibility of [OEM D]’s statements in its letter of 19 July 2019 upon which Broadcom places considerable emphasis are questionable for the reasons outlined in recitals (397) to (402) below. As regards the statements from the [OEM D] RFI: (i) the passage pertaining to WiFi chipsets is irrelevant as these products are outside the scope of this Decision; (ii) the passage pertaining to cable residential gateway SoCs does not state that Broadcom is the only viable option for [OEM D]; (iii) as regards the passages not pertaining to cable residential gateway SoCs and WiFi chipsets, to the extent that these emphasise Broadcom’s supposedly unique ability to satisfy service provider demand for STB SoC, xDSL residential gateway

⁴¹² Broadcom’s SO Response, Doc ID 1843-15, section 4.2(e)(i)(B).

⁴¹³ Broadcom’s SO Response, Doc ID 1843-15, paragraph 161.

⁴¹⁴ Doc ID 734, pages 9 and 10, cited at Broadcom’s SO Response, Doc ID 1843-15, paragraph 162.

⁴¹⁵ Doc ID 1792.

⁴¹⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraph 161.

⁴¹⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 195 and 201.

⁴¹⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 195.

⁴¹⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 201.

⁴²⁰ “*Non-Binding Memorandum of Understanding*” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 8.

SoCs and fibre residential gateway SoCs, the Commission does not accept that characterisation (see further recital (281) above).

- (321) In the third place, Broadcom’s characterisation of the “*escalation process*” within the [OEM D] MoU as straightforward, easy to use and systematically resulting in approval by Broadcom of [OEM D]’s use of competing solutions is not credible. In particular, such process explicitly stipulates that Broadcom would need to agree that it does not have in its portfolio a product that meets the needs of the service provider. In addition, it involves multiple layers of escalation up to very senior (specifically named) individuals and includes a requirement for [OEM D] to provide [...]. The fact that Broadcom has not submitted any evidence concerning the effective use of this escalation process confirms these findings.
- (322) Second, Broadcom’s claim that the [OEM D] MoU does not contain leveraging restrictions is unfounded.
- (323) In the first place, the Commission’s finding that [OEM D]’s obligation to “*promote and use Broadcom solutions exclusively*” and to “*solely promote and demonstrate Broadcom based products*” with respect to STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs - all products in which Broadcom is *prima facie* dominant - as well as with respect to cable residential gateways - products in which Broadcom is not *prima facie* dominant - amounts to exclusivity or quasi-exclusivity (see section 8.5.2.1.A.iv above) remains well founded for the reasons set out in recitals (319) to (321) above. It follows that this amounts to cross-leveraging of Broadcom’s *prima facie* dominance across STB SoCs, xDSL residential gateway SoCs and fibre residential gateway SoCs; and leveraging of Broadcom’s *prima facie* dominance in those markets into cable residential gateway SoCs (see further section 8.5.2.1.B.iii above).
- (324) In the second place, the examples that Broadcom cites lack validity insofar as they only relate to non-Broadcom WiFi chips, in respect of which the Commission does not pursue interim measures in this Decision.
- (C.vi.) Broadcom’s claims on the [OEM E] SoC SPA
- (325) With regard to the [OEM E] SoC SPA, Broadcom claims the following:
- (a) The [OEM E] SoC SPA does not entail exclusivity or quasi-exclusivity obligations⁴²¹ as the exclusion of China from the geographic scope of the [OEM E] SoC SPA precludes this finding.⁴²² In addition, an “*escalation process*” in the [OEM E] SoC SPA allows [OEM E] to bid non-Broadcom solutions.⁴²³ There is also no conditionality between obligations and non-price advantages within the [OEM E] SoC SPA.⁴²⁴ Broadcom places emphasis⁴²⁵ on a statement in a [OEM E] RFI response⁴²⁶ that [...]; and

⁴²¹ Broadcom’s SO Response, Doc ID 1843-15, section 4.2(e)(i)(C).

⁴²² Broadcom’s SO Response, Doc ID 1843-15, paragraph 168.

⁴²³ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 169 and 170.

⁴²⁴ Broadcom’s SO Response, Doc ID 1843-15, paragraph 169.

⁴²⁵ Broadcom’s SO Response, Doc ID 1843-15, paragraph 169.

⁴²⁶ [OEM E]’s revised reply of [...] to question 5 of the Article 18(3) Decision of [...], page 2.

- (b) The [OEM E] SoC SPA does not contain leveraging restrictions⁴²⁷ as “*the bid support benefits under the contracts are not conditional on [OEM E] meeting each product requirement*”.⁴²⁸ The following examples – cited from among a list of among other examples of OEMs using a competing chip “*together with a Broadcom solution*” – confirm Broadcom’s position: (i) “[...] *Gateway designed by [OEM E] uses Quantenna Wi-Fi*”; (ii) “[...] *designed by [OEM E] uses Quantenna Wi-Fi and Broadcom VDSL SoC.*”⁴²⁹
- (326) The Commission’s conclusions as regards the legal qualification of the [OEM E] SoC SPA are not affected by Broadcom’s claims.
- (327) First, Broadcom’s claim that the [OEM E] SoC SPA does not contain exclusivity and quasi-exclusivity obligations is unfounded for the following reasons.
- (328) In the first place, the exclusion of China from the general obligation for [OEM E] to source [80-90]% of its overall requirements from Broadcom only appears to refer to such general obligation and not to the narrower and more detailed (quasi-)exclusivity obligations for each product market.⁴³⁰ In any event, independently of the question of whether the exclusion of China applies to each specific share requirement, an exclusivity obligation that applies to a particular segment of customer demand remains a (quasi-)exclusivity obligation⁴³¹ (see further recital (182) above).
- (329) In the second place, as regards the “*escalation process*” in the [OEM E] SoC SPA, the Commission assumes that Broadcom’s claim refers to the statement within the [OEM E] SoC SPA that “[*OEM E*] will only bid Broadcom solutions effective immediately on CA and OTT STB SoCs unless exception process [...]”.⁴³² Such clause explicitly stipulates that Broadcom would need to agree to any exception requested by [OEM E], thereby effectively giving Broadcom a veto over [OEM E]’s ability to bid non-Broadcom solutions. In addition, the product scope of this process is limited to STB SoCs. Hence, there is no contractual basis for concluding that an “*escalation process*” exists for the other products within the scope of this Decision that are covered by the [OEM E] SoC SPA, namely cable residential gateway SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs. Finally, the stipulation of specific, named individuals whose agreement must be obtained tends to reduce further the likelihood that [OEM E] would be able to avail itself successfully of this mechanism.
- (330) In the third place, Broadcom’s claim that there is no conditionality between obligations and non-price advantages within the [OEM E] SoC SPA is unfounded in light of the elements outlined in recitals (291) to (294) above. In addition, specific clauses are

⁴²⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 197 and 201. See also Broadcom’s SO Response, Doc ID 1843-15, paragraph 169.

⁴²⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 197.

⁴²⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 201.

⁴³⁰ The [OEM E] SoC SPA takes the form of a bullet point list. The exclusion of China from the “*Overall Guaranteed Broadcom minimum market share*” features in a bullet, of which the product-specific guaranteed minimum market share commitments are sub-bullets. The basis for concluding that the exclusion of China does not apply to the individual sub-bullets setting-out product-specific share requirements flows from the fact that the exclusion of China is not specifically repeated in them.

⁴³¹ See, to that effect, Case T-286/09 *Intel v Commission*, EU:T:2014:547, paragraphs 129-134, annulled but not on this point.

⁴³² Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]’s reply of [...] to Article 18(3) Decision of [...], second bullet point.

included in the contract which confirm the existence of conditionality, even between different products.⁴³³

- (331) In the fourth place, as regards the statement by [OEM E] in an RFI reply, the Commission notes that such statement confirms that the pricing concessions included in the [OEM E] SoC SPA are conditional upon [OEM E] sourcing all or most of its SoC requirements from Broadcom. As regards the non-pricing concessions included in the [OEM E] SoC SPA, the Commission notes that the [OEM E] SoC SPA includes provisions that explicitly allow Broadcom to terminate the whole agreement in the case where [OEM E] were not to comply with certain specific provisions. Given that the [OEM E] SoC SPA contains such provisions, which appear to be legally binding and whose consequences are far more significant than the loss of certain specific non-price advantages (see recital (231) above), the Commission considers it likely that Broadcom could at the very least refrain from granting certain non-price advantages listed in the [OEM E] SoC SPA if [OEM E] were not to fulfil the exclusivity obligations as outlined in the [OEM E] SoC SPA.
- (332) In the fifth place, in light of the widely-framed termination events stipulated in the overarching agreement to which the [OEM E] SoC SPA is a supplement,⁴³⁴ Broadcom could foreseeably terminate the overarching agreement - thereby depriving [OEM E] of these advantages, in the event of [OEM E]'s non-compliance with the commitments stipulated in the [OEM E] SoC SPA (see recital (231) above).
- (333) Second, Broadcom's claim that the [OEM E] SoC SPA does not contain leveraging restrictions is unfounded.
- (334) In the first place, Broadcom's claim that "*The bid support benefits under the contracts are not conditional on [OEM E] meeting each product requirement*" is not credible as it is not supported by any wording included in the [OEM E] SoC SPA. On the contrary, there is an explicit contractual basis for dismissing Broadcom's claim, given that the "*escalation process*" in the [OEM E] SoC SPA is product-specific (see further the discussion of the product-specific nature of this "*escalation process*" in recital (329) above), but is immediately followed by the stipulation that "*If this condition is not met, Broadcom can reverse the other agreed terms in the agreement.*"⁴³⁵
- (335) In the second place, in light of the widely-framed termination events stipulated in the overarching agreement to which the [OEM E] SoC SPA is a supplement,⁴³⁶ Broadcom could foreseeably terminate the overarching agreement - thereby depriving [OEM E]

⁴³³ In particular: (i) the consequences for failing to respect the "*escalation process*" (see recital (329) above) are the following - "*If this condition is not met, Broadcom can reverse the other agreed terms in the agreement*" [emphasis added]; and (ii) If [OEM E] fails to meet the [80-90]% purchase requirement for xDSL and fibre residential gateway SoCs by a margin of [...] % (i.e. if it fails to purchase [70-80]% of its requirements from Broadcom), Broadcom "*reserves right to cancel agreement*", see Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]'s reply of [...] to Article 18(3) Decision of [...], second bullet point.

⁴³⁴ "*Preferred Supplier Framework Purchase Agreement*" entered into between Broadcom and [...] on [...] 2009, Doc ID 1068-16. See further [OEM E]'s reply of [...] to question 3(a) of Article 18(2) request for information of [...], page 2.

⁴³⁵ Agreement entered into between Broadcom and [OEM E] on [...] 2017, included as Annex 004 to [OEM E]'s reply of [...] to Article 18(3) Decision of [...], second bullet point.

⁴³⁶ "*Preferred Supplier Framework Purchase Agreement*" entered into between Broadcom and [...] on [...] 2009, [...]. See further [OEM E]'s reply of [...] to question 3(a) of Article 18(2) request for information of [...], page 2.

of these advantages, in the event of [OEM E]’s non-compliance with the commitments stipulated in the [OEM E] SoC SPA (see recital (231) above).

(336) In the third place, the examples that Broadcom cites lack validity insofar as they only relate to non-Broadcom WiFi chips, in respect of which the Commission does not pursue interim measures in this Decision.

(C.vii.) Broadcom’s claims on the [OEM F] LoI

(337) With regard to the [OEM F] LoI, Broadcom claims the following:

(a) The [OEM F] LoI does not contain exclusivity or quasi-exclusivity obligations. In particular, *“The limited footprint of the LoI within the geographic markets defined in the SO”* precludes this finding;⁴³⁷ and

(b) The [OEM F] LoI does not contain leveraging restrictions. In particular, the absence of an explicit stipulation as to the precise consequences of breaching an obligation under the [OEM F] LoI precludes this finding. Specifically, Broadcom asserts that *“it is apparent that each obligation in the LoI is product specific.”*⁴³⁸

(338) The Commission’s conclusions as regards the legal qualification of the [OEM F] LoI are not affected by Broadcom’s claims to the contrary.

(339) First, Broadcom’s claim that the [OEM F] LoI does not contain exclusivity and quasi-exclusivity obligations is unfounded. Broadcom’s claim that, geographically speaking, the [OEM F] LoI has a *“limited footprint”* is not in line with the wording of the agreement. The geographic scope of the [OEM F] LoI comprises markets accounting for close to 1.5 billion people – that is, close to 20% of global population. It explicitly covers:⁴³⁹ (i) *“North America”*;⁴⁴⁰ (ii) Mexico; (iii) the entirety of the European Union; (iv) the non-EU countries that are Contracting Parties to the EEA Agreement;⁴⁴¹ (v) Switzerland; (vi) Russia; (vii) Turkey; (viii) Japan; (ix) Singapore; (x) Australia; (xi) New Zealand; (xii) the United Arab Emirates; and (xiii) Saudi Arabia.⁴⁴²

(340) Second, as to (337)(b) above, Broadcom’s claim that the [OEM F] LoI does not contain leveraging restrictions is unfounded. In particular, Broadcom’s assertion that *“it is apparent that each obligation in the LoI is product specific”* is not credible. In particular, the fact that the parties to the [OEM F] LoI are explicitly entitled to terminate the [OEM F] LoI with or without cause at any time⁴⁴³ means Broadcom could terminate it, thereby interrupting supplies, deteriorating technical assistance or

⁴³⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraph 185.

⁴³⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 200.

⁴³⁹ *“Letter of Intent”* entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, page 3.

⁴⁴⁰ The Commission understands *“North America”* to refer to the USA and Canada.

⁴⁴¹ Given that *“all the member countries of the European Union”* is explicitly stipulated, the Commission understands *“Nordic countries”* to refer to non-EU Nordic countries that are Contracting Parties to the EEA Agreement (Iceland and Norway). The only possible exclusion from this list item, therefore, would be Liechtenstein - the population of which is only approximately 40,000. The Commission however considers it implausible that the parties to the Agreement intended to exclude Liechtenstein from the scope of the [OEM F] LoI.

⁴⁴² See also recitals (182) and (314) above.

⁴⁴³ *“Letter of Intent”* entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, page 3.

increasing prices, should [OEM F] fail to comply with an obligation relative to an individual product market.

(D.) Conclusions on Broadcom's exclusivity-inducing provisions

(341) For the reasons outlined in the above, the Commission concludes that the Agreements contain *prima facie* exclusivity-inducing provisions, in the form of: (i) exclusivity and quasi-exclusivity arrangements; and (ii) leveraging restrictions.

8.5.2.2. Capability to affect competition

(A.) Broadcom's submission with regard to the applicable test for finding a *prima facie* infringement of Article 102 TFEU

(342) In its SO Response, Broadcom submits that the Commission's approach for finding a *prima facie* infringement of Article 102 TFEU in this case sets an inappropriately low threshold for imposing interim measures and is not consistent with the inherently exceptional nature of the power to adopt interim measures.⁴⁴⁴ Broadcom claims that the SO contained no assessment of the actual capacity of the Agreements to foreclose as-efficient competitors, thereby ignoring the *Intel*⁴⁴⁵ judgment.⁴⁴⁶ Broadcom submits that, for the purposes of this case, the applicable test ought to be the one established by the Court of Justice in *Intel*, suggesting the Commission should have carried out a price-cost as-efficient competitor test.⁴⁴⁷

(343) Second, Broadcom argues that the capacity to foreclose was also a central principle of the Commission's own Guidance on Enforcement Priorities⁴⁴⁸, the general enforcement principles of which had however not been followed by the Commission in the SO.⁴⁴⁹

(344) Third, Broadcom further claims that the Commission conducted a quasi "*by object*" analysis and failed to consider the conditions and arrangements for granting the rebates in question, for example by not examining whether the price benefits for the OEMs covered by the Agreements are retroactive or incremental.⁴⁵⁰

(345) Broadcom's arguments are flawed for the following reasons.

(346) First, as to recital (342) above, the Commission considers that the legal test established by the Court of Justice in *Intel* would not be applicable to Broadcom's conduct, even under the assumption that Broadcom's conduct were to be considered as limited to the provision of advantages conditional on exclusivity.⁴⁵¹ This is because the advantages provided for in the Agreements are not only limited to rebates but also include non-

⁴⁴⁴ Broadcom's SO Response, Doc ID 1843-15, paragraph 76.

⁴⁴⁵ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632.

⁴⁴⁶ Broadcom's SO Response, Doc ID 1843-15, paragraph 85.

⁴⁴⁷ Broadcom's SO Response, Doc ID 1843-15, paragraphs 78, 80, 81, 85.

⁴⁴⁸ Communication from the Commission – Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 45, 24.2.2009, page. 7

⁴⁴⁹ Broadcom's SO Response, Doc ID 1843-15, paragraphs 82-84.

⁴⁵⁰ Broadcom's SO Response, Doc ID 1843-15, paragraph 85.

⁴⁵¹ As indicated in recital (191), Broadcom's conduct includes behaviour that could amount to either exclusive purchasing arrangements or to the provision of advantages conditional on exclusivity, or a combination of both. Given that the Court of Justice's judgment in *Intel* has clarified the *Hoffmann-La Roche* case law only with regard to the granting of rebates conditional on exclusivity, it would not be liable to be applied to the part of Broadcom's conduct that amounts to exclusive purchasing arrangements.

price related advantages (see section 8.5.2.1 above). In any event, the Commission's assessment on the capability of Broadcom's conduct to affect competition is in line with the legal test as set out by the Court of Justice of the European Union, including the Court of Justice's judgment in *Intel* for the reasons that follow.⁴⁵²

- (347) In the first place, the Commission has found Broadcom to be *prima facie* dominant on three different product markets. Furthermore, it concluded that the Agreements contain (i) obligations or promises to obtain products in which Broadcom is dominant exclusively or almost exclusively from Broadcom; or (ii) provisions that make the granting of certain advantages conditional on the customer obtaining products in which Broadcom is dominant exclusively or almost exclusively from Broadcom.
- (348) On this basis, and in line with the legal test set out in paragraph 137 of the *Intel* judgment, it must be concluded that the exclusivity and quasi-exclusivity arrangements entered into by Broadcom are presumptively contrary to Article 102 TFEU. This is an important element to assess whether these arrangements constitute a *prima facie* infringement of competition rules under Article 8 of Regulation (EC) No 1/2003.
- (349) In the second place, however, the Commission has gone beyond the presumption set out in paragraph 137 of the *Intel* judgment, by carrying out an assessment of the capability of the exclusivity and quasi-exclusivity arrangements to affect competition (see analysis in section 8.5.2.2.(B.) below). The analysis carried out by the Commission leads to the conclusion that Broadcom's conduct is *prima facie* capable of restricting competition, also in light of the criteria outlined in paragraph 139 of the *Intel* judgment.⁴⁵³ In this regard, the Commission notes the following:
- (a) The *Intel* judgment does not require the Commission to prove actual effects as Broadcom seems to imply, but rather only capability to foreclose. In the context of interim measures, this requirement would have to be proven on a *prima facie* basis; and
 - (b) As part of its assessment, the Commission considered the extent of Broadcom's dominant position on the relevant market (see section 8.4 above and recital (365) below); the share of the market covered by the challenged practice (recital (366) and recitals (385) to (389) below); the conditions and arrangements for granting the rebates in question, their duration and their amount (see section 8.5.2.1 above and recitals (364)(b), (367), (382), (383), (384), (390) and (391) below); and a large amount of qualitative evidence including contemporaneous documents and responses to requests for information received by Broadcom's customers and competitors as well as service providers (see for example recitals (364)(c), (368) and (370)). In addition, the Commission notes that the existence of a possible strategy to foreclose emerges from several elements in the investigative file (see for example recitals (293) above and (368) and (370) below).

⁴⁵² See, e.g., paragraphs 142, 144 and 147 of the SO.

⁴⁵³ For the avoidance of doubt, the Commission was under no legal obligation to refer to paragraph 139 of the *Intel* judgment in the SO, given that such paragraph only applies “*in the case where the undertaking concerned submits, during the administrative procedure, on the basis of supporting evidence, that its conduct was not capable of restricting competition and, in particular, of producing the alleged foreclosure effects*” (see Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 138). By the time of issuance of the SO, Broadcom had not produced any supporting evidence that its conduct was not capable of restricting competition.

- (350) In the third place, and also in light of the above, the Commission considers that a price-cost as-efficient competitor test is not required in the case at hand. The Commission recalls that the Court of Justice in *Intel* does not mandate the application of a price-cost as-efficient competitor test but rather leaves it to the enforcement authorities to assess whether or not it is appropriate to run such a test in a particular case.⁴⁵⁴
- (351) The Commission further recalls in that respect that this approach is in line with the Court of Justice’s ruling in *Post Danmark II*⁴⁵⁵, where the Court of Justice concluded that while being one tool amongst others, the as-efficient competitor test was not a necessary instrument for the purposes of concluding on the legality of conditional rebate schemes.⁴⁵⁶ The Commission also notes that Broadcom did not submit an as-efficient competitor analysis.⁴⁵⁷
- (352) These considerations apply *a fortiori* when the Commission needs to show the existence of a *prima facie* infringement of Article 102 TFEU. As the Commission explained in section 8.1 above, the finding of a *prima facie* infringement is inherently not based on a full and final appreciation of the facts and law in question.⁴⁵⁸ It is rather based on a legal analysis providing sufficient indications “*at first sight*” that the conduct subject to the investigation raises serious doubts as to its compatibility with the applicable EU competition rules. Since an as-efficient competitor test is not required in a full investigation under Article 7 of Regulation (EC) No 1/2003, it cannot be required in cases of urgency under Article 8 of Regulation (EC) No 1/2003. This is even more the case when, as in this instance, the conduct of the dominant undertaking includes both pricing and non-pricing aspects, such as early access to technology and technical support conditional on exclusivity, which would be difficult if not impossible to be incorporated in a purely quantitative price-cost test.
- (353) Second, as to recital (343) above, Broadcom’s arguments on the Guidance on Enforcement Priorities are unfounded for the reasons below.
- (354) In the first place, the Commission is not required to assess the *prima facie* legality of Broadcom’s exclusivity-inducing provisions in accordance with the Guidance on Enforcement Priorities. The Guidance on Enforcement Priorities merely sets out the Commission’s approach as to the choice of cases that it intends to pursue as a matter of priority.⁴⁵⁹ The Commission did not thereby impose on itself any limitations or requirements regarding the range of tools at its disposal for the purposes of assessing the *prima facie* legality of Broadcom’s exclusivity-inducing provisions and the types of evidence on which the Commission can rely on as part of that assessment.⁴⁶⁰
- (355) In the second place, Broadcom’s conduct satisfies the criteria set out in the Guidance on Enforcement Priorities for being dealt with by the Commission as a priority. In particular:

⁴⁵⁴ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 142.

⁴⁵⁵ Case C-23/14 *Post Danmark A/S v Konkurrencerådet*, EU:C:2015:651.

⁴⁵⁶ Case C-23/14 *Post Danmark A/S v Konkurrencerådet*, EU:C:2015:651, paragraph 61.

⁴⁵⁷ Such an analysis has, in particular, not been brought forward in Annex 1 to Broadcom’s SO Response titled “*Economic Considerations that Should be More Thoroughly Explored Before Interim Measures are Imposed Against Broadcom*”, Doc ID 1843-1.

⁴⁵⁸ Case T-184/01 R *IMS Health v Commission*, EU:T:2001:259, paragraph 68.

⁴⁵⁹ Case C-23/14 *Post Danmark A/S v Konkurrencerådet*, EU:C:2015:651, paragraph 52.

⁴⁶⁰ Case T-210/01 *General Electric v Commission*, EU:T:2005:456, paragraph 519; Case T-699/14 *Topps Europe v Commission*, EU:T:2017:2, paragraph 82.

- (a) Broadcom holds a *prima facie* dominant position in the markets at stake (see section 8.3 above), which play a crucial role in today’s society and economy (see recital (480) below);
 - (b) The markets are characterised by the existence of barriers to entry (see section 8.4.4 above);
 - (c) The OEMs that are targeted by the Agreements are important for entry and expansion in the markets at hand (see recital (366) below); and
 - (d) There is evidence showing at least on a *prima facie* basis that competitors and service providers have been affected by Broadcom’s conduct (see recitals (368) and (370) below).
- (356) In the third place, the Commission was not required to carry out a price-cost test for the reasons discussed at recitals (350) to (352) above.
- (357) In the fourth place, contrary to Broadcom’s claims, the Commission has assessed the *prima facie* capacity of Broadcom’s conduct to foreclose competition (see Section 8.5.2.2.B below).
- (358) Third, as to recital (344) above, the Commission did not carry out a mere “by object” analysis.
- (359) In the first place, the Commission carried out an analysis of the provisions and arrangements in each of the Agreements subject to this Decision, including the conditions and arrangements for granting the advantages in question, their duration and their extent (see section 8.5.2.1 above). As part of this assessment, the Commission identified the individual benefits granted under each single agreement and analysed their conditionality upon compliance by the respective OEMs with obligations under the individual agreement. While the Commission has not explicitly stated in the SO that the price advantages at stake were “retroactive” as opposed to “incremental”,⁴⁶¹ it was under no obligation to do so given that Broadcom has never claimed in the meetings that were held with the Commission prior to the SO⁴⁶² that its price advantages were incremental and given that it appears obvious from the wording of the Agreements that the price concessions therein described refer to retroactive rather than incremental rebates.
- (360) In the second place, and in any event, the Commission analyses in section 8.5.2.2.(B.) below the *prima facie* capability of Broadcom’s restrictions to affect competition. As such, Broadcom’s claim that the Commission carried out a “*by object*” assessment is clearly without merit.
- (B.) Analysis of *prima facie* capability of Broadcom’s conduct to affect competition
- (361) At the outset, the Commission notes that, in the absence of an objective justification, certain of the exclusivity-inducing provisions identified in section 8.5.2.1 above may amount *prima facie* to an abuse of dominant position, without, in principle, it being necessary to conduct an analysis of their capability to restrict competition. In any event, and without prejudice to the Commission’s approach in a possible final decision

⁴⁶¹ A retroactive price advantage is granted on all purchases once a certain purchase threshold is achieved. An incremental price advantage is granted only on those purchases made in excess of the amount required to achieve the threshold.

⁴⁶² On 21 March 2019 and on 25 June 2019, the Commission met with Broadcom representatives in the context of its preliminary investigation.

on the substance of the case, the Commission presents in the following section its conclusions as regards the *prima facie* capability of the exclusivity-inducing provisions described in sections 8.5.2.1.A and 8.5.2.1.B above to affect competition.

- (362) It should be noted that while the exclusionary mechanism for each of the types of restrictions identified in section 8.5.2.1 is different (see sections 8.5.2.1.A and 8.5.2.1.B above), all of the exclusivity-inducing provisions have the same object or effect. That is: to force or induce customers to obtain exclusively (or at least almost exclusively) their requirements of the relevant products from Broadcom. As such, the Commission will analyse in this section the capability of the exclusivity-inducing provisions as a whole to affect competition.
- (363) On the basis of the elements that follow, the Commission concludes that Broadcom's exclusivity-inducing provisions are *prima facie* capable of affecting competition, in the sense of excluding competitors that are as efficient and attractive to consumers as Broadcom from the point of view of, among other things, price, choice, quality or innovation.
- (364) First, the six OEMs covered by this Decision are likely to comply with the exclusivity-inducing provisions insofar as the OEMs either *de jure* or *de facto* commit to fulfil their obligations under those provisions and the majority of the Agreements provide the OEMs with significant incentives to induce them to comply with those provisions. Broadcom has therefore ensured that the exclusionary effect of the Agreements can be achieved by means of the compliance of the six OEMs. In particular:
- (a) The Agreements concluded with [OEM B], [OEM C] and [OEM E] can be presumed to be legally binding as no reference to any conflicting interpretation is included in these Agreements.⁴⁶³ As regards the Agreements with [OEM A], [OEM D] and [OEM F], the fact that these Agreements explicitly state that they are not legally binding is contradicted by the intention of the parties that transpires from the wording and the context of the Agreements, which was to reach a *de facto* binding agreement (see recitals (198), (199), (223), (224), (234) and (236) above, respectively). The language of these Agreements is clearly not suggestive of a non-binding agreement.⁴⁶⁴ Furthermore, if the Agreements were not intended to be (at least *de facto*) binding, it would be impossible to reconcile the rationale for Broadcom, [OEM A], [OEM D], and [OEM F] to spend significant time and resources in the negotiation and conclusion of these Agreements.⁴⁶⁵ In any event, in response to the Commission's requests for information, all of the customers that entered into the Agreements have confirmed that they comply with the terms thereof.⁴⁶⁶

⁴⁶³ Even if the exclusivity-inducing provisions of these agreements may have to be considered void due to them being contrary to Article 102 TFEU, the fact that they are contained in formal agreements that are in principle legally binding is a factor that increases the likelihood that the OEMs concerned will comply with them.

⁴⁶⁴ For example, the [OEM D] MoU clearly refers to [OEM D]'s "*obligations*".

⁴⁶⁵ See, for example, the correspondence between [OEM A] and Broadcom in relation to the negotiation of the [OEM A] CSA, Doc IDs [...].

⁴⁶⁶ Note [OEM A]'s revised reply of [...] to question 6 of Article 18(2) request for information of [...], page 8, paragraph 6.2: "*So far as [OEM A] is aware, it complied with its contractual obligations in respect of Clauses 5.2(b) to (e) ([90-100%] target).*"; See [OEM E]'s reply of [...] to question 2 of Article 18(2) request for information of [...], page 1; See [OEM D]'s reply of [...] to question 5 of Article 18(3)

- (b) In any event, regardless of whether the Agreements were *de facto* or *de jure* binding, as indicated in section 8.5.2.1 above, Broadcom typically⁴⁶⁷ offers important commercial advantages to its customers that are conditional on compliance with the exclusivity-inducing provisions. These advantages therefore also ensure that the OEMs comply with the exclusivity-inducing provisions, to the benefit of Broadcom. For example, and without it being necessary to restate all of the benefits listed in section 8.5.2.1 above, Broadcom offers to its customers that comply with the exclusivity-inducing provisions:⁴⁶⁸
- (1) rebates ranging from a [...] % reduction on pricing from the preceding year⁴⁶⁹ (see relevant clause at recital (224) above) to a [...] % discount against prices offered to non-strategic customers⁴⁷⁰ (see relevant clause at recital (198) above). These discounts are likely to guarantee OEMs which entered into the Agreements a more competitive market position relative to those which have not;
 - (2) advantageous technical support conditions (see relevant clauses at recitals (199), (206), (217), (223), and (229) above), which are highly valued by customers.⁴⁷¹ [OEM B], for instance, stated that “[...]”⁴⁷² and [OEM F] submitted that “[...]”;⁴⁷³ and
 - (3) early access to Broadcom’s technology (see relevant clauses at recitals (199), (223) and (229) above), which is highly valued by customers.⁴⁷⁴ [OEM F], for instance, stated that “[a]s a leading vendor in residential gateways, [...]”⁴⁷⁵. [OEM D] stated that early access “[...]”⁴⁷⁶ and [...] stated that “[...]”.⁴⁷⁷

Decision of [...], page 10; See [OEM B]’s reply of [...] to question 5 of Article 18(3) Decision of [...], page 4; See [OEM F]’s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1; See [OEM C]’s reply of [...] to questions 4 and 5 of Article 18(2) Request for Information of [...], page 2).

⁴⁶⁷ In certain cases, the Agreements contain exclusivity commitments on the side of OEMs in the absence of any specific advantages linked to them, such as in the [OEM F] LoI.

⁴⁶⁸ See also the list of benefits listed in Broadcom’s presentation to the Commission of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*,” Doc ID 1285, pages 24-25.

⁴⁶⁹ “*Non-Binding Memorandum of Understanding*” entered into between Broadcom and [OEM D] on [...] 2017, Doc ID 317, Clause 6.

⁴⁷⁰ “[*OEM A*]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 6.1.

⁴⁷¹ See [OEM B]’s reply of [...] to question 32 of Article 18(2) request for information of [...], page 13; [OEM D]’s reply of [...] to question 32 of Article 18(2) request for information of [...], page 13; [OEM F]’s reply of [...] to question 32 of Article 18(2) request for information of [...], page 12.

⁴⁷² See [OEM B]’s reply of [...] to question 32.1 of Article 18(2) request for information of [...], page 13.

⁴⁷³ [OEM F]’s reply of [...] to question 32.1 of Article 18(2) request for information of [...], page 12.

⁴⁷⁴ See [OEM B]’s reply of [...] to question 34 of Article 18(2) request for information of [...], page 14; [OEM D]’s reply of [...] to question 34 of Article 18(2) request for information of [...], page 13; [OEM E]’s reply of [...] to question 34 of Article 18(2) request for information of [...], page 19; [OEM F]’s reply of [...] to question 34 of Article 18(2) request for information of [...], page 13.

⁴⁷⁵ [OEM F]’s reply of [...] to question 34.1 of Article 18(2) request for information of [...], page 13.

⁴⁷⁶ [OEM D]’s reply of [...] to question 34.1 of Article 18(2) request for information of [...], pages 13-14.

⁴⁷⁷ [...]’s reply of [...] to question 34.1 of Article 18(2) request for information of [...], page 14.

(c) In addition to granting substantial advantages to those customers entering into agreements containing exclusivity-inducing provisions, the Commission has gathered evidence of Broadcom *inter alia* threatening to increase prices or terminate supplies to those customers who do not enter into such agreements. Feedback from the OEMs confirms the credibility of Broadcom’s threats. For example:

- (1) [OEM E] stated: “Broadcom has suggested that it would apply less favourable purchase conditions in terms of pricing if [OEM E] did not commit to source all or specific shares of our SoC [...] from Broadcom;”⁴⁷⁸
- (2) [OEM B] was forced by Broadcom to enter into the [OEM B] TPA in order to be able to benefit from competitive prices as Broadcom threatened to apply higher prices than those offered to other customers as a retaliatory measure for [OEM B] having opted in the past for a different chip supplier.⁴⁷⁹ [OEM B] had to subsequently consider readjusting its commercial strategy fearing further retaliation: “as non-BRCM sales take up small % of the total sales, we need to be fully aware of what we have to endure when considering its effect on the entire [OEM B] business. Accordingly, I would like to discuss about [...]”.⁴⁸⁰ [OEM B] eventually complied with the obligation [...];⁴⁸¹
- (3) Email exchanges, presentations and draft agreements in the run-up to the signing of the [OEM C] TPA demonstrate that Broadcom persistently applied pressure on [OEM C] to sign an agreement containing exclusivity-inducing provisions, including by (i) threatening lower quality technical support or higher cost for it should [OEM C] commit to a lesser form of cooperation with Broadcom;⁴⁸² (ii) threatening – from a date only three days in the future - to cease technical support via the Customer Support Portal and require payment of USD [...] million per year to re-enable it “if partnership deal cannot be reached”;⁴⁸³ and (iii) threatening – from a date only three days in the future – to impose price increases “if partnership deal cannot be reached”;⁴⁸⁴ and
- (4) An internal Intel report from the IBC conference⁴⁸⁵ in 2017 contains the following statement: “Broadcom business practices were part of nearly every discussion we had. Prices have been increased across the board,

⁴⁷⁸ [OEM E]’s reply of [...] to question 7 of Article 18(3) Decision of [...], page 6.

⁴⁷⁹ A [OEM B] employee mentions in an e-mail to Broadcom that “you were so negative to give us revised price on HR54 [i.e. a [OEM B] STB model] because [OEM B] had chosen another tuner solution by direction of [...]” and thus [OEM B] has “more than \$[...] price penalty against to other vendors”, e-mail of 22 February 2017 from [...] (Chief Procurement Officer) at [OEM B] to [...] at Broadcom, Doc ID 574, page 1.

⁴⁸⁰ [OEM B] internal e-mail of 3 July 2017 from [...], Doc ID 574, page 12.

⁴⁸¹ [OEM B]’s s reply of [...] to question 5 of Article 18(3) Decision of [...], page 4.

⁴⁸² See e-mail of 5 December 2016 from [...] at Broadcom to [...] at [OEM C], Doc ID 1605-39, page 1; e-mail of 12 December 2016 from [...] at Broadcom to [...] at [OEM C], Doc ID 1605-40, page 1; Broadcom presentation titled “[OEM C] / Partnership MoU” of February 2017, Doc ID 1605-41, page 2.

⁴⁸³ Broadcom presentation titled “3 Year Fiber CPE Proposal for [OEM C]” of 2 June 2017, Doc ID 1605-37, page 11.

⁴⁸⁴ Broadcom presentation titled “3 Year Fiber CPE Proposal for [OEM C]” of 2 June 2017, Doc ID 1605-37, page 11.

⁴⁸⁵ International Broadcasting Convention, an annual trade show.

technical customer support has been cut, and pressure is being applied for OEMs and MSOs to increase their business with Broadcom.”⁴⁸⁶

- (365) Second, the Agreements are likely to generate an even stronger loyalty effect given that they cover several product markets⁴⁸⁷ and that customers stand to lose significant advantages not only in relation to one single product but across the whole spectrum of products covered by the Agreements due to the existence of the cross-leveraging restrictions. Broadcom is found to be *prima facie* dominant in three product markets covered by the Agreements, which in itself means that Broadcom’s competitors have limited opportunities to counter Broadcom’s offers in these markets in light of Broadcom’s market power. In addition, Broadcom “*offers a more complete broadband portfolio than any other company*”⁴⁸⁸ and in fact it is the only company active in SoCs for STBs and residential gateways of all technologies.⁴⁸⁹ All of these factors make it very unlikely that any of Broadcom’s competitors would be able to compensate switching customers for the loss of the Broadcom benefits across the relevant product range resulting from a breach of the exclusivity-inducing provisions.
- (366) Third, the Agreements cover OEMs which are important for entry and expansion in the markets at hand. This is for the following reasons:
- (a) The OEMs that entered into the Agreements represent a significant part of the relevant markets and account for roughly half of global STB sales and approximately [30-40]% of global residential gateway sales.⁴⁹⁰
 - (b) Serving the needs of large OEMs such as the ones covered by the Agreements is likely to have beneficial effects in terms of economies of scale, which are an important feature of this industry (see recital (157) above).
 - (c) The OEMs that entered into the Agreements have an established market position and benefit from long-standing relationships with service providers downstream. By influencing the procurement strategies of these OEMs, Broadcom substantially increases the likelihood that products based on its components will be ultimately selected by service providers in the context of tenders and reduces the chances for competitors to compete on the merits (see recitals (368) and (370) below).
- (367) Fourth, given the functioning of this industry, the Agreements have a long duration, ranging from one to three years, and, with the exception of the [OEM A] CSA and the [OEM C] TPA, contain renewal clauses for further periods.⁴⁹¹ Multiple tenders take

⁴⁸⁶ Intel internal e-mail of 20 September 2017 from [...] at Intel to CHD Cable-BL Extended Staff and CHD Direct Staff, Doc ID 1094-134, page 1.

⁴⁸⁷ This does not apply to the [OEM C] TPA, which only covers fibre residential gateway SoCs, and to the [OEM B] TPA, which does not contain any cross-leveraging restrictions.

⁴⁸⁸ See Linley Group Report titled “Communications Semiconductor Market Share 2017”, Doc ID 1646, page 60: “*Broadcom offers a more complete broadband portfolio than any other company. Its portfolio includes DSL and PON as well as gateway technologies such as Ethernet and WiFi*”.

⁴⁸⁹ For example, Intel is not any longer active in STB SoCs; MediaTek is not active in cable gateway SoCs. See section 6 above.

⁴⁹¹ The [OEM A] CSA has a term of one year. The [OEM B] TPA has an initial term of three years, with the option of a renewal for a further two years. The [OEM C] TPA has a term of two years and six months. The [OEM D] MoU has an initial term of two years, tacitly renewable for further periods of one year. The [OEM E] SoC SPA has an initial term of three years, renewable for a further two years. The [OEM F] LoI has an initial term of three years, renewable “*as may be reasonably required*.” See section 6 above.

place each year. Hence, it is likely that the Agreements affect a number of tenders during their lifetime. Given that the effects of missing a tender typically continue to affect a supplier for several years (see recital (27)), the effects of the Agreements are likely to last for a long period even after their expiration. This makes it even more likely that they result in anticompetitive effects.

(368) Fifth, Broadcom's competitors have confirmed that they were unsuccessful in maintaining their business with the OEMs that entered into the Agreements:

(a) Intel:

- (1) With regard to [OEM E], Intel submitted that Broadcom obtained exclusivity commitments through threats of price increases and supply limitations, resulting in [OEM E] ceasing to launch Intel-based cable residential gateways.⁴⁹² In an internal Intel presentation, it is stated that "*The deal they signed with Broadcom locks us out [...]*."⁴⁹³
- (2) With regard to [OEM B], in an internal email submitted by Intel, an Intel employee stated in [...] 2017: "It seems that pressure from Broadcom is getting harder and harder to push [OEM B] to use Broadcom's Docsis solution. What we heard is that Broadcom is talking about price increase of some items which [OEM B] is buying from Broadcom if [OEM B] does not accept Broadcom's proposal. [OEM B] is still buying big amount of video chips from Broadcom for legacy set top box and any price increase will put big financial impact on [OEM B]. Recently Avago and Broadcom executives visited [OEM B], and we are so worried if [OEM B] might be forced to take a wrong decision due to this financial impact."⁴⁹⁴ Furthermore, according to Intel, "[OEM B] told Intel that it would be worse off financially even if it accepted Intel chips at no charge."⁴⁹⁵
- (3) With regard to [OEM D], Intel states that [OEM D] "*has been strong-armed into agreeing to source DSL and cable modem silicon nearly exclusively from Broadcom*".⁴⁹⁶ Intel submitted an internal presentation according to which Intel considers that "*BRCM [is] leveraging their ~200M\$ biz (STB+GW) with [OEM D] to keep us out*".⁴⁹⁷

(b) Marvell:

⁴⁹² Intel's supplemental reply of 21 December 2018 to question 5 of Article 18(3) Decision of 26 October 2018, Doc ID 1739, page 7.

⁴⁹³ Intel internal presentation of October 2017 titled "Cable BL CSO Update", Doc ID 1539, page 25.

⁴⁹⁴ Intel internal e-mail of 25 April 2017 from [...], Doc ID 1538.

⁴⁹⁵ Intel's supplemental reply of 21 December 2018 to question 5 of Article 18(3) Decision of 26 October 2018, Doc ID 1739, page 7. The same reply continues: "*because of the linking of STB silicon pricing to the pricing of cable modem and DSL silicon, an as efficient competitor could not counter Broadcom's pricing with above-cost discounted pricing at other OEMs as well*".

⁴⁹⁶ Intel's supplemental reply of 21 December 2018 to question 5 of Article 18(3) Decision of 26 October 2018, Doc ID 1739, page 14.

⁴⁹⁷ Intel internal presentation of September 2017 titled "[OEM D] Account Overview", Doc ID 1537, page 8. In another presentation Intel referred to [OEM D] as having "quasi-exclusivity" with Broadcom, bidding Intel-based designs only when pressed to do so by a service provider, see Intel internal presentation of 4 June 2018 titled "CHD Design Win Status", Doc ID 1536, page 8.

- (1) With regard to [...], Marvell attributes its difficulties to enter into a supply agreement since 2017 to an “*allegedly exclusive supply agreement imposed by Broadcom on [...]*”.⁴⁹⁸
 - (2) With regard to [...], Marvell stated that “*Broadcom forced [...] to enter into an exclusive supply agreement with Broadcom for the supply of Set Top Boxes which prevented Marvell from supplying [...] SoCs to [...]*”.⁴⁹⁹
- (c) MediaTek:
- (1) With regard to [...], MediaTek submitted that, in 2016, Broadcom had requested set-top box manufacturers that participated in a [...] tender for next generation STBs to not rely on a solution from MediaTek group and that “[...] [networking device/solutions] *was one of the vendors which was dissuaded from having recourse to [MediaTek Group] solutions. [...] ultimately decided to award the project to Broadcom*”.⁵⁰⁰
 - (2) With regard to [...], MediaTek stated that: “For many years, [...] have been under pressure from Broadcom to sole-source their chipsets needs from them. They were required to sign an exclusivity agreement with Broadcom in 2017 as a condition for Broadcom not imposing increases in price and lead times.”⁵⁰¹
 - (3) With regard to [...], MediaTek stated: “[...] has been required to sign an exclusivity agreement with Broadcom in 2017 as a condition for avoiding price rises and increases in the lead times of products which it sources from Broadcom. [...] was an important [...] customer for [MediaTek Group] in 2017 and both parties intended to establish a long-term relationship. However, as [...] was forced to sign the exclusivity agreement with Broadcom, [MediaTek Group’s] attempt to become [...] alternative supplier of SoCs [networking device/solutions] and other customer-premises equipment has been unsuccessful.”⁵⁰²
 - (4) With regard to [...], MediaTek submitted: “After [...] submitted a bid in the [...] envisaging that chipsets would be provided by [MediaTek Group], Broadcom decided to increase the sales prices of chipset to [...] by 50-100%. Broadcom also interrupted supplies of chipsets to [...], and asked its (Broadcom’s) customers not to supply Broadcom chipsets to [...]. [Two senior executives] felt they had no choice but to inform [MediaTek Group] that [...] could not use [MediaTek Group] chipsets for the [...], and that they would need to decline any further cooperation with [MediaTek

⁴⁹⁸ Marvell’s reply of 30 November 2018 to questions 5 and 6 of Article 18(3) Decision of 24 October 2018, Doc ID 1549, page 14.

⁴⁹⁹ Marvell’s reply of 30 November 2018 to questions 5 and 6 of Article 18(3) Decision of 24 October 2018, Doc ID 1549, pages 14-15.

⁵⁰⁰ MediaTek’s reply of 23 November 2018 to question 8 of Article 18(3) Decision of 24 October 2018, Doc ID 1621, page 13.

⁵⁰¹ MediaTek’s reply of 23 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1621, page 10.

⁵⁰² MediaTek’s reply of 23 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1621, page 11.

Group], in spite of the two companies having worked together intensively for over five years”.⁵⁰³

- (369) These statements show that Broadcom’s competitors are becoming increasingly unable to exercise a significant competitive constraint on Broadcom. Major and established competitors appear to be losing existing customers or are prevented from finding new ones for reasons that are not dependent on competition on the merits. Intel’s statement that [OEM B] would not find it economically viable to purchase from Intel “*even if it accepted Intel chips at no charge*”⁵⁰⁴ is particularly telling in this regard.
- (370) Sixth, Broadcom’s conduct has a direct detrimental effect at the downstream level, that is *vis-à-vis* service providers. This is because service providers are interested in purchasing STBs and residential gateways incorporating non-Broadcom components and would likely do so absent the Agreements for at least part of their requirements. For example:
- (a) Deutsche Telekom stated with regard to STBs: “In the last tenders (since mid-2017) it became indeed apparent that these exclusivity contracts seem to be in place as we only got offers with BCM solutions, even when we [were] explicitly asking for offers with two different SoC solutions.”⁵⁰⁵
 - (b) [ANONYMOUS SERVICE PROVIDER 1] stated with regard to STBs: “[...].”⁵⁰⁶ [...].⁵⁰⁷
 - (c) Orange stated with regard to STBs: “[various OEMs - including [OEM A], [OEM E], [OEM B] and [...]] *have explained to Orange that they signed a Partnership Agreement with Broadcom in order to have best prices and lead times if they source only or partially Broadcom SoC. Under this Partnership Agreement, the supplier is not allowed to propose another chipset than Broadcom’s.*”⁵⁰⁸ In relation to a particular STB proposal, Orange stated, “*The suppliers [including [OEM A], [OEM B] and [OEM E]] were explicitly requested to answer with offers based on Broadcom and HiSilicon chipsets as a mandatory condition to be shortlisted. However, all suppliers answered only with Broadcom chipsets. To justify why only Broadcom chipsets were included in their offers, some of the suppliers said that an offer based on non-Broadcom chipsets would not be compliant with Orange’s Time-To-Market requirements.*”⁵⁰⁹

⁵⁰³ MediaTek’s reply of 23 November 2018 to question 8 of Article 18(3) Decision of 24 October 2018, Doc ID 1621, pages 12-13.

⁵⁰⁴ Intel’s supplemental reply of 21 December 2018 to question 5 of Article 18(3) Decision of 26 October 2018, Doc ID 1739, page 7. The same reply continues: “*Intel believes that, because of the linking of STB silicon pricing to the pricing of cable modem and DSL silicon, an as efficient competitor could not counter Broadcom’s pricing with above-cost discounted pricing at other OEMs as well*”.

⁵⁰⁵ Deutsche Telekom’s reply of 14 November 2018 to question 6 of Article 18(3) Decision of 24 October 2018, Doc ID 1194, page 5.

⁵⁰⁶ [ANONYMOUS SERVICE PROVIDER 1]’s reply to question [CONFIDENTIAL] of Article 18(3) Decision of 24 October 2018, Doc ID 1680, page 1.

⁵⁰⁷ [ANONYMOUS SERVICE PROVIDER 1]’s reply to question [CONFIDENTIAL] of Article 18(3) Decision of 24 October 2018, Doc ID 1680, page 1.

⁵⁰⁸ Orange’s reply of 19 November 2018 to question 6 of Article 18(3) Decision of 24 October 2018, Doc ID 1612, pages 1-2.

⁵⁰⁹ Orange’s reply of 19 November 2018 to question 10 of Article 18(3) Decision of 24 October 2018, Doc ID 1612, page 2.

- (d) Liberty Global stated with regard to [...]: *“During the IBC 2017 trade show in Amsterdam [...] Liberty Global expressed its wish to see OEMs propose both Broadcom and non-Broadcom-based chip solutions [...],”* but *“In meetings with [...], each vendor made it clear that they would not propose anything other than Broadcom solutions to Liberty Global. [...] verbally stated that they were concerned that their pricing and supply chain terms (specifically, lead time) would be detrimentally affected if they were to propose a non-Broadcom solution,”* and, ultimately, *“Of the twelve vendors that submitted proposals to the [...] RFP, none of the five vendors that had pre-existing relationships with Broadcom (namely, [...]) submitted a non-Broadcom solution.”*⁵¹⁰
- (e) KPN stated with regard to STBs: *“KPN once noticed that once a supplier of TV Set Top Boxes first orally offered equipment with non-Broadcom chipsets but when offering in writing replaced the offer by an offer with products consisting of Broadcom components”*⁵¹¹ and *“At an international exhibition (IBC) in fall 2017 a KPN representative talked with a Broadcom representative. In this talk the Broadcom representative indicated that Broadcom would stop further developing a chipset in a tv set-top box if KPN would not procure the next version of the chipset from Broadcom.”*⁵¹²
- (f) Vodafone stated with regard to residential gateways: *“In its recent tender process for Gateway propositions such as DOCSIS 3.1 and VOX 3.0, Vodafone shared information with Broadcom and Intel, about Vodafone’s required technical specifications, so that they could support Vodafone’s suppliers in their RFQ responses. During the VOX 3.0 RFQ process (in April 2017), Intel expressed a concern about the fairness of the RFQ process, around the best and final offer stage. By this stage, all suppliers were proposing a Broadcom solution. Intel informed Vodafone that the suppliers involved in the RFQ process had told Intel that Vodafone was only asking for variations on the Broadcom chipsets. This was not Vodafone’s intention. In order to avoid any misinterpretation by suppliers of Vodafone’s requests, Vodafone clarified to all suppliers that it was open to evaluating non-Broadcom-based solutions if they met Vodafone’s functional requirements and they were commercially competitive.”*⁵¹³ Vodafone also stated that it *“always asks suppliers to consider multiple chipset-platform solutions.”*⁵¹⁴
- (g) In a 2017 internal presentation by Marvell, it is stated with regard to STBs that *“[o]perators are eager to break Broadcom’s monopoly position”* in STBs and thus *“reduce [their] dependency on Broadcom”*.⁵¹⁵

⁵¹⁰ Liberty Global’s reply of 14 November 2018 to question 8 of Article 18(3) Decision of 24 October 2018, Doc ID 1640, pages 1-2.

⁵¹¹ KPN’s reply of 14 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 879, page 8.

⁵¹² KPN’s reply of 14 November 2018 to question 9 of Article 18(3) Decision of 24 October 2018, Doc ID 879, page 10.

⁵¹³ Vodafone’s reply of 29 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1643, page 1.

⁵¹⁴ Vodafone’s reply of 29 November 2018 to question 11 of Article 18(3) Decision of 24 October 2018, Doc ID 763, page 6.

⁵¹⁵ Marvell internal presentation titled “Market Overview”, Doc ID 1548, pages 4 and 5.

- (371) These statements confirm that service providers have a genuine interest in exploring options different from Broadcom in their tendering requirements and switching at least part of their requirements. However, by closing off access to major and strategic OEMs which represent a significant part of the market, Broadcom’s conduct harms service providers, reducing the latter’s sourcing opportunities and freedom of choice.
- (372) Broadcom argues that its conduct is not capable of affecting competition.
- (373) First, Broadcom claims or implies⁵¹⁶ that the Commission is wrong to conclude that it was likely that the six OEMs that are party to the Agreements would comply with the Agreements due to the following:
- (a) “*Escalation processes*” and “*opt outs*” included in the Agreements allow OEMs to bid non-Broadcom solutions in certain circumstances;⁵¹⁷ and
 - (b) Certain Agreements are designated as “*non-binding*” and/or contain wording obliging “*good faith*” or the use of “*best efforts*”.⁵¹⁸
- (374) Second, Broadcom claims or implies⁵¹⁹ that the Commission is wrong to conclude that the Agreements are likely to have a loyalty-inducing effect. Broadcom also claims that the lack of an explicit stipulation as to the interrelation between contractual clauses within certain Agreements precludes the conclusion that there was cross-product conditionality.⁵²⁰
- (375) Third, Broadcom claims that the Commission is wrong to conclude that the six OEMs that are party to the Agreements were large and important market players due to the following reasons:
- (a) The Commission’s coverage figures ignore the high-end/low-end segmentation in the relevant markets;⁵²¹
 - (b) The Commission’s coverage figures fail to take proper account of the purchase commitments within the Agreements;⁵²²

⁵¹⁶ Broadcom also articulated the arguments treated in this recital in the context of other parts of its submissions. Given the bearing that such factual considerations may have on this element of the Commission’s conclusion of capability to affect competition, they are briefly addressed in this section as well.

⁵¹⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraph 9 (generally), paragraphs 136 and 158 (concerning the [OEM A] CSA), paragraph 164 (concerning the [OEM D] MoU), and paragraph 174 (concerning the [OEM B] TPA).

⁵¹⁸ See, for example, Broadcom’s SO Response, Doc ID 1843-15, paragraphs 4, 58 and 149 (generally), paragraphs 135, 155 and 157 (concerning the [OEM A] CSA), paragraph 203 (concerning the [OEM B] TPA) and paragraph 160 (concerning the [OEM D] MoU).

⁵¹⁹ Broadcom formally articulated the arguments treated in this recital in the context of contesting the Commission’s legal qualification of the Agreements. Given the foreseeable bearing that such factual considerations may have on this element of the Commission’s conclusion of capability to affect competition, they are dealt with here also.

⁵²⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 190 to 192.

⁵²¹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 218 and 219. See also Doc ID 2203, slide 27 on page 29; see also Annex 1 to Broadcom’s SO Response titled “*Economic Considerations that Should be More Thoroughly Explored Before Interim Measures are Imposed Against Broadcom*”, Doc ID 1843-1, page 6.

⁵²² Broadcom’s SO Response, Doc ID 1843-15, paragraph 219. See also Doc ID 2203, slide 27 on page 29.

- (c) Broadcom’s alternative market coverage figures, ranging from [10-20]% to [30-40]% depending on the relevant market concerned, preclude the conclusion that relevant markets were foreclosed;⁵²³ and
- (d) [OEM B], [OEM D] and [OEM E] are not apt to be considered “key” OEMs because together they represent: (i) “*less than [30-40] percent of [cable residential gateway] sales*”; (ii) “*only [20-30] percent of [DSL residential gateway] sales*”; and (iii) “*less than [0-10] percent of [fibre residential gateway] sales.*”⁵²⁴
- (376) Fourth, Broadcom claims that the Commission is wrong to conclude that the Agreements were of long duration. Broadcom argues that the Commission’s characterisation of Agreements lasting one to three years as being of long duration is “*entirely unsupported*”⁵²⁵ and describes the Agreements (albeit in the context of Broadcom’s submissions on the urgency of the proposed interim measures) as being of “*short duration.*”⁵²⁶
- (377) Fifth, Broadcom claims that the Commission is wrong to conclude that testimony by Broadcom’s competitors indicates that OEMs wished to multi-home, but were prevented from doing so by the Agreements. In this regard, Broadcom submits the Commission has simply taken statements from its competitors “*at face value*”.⁵²⁷
- (378) Sixth, Broadcom claims that the Commission is wrong to conclude that testimony by Service Providers indicates that OEMs and Service Providers wished to multi-home, but were prevented from doing so by the Agreements due to the following reasons:
- (a) As regards Liberty Global’s reply to the RFI of 24 October 2018,⁵²⁸ Broadcom specifically refers to the [...] project, in which, Broadcom claims: (i) eight out of twelve OEMs were not subject to a contractual relationship akin to the Agreements with Broadcom; (ii) “*at least three*” of the eight “*independent*” OEMs bid non-Broadcom solutions; and (ii) Liberty Global selected Broadcom as its “*1st seat*” provider, but – at the time of its reply – “[was] *still in the process of looking for a 2nd seat provider.*”
- (b) As regards Vodafone’s reply to the RFI of 24 October 2018,⁵²⁹ Broadcom specifically refers to: (i) statements to the effect that Vodafone has a policy of multi-homing during selection processes; (ii) statements to the effect that this approach is subject to chip suppliers’ ability to meet Vodafone’s functional commercial requirements; and (iii) a statement to the effect that Vodafone is not aware of an instance where an OEM explicitly refused to supply non-Broadcom solutions.
- (c) As regards KPN’s reply to the RFI of 24 October 2018,⁵³⁰ Broadcom specifically refers to statements to the effect that: (i) KPN has not encountered a situation where OEMs refused to supply non-Broadcom solutions; and (ii) KPN bases its

⁵²³ Broadcom’s SO Response, Doc ID 1843-15, paragraph 219.

⁵²⁴ Broadcom’s Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 4.a., pages 7-8.

⁵²⁵ Broadcom’s SO Response, Doc ID 1843-15, paragraph 85.

⁵²⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraph 278.

⁵²⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 13, 75, 85, 151 and 253.

⁵²⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 221.

⁵²⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 221.

⁵³⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraph 221.

sourcing decisions on technical requirements and functionality, rather than the identity of the chip supplier.

- (d) As regards Orange's reply to the RFI of 24 October 2018,⁵³¹ Broadcom specifically refers to statements pertaining to a tender process for an STB opportunity for Orange Poland, in which context: (i) Orange states that it specifically requested bids with Broadcom and HiSilicon solutions, and was frustrated to see only Broadcom solutions bid; (ii) Broadcom contends that Orange was satisfied by the explanation by "some of" the OEMs involved that other chip suppliers' solutions could not meet Orange's time-to-market requirements; and (iii) Broadcom contends that this proves that Broadcom is the only supplier capable of meeting such requirements, such that there can be no foreclosure.
- (379) Seventh, Broadcom claims in general terms that the Commission was wrong to conclude that OEMs wished to multi-home, but were prevented from doing so by the Agreements, because many OEMs actually preferred to work with just one chipset supplier when bidding on a service provider opportunity in order to keep under control their substantial costs.⁵³²
- (380) The Commission considers that Broadcom's claims are without merit for the following reasons.
- (381) First, Broadcom's claims regarding the lack of compliance with the Agreements due to "escalation processes" and the non-binding nature of certain Agreements are unfounded for the following reasons.
- (382) In the first place, as outlined in recitals (273) to (277) above, the "escalation processes" contained within certain Agreements do not provide for genuine ways for the OEMs to multi-source in full independence.
- (383) In the second place, Broadcom's claims as to the alleged significance of the fact that certain Agreements are designated as "non-binding" and/or contain wording obliging "good faith" or the use of "best efforts" are unfounded for the reasons described at recitals (284) to (289) above.
- (384) Second, Broadcom's claim concerning the lack of conditionality is unfounded for the reasons described at recitals (290) to (294) above. Furthermore, as regards the existence of cross-product conditionality, the fact that Broadcom's market shares in the market for cable residential gateway SoCs have been increasing from [50-60]% to [60-70]% between 2017 and 2018⁵³³ is consistent with a potential leveraging conduct displaying its effects.
- (385) Third, Broadcom's claims on the role of the OEMs and the coverage of the Agreements are unfounded for the following reasons.
- (386) In the first place, if the Commission, at this stage, was not considering the product market as a whole, *i.e.* without further segmentation between high- and low-end, but would focus only on high-end solutions of the market, which are particularly in

⁵³¹ Broadcom's SO Response, Doc ID 1843-15, paragraph 221.

⁵³² See Broadcom's Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 3.b., page 2.

⁵³³ See fn. 664.

demand in the EEA,⁵³⁴ coverage figures of the Agreements would likely be yet much higher.⁵³⁵ As such, Broadcom's claim in this regard is irrelevant.

- (387) In the second place, Broadcom's coverage figures ([50-60]% for STB SoCs; [30-40]% for xDSL residential gateway SoCs; [10-20]% for fibre residential gateway SoCs; and [30-40]%⁵³⁶ for cable residential gateway SoCs) in fact confirm that the Agreements cover a substantial part of the relevant markets and support the finding – as part of a range of qualitative and quantitative evidence – that Broadcom's conduct is *prima facie* capable of affecting competition.⁵³⁷ These figures are large even disregarding the fact that they refer to the overall market and not only to the high-end of the market, in which coverage is likely to be much more significant. In addition, these figures overestimate the likely amount of the downstream demand that is contestable given the existence of alternative arrangements that may not leave customers free to source from Broadcom's competitors.⁵³⁸ Finally, [...].⁵³⁹ Hence, it would represent an important customer for a fibre residential gateway SoC supplier who wants to enter or establish a credible presence in the market.
- (388) In the third place, Broadcom's claim on coverage figures for [OEM B]'s, [OEM D]'s and [OEM E]'s sales of residential gateways is misleading. It is inappropriate to look at the combined coverage figures of only three out of six OEMs covered by the Agreements. The importance of the OEMs covered by the Agreements as market players is represented in their combined coverage figures for the different markets at stake and has to be seen against the backdrop of the considerations expressed at recital (366) above and (389) below.
- (389) In the fourth place, as set out in recital (366) above, the Agreements cover OEMs which are crucially important for entry and expansion in the markets at hand.
- (390) Fourth, Broadcom's claim that the duration of the Agreements was short is unfounded. The Commission's characterisation of the Agreements as long is substantiated insofar as it explicitly refers to the Agreements' tendency to affect several generations of products spanning several tender cycles, in view of the typical length of tender processes (1.5 to 2 years) in this industry (see recitals (27) and (367) above).⁵⁴⁰ In addition, the Commission notes the following:

⁵³⁴ See minutes of meeting with Broadcom of 21 March 2019, Doc ID 1352, page 2.

⁵³⁵ As is acknowledged by Broadcom stating that its strategic partners focus mainly on high-end solutions, see e.g. Broadcom presentation of 21 March 2019 titled "*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom's Strategic Partnerships*", Doc ID 1285, pages 23-24; Broadcom's SO Response, Doc ID 1843-15, paragraphs 4, 42.

⁵³⁶ The Commission excluded from Broadcom's figure as provided in Broadcom's SO Response (i.e. [30-40]%), which was taken from the SO, cable residential gateway sales accounted for by [...].

⁵³⁷ The Court of Justice has confirmed that two fifths of a market is a considerable proportion of total demand in view of foreclosure of the market to competition; see Case C-549/10 P *Tomra and Others v Commission*, EU:C:2012:221, paragraphs 43-46. This must however not be understood as a minimum threshold as the General Court has accepted even much lower market coverage figures as "significant" with a view to foreclosure effects, see Case T-286/09 *Intel v Commission*, EU:T:2014:547, paragraphs 194, 271, annulled but not on this point. In the case at hand, foreclosure effects of the Agreements are confirmed also by other elements, see e.g. recitals (366)(b) and (370)(f) above.

⁵³⁸ For example, Broadcom has an agreement [...] with [...], an OEM producing cable residential gateways. Pursuant to this agreement, "[...]"

⁵³⁹ [...].

⁵⁴⁰ See [OEM B]'s comments on the SO, Doc ID 2005, page 2.

- (a) Broadcom itself makes statements as to what is apt to be considered “long” in this industry – citing among a list of “*danger signs*” in semiconductor markets “*Long product development lead times (2-3 years)*”;⁵⁴¹
- (b) The average duration (absent any renewal) of the Agreements is 2.40 years. Their average duration incorporating the exercise of the renewal option specified, or a single renewal (where multiple renewals are, or indefinite renewal is, contractually possible), is 3.57 years.⁵⁴²
- (391) Hence, in this light, the Commission considers the duration of the Agreements to be long.
- (392) Fifth, Broadcom’s claim that the Commission took competitors’ statements at face value is unfounded for the following reasons.
- (393) In the first place, as a general remark, the Commission has not accepted any evidence “*at face value*”. It has rather considered a wide range of qualitative and quantitative evidence in arriving at its conclusions on the *prima facie* qualification of Broadcom’s conduct. The statements from competitors referred to in recital (368) above are entirely consistent with the remaining evidence quoted in this section and provide a coherent basis to establish the *prima facie* capability of Broadcom’s conduct to affect competition.
- (394) In the second place, Broadcom’s claim that the Commission took statements made by Intel at face value is wrong. Intel’s description of the impact of Broadcom’s conduct on Intel’s Connected Home Division is consistent with multiple other quotations listed at recital (368) above. Further, as regards Broadcom’s claim that performance issues with Intel’s Puma 6 and Puma 7 cable residential gateway SoCs are the sole cause of OEMs’ use of competing Broadcom cable residential gateway SoCs: (i) this is at odds with Broadcom’s parallel claim that the Agreements were *necessary* to protect Broadcom’s significant investments in its relationships with OEMs and service providers (see further recital (405) below); and (ii) even if it were true, this claim would have no effect on the Intel quotation pertaining to [OEM D]’s sourcing of xDSL SoCs from Broadcom (see recital (368)(a)(3) above).
- (395) Sixth, Broadcom’s claims concerning statements from service providers are unfounded for the reasons below:

⁵⁴¹ Broadcom presentation of 21 March 2019 titled “*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom’s Strategic Partnerships*”, Doc ID 1285, page 5.

⁵⁴² These calculations have been conducted on a cautious basis that is favourable to Broadcom. **Note 1:** There is no explicit contractual stipulation as to the possibility of renewal in the [OEM A] CSA, the [OEM C] TPA and the [OEM E] Cable SPA. Hence, in respect of these Agreements, no addition has been made to the initial term in the above calculation with renewal options exercised. **Note 2:** The [OEM D] MoU provides for tacit 1 year renewals (thus an unspecified number of 1-year renewals is possible). On a cautious basis that is favourable to Broadcom, the above calculation with the renewal option exercised applies only one 1-year renewal. **Note 3:** The [OEM F] LoI provides for renewal “*as may be reasonably required*” (thus indefinite renewal is possible, subject to a reasonableness caveat). On a cautious basis that is favourable to Broadcom, the above calculation with the renewal option exercised applies only one 2-year renewal. This is an appropriate proxy since Broadcom indicates (Broadcom’s SO Response, Doc ID 1843-15, Section 2.4) that this Agreement was concluded when negotiations geared towards concluding a TPA (a majority of which contain the option of a single 2-year renewal) were unsuccessful.

- (a) Liberty Global’s description of the [...] project (and other evidence on file contextualising this project) refutes, rather than supports, Broadcom’s claim. In particular:
- (1) According to Liberty Global, despite an explicit specification in the tender documentation that “[...]”⁵⁴³ only three proposals not incorporating Broadcom solutions from among eight OEMs identified as having no pre-existing relationship with Broadcom were submitted. This does not affect the Commission’s conclusions with respect to [...] and confirms that the Agreements had the effect of restricting significantly Liberty Global’s choice (see recital (370)(d) above);
 - (2) Broadcom’s emphasis on Liberty Global’s selection of Broadcom “*on the basis of technical specifications*” is, again, an attempt to deflect scrutiny of Broadcom’s conduct by alluding to the supposed paramountcy and insuperability of service providers’ specifications. This is false, both in a general sense (see recitals (266) to (271) above) and in the specific case of this tender process – the Request for Proposal of which explicitly states “[...]”.⁵⁴⁴
 - (3) In addition, the mere fact that five out of eight OEMs did not propose a non-Broadcom solution confirms that Liberty Global did not have the power to require these OEMs to submit a non-Broadcom proposal.
- (b) Vodafone’s statements refute, rather than support, Broadcom’s claim. In particular:
- (1) Statements to the effect that Vodafone has a policy of multi-homing during selection processes supports the view that there is indeed a desire among service providers to multi-source;
 - (2) Broadcom’s quotation in isolation of a statement that Vodafone’s approach is subject to chip suppliers’ ability to meet Vodafone’s functional commercial requirements (the implication being that Broadcom’s chips are the only ones that meet them and that therefore there can be no foreclosure) is misleading. Quoting only the statement in which Vodafone says that it “*was open to evaluating non-Broadcom-based solutions if they met Vodafone’s functional requirements and they were commercially competitive*” omits information concerning the surrounding context and notably that Vodafone is paraphrasing the clarification it was forced to issue to OEMs when it became aware of a perception among OEMs that Vodafone would only consider Broadcom-based solutions in a particular process – something it describes as “*not [our] intention*”;⁵⁴⁵ and
 - (3) Broadcom’s quotation in isolation of a statement to the effect that Vodafone is not aware of an instance where an OEM explicitly refused to supply non-Broadcom solutions is also misleading. Quoting only the

⁵⁴³ Request for Proposal entitled [...], included as Annex 19 to Liberty Global’s reply of 14 November 2018 to the Article 18(3) Decision of 24 October 2018, Doc ID 1205-13, page 9.

⁵⁴⁴ Request for Proposal entitled [...], included as Annex 19 to Liberty Global’s reply of 14 November 2018 to the Article 18(3) Decision of 24 October 2018, Doc ID 1205-13, page 5.

⁵⁴⁵ Vodafone’s reply of 29 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1643, page 1.

statement in which Vodafone says that it “*does not recall a case of an explicit refusal to supply equipment which did not contain Broadcom components*”, again, omits information concerning the surrounding context insofar as the very next sentences state “*If a supplier refused to provide solutions based on non-Broadcom components, it would not be obvious to Vodafone. Suppliers typically justify choice of components on the basis of synergies with other projects.*”⁵⁴⁶ Hence, Vodafone recognises the potential limits of its knowledge of arrangements between Broadcom and OEMs, and underlines the importance of synergies between projects – something which tends to reinforce the Commission’s conclusions as to the Agreements’ loyalty-inducing effect in view of their multi-product scope (see recital (365) above).

- (c) KPN’s statements undermine Broadcom’s claim, or are at best irrelevant to (as opposed to supportive of) Broadcom’s claim. In particular:
- (1) KPN’s statement that it has not encountered with certainty a situation where OEMs refused to supply non-Broadcom solutions is tempered by the two KPN-provided examples of exertion of pressure by Broadcom on market players that are quoted in recital (370)(e) above (namely – (a) an occasion where an oral offer of a non-Broadcom solution was changed to a Broadcom solution in the subsequent written offer; and (b) an occasion at the September 2017 IBC conference, in which Broadcom threatened to discontinue certain development activity if KPN refused to procure the next version of a chipset from Broadcom); and
 - (2) KPN’s statement that it bases its sourcing decisions on technical requirements and functionality, and “*does not require [OEMs] to offer non-Broadcom products*” does not refute the Commission’s conclusion that the Agreements (concluded directly between Broadcom and OEMs) were capable of affecting competition. The fact that KPN does not require non-Broadcom products does not mean that it does not expect them if they meet its technical requirements and functionality.
- (d) Orange’s statements undermine Broadcom’s claim, or are at best irrelevant to (as opposed to supportive of) Broadcom’s claim. In particular:
- (1) Orange’s statement that it specifically requested bids with Broadcom and HiSilicon solutions, and its apparent frustration to see only Broadcom solutions bid, supports the view that service providers indeed wish to multi-source; and
 - (2) Broadcom’s contention that Orange was satisfied by the explanation by “*some of*” the OEMs involved that other chip suppliers’ solutions could not meet Orange’s time-to-market requirements is without basis. Orange did not state that it was satisfied with the OEMs’ explanation – rather only that some OEMs justified the lack of non-Broadcom based proposals on the basis of time-to-market requirements.

⁵⁴⁶ Vodafone’s reply of 29 November 2018 to question 11 of Article 18(3) Decision of 24 October 2018, Doc ID 763, page 6.

(e) In the fifth place, Broadcom’s general claims that service providers would not be interested or willing to multi-source are also refuted by the following:

(1) [...] ⁵⁴⁷

(2) [...] ⁵⁴⁸

(3) Cable Europe, a European trade association representing broadband cable TV operators and national cable associations in the EU, stated: “*It is also important, from a commercial perspective, for our members to have multiple chipset suppliers. One member has historically held a two OEM, two SOC policy for its customer premises equipment, whereby it nominates a primary (preferred) and secondary seat SOC provider. The purpose of this policy is to mitigate risk – e.g. in case of loss of supply from the primary chip provider – and to increase commercial leverage against the preferred, primary chip provider.*” ⁵⁴⁹

(396) Seventh, Broadcom’s claim that many OEMs actually preferred to work with just one chipset supplier when bidding is unfounded for the following reasons.

(397) In the first place, Broadcom’s claim is irrelevant with regard to the Agreements’ capability to affect competition. By way of the exclusivity-inducing provisions in the Agreements, Broadcom is effectively preventing the OEMs concerned from sourcing from its competitors. In addition, it is legally irrelevant that the exclusivity-inducing provisions had been included in the Agreements upon the OEMs’ request (which is in itself unlikely). ⁵⁵⁰

(398) In the second place, the three statements from [OEM A] ⁵⁵¹, [OEM D] ⁵⁵² and [OEM E] ⁵⁵³ invoked by Broadcom in support of its claim lack credibility. The Commission has acquired evidence of numerous contacts between Broadcom and the respective OEMs in relation to these letters and prior to their submission to the Commission, which shows that Broadcom invited these OEMs to provide the Commission with corresponding submissions and, in two cases, even provided these OEMs with drafting suggestions.

(399) As regards [OEM A]’s statement in its letter to the Commission of 24 July 2019, evidence in the Commission’s file shows that in a telephone conference between [OEM A], Broadcom, [OEM A]’s external lawyer and Broadcom’s external lawyer on 9 July 2019, “[Broadcom’s external lawyer] *asked that [[OEM A]] make a written submission to the Commission [...]. [Broadcom’s external lawyer] asked that [[OEM A]] send this statement by 23 July 2019. [[OEM A]’s external lawyer] asked [Broadcom’s external lawyer] to provide an outline of the type of submission Broadcom would like [[OEM A]] to consider making, for consideration by [[OEM A]]*”. ⁵⁵⁴ On 10 July 2019, “[Broadcom’s external lawyer] *wrote to [[OEM A]’s*

⁵⁴⁷ [...].

⁵⁴⁸ [...].

⁵⁴⁹ Cable Europe’s observations on the SO, Doc ID 2070, page 2.

⁵⁵⁰ Case C-85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 89. See also Case C-413/14 *P Intel Corp. v Commission*, EU:C:2017:632, paragraph 137.

⁵⁵¹ Doc ID 1846, page 2.

⁵⁵² Doc ID 1792, page 2.

⁵⁵³ Doc ID 2057, pages 2-3.

⁵⁵⁴ [OEM A]’s reply of [...] to question 2 of Article 18(2) request for information of [...], page 3.

external lawyer] *attaching Broadcom's suggested topics for [[OEM A]'s] letter to the Commission [...]*".⁵⁵⁵ This "*Outline for Potential [OEM A] Statement*" proposed [...].⁵⁵⁶ [...].⁵⁵⁷ [...].⁵⁵⁸

- (400) As regards [OEM D]'s statement in its letter to the Commission of 19 July 2019, first contacts in relation to the letter were initiated by Broadcom on 5 July 2019 with Broadcom asking [OEM D] to provide the Commission with a detailed presentation of the partnership between Broadcom and [OEM D]. Broadcom is said to have indicated that this could be done either in writing or during the Oral Hearing.⁵⁵⁹ On 9 July 2019, [OEM D] decided that it would be "*favourable to make a letter in order to defend [[OEM D]'s] interest for the development of its business in the future. Without the current support provided by BCM [Broadcom], our [[OEM D]'s] businesses will be worse*".⁵⁶⁰
- (401) In a conversation between Broadcom's external lawyer and [OEM D]'s external lawyer on 10 July 2019, Broadcom renewed its request for a [OEM D] letter to the Commission.⁵⁶¹ On 12 July 2019, [OEM D] advised its external lawyer to communicate to Broadcom that [OEM D] would send a letter to the Commission.⁵⁶² This was communicated to Broadcom on 13 July 2019.⁵⁶³ On 16 July 2019, Broadcom's external lawyer provided [OEM D]'s external lawyer with proposed elements to be included in a draft letter to be sent to the Commission by [OEM D].⁵⁶⁴ This "*Input for Potential [OEM D] Statement*" proposed as item number 8 on the list: "*Complaints by Service Providers that they would be harmed by the contracts are unfounded. The Service Providers fail to appreciate that it is not practicable to have the kinds of procurement competitions that were feasible prior to ST Microelectronics's exit, featuring comparable Broadcom and non-Broadcom STB and residential gateway chips.*"⁵⁶⁵
- (402) As concerns [OEM E]'s statement in its letter to the Commission of 7 August 2019, the Commission notes that also [OEM E] had direct contacts with Broadcom and Broadcom's external legal advisor prior to [OEM E]'s submission to the Commission of 7 August 2019.⁵⁶⁶ Evidence in the file on the existence of these direct contacts reveals, *inter alia*, that Broadcom's external lawyer communicated to [OEM E] Broadcom's preference as to who should represent [OEM E] at the Oral Hearing before

⁵⁵⁵ [OEM A]'s reply of [...] to question 2 of Article 18(2) request for information of [...], page 3.

⁵⁵⁶ Annex 4 to [OEM A]'s reply of [...] to 18(2) request for information of [...], page 2.

⁵⁵⁷ [OEM A]'s reply of [...] to question 2 of Article 18(2) request for information of [...], page 5.

⁵⁵⁸ [OEM A]'s reply of [...] to question 2 of Article 18(2) request for information of [...], page 5.

⁵⁵⁹ [OEM D]'s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1.

⁵⁶⁰ [OEM D]'s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1.

⁵⁶¹ Appendix 1 to [OEM D]'s reply of [...] to question 2 of Article 18(2) request for information of [...].

⁵⁶² [OEM D]'s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1.

⁵⁶³ [OEM D]'s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1.

⁵⁶⁴ [OEM D]'s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1 and Appendix 1 to [OEM D]'s reply of [...] to question 2 of Article 18(2) request for information of [...], pages 43 and 51-53.

⁵⁶⁵ Appendix 1 to [OEM D]'s reply of [...] to question 2 of Article 18(2) request for information of [...], page 52.

⁵⁶⁶ See [OEM E]'s reply of [...] to question 1 of Article 18(2) request for information of [...], page 1.

the Commission on 20 August 2019 and that [OEM E] shared with Broadcom a list of the speaking points for [OEM E]’s intervention at the Oral Hearing.⁵⁶⁷

- (403) In the third place, there are discrepancies between the three statements and the submissions by those OEMs in their earlier responses to the Commission’s requests for information pursuant to Article 18(2) of Regulation (EC) No 1/2003. In particular, all of these players have previously pointed at the possibility of switching between different suppliers of SoCs when launching new STB or residential gateway models depending on a variety of considerations, while in their letters they seem to indicate the opposite.⁵⁶⁸ Providing incorrect or misleading information to requests pursuant to Article 18(2) of Regulation (EC) No 1/2003 is punishable by a fine. Hence, replies to these earlier requests are inherently more reliable than letters submitted in the absence of requests for information.
- (404) In the fourth place, [OEM B] submitted in its written observations on the SO of 5 August 2019 that “[OEM B] understands that lifting the exclusivity would give [OEM B] more flexibility in sourcing its requirements”.⁵⁶⁹ This corroborates the findings in the SO in that OEMs can make use of the increased flexibility that the interim measures would grant them.

8.5.2.3. Objective justification and efficiencies

- (405) Broadcom argues that its conduct is justified by efficiencies. In particular, it argues that its conduct created significant benefits for OEMs, service providers, and consumers.⁵⁷⁰ Broadcom claims that focussing its resources on supporting its selected OEM partners and the associated investments enabled Broadcom and its OEM partners to accelerate time-to-market with top-quality designs at competitive prices, which ultimately benefitted service providers and consumers.⁵⁷¹ Broadcom claims that the exclusivity-inducing provisions reflect Broadcom’s significant investment in its commercial relationships with the six OEMs and with service providers.⁵⁷²
- (406) The Commission concludes that Broadcom has not demonstrated at this stage of the proceedings that its conduct is counterbalanced or outweighed by advantages in terms of efficiencies that also benefit the consumer.
- (407) First, Broadcom did not demonstrate that the exclusivity-inducing provisions are indispensable to the realisation of the claimed efficiencies. In particular, Broadcom

⁵⁶⁷ See [OEM E]’s reply of [...] to question 1 of Article 18(2) request for information of [...], pages 1-2; e-mail exchange of 12 July 2019 between Broadcom’s external lawyer and [OEM E], Doc ID 2184, page 1.

⁵⁶⁸ [OEM A]’s reply of [...] to question 27.1 of Article 18(2) request for information of [...], page 10. [OEM D]’s reply of [...] to question 27 of Article 18(2) request for information of [...], page 9; [OEM E]’s reply of [...] to question 27 of Article 18(2) request for information of [...], page 13.

⁵⁶⁹ [OEM B]’s observations on the SO, Doc ID 2005, page 2.

⁵⁷⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 39-69; see also Broadcom’s Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 3 h., pages 6-7; see also Annex 1 to Broadcom’s SO Response titled “*Economic Considerations that Should be More Thoroughly Explored Before Interim Measures are Imposed Against Broadcom*”, Doc ID 1843-1, pages 4-5.

⁵⁷¹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 43 and 69.

⁵⁷² Broadcom’s SO Response, Doc ID 1843-15, paragraphs 129, 133, 134 and 142. See further paragraphs 148 to 152 (illustratively referring to, variously, the nature of Broadcom’s commercial relations with [OEM A], [OEM B] and [OEM E]).

has submitted no evidence to support its claim that, but for the clauses, it would not have made investments in its relationships with OEMs and service providers.

- (408) In the first place, Broadcom has a natural interest in working together with the OEMs to provide useful products to service providers. That is because OEMs might no longer want to bid products incorporating Broadcom solutions if the cooperation with Broadcom does not work. It is therefore very likely that Broadcom would seek close cooperation with OEMs also in absence of the exclusivity-inducing provisions, as confirmed by Broadcom's form 8-K submitted to the US SEC the day after the SO was issued ("*The interim measures, if adopted, will not preclude the continued sale by Broadcom of any products. Broadcom's contracts with these customers would remain in force, other than the provisions at issue, and it intends to continue to support these customers going forward.*")⁵⁷³
- (409) In the second place, Broadcom itself states that the Agreements simply concretised an already existing and entirely voluntary state of affairs in which OEMs' perception of the quality of Broadcom's offering and of Broadcom being a valued partner⁵⁷⁴ had led to a longstanding commercial relationship with the relevant OEMs, and a *de facto* exclusive or quasi-exclusive supply of Broadcom products. While Broadcom's claims in this regard are implausible (see recitals (278) to (283)), this indicates that the exclusivity-inducing provisions in the Agreements are not indispensable and rather suggests they aim at foreclosing competition.
- (410) In the third place, Broadcom has also failed to demonstrate that other arrangements such as incremental volume-based rebates would not have been sufficient to achieve the claimed objective. Whilst Broadcom claims that OEMs were not willing to make volume commitments because demand from service providers was unpredictable,⁵⁷⁵ this claim is entirely unsubstantiated.
- (411) Second, Broadcom did not demonstrate, with a sufficient degree of probability, and on the basis of verifiable evidence, that any efficiencies have been realised or are likely to be realised as a result of the exclusivity-inducing provisions. Given the importance OEMs attach to technical support and customer support in general from chip suppliers, it is likely that Broadcom would have provided the relevant support also in the absence of the exclusivity-inducing provisions in the Agreements as otherwise OEMs would risk not being able to provide the technical support which is required from them by service providers.⁵⁷⁶ Aside from this, Broadcom's claim that the Agreements enable Broadcom's OEM Partners to better compete is based on statements by [OEM A], [OEM D] and [OEM E] that were brought forward in letters to the Commission prepared in the circumstances described at recitals (398) to (402) above. The credibility of – and thereby the evidential weight that can be attributed to – these statements is, therefore, questionable. Even if these statements were plausible, Broadcom did not submit any justification for why the foreclosure effects on other OEMs not covered by the Agreements will not lead to any harm to consumers.

⁵⁷³ Broadcom's form 8-K of 26 June 2019, printed from <https://investors.broadcom.com/static-files/8fdf8974-7641-4c5b-bf84-82edb4215a61>, page 2.

⁵⁷⁴ Broadcom's Comments on the Letter of Facts of 22 August 2019, Doc ID 2154, point 3.e., pages 3-5.

⁵⁷⁵ Broadcom's SO Response, Doc ID 1843-15, paragraph 61.

⁵⁷⁶ See Broadcom's form 8-K of 26 June 2019, printed from <https://investors.broadcom.com/static-files/8fdf8974-7641-4c5b-bf84-82edb4215a61>, page 2.

- (412) Third, Broadcom did not demonstrate that the alleged efficiencies brought about by the exclusivity-inducing provisions outweigh the negative effects on competition as described above.
- (413) Fourth, Broadcom has not shown that the exclusivity-inducing provisions do not eliminate competition, by removing all or most existing sources of actual or potential competition.
- (414) Fifth, Broadcom has not shown that the claimed efficiencies benefit consumers.

8.5.2.4. Conclusions on the finding of abuse

- (415) In light of the principles established in section 8.5.1 above, the Commission concludes that the exclusivity-inducing provisions contained in the Agreements, which have been identified in section 8.5.2.1 above, are *prima facie* capable of affecting competition and *prima facie* amount to an abuse of Broadcom's *prima facie* dominant positions in the worldwide markets for STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs. As explained in section 8.5.2.3 above, Broadcom has so far failed to demonstrate that those provisions are *prima facie* objectively justified and/or generate the requisite degree of efficiencies.

8.6. Effect on trade between Member States

8.6.1. Principles

- (416) Article 102 TFEU prohibits any abuse of a dominant position within the internal market or in a substantial part of it insofar as it may affect trade between Member States. An abuse of a dominant position affects trade between Member States when it is capable of influencing, either directly or indirectly, actually or potentially, the pattern of trade in goods and services between Member States.⁵⁷⁷
- (417) The Court of Justice has held that “Article 82 [now 102 TFEU] does not require it to be proved that abusive conduct has in fact appreciably affected trade between Member States, but that it is capable of having that effect”.⁵⁷⁸
- (418) The Commission Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty [now Articles 101 and 102 TFEU] (the “Notice on the effect on trade”),⁵⁷⁹ states that “[w]here a dominant undertaking adopts various practices in pursuit of the same aim, [...], it is sufficient that at least one of these practices is capable of affecting trade between Member States.”⁵⁸⁰ Furthermore, “[a]greements and practices that affect the competitive structure inside the [Union] by eliminating or threatening to eliminate a competitor operating within the [Union] may be subject to the [Union] competition rules.”⁵⁸¹

⁵⁷⁷ See Joined Cases C-215/96 and C-216/96 *Bagnasco v BNP and others*, EU:C:1999:12, paragraph 47.

⁵⁷⁸ Case C-322/81 *Michelin v Commission*, EU:C:1983:313, paragraph 104; see also Joined Cases C-241/91 P and C-242/91 P *RTE and ITP v Commission*, EU:C:1995:98, paragraphs 69-70.

⁵⁷⁹ Commission Notice - Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty, OJ C 101, 27.04.2004, pages 81-96.

⁵⁸⁰ Commission Notice - Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty, OJ C 101, 27.04.2004, pt. 17; see in this respect also Case C-85/76, *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 126.

⁵⁸¹ Commission Notice - Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty, OJ C 101, 27.04.2004, pt. 20; see also Case T-24/93, *Compagnie maritime belge transports and Others v Commission*, EU:T:1996:139, paragraph 203.

(419) Thus, EU law covers any agreement or any practice which is capable of constituting a threat to free trade between Member States in a manner which might harm the attainment of the objectives of an internal market between the Member States, in particular by sealing off domestic markets or by affecting the structure of competition within the internal market.⁵⁸²

8.6.2. *Application to this case*

(420) The Commission concludes that Broadcom's conduct is, *prima facie*, capable of affecting the pattern of trade in goods between Member States.

(421) First, the Agreements have either a worldwide scope, a worldwide scope excluding China in the case of the [OEM C] TPA or, as regards the [OEM F] LoI, relate to the sale of chipsets for products destined for the entire European Union.⁵⁸³ Hence, Broadcom's conduct is capable of having a negative impact on competition in an area extending beyond a single Member State even covering the entire European Union.

(422) Second, as mentioned in recital (26) above, in the EEA, tenders typically cover a service provider's demand for products in multiple EU Member States, or even in both EU and non-EU countries.⁵⁸⁴ This further increases the likelihood that trade between Member States is affected.

(423) Third, trade between Member States is capable of being affected because the Agreements have been implemented with regard to customers established in the European Union (namely [OEM C], [OEM D] and [OEM E]) or in any event that are active in the European Union (namely [OEM A], [OEM B] and [OEM F]). Moreover, they have been implemented with regard to shipments destined to satisfy the needs of service providers established or active in several Member States of the European Union (such as Vodafone, KPN, Liberty Global, Orange, Telefonica and Deutsche Telekom).

8.7. **Conclusion as regards the *prima facie* infringement**

(424) Based on the findings set out in this section 8, the Commission concludes that the exclusivity-inducing provisions contained in the Agreements *prima facie* amount to an abuse of Broadcom's *prima facie* dominant positions in the worldwide markets for STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs contrary to Article 102 TFEU and Article 54 of the EEA Agreement.

9. **URGENCY DUE TO THE RISK OF SERIOUS AND IRREPARABLE DAMAGE TO COMPETITION**

9.1. **Principles**

(425) Article 8(1) of Regulation (EC) No 1/2003 confines the Commission's power to take interim measures to cases of "*urgency due to the risk of serious and irreparable damage to competition*". In this regard, the following criteria are relevant.

⁵⁸² Case C-22/78 *Hugin v Commission*, EU:C:1979:138, paragraph 17; Case C-475/99 *Ambulanz Glöckner*, EU:C:2001:577, paragraph 47; Case C-407/04 P *Dalmine v Commission*, EU:C:2007:53, paragraph 89.

⁵⁸³ See "*Letter of Intent*" entered into between Broadcom and [OEM F] on [...] 2018, Doc ID 999, Exhibit A, page 3.

⁵⁸⁴ MediaTek's submission of 8 April 2019, Doc ID 1741, page 8, paragraphs 60-61.

- (426) First, for the ordering of interim measures to be urgent it must be necessary for these measures to take effect before the decision on the substance of the case in order to avoid the risk of serious and irreparable damage to competition.⁵⁸⁵
- (427) Second, it is sufficient that the damage in question resulting from the implementation of the conduct at stake represents a tangible risk⁵⁸⁶ or appears *likely* (*i.e.* foreseeable with a sufficient degree of probability), particularly when it depends on the occurrence of a number of factors.⁵⁸⁷ While purely hypothetical damage cannot be taken into consideration, it is not necessary to establish with absolute certainty that the harm is imminent.⁵⁸⁸
- (428) Third, damage is irreparable if it could no longer be remedied by the decision to be adopted by the Commission upon the conclusion of the administrative procedure.⁵⁸⁹ Situations in which the Union Courts have identified that irreparable damage can occur include new developments on the market having long-term effects on supply and demand that would subsequently be very difficult, if not impossible, to reverse;⁵⁹⁰ damage suffered by an undertaking such as to threaten that undertaking's survival on the relevant market(s)⁵⁹¹ or irreparably affect its market share;⁵⁹² or the restriction of an undertaking's freedom to define its business policy.⁵⁹³ Damage can be deemed irreparable even in the absence of structural or legal obstacles to reverse that damage.⁵⁹⁴
- (429) Fourth, the seriousness of the damage implies a certain degree of magnitude or severity of the harm to competition to be determined in the circumstances of the particular case.⁵⁹⁵
- (430) Fifth, the strength of the *prima facie* case may be taken into account in the assessment of urgency and, if appropriate, of the balance of interests.⁵⁹⁶

9.2. Application to this case

- (431) The Commission concludes that if Broadcom's conduct (as described in section 8.5 above) were allowed to continue, it would likely lead to serious and irreparable damage to competition in each of the relevant markets concerned by this case (as defined in section 8.3 above) before the Commission could reasonably take a final decision on the substance. Section 9.2.1 below sets out the Commission's conclusions regarding the damage to competition which is likely to occur in the absence of interim measures.

⁵⁸⁵ Joined Cases 76, 77 and 91/89 R *RTE v Commission*, EU:C:1989:192, paragraph 12.

⁵⁸⁶ Case T-184/01 R *IMS Health v Commission*, EU:T:2001:259, paragraph 144 and Case C-481/01 P(R) *NDC Health v IMS*, EU:C:2002:223, paragraphs 68-69.

⁵⁸⁷ Case C-149/95 P(R) *Commission v Atlantic Container Line and Others*, EU:C:1995:257, paragraph 38.

⁵⁸⁸ Case C-149/95 P(R) *Commission v Atlantic Container Line and Others*, EU:C:1995:257, paragraph 38.

⁵⁸⁹ Case 792/79 R *Camera Care v Commission*, EU:C:1980:18, paragraph 14; Case T-44/90 *La Cinq v Commission*, EU:T:1992:5, paragraph 80.

⁵⁹⁰ Joined Cases 76, 77 and 91/89 R *RTE v Commission*, EU:C:1989:192, paragraphs 16, 18.

⁵⁹¹ Case 792/79 R *Camera Care v Commission*, EU:C:1980:18, paragraph 14; and, by analogy, Case T-184/01 R *IMS Health v Commission*, EU:T:2001:259, paragraph 121.

⁵⁹² By analogy, Case T-369/03 R, *Arizona Chemicals and others v Commission*, EU:T:2004:9, paragraph 76.

⁵⁹³ By analogy, Case T-184/01 R *IMS Health v Commission*, EU:T:2001:259, paragraph 130.

⁵⁹⁴ Case C-481/01 P(R) *NDC Health v IMS*, EU:C:2002:223, paragraph 70.

⁵⁹⁵ Commission Decision of 18 August 1982 (IV/30.696 - Distribution system of Ford Werke AG - interim measure), OJ 1092 L 256, recitals 45 and 46.

⁵⁹⁶ Case C-481/01 P(R) *NDC Health v IMS*, EU:C:2002:223, paragraph 63 and Case C-445/00 R *Austria v Council*, EU:C:2001:123, paragraph 110.

Sections 9.2.2 and 9.2.3 below set out the Commission's conclusions regarding the seriousness and irreparability of such damage.

9.2.1. *Urgent need to prevent damage to competition*

- (432) The Commission concludes that there is an urgent need to prevent irreparable damage to competition that would likely occur in the following forms, if Broadcom's conduct were allowed to continue pending a final Commission decision on the substance of the case.
- (433) First, as outlined in section 8.5 above, Broadcom's exclusivity-inducing provisions are likely to lead the OEMs affected by the conduct to purchase SoCs exclusively or quasi-exclusively from Broadcom when bidding for service providers' calls for tenders. Given that these are major OEMs, which have significant chances of winning tenders of service providers,⁵⁹⁷ the ability of Broadcom's competitors to compete on the merits for downstream demand is likely to be severely affected in the timeframe that it would take for the Commission to come to a final decision on the substance of the case, which is likely to be at least two to three years.⁵⁹⁸
- (434) In this regard, the Commission recalls that tenders are generally organised by service providers for at least part of their demand roughly every 1.5 to 2 years (see recital (27) above) and that the Agreements were entered into between [...] 2017 and [...] 2019 (*i.e.* sometimes less time ago than the usual time period between two tenders) and have a duration ranging from one to three years (see recitals (367) and (390) above). This suggests that the likely anticompetitive consequences brought by the exclusivity-inducing conditions in the Agreements (see section 8.5.2.2 above) are far from having fully materialised, as not all service providers may have launched tenders to replace CPE since the point in time when the Agreements have entered into force. In the absence of the Commission's urgent intervention by means of interim measures, in the timeframe that it would take for the Commission to come to a final decision on the substance of the case (which is likely to be at least two to three years; see recital (433) and footnote 598 above), the application of Broadcom's exclusivity-inducing conditions would ultimately affect at least part of the demand of all service providers.⁵⁹⁹ If the Agreements were in place for longer, the anticompetitive effects of Broadcom's conduct would be extended to an even larger portion of the markets at stake, as an increasing part of service providers' demand would be affected. This would severely restrict the ability of Broadcom's competitors to compete with Broadcom with respect to service providers' demand.
- (435) Moreover, the Commission's investigation indicates that a considerable number of tenders are likely to be announced in the coming months (see recital (437)(c) below). While, under normal circumstances, frequent tenders would indeed offer more opportunities to compete in the absence of undue obstacles to competition on the merits, this is not the case in the situation at hand, where, *prima facie*, Broadcom's conduct is capable of affecting competitors' ability to compete for those very tenders

⁵⁹⁷ As set out in sections 6.2 to 6.7 above, these OEMs account for roughly half of global STB sales and approximately [30-40]% of global residential gateway sales.

⁵⁹⁸ No Commission investigation which resulted in a prohibition decision in the past five years lasted less than two years and only a limited number of cases lasted less than three years. In this case, the need to carry out an assessment of several markets and different types of conduct in the full respect of Broadcom's procedural rights would make it unlikely that a case on the substance could be concluded more swiftly.

⁵⁹⁹ See also the considerations included in recital (27) above on the consequences of a chip supplier's failure to win tenders.

(see section 8.5.2.2 above). In this case, the opposite conclusion is true, *i.e.* substantial upcoming tendering activity means that Broadcom's conduct is more likely to lead to increasing marginalisation or exit of Broadcom's competitors as their ability to participate in these tenders with the largest OEMs will be hindered.

- (436) The consequences of such scenario would be particularly damaging to competition, especially in light of the adverse knock-on consequences of a chip supplier's failure to win a particular tender on its ability to win tenders in subsequent generations of a particular product (see recital (27) above), which would likely significantly reduce a chip supplier's incentive to incur the necessary investment to remain present and competitive in the market (see recital (479) below), thereby likely leading to competitors' increasing marginalisation and potential exit from the market. This has to be seen, in particular, in light of the importance of economies of scale to profitably supply STB and residential gateway SoCs (see recital (157) above) and the competitive advantage enjoyed by chip suppliers with established customer relationships over new suppliers or suppliers seeking to expand sales with new customers (see recital (158) above).
- (437) Second, the likelihood that Broadcom's conduct will lead to the increasing marginalisation and the exit from the relevant markets of Broadcom's competitors in the absence of the Commission's urgent intervention is corroborated by the following elements:
- (a) The fact that there are a minimum of 120 large Internet service providers across the European Union's 28 Member States⁶⁰⁰ and the fact that as of July 2018 there were over 380 bit-stream access agreements granted by incumbent Internet service providers to new market entrants.⁶⁰¹ Given that providers of fixed Internet access rely on CPE incorporating SoCs to serve their customers and therefore typically source devices from OEMs on a regular basis (see recitals (26) and (27) above), the scale of the business affected by Broadcom's conduct would likely be significant. Indeed, according to estimates by MediaTek, the accuracy of which was not contested by Broadcom, approximately 75 of these Internet service providers might be involved in a tender for CPE each year (even if the actual number of tenders may be less since a number of larger groups organise cross-border tenders; see recital (26) above).⁶⁰²
 - (b) The fact that there are at least 71 companies that provide cable audiovisual services in the European Union. Given that providers of cable audiovisual services rely on STBs incorporating SoCs to serve their customers and therefore typically source STBs from OEMs on a regular basis (see recitals (26) and (27) above), the scale of the business affected by Broadcom's conduct would likely be significant. Indeed, according to estimates by MediaTek, the accuracy of which was not contested by Broadcom, approximately 30 of these providers of cable audiovisual services might be involved in a tender for STBs each year

⁶⁰⁰ See MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 70, with reference to a *Study for EC: Fixed Broadband Prices*, empirica and TÜV Rheinland, SMART 2016/0044, available at: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=49386.

⁶⁰¹ See MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 70, with reference to *DESI 2018 - Connectivity - Broadband market developments in the EU*, European Commission, SMART 2016/0045, available at: https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=57328.

⁶⁰² MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 70.

(even if the actual number of tenders may be less since a number of larger groups organise cross-border tenders; see recital (26) above).⁶⁰³

(c) The fact that service providers' tendering activity for residential gateways and STBs is generally expected within the industry to become particularly intense within the next three years, in particular due to the introduction of the new Wi-Fi 6 standard. This is confirmed by the following information provided by chip suppliers.

(1) According to Intel, "[...] *there will be a significant amount of tendering activity from service providers, prompted by the introduction of the new Wi-Fi 6 standard. The introduction of this new standard will drive growth for residential gateway equipment suppliers, as it will necessitate the rollout of new Wi-Fi access point equipment that will be Wi-Fi 6-compliant*".⁶⁰⁴ In particular, Intel expects that in the coming months several leading European service providers including Liberty Global, Vodafone Group, British Telecom, Orange, Telecom Italia, Fastweb Italy, Wind Italy, Telefonica and Bouygues Telecom will launch a significant number of new tenders for new residential gateways containing Wi-Fi 6 functionality in the EEA alone.⁶⁰⁵

(2) According to estimates by MediaTek, provided by MediaTek to illustrate the harm which would ultimately need to be borne by European consumers, there will be around 80-85 tenders for any given residential gateway product line coming up in the next three years and between 10 and 20 tenders for STBs coming up only in the next year.⁶⁰⁶ Tenders at their closing stage or to be launched between the second half of 2019 and the first half of 2020 include tenders by some of the largest service providers in the EEA, including Liberty Global, Canal+, Deutsche Telekom, Orange, Telecom Italia, TalkTalk Group and OTE.⁶⁰⁷

(438) Third, these conclusions are confirmed and strengthened by the fact that Broadcom's competitors are already facing difficulties, which are likely to be at least partially attributable to Broadcom's ongoing conduct. For example:

(a) As regards the market for STB SoCs, **MediaTek** stated that, as a result of the pressure exerted by Broadcom, MediaTek Group's STB business has performed

⁶⁰³ MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 71. Due to what seems to be a clerical error, MediaTek mistakenly refers to modems rather than STBs. The Commission notes that these figures underestimate the number of future STB tenders because they do not take into account STBs based on technologies other than cable.

⁶⁰⁴ Intel's observations on the SO of 26 July 2019, Doc ID 1897, page 2.

⁶⁰⁵ Intel's observations on the SO of 26 July 2019, Doc ID 1897, page 2; Annex 1 to Intel's observations on the SO of 26 July 2019, Doc ID 1898.

⁶⁰⁶ MediaTek's submission of 8 April 2019, Doc ID 1741, paragraphs 55-56. The correctness of MediaTek's estimates was confirmed by MaxLinear (see MaxLinear's observations on the SO of 28 July 2019, Doc ID 1932, paragraph 15). See also Intel's observations on the SO of 26 July 2019, Doc ID 1897, page 2, where it is stated: "[Intel's expectation of new tenders to be launched] *is largely consistent with the Commission's estimate* [which was based on MediaTek's submission of 8 April 2019, Doc ID 1741, paragraphs 55-56] *in the SO that there will be significant tendering activity in the short to medium term both on a European and global basis.*"

⁶⁰⁷ MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, Table 1 at paragraph 72.

poorly in 2017 and 2018 and become less and less profitable.⁶⁰⁸ MediaTek expects this trend to continue during the course of 2019.⁶⁰⁹ The estimated percentage changes of gross profit margin and headcount of MediaTek Group’s STB business from 2017 to 2018 and from 2018 to 2019 are indicated in Table 3 below.

Table 3: Estimated Percentage changes of gross profit margin and headcount of MediaTek Group’s set-top box business⁶¹⁰

	from 2017 to 2018	from 2018 to 2019
Gross profit margin	-8%	-17%
Headcount	-30%	-49%

- (b) As regards the markets for cable, fibre and xDSL gateway SoCs, **Intel** stated that “Broadcom’s exclusionary practices already had a significant impact on Intel’s Connected Home Division (“CHD”),⁶¹¹ as it led to irreversible loss of key OEM partners and customers”.⁶¹² Intel explained that “[f]rom 2016 throughout the present, CHD has consistently failed to meet revenue and profitability projections and incurred unsustainable operating losses.”⁶¹³ In particular, “[...] CHD failed to meet its long range plan projections in the 2016-2019 period, despite the fact that they were repeatedly revised downwards in a significant way throughout the 2016-2019 period.”⁶¹⁴ In light of these losses and in response to the declining performance of CHD’s business, Intel’s management considered different strategic options and ultimately decided to take several measures to maintain CHD’s viability. These measures included (i) focussing on a smaller number of customers and OEMs (primarily those less vulnerable to Broadcom’s conduct); (ii) substantially reducing product investment in the xDSL and fibre residential gateway business; (iii) cancelling future platform development of at least one CHD product; and (vi) significantly reducing its overall headcount by

⁶⁰⁸ MediaTek’s supplementary reply of 12 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1429, page 2.

⁶⁰⁹ MediaTek’s supplementary reply of 12 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1429, page 2.

⁶¹⁰ Percentage figures based on information provided in MediaTek’s supplementary reply of 12 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1429, page 2.

⁶¹¹ Intel’s CHD is an Intel business unit active, amongst other, in the production of SoCs, FE chips and WiFi chipsets. CHD’s business includes production and sales activity carried out by Lantiq Beteiligungs GmbH prior to its acquisition by Intel in 2015 as well as production and sales activity carried out by Texas Instrument Inc.’s cable modem unit, which Intel acquired in 2010 (see Intel’s replies of 21 December 2018 to questions 1 and 2 of Article 18(3) Decision of 25 October 2018, Doc ID 1739, page 2).

⁶¹² Intel’s observations on the SO of 26 July 2019, Doc ID 1897, page 2.

⁶¹³ Intel’s reply of 18 March 2019 to question 1.1 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, page 2.

⁶¹⁴ Intel’s reply of 18 March 2019 to question 1.1 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, page 2. As evidence supporting these claims, Intel submitted detailed actual revenue and profit/loss information, as well as a comparison of that information with CHD’s strategic projections on an annual basis for the 2016-2019 period based on Intel CHD’s long range plans (see Annexes 1 and 2 to Intel’s reply of 18 March 2019 of Article 18(2) request for information of 28 February 2019, Doc ID 1386 and Doc ID 1387).

[5-10]%.⁶¹⁵ Intel explained that “Broadcom’s conduct, and in particular the conditions that Broadcom imposed on customers, was a very important contributor to CHD’s revenue and profitability shortfalls”⁶¹⁶ and considered that “[...] if Intel CHD continues to miss revenue projections, it is unlikely that future cuts would be available short of exiting one or more lines of the business”.⁶¹⁷ Intel thus considered that “[t]he risk of serious and irreparable harm resulting from Broadcom’s practices continues to be significant in the short-to-medium term.”⁶¹⁸ Along the same lines, **MaxLinear** (a supplier of FE chips and partner of Intel in offering chipset solutions for CPE) stated that it is “[...] aware that Intel is quickly approaching its critical market exit threshold for [residential gateway] SoCs. [...] [I]f Broadcom’s unlawful behavior is allowed to continue, in the next two to three years Broadcom will acquire a monopoly position in yet another market.”⁶¹⁹ Moreover, **MediaTek** claimed that, as a result of Broadcom’s behaviour, it has only been able to participate in a limited number of tenders for residential gateway SoCs organised by service providers in the EU.⁶²⁰

- (439) Fourth, the risk of marginalisation of or exit by competitors to Broadcom in the relevant markets covered by this Decision is made more likely by the fact that competitors have already been facing difficult market conditions in the past, as confirmed by the fact that several companies have already exited the STB SoC market in recent years “*due to low ROI [return on investment] and high technical cost*” (see also recital (120) above).⁶²¹ In particular:
- (a) Intel discontinued development of SoCs for STBs in 2015, with the last of these products going out of production at the end of Q4 2018,⁶²² since Intel’s market share in SoCs for STBs was insufficient to sustain the required investment level to remain profitable;⁶²³
 - (b) STMicroelectronics announced in January 2016 that it had ceased developing SoCs for STBs and cable residential gateways.⁶²⁴
- (440) Fifth, it is likely that in the absence of the Commission’s intervention, Broadcom’s conduct would likely expand to additional OEMs and therefore cause additional damage to competition. This is confirmed by the fact that the [OEM F] LoI described in recital (56) above was concluded only on [...] 2018 and by the fact that the [OEM

⁶¹⁵ Intel’s reply of 18 March 2019 to question 1.2 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, pages 2-3.

⁶¹⁶ Intel’s reply of 18 March 2019 to question 1.1 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, page 2.

⁶¹⁷ Intel’s reply of 18 March 2019 to question 1.3 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, page 3.

⁶¹⁸ Intel’s observations on the SO of 26 July 2019, Doc ID 1897, page 2.

⁶¹⁹ MaxLinear’s reply of 2 December 2018 to question 5.2 of Article 18(3) Decision of 24 October 2018, Doc ID 867, page 8.

⁶²⁰ MediaTek’s submission of 8 April 2019, Doc ID 1741, paragraph 59.

⁶²¹ See internal e-mail of 29 June 2017 from [...], Doc ID 574, pages 9-11.

⁶²² See Intel’s reply of 21 December 2018 to question 2 of Article 18(3) Decision of 25 October 2018, Doc ID 1535, page 3.

⁶²³ Intel’s reply of 18 March 2019 to question 1.1 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, page 3.

⁶²⁴ STMicroelectronics’ reply of 12 November 2018 to question 2 of Article 18(2) request for information of 24 October 2018, Doc ID 264, page 2.

A] CSA of [...] 2019 described in recital (40) above covers products additional to the ones covered by a previous iteration of the same agreement.⁶²⁵ In this regard, Broadcom confirmed that the [OEM F] LoI is the expression of a “[...] [OEM F]”, while the [OEM A] CSA of [...] 2019 is “*a continuation*” of the agreement entered into in 2016.⁶²⁶

- (441) Broadcom contests the Commission’s findings regarding the urgent need to prevent damage to competition.
- (442) First, Broadcom argues that the exclusivity-inducing conditions applying to the OEMs affected by the conduct at issue do not lead those OEMs to purchase exclusively their SoC requirements from Broadcom. In particular, Broadcom claims that (i) the conditions of the Agreements reflect the *status quo*, and that the OEMs at issue would have purchased Broadcom’s chips regardless of the conditions contained in the Agreements; (ii) no exclusive purchasing obligations are imposed on OEMs; and that (iii) the Agreements provide opt-outs that allow the OEMs to turn to other suppliers without losing bid support for other opportunities.⁶²⁷
- (443) Second, Broadcom argues that the exclusivity-inducing provisions applying to the OEMs affected by the conduct at issue are not the cause of the difficulties that Broadcom’s competitors claim to face. Broadcom claims that the OEMs affected by the conduct at issue prefer Broadcom because of the quality of its products and support, and because competitors (such as MediaTek and HiSilicon) do not offer the high-end solutions that they need in order to bid for operator opportunities.⁶²⁸ To corroborate its claim with regard to MediaTek, Broadcom refers to MediaTek’s alleged failure to execute on an STB design for [...],⁶²⁹ which – according to Broadcom – led [...] to terminate the cooperation with MediaTek and turn to Broadcom instead.⁶³⁰ With regard to Intel, Broadcom points at alleged serious and lengthy design issues and product delays with Intel’s Puma 5/6/7 cable residential gateway SoC as the real cause of the weak performance of Intel’s CHD business.⁶³¹
- (444) Third, with regard to the number of tenders set to take place in the coming years, referred to in recital (437)(c)(2) above, Broadcom argues that the figures put forward are based on a single source, have not been validated and are unclear.⁶³² With specific regard to the information provided by Intel on upcoming tenders by EU service providers in relation to the introduction of the new Wi-Fi 6 standard (referred to in recital (437)(c)(1) above), Broadcom questions the meaningfulness of that information

⁶²⁵ For example, the [...] 2019 [OEM A] CSA covers [...], whereas the 2016 iteration of the same agreement does not. See (i) “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2019, included as Attachment 29 to [OEM A]’s revised reply of [...] to Article 18(2) request for information of [...], Clause 5.2; and (ii) “[OEM A]-Broadcom CSA Addendum Term Sheet” entered into between [OEM A] and Broadcom on [...] 2016, included as Attachment 3 to [OEM A]’s reply of [...] to Article 18(3) Decision of [...], Clause 5.2.

⁶²⁶ Broadcom’s SO Response, Doc ID 1843-15, paragraph 258.

⁶²⁷ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 239, 245-246.

⁶²⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 235, 245-246; Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraphs 4.c.3) and 5.a.3).

⁶²⁹ [...].

⁶³⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraph 213; Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 4.c.2).

⁶³¹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 249; Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 5.a.3).

⁶³² Broadcom’s SO Response, Doc ID 1843-15, paragraph 241.

for the purpose of the Commission’s finding of urgency in the absence of information on OEMs with whom Intel may potentially be partnering on these bids.⁶³³ Broadcom also alleges that due to its established relationship with Liberty Global and Vodafone Intel is well placed for bidding on future tenders with these service providers.⁶³⁴ Moreover, Broadcom claims that some of the tenders listed by Intel can by definition not justify a finding of urgency, as the relevant service provider would either (i) require OEMs to also advance a non-Broadcom-based design ([...]), (ii) have signalled that it will not consider Broadcom-based designs unless there are no other options ([...]), (iii) have shortlisted OEMs or source from ODMs⁶³⁵ that are not Broadcom’s partners for their tenders ([...]), or (iv) have launched tenders not implicating Wi-Fi 6 ([...]).⁶³⁶ Finally, with respect to Wi-Fi 6, Broadcom claims that there is no special “wave” of tenders due to the introduction of this new Wi-Fi standard, as service providers would only gradually procure equipment that implements the latter.⁶³⁷

- (445) Fourth, Broadcom argues that frequent tenders prove that demand is fragmented rather than lumpy. Under such conditions, Broadcom’s competitors would regularly be presented with opportunities to compete, given that there would be no shortage of OEMs to partner with.⁶³⁸
- (446) Fifth, Broadcom claims that the time period in which the harm is expected to materialise is unspecified and that the Commission does not refer to any imminent damage, justifying urgent action.⁶³⁹ In this regard, Broadcom argues that the relevant case law requires interim measures to be justified by a risk likely to materialise “*within days, weeks or at most a few months*”.⁶⁴⁰
- (447) Sixth, Broadcom argues that, with regard to SoCs for xDSL and fibre residential gateways, the Agreements are not capable of foreclosing competition, as the purchase requirements set therein cover only a limited portion of total OEM demand. There would therefore be no urgent need for interim measures.⁶⁴¹
- (448) Seventh, Broadcom argues that the statements by MediaTek referred to in recitals (438)(a) and (438)(b) above reflect the normal struggles of companies active in a very competitive market and not a situation of urgency. Moreover, the fact that MediaTek is cooperating with another company⁶⁴² on the development of next generation STBs

⁶³³ Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 4.b.1).

⁶³⁴ Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 4.b.2).

⁶³⁵ “Original Design Manufacturer”. An ODM typically manufactures products of its own design which are then sold under the brand name of an OEM.

⁶³⁶ Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraphs 4.b.4) and 5.a.2).

⁶³⁷ Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 5.a.2).

⁶³⁸ Broadcom’s SO Response, Doc ID 1843-15, paragraph 242.

⁶³⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 243.

⁶⁴⁰ Broadcom’s presentation during the closed session of the Oral Hearing, Doc ID 2203, pages 52-53, with reference to Commission decision of 16 May 1995 in case 35388 *Irish Continental Group / CCI Morlaix (Roscoff)*, Commission decision of 11 June 1992 in case 34174 *Sealink/B&I – Holyhead*, Commission decision of 23 December 1992 in case 34072 *Mars*, Commission decision of 29 July 1987 in case 32279 *BBI/Boosey & Hawkes*. See also Broadcom’s SO Response, Doc ID 1843-15, paragraphs 230-231.

⁶⁴¹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 250.

⁶⁴² See MediaTek’s supplementary reply of 12 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1429, page 2.

would run counter to the Commission’s argument that there is a real and tangible risk threatening MediaTek’s survival on the market or a significant loss of market share.⁶⁴³

- (449) Eighth, Broadcom claims that the Agreements cannot be blamed, even in part, for the exits by Intel and STMicroelectronics from certain markets referred to in recital (439) above, given that they took place before the Agreements were signed.⁶⁴⁴
- (450) Ninth, Broadcom argues that the imposition of interim measures by the Commission would not make it easier for other chip suppliers to withstand the low return on investment and high technical costs that caused others to exit.⁶⁴⁵
- (451) Broadcom’s arguments are without merit, for the following reasons.
- (452) First, with regard to Broadcom’s arguments set out in recital (442) above, the Commission notes the following.
- (453) In the first place, whether the conditions of the Agreements reflect the situation at the moment of their conclusion is irrelevant and, in any case, unsubstantiated. Even if the Agreements reflected the *status quo ante* (which is not the case; see recitals (278) to (283) above), no inferences could be drawn from that on the absence of any influence of the Agreements on OEMs’ purchasing decisions. Broadcom’s claim that the OEMs at issue would have purchased Broadcom’s chips regardless of the conditions contained in the Agreements remains entirely unsubstantiated. Conversely, evidence shows that OEMs did indeed consider sourcing non-Broadcom chips, but refrained from doing so due to Broadcom’s conduct (see, *e.g.*, recital (364)(c)(2) above). In addition, if the behaviour of Broadcom’s customers were unaffected by the exclusivity-inducing provisions, Broadcom would have no interest to include those provisions in the Agreements and in opposing interim measures concerning those provisions.
- (454) In the second place, for the reasons already explained in section 8.5.2.1.A and recitals (266) to (289) above,⁶⁴⁶ the Agreements do contain exclusivity-inducing provisions.
- (455) In the third place, for the reasons already explained in recitals (273) to (277) above,⁶⁴⁷ the existence in the Agreements of limited “*opt-out*” mechanisms in the form of an escalation process does not put into question the Commission’s assessment of the exclusivity-inducing provisions.
- (456) Second, with regard to Broadcom’s arguments set out in recital (443) above, the Commission notes that there is ample evidence in the file showing that the OEMs affected entered into the Agreements and are complying with the Agreements amid concerns that serious consequences would follow if they were to pursue a multi-sourcing strategy, such as immediate significant price increases or the termination of

⁶⁴³ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 254-255; Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 5.a.3).

⁶⁴⁴ Broadcom’s SO Response, Doc ID 1843-15, paragraph 252.

⁶⁴⁵ Broadcom’s SO Response, Doc ID 1843-15, paragraph 257.

⁶⁴⁶ See also recitals (297) to (300) above in relation to the [OEM A] CSA, recitals (307) to (310) above in relation to the [OEM B] TPA, recitals (314) and (315) above in relation to the [OEM C] TPA, recitals (318) to (321) above in relation to the [OEM D] MoU, recitals (327) to (331) above in relation to the [OEM E] SoC SPA and recital (339) above in relation to the [OEM F] LoI.

⁶⁴⁷ See also recital (299) above in relation to the [OEM A] CSA, recital (310) above in relation to the [OEM B] TPA, recital (321) above in relation to the [OEM D] MoU and recital (329) above in relation to the [OEM E] SoC TPA.

technical support services (see recital (364)(c) above). Evidence in the file also shows that service providers are indeed interested in purchasing STBs and residential gateways incorporating non-Broadcom SoCs (see recitals (370) and (395) above) and that at least part of the OEMs' and service providers' demand could be satisfied by Broadcom's competitors. For example, competitors such as MediaTek are being seriously considered by OEMs for their bids for business with European service providers such as [...] ⁶⁴⁸ and European service providers regard in some cases chipsets from suppliers other than Broadcom as a potential alternative to Broadcom's chipsets for incorporation in CPE (see recital (368) above).

- (457) With specific regard to Broadcom's allegations concerning MediaTek's cooperation with [...], the Commission notes that no evidence in the file exists supporting Broadcom's argument that [...] switched to Broadcom due to MediaTek's inability to deliver its ongoing STB project with [...]. On the contrary, [...]. ⁶⁴⁹
- (458) With specific regard to Broadcom's allegation concerning Intel's Puma 5/6/7 cable residential gateway SoC, the Commission notes that even if these allegations were to be true, in light of the capability of Broadcom's conduct to affect competition described in section 8.5.2.2 above, such issues affecting Intel's Puma 5/6/7 cable residential gateway SoC alone would be incapable of refuting Intel's explanation regarding the impact of Broadcom's conduct on Intel's CHD, as set out in recital (438)(b) above. ⁶⁵⁰ In any case, any issues Intel may have experienced with its products in the past do not invalidate the Commission's conclusion that in the absence of the Commission's urgent intervention by means of interim measures, damage to competition would likely occur in the forms outlined in recitals (433) to (440) above.
- (459) Third, with regard to Broadcom's arguments set out in recital (444) above, the Commission notes at the outset that Broadcom does not provide any evidence that such tender estimates are not reliable, nor does it provide its own estimates in this regard. Information provided by other market players is in fact consistent with significant upcoming tendering activity, also as a result of the introduction of the new Wi-Fi 6 standard (see recital (437)(c) above).
- (460) In any case, as regards the information on upcoming tenders by EU service providers provided by Intel, contrary to Broadcom's claims, this information *does* support the Commission's conclusion that there is an urgent need to prevent damage to competition in this case, for the following reasons.
- (461) In the first place, in light of the capability of Broadcom's conduct to affect competition described in section 8.5.2.2 above, whether or not Intel may be collaborating with OEMs on these bids is irrelevant, as Broadcom's conduct *a priori* impedes Intel from competing with Broadcom on equal terms, *e.g.* by effectively preventing Intel from partnering with any of the six OEMs which entered into the Agreements. Given the importance of these OEMs for a chipset supplier's business (see recital (366) above

⁶⁴⁸ See Broadcom's statement that "[...] *has short-listed OEMs (working with MediaTek) that are not Broadcom partners for their tender*" (Broadcom's Comments on the Letter of Facts, Doc ID 2154, paragraphs 4.b.4)e). See also MediaTek's supplementary reply of 12 December 2018 to Article 18(3) Decision of 24 October 2018, Doc ID 1429, page 2, where MediaTek stated that its market share on the European market for STB chips is approximately 5-10% (by volume) and that it considers to have achieved some limited progress on the European market.

⁶⁴⁹ [...].

⁶⁵⁰ See also recital (394) above.

and recitals (475), (476) and (486) below), the probability of Broadcom's competitors winning these tenders is therefore likely to be diminished.

- (462) In the second place, as demonstrated by the evidence referred to in recital (370) above, even large service providers' requests to OEMs to also advance a non-Broadcom-based design or announcement not to consider Broadcom-based designs unless also a non-Broadcom-based solution is offered have effectively proven incapable of providing service providers with bids based on non-Broadcom SoCs.⁶⁵¹
- (463) In the third place, whether some service providers may have shortlisted OEMs for their tenders or source from ODMs that are not Broadcom's partners is irrelevant, as the mere fact that Broadcom's conduct impedes chip suppliers from competing on equal terms with Broadcom for business with six OEMs which are important for entry and expansion in the relevant markets (see recital (366) above and recitals (475), (476) and (486) below) places Broadcom's competitors at a significant competitive disadvantage and is therefore likely to negatively affect the viability of their business. A limited possibility for Broadcom's competitors to compete for the demand of certain service providers does not affect this assessment (see also recitals (486) and (488) below).
- (464) In the fourth place, whether or not upcoming tender specifications request OEMs to submit designs already compliant with Wi-Fi 6 is irrelevant. Indeed, whether or not tender specifications request compliance with a certain Wi-Fi standard has no bearing on the fact that tenders represent opportunities for chipset suppliers to sell SoCs, which are the products concerned by Broadcom's conduct as described in section 8.5 above and different from Wi-Fi chips (see 8.3.2.1 above).
- (465) In the fifth place, while not all service providers may immediately seek to replace their current CPE with new equipment which complies with the new Wi-Fi 6 standard, Broadcom does not appear to contest that the introduction of Wi-Fi 6 may lead to an increased number of tenders within the next years. Indeed, Broadcom reckons that there will be some "early adopters" of Wi-Fi 6 among service providers,⁶⁵² which suggests that increased tendering activity will occur. The significance of the launch of Wi-Fi 6 is corroborated by the fact that Broadcom appears to attribute great importance to the introduction of this standard, as it considers that "[t]oday, we are at a key inflection point with the roll-out of Wi-Fi 6".⁶⁵³
- (466) Fourth, with regard to Broadcom's arguments set out in recital (445) above, the Commission refers to recitals (433) to (436) above. The risk of Broadcom's competitors becoming marginalised and/or forced to exit the relevant markets within a short time frame if the exclusivity-inducing conditions in the Agreements continue to apply appears particularly tangible in consideration of the temporal circumstances at hand.
- (467) Fifth, with regard to Broadcom's arguments set out in recital (446) above, the Commission notes that recital (431) above refers to the time period until the

⁶⁵¹ See also recital (395) above concerning Broadcom's claims regarding the evidence set out in recital (370) above.

⁶⁵² See Broadcom's Comments on the Letter of Facts, Doc ID 2154, paragraph 5.a.2).

⁶⁵³ See article of 28 August 2019 by Christopher Szymanski (Director of Product Marketing and Government Affairs for the Mobile Wireless Connectivity Division at Broadcom) titled "#20yearsofwifi with Broadcom", printed from the Wi-Fi Alliance's website at <https://www.wi-fi.org/beacon/christopher-szymanski/20yearsofwifi-with-broadcom> on 10 September 2019, page 1.

Commission could reasonably take a decision on the substance of the case as the relevant time horizon in which serious and irreparable damage to competition is likely to occur in the absence of interim measures.⁶⁵⁴ With a view to this time period, which is appropriate in light of the case law⁶⁵⁵ and indeed reflective of the inherent purpose of interim measures (*i.e.* to ensure the effectiveness of the final decision on the substance of the case), the damage to competition referred to in recitals (433) to (440) is impending. Broadcom's claim that the imposition of interim measures presupposes serious and irreparable damage to competition to materialise within days, weeks or at most a few months is unfounded. The damage to competition likely to arise in the absence of interim measures before the Commission could reasonably take a decision on the substance of the case (see recitals (433) to (440) above) warrants the Commission's urgent intervention, given the serious (see section 9.2.2 below) and irreparable (see section 9.2.3 below) nature of that damage in light of the circumstances and market characteristics at hand. These circumstances and market characteristics are fundamentally different from those in the previous cases referred to by Broadcom, which instead concerned access to port facilities,⁶⁵⁶ the provision of sea ferry services,⁶⁵⁷ the distribution of ice cream products⁶⁵⁸ and the supply of certain musical instruments or spare parts.⁶⁵⁹

- (468) Furthermore, accepting Broadcom's argument would imply that only damage to competition due to sudden and non-continuous market developments could be prevented by means of interim measures, but not damage to competition that is due to progressive and incremental market developments. On the contrary, what matters pursuant to Article 8 of Regulation 1/2003 is that there is "*urgency due to the risk of serious and irreparable damage to competition*". The Commission must be in the position to prevent damage to competition that is due to progressive and incremental market developments, as long as such damage is serious and irreparable. If the Commission could not stop damage to competition that is due to progressive and incremental market developments by means of interim measures, the Commission's exercise of its powers with regard to such damage to competition would be ineffective.⁶⁶⁰
- (469) Sixth, with regard to Broadcom's arguments set out in recital (447) above, the Commission refers to recitals (386) to (389) above. As set out therein, Broadcom's arguments contesting the Commission's finding that the Agreements are capable of foreclosing competition in the relevant markets are unfounded, and thus not capable of undermining the Commission's finding regarding the urgent need to prevent damage to competition. Moreover, the ability of the Agreements to foreclose competition is likely to be particularly strong with regard to more expensive high-end SoCs which are mainly used in end-devices destined for sale in regions such as the US and Europe (see recital (98) above), in view of Broadcom's focus on the high end of the market (see, *e.g.*, recital (92) above), and its claim that the purpose of the SPAs is to "*to identify a small handful of strategic OEM partners in which Broadcom would concentrate its bid support efforts*" (see recital (30) above).

⁶⁵⁴ See also footnote 598 above which further defines this period.

⁶⁵⁵ Joined Cases 76, 77 and 91/89 R *RTE v Commission*, EU:C:1989:192, paragraph 12.

⁶⁵⁶ Commission decision of 16 May 1995 in case 35388 *Irish Continental Group / CCI Morlaix (Roscoff)*.

⁶⁵⁷ Commission decision of 11 June 1992 in case 34174 *Sealink/B&I – Holyhead*.

⁶⁵⁸ Commission decision of 23 December 1992 in case 34072 *Mars*.

⁶⁵⁹ Commission decision of 29 July 1987 in case 32279 *BBI/Boosey & Hawkes*.

⁶⁶⁰ Case C-792/79 R *Camera Care v Commission*, EU:C:1980:18, paragraph 18.

- (470) Seventh, with regard to Broadcom’s arguments set out in recital (448) above, the Commission notes that while in light of the capability of Broadcom’s conduct to affect competition in the markets at hand (see section 8.5.2.2 above) the difficulties MediaTek is facing cannot certainly be considered as reflecting the “*normal struggles of companies active in a very competitive market*”, the fact that MediaTek may be cooperating with another company on the development of next-generation STBs in no way allows inferences regarding the profitability of MediaTek’s business. If anything, it supports the Commission’s position that MediaTek can under certain conditions be considered as an alternative to Broadcom (see recitals (456) and (457) above).
- (471) Eighth, with regard to Broadcom’s argument set out in recital (449) above, the Commission notes that it does not argue that the market exits referred to in recital (439) above are linked to the Agreements. Indeed, the underlying purpose of the Commission’s reference to market exits occurred in recent years is to provide further support for the finding that, in an already challenging market environment, any worsening of business prospects, this time attributable to Broadcom’s conduct at issue, is indeed likely to lead to damage to competition in the form of Broadcom’s few remaining competitors exiting the relevant markets.
- (472) Ninth, with regard to Broadcom’s argument set out in recital (450) above, the Commission notes that that argument is inconsistent with Broadcom’s own claims regarding the conditions required for chip suppliers to maintain the viability of their business in the markets at issue. Indeed, Broadcom explained that assurances of a minimum return on investments are critical in driving R&D investments.⁶⁶¹ As described above in section 8.5.2.2, the exclusivity-inducing provisions contained in the Agreements are capable of hindering competitors from competing on the merits with Broadcom and from reaching the scale required to obtain the necessary return on investment. While in the absence of Broadcom’s conduct described in section 8.5 above market players would still need to face the challenges inherent to the markets at stake, such conduct would no longer constitute an obstacle for competing chip suppliers to establishing a sustainable presence on the market.
- (473) Therefore, in consideration of the characteristics of the sourcing process described in recitals (26) to (27) above, notably the long life-cycle of products⁶⁶² and the related long-lasting consequences of a chipset supplier’s failure to win tenders, as well as the duration of, and the time of entry into force of, the Agreements, which is likely to hinder competitors’ ability to compete for upcoming tenders, together with the pre-existing challenging market conditions, in the absence of the Commission’s intervention, it is likely that the exclusivity-inducing provisions in the Agreements will likely result in Broadcom’s competitors becoming increasingly marginalised and, possibly, ultimately being forced to exit the relevant markets. In particular, the Commission considers that interim measures (as described in section 10 below) are required to prevent, in particular, the following progressive and incremental developments and the resulting damage to competition on each of the markets concerned by this Decision:
- (a) As regards the market for STB SoCs, a further marginalisation of Broadcom’s competitors and in particular of MediaTek. As already stated above (see recitals

⁶⁶¹ Broadcom’s SO Response, Doc ID 1843-15, paragraph 286.

⁶⁶² See Quantenna’s observations on the SO of 28 July 2019, Doc ID 1939, paragraph 14; MaxLinear’s observations on the SO of 28 July 2019, Doc ID 1932, paragraph 16.

(368)(c), (456) and (457) above), there is evidence that MediaTek can satisfy at least part of EU service providers' demand. In addition, MediaTek represents one of the only two remaining sizeable competitors in the overall STB SoC market (together with Huawei, which [...] and has virtually no direct sales in the EEA; see Table 1 at recital (117) and recitals (121) and (122) above). As such, MediaTek's exit or marginalisation would likely have a significant detrimental impact on competition.

- (b) As regards the market for xDSL residential gateway SoCs, a further marginalisation of Broadcom's competitors and in particular of Intel, which Broadcom considers the only high-end provider of xDSL residential gateway SoCs beside itself.⁶⁶³ Should Intel be further marginalised or even exit the market, Broadcom would likely increase its already very high market share ([80-90]% in 2018) to above [90-100]% and thus approach to acquiring a monopoly in the market (see Table 2 at recital (131) and recitals (132) and (133) above).
- (c) As regards the market for fibre residential gateway SoCs, a further marginalisation of Broadcom's competitors and in particular of Intel, which Broadcom claims to be the only high-end provider of fibre residential gateway SoCs beside itself (see recital (142) above). Should Intel be further marginalised or even exit the market, Broadcom is likely to effectively remain the only viable supplier of high-end fibre residential gateway SoCs (see Table 2 at recital (131) and recitals (135) to (138) above).
- (d) As regards the market for cable residential gateway SoCs, a marginalisation of Broadcom's competitor Intel, which Broadcom recognises as being its only competitor left in this market (see recital (107) above). Should Intel be marginalised or even exit the market, Broadcom is likely to acquire a monopoly position as the only supplier of cable residential gateway SoCs.⁶⁶⁴

9.2.2. *Seriousness of the damage to competition*

- (474) For the reasons set out below, the Commission considers that the likely damage to competition in this case must be considered as serious, as it would be capable of having long-lasting effects on the structure of the markets at stake, innovation and consumers.
- (475) First, the Agreements cover major OEMs accounting for roughly half of global STB sales and approximately [30-40]% of global residential gateway sales (see sections 6.2 to 6.7 above). Such market coverage is very significant and the exclusion of Broadcom's competitors from business with these OEMs (see recital (368) above) likely to cause substantial damage to competition in light of the fact that the markets

⁶⁶³ Broadcom's SO Response, Doc ID 1843-15, paragraph 129.

⁶⁶⁴ According to the Commission's preliminary assessment, Broadcom and Intel are the only two suppliers of cable residential gateway SoCs in the market. This assessment is based on sales figures submitted by Huawei (see Huawei's reply to information requests of 24 October 2018, 20 March 2019 and 28 March 2019, Doc ID 1616-3), Intel (see Intel's reply of 16 April 2019 to Article 18(2) request for information of 11 April 2019, Annex 1, Doc ID 1501), [...], Qualcomm (see Qualcomm's reply of 22 February 2019 to Article 18(2) request for information of 1 February 2019, Annex 1, Doc ID 1142) and ZTE (see ZTE's reply of 23 April 2019 to Article 18(2) request for information of 3 April 2019, Doc ID 1400). Based on the aforementioned information, Broadcom held the following market shares between 2015 and 2018: 2015: [50-60]%; 2016: [50-60]%; 2017: [50-60]%; 2018: [60-70]%.

covered by this Decision are characterised by the need to develop economies of scale in order to be able to compete effectively (see recital (157) above).

- (476) Second, the OEMs concerned by the Agreements are targeting major Tier-1 operators in major EU countries, whose sourcing decisions may influence smaller OEMs in their selection of chipset suppliers, thereby unduly placing Broadcom's competitors at a disadvantage in competing with Broadcom for business at these OEMs.⁶⁶⁵ Similarly, smaller service providers may be influenced by the sourcing decisions of bigger service providers, as smaller network operators normally use the network developed by the larger providers.⁶⁶⁶
- (477) Third, by leading to the marginalisation or the exit of the few remaining competitors, Broadcom's conduct would likely lead to Broadcom further strengthening its dominant positions in the markets for STB SoCs and fibre and xDSL residential gateway SoCs as well as to affecting the competitive structure of markets in which Broadcom may not yet be dominant, such as that for cable residential gateway SoCs. This likely damage to competition, which affects several markets, is, by its very nature, serious.
- (478) Fourth, due to the very strengthening or creation of Broadcom's dominance, Broadcom's conduct would also likely deter entry and expansion of new entrants in the markets affected by the Agreements that form the subject of this Decision. This is even more the case due to the fact that the markets at stake are characterised by barriers to entry, notably the importance of economies of scale, which make it unlikely that new entrants could easily penetrate and challenge Broadcom's established position (see section 8.4.4 and, in particular, recital (157) above).
- (479) Fifth, the reduction of competition caused by Broadcom's conduct would likely result in damage to innovation. This is because, due to their weakened state and the reduced possibility of being able to contract with the principal OEMs for the sale of new products and thereby generate the necessary return on investment, competitors are likely to be less willing to carry out significant investments in research and development.⁶⁶⁷ Damage to innovation is likely to occur for example in the form of competitors abandoning pipeline products⁶⁶⁸ as well as OEMs and service providers becoming increasingly unable to offer new or improved services to their customers.⁶⁶⁹ This is confirmed by MediaTek, which explained that "[...] *the initial investment required* [for each generation of product] *is high. If companies miss one cycle, they*

⁶⁶⁵ MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 75.

⁶⁶⁶ MediaTek's observations on the SO of 26 July 2019, Doc ID 1889, paragraph 74.

⁶⁶⁷ See Broadcom's Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1> on 13 June 2019, Doc ID 1574, page 22, where it is stated: "*Significant investments in unsuccessful research and development efforts could materially adversely affect our business, financial condition and results of operations. In addition, increased investments in research and development could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results.*"

⁶⁶⁸ See, e.g., Intel's statement that it had to cancel future platform development of at least one CHD product (Intel's reply of 18 March 2019 to question 1.2 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, pages 2-3).

⁶⁶⁹ In this regard, MediaTek explained that "[t]he exclusivity obligation means that manufacturers lose flexibility to develop solutions from different vendors and to benchmark such vendors against each other in technical and commercial terms" and that "[s]ince most manufacturers propose solutions based on Broadcom chipsets, there is not much possibility for differentiation between them" (see MediaTek's reply of 23 November 2018 to question 7 of Article 18(3) Decision of 24 October 2018, Doc ID 1621, page 9).

would have to wait for the next one and their appetite to invest from scratch in a new product would be much lower.”⁶⁷⁰

- (480) Sixth, the markets affected by Broadcom’s conduct concern key components of devices (*i.e.* STBs and residential gateways) providing connectivity. Connectivity plays a crucial role in today’s society and economy. Any threat to competition and innovation in this field is potentially capable of producing consequences and hampering innovation even beyond the markets identified in section 8.3 above, such as any markets relying on state-of-the-art Internet connectivity provided over fixed networks.
- (481) Seventh, given that Broadcom’s conduct would likely strengthen Broadcom’s dominance, decrease the choice of OEMs and service providers as regards SoCs to be incorporated in the devices which they are producing or procuring as well as hamper innovation, it is likely that consumers would also suffer harm in the form of increased prices, reduced choice and stifled innovation.
- (482) Broadcom contests the Commission’s findings regarding the seriousness of the damage to competition.
- (483) First, Broadcom claims that the Agreements leave ample space for competitors to gain share and build a client portfolio in each of the segments under investigation. In this regard, Broadcom argues that in each relevant market a significant share of the market remains fully contestable, notably due to the highly fragmented nature of the market level at which OEMs operate and thus the presence of OEMs other than the six OEMs which entered into the Agreements with Broadcom. This would also be corroborated by the fact that the Agreements foresee a possibility for OEMs to “opt out” and the fact that service providers’ demand is unaffected by the Agreements.⁶⁷¹
- (484) Second, Broadcom contests the Commission’s argument set out in recital (476) above, according to which the sourcing decisions of the OEMs concerned by the Agreements may influence smaller OEMs in their selection of chipset suppliers. In order to support its claim, Broadcom explains that service providers of all sizes can and do run competitive design win processes.⁶⁷²
- (485) Broadcom’s arguments are without merit, for the following reasons.
- (486) First, with regard to Broadcom’s arguments set out in recital (483) above, the Commission notes that, as explained in recital (366) above, Broadcom’s conduct is capable of affecting competition in the overall markets at hand, in particular as the Agreements cover OEMs which are crucially important for entry and expansion in these markets (in particular due to their high combined market share, given the the importance of economies of scale (see recital (475) above)). In light of the importance of these OEMs, the likely inability of Broadcom’s competitors to maintain and/or increase their market share, which is likely attributable to Broadcom’s conduct in light of its capability to affect competition (see section 8.5.2.2 above), must be considered as serious (see also recital (475) above), particularly with regard to more expensive high-end SoCs which are mainly used in end-devices destined for sale in regions such as the US and Europe (see recital (469) above). Moreover, the seriousness of the

⁶⁷⁰ MediaTek’s observations on the SO of 26 July 2019, Doc ID 1889, paragraph 74.

⁶⁷¹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 265-271; see also Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraphs 3.i., 4.b.3), 4.c.1), 4.c.2) and 5.a.1).

⁶⁷² Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 4.c.3).

consequences of Broadcom's conduct on competition in the relevant markets is exacerbated by the fact that the Agreements are likely to severely impact Broadcom's competitors' ability to win business by taking advantage of recent market exits by competitors (see recital (439) above), whose former market shares can therefore reasonably be expected to be absorbed by Broadcom. Indeed, under the circumstances at hand which do not allow for unfettered competition on the merits, Broadcom is likely to win the tenders aimed at replacing CPE incorporating SoCs provided by former competitors. Moreover, as already explained in recitals (273) to (277) above, the existence in the Agreements of very limited "opt-out" mechanisms in the form of an escalation process does not put into question the Commission's assessment of Broadcom's conduct.

- (487) Finally, Broadcom's claim that service providers' demand is unaffected by the Agreements is unconvincing, as it is at odds with the evidence set out in recital (370) above.⁶⁷³
- (488) Second, with regard to Broadcom's argument set out in recital (484) above, the Commission notes that the fact that service providers of all sizes can and do run competitive design win processes is irrelevant to the Commission's finding that the influence of sourcing decisions by the OEMs concerned by the Agreements on smaller OEMs places Broadcom's competitors at a disadvantage in competing with Broadcom for business at these OEMs. What matters is that, as explained in recital (476) above, Broadcom's conduct is likely to lead even OEMs which did not enter into the Agreements to source their SoC requirements from Broadcom rather than from other chipset suppliers, thereby exacerbating the risk of serious damage to competition.

9.2.3. *Irreparability of the damage to competition*

- (489) For the reasons set out below, the Commission concludes that damage to competition could no longer be remedied by means of a final decision concluding the Commission's administrative procedure.
- (490) First, it is highly unlikely that once a company has exited a given market it would decide to re-enter at a later point in time. This is for the following reasons.
- (491) In the first place, given that the market for specialised engineering and other talented employees in the semiconductor sector is recognised as being extremely competitive (see recital (155) and footnote 229 above), it may prove very difficult for a company to attract or re-hire the personnel necessary to reverse a market exit.
- (492) In the second place, the industries in which Broadcom and its competitors are active are characterised by rapid technological change, changes in customer requirements, frequent new product introductions and enhancements and evolving industry standards. Discontinuation of R&D investment required to develop and bring to market new and enhanced technologies and products is therefore likely to lead to an irreversible failure to keep pace with technological advances and to remain competitive in the relevant markets.⁶⁷⁴

⁶⁷³ See also recital (395) above concerning Broadcom's claims regarding the evidence set out in recital (370) above.

⁶⁷⁴ See Broadcom's Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1> on 13 June 2019, Doc ID 1574, page 22.

- (493) In the third place, the re-launch of a previously discontinued product offering may be made more difficult due to the loss of costumers' confidence.⁶⁷⁵
- (494) Second, even if competitors were not forced to exit but rather be marginalised, it would be unlikely that such damage to competition could be remedied by means of a Commission's decision on the substance. This is because Broadcom's position in the meantime would have likely strengthened to a considerable extent and provided it with a strategic advantage over its competitors, particularly in light of the economies of scale and importance of established customer relationships that characterise the industry (see recitals (157) and (158) above).
- (495) Third, damage to innovation would unlikely be reversed by means of a Commission decision on the substance. This is because it is impossible for a Commission decision on the substance to undo delays in innovation that would occur in the interim or to bring to market products whose development has been abandoned in the interim.
- (496) Fourth, given that damage to competition and innovation are unlikely to be reversed for the reasons outlined above (see recitals (490) to (495) above), the consumer harm that would likely derive from those is also unlikely to be reversed.
- (497) Broadcom contests the Commission's findings regarding the irreparability of the damage to competition.
- (498) First, with regard to the difficulty to hire specialised engineering and other talented employees in the semiconductor sector referred to in recital (491) above, Broadcom argues that it is unclear why this difficulty should apply in particular to a company that has exited the market and would decide to re-enter, as such company would likely have in-house at least part of the personnel necessary to (re)launch a product and personnel previously active on the product might still be in the company. Moreover, Broadcom notes that the market for engineering talent is global and companies can recruit worldwide. Broadcom also argues that the Commission seems to misunderstand the purpose of risk factors listed in Broadcom's Form 10-K, which are meant to warn investors on the whole range of issues that could adversely affect a business, but "*do not necessarily flag any real and ongoing issue*".⁶⁷⁶
- (499) Second, with regard to the likely irreversible effects of a discontinuation of R&D investment in the industries at issue referred to in recital (492) above, Broadcom argues that fast innovation cycles may also incentivise the entry of new players, which could be supported by customers or partners, as it has been the case in the past, or occur through M&A, by acquiring an existing player or assets.⁶⁷⁷
- (500) Third, with regard to the re-launch of a previously discontinued product offering being made more difficult due to the loss of costumers' confidence referred to in recital (493) above, Broadcom claims, with regard to the referenced statement by Intel, that it is hard to believe that customers – if persuaded of the technical value of a solution and guaranteed by contractual arrangements – would entertain doubts about the ability of semiconductor giants like Intel to be a viable business partner.⁶⁷⁸

⁶⁷⁵ Intel's reply of 18 March 2019 to question 1.2 of Article 18(2) request for information of 28 February 2019, Doc ID 1535, page 3.

⁶⁷⁶ Broadcom's SO Response, Doc ID 1843-15, paragraph 274.

⁶⁷⁷ Broadcom's SO Response, Doc ID 1843-15, paragraph 275.

⁶⁷⁸ Broadcom's SO Response, Doc ID 1843-15, paragraph 276.

- (501) Fourth, Broadcom argues that the Commission incorrectly assumes that any marginalisation of Broadcom’s competitors caused by the Agreements would inevitably become permanent, while in reality competing chip suppliers can regularly compete to replace Broadcom, given that demand is fragmented, tenders occur frequently and the industry concerned is complex and of variable nature.⁶⁷⁹
- (502) Broadcom’s arguments are without merit, for the following reasons.
- (503) First, with regard to Broadcom’s arguments set out in recital (498) above, the Commission notes that if scarceness of engineering resources is a concern for companies active on the market even under normal circumstances (as documented, e.g., by the statements taken from Broadcom’s and Qualcomm’s annual reports referenced in footnote 229 above), such constraint will *a fortiori* apply to a company that has exited the market and would decide to re-enter, as such company would likely have difficulty to retain the relevant personnel after its market exit.⁶⁸⁰ This constraint is likely to apply even if a company was able to reassign its employees to different tasks after its exit from a particular market, given that the company’s decision to abandon that market will likely decrease the attractiveness of the company as an employer of personnel with specialised capabilities relevant to the abandoned market. Companies can also not overcome the difficulty to attract and retain qualified personnel by seeking to recruit worldwide, due to the fact that – as pointed out by Broadcom itself – the market for engineering talent already is global. Finally, with regard to Broadcom’s claim that the Commission misunderstood the purpose of risk factors listed in Broadcom’s Form 10-K, the Commission notes that the fact that Broadcom may not currently be experiencing a “*real and ongoing issue*” with regard to talent acquisition or retention does not invalidate in any way its statement about the general difficulty to attract and retain qualified personnel.
- (504) Second, with regard to Broadcom’s argument set out in recital (499) above, the Commission notes that while it is impossible to rule out with certainty the entry of new players or the re-entry of former competitors to Broadcom, such (re-)entry appears unlikely due to the difficulties arising from the market characteristics described in recital (492) above and the expectation that the markets at issue are unlikely to expand significantly in the future (see recital (159) above). As regards the argument that certain players may decide to partner with other market participants or to acquire an existing player or assets, such possibility is not substantiated and is framed in such generic terms that it could be considered as applying in the abstract to any industry or market. In any event, it is not clear how such possibility should affect the Commission’s assessment, given that the effects of a discontinuation of R&D investment would likely continue to apply even after a potential ownership change.
- (505) Third, with regard to Broadcom’s argument set out in recital (500) above, the Commission notes that that argument is unconvincing, as it appears to presuppose that the product offering of any market player re-entering the market or re-engaging with customers after a period of absence from the market⁶⁸¹ would be received by customers

⁶⁷⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 278-280.

⁶⁸⁰ The Commission’s finding is also confirmed by MediaTek’s written observations on the SO, Doc ID 1889, paragraph 51; MaxLinear’s written observations on the SO, Doc ID 1932, paragraph 24; Quantenna’s written observations on the SO, Doc ID 1939, paragraph 21.

⁶⁸¹ E.g., Intel stated that in light of the losses and in response to the declining performance of CHD’s business, it decided, amongst other, to focus on a smaller number of customers and OEMs and to substantially reduce product investment in the xDSL and fibre residential gateway business (see recital (438)(b) above).

in the same way as the offering from suppliers like Broadcom which are already present on the market and which entertain and benefit from established customer relationships. This is, however, implausible, as corroborated by statements of market participants referenced in recital (158) above, according to which having an established relationship with customers can provide an advantage to existing suppliers.

- (506) Fourth, with regard to Broadcom's claim set out in recital (501) above, the Commission notes that that claim as it is at odds with market developments. Indeed, while Broadcom itself refers to "[o]ver 35 SoC suppliers [that] have exited the STB or Gateway market over [the] last 20 years [...]",⁶⁸² there is no evidence (and indeed Broadcom does not even attempt to claim) that these market exits have over the years been compensated by market entrances of new players of an even remotely similar number or significance, nor did Broadcom point to an example of a player which re-entered the market after having left it. Moreover, Broadcom's claim that competing chip suppliers can regularly compete to replace Broadcom is flawed, as it disregards the capability of its conduct to distort competition, as described in section 8.5.2.2. above.⁶⁸³

10. INTERIM MEASURES

- (507) In light of the finding set out in section 8 above that Broadcom has, *prima facie*, engaged in an infringement of Article 102 TFEU and Article 54 of the EEA Agreement and the urgent need to prevent serious and irreparable damage to competition as described in section 9 above, the Commission considers that interim measures are required to ensure the effective exercise of its competition law enforcement powers and, in particular, the effectiveness of any final decision it may take on the compatibility of Broadcom's conduct with the rules on competition laid down in Article 102 TFEU and Article 54 of the EEA Agreement.
- (508) The Commission concludes that the objective of ensuring the effectiveness of any final decision in this case can be achieved by ordering Broadcom to:
- (a) Unilaterally cease to apply with immediate effect the exclusivity-inducing provisions identified in sections 8.5.2.1.A and 8.5.2.1.B above contained in the Agreements concerning [OEM A]', [OEM B]'s, [OEM C]'s, [OEM D]'s, [OEM E]'s and [OEM F]'s purchases of SoCs for STBs and SoCs for cable, fibre or xDSL residential gateways (as appropriate) from Broadcom. Broadcom shall, without delay, (a) inform the contracting parties of the Agreements of such disapplication and (b) notify the Commission that it has put this measure into effect, such notification to be accompanied by supporting documentation;
 - (b) Refrain from agreeing the same exclusivity-inducing provisions or provisions having an of equivalent object or effect as those identified in sections 8.5.2.1.A and 8.5.2.1.B above in any future contracts or agreements (written or otherwise) with [OEM A], [OEM B], [OEM C], [OEM D], [OEM E] and [OEM F], and refrain from implementing punishing or retaliatory practices having an equivalent object or effect.

⁶⁸² Broadcom presentation of 21 March 2019 titled "*Industry Tutorial: Set-Top Boxes, Broadband Gateways, and Broadcom's Strategic Partnerships*", Doc ID 1285, page 14.

⁶⁸³ In this regard, see also recitals (466) and (466) above regarding Broadcom's argument that frequent tenders regularly provide its competitors with opportunities to compete.

- (509) Broadcom shall have 30 days from the date of notification of this Decision to implement the measures described in recital (508) above. By the same deadline, Broadcom shall inform the Commission of the measures it has put in place to ensure compliance with the Decision.
- (510) In consideration of the specific circumstances at hand (notably the risk of Broadcom’s competitors becoming increasingly marginalised or exiting the market within a short timeframe if they are unable to effectively compete with Broadcom (see, in particular, recital (434) above)), the Commission considers it sufficient at this stage to limit the time period during which interim measures are to apply in this case to a period of three years⁶⁸⁴ as from the date on which Broadcom informs the Commission that it has put the measures described in recital (508)(a) above into effect, or until the date that the Commission either adopts a final decision on the substance of Broadcom’s conduct covered by this Decision or closes its investigation into that conduct, should either of these events occur prior to the end of the aforementioned three-year period. The period of three years is also in line with the timeframe that it would likely take for the Commission to come to a final decision on the substance of the case (see recital (433) and footnote 598 above). This does not affect the Commission’s power to renew its decision to impose interim measures in so far as this may be necessary and appropriate, pursuant to Article 8(2) of Regulation (EC) No 1/2003.

11. PROPORTIONALITY AND BALANCE OF INTERESTS

11.1. Principles

- (511) It is settled case law that interim measures should be indispensable for the effective exercise of the Commission’s functions and restricted to what is necessary in the given situation.⁶⁸⁵ It follows that the interim measures must come within the framework of a possible final decision which may be adopted by the Commission.⁶⁸⁶

⁶⁸⁴ This would mean that Broadcom’s competitors should at least be able to compete effectively for the demand of one tender launched by each service provider. Although tenders are generally organised by service providers roughly every 1.5 to 2 years, a period shorter than three years during which interim measures are to apply would likely be insufficient, as: (i) the duration of a tender can be long and design wins can ultimately be awarded several months after the launch of a tender (*e.g.*, Sky stated that its selection process “*generally takes up to 6 months*” (see Sky’s reply of 25 January 2019 to question 30.1.1 of Article 18(2) request for information of 18 December 2018, Doc ID 929, page 15)). It is important that OEMs are not tied to the exclusivity-inducing provisions not only at the beginning of a tender, but also during its duration, given that if those provisions were reinstated, OEMs could be induced to drop out of an ongoing tender before such tender is awarded; and (ii) informal discussions between service providers and OEMs can take place even months before the launch of a tender. If the exclusivity-inducing provisions were ongoing during those informal discussions, they could have an effect on the outcome of the tender (see, *e.g.*, Liberty Global’s reply of 14 November 2018 to question 8 of Article 18(3) Decision of 24 October 2018, Doc ID 1640, pages 9-10, where it states that during the IBC 2017 show [...] it was discussing with OEMs its tender to be launched in [...] and OEMs “*made it clear that they would not propose anything other than Broadcom solutions to Liberty Global*”). The Commission’s approach is in any event highly conservative, because each tender launched by a service provider does not necessarily aim at replacing all CPE deployed by that service provider (see footnote 27 above). Hence, it is unlikely that a period of three years will be sufficient for Broadcom’s competitors to compete on the merits for the whole market demand.

⁶⁸⁵ See, *e.g.*, Case 792/79 R *Camera Care v Commission*, EU:C:1980:18, paragraphs 18-19; Joined Cases 228 and 229/82 *Ford v Commission*, EU:C:1984:80, paragraph 19; Case T-23/90 *Peugeot v Commission*, EU:T:1991:45, paragraph 19.

⁶⁸⁶ Joined Cases 228 and 229/82 *Ford v Commission*, EU:C:1984:80, paragraph 19.

(512) Proportionality is assessed by weighing the public interest in avoiding a serious and irreparable damage to competition against the likely impact of the envisaged interim measures on the undertaking at stake.⁶⁸⁷ In this regard, it should be taken into account whether it would be possible to reverse the situation that would be brought about by ordering interim measures and conversely whether a final decision in the case at stake would be prevented from being fully effective in the absence of interim measures.⁶⁸⁸

11.2. Application to this case

(513) The Commission concludes that the envisaged interim measures described in section 10 above are proportionate, for the following reasons.

(514) On the one hand, the imposition of interim measures is necessary to preserve the effective exercise of the Commission's enforcement powers. If the measures described in section 10 above were not put in place pending the Commission's final determination of whether, through the Agreements, Broadcom is breaching Article 102 TFEU, it is likely that a potential prohibition of Broadcom's conduct by means of a final decision would be ineffective, as such decision would be unable to reverse the competitive harm that would likely have materialised in the interim period (see section 9.2.3 above).

(515) On the other hand, the Commission considers that the interim measures do not impose an undue burden on Broadcom for the reasons that follow.

(516) First, the envisaged measures are strictly limited to what is necessary to avoid serious and irreparable damage to competition. This is because the measures in question are strictly limited to the exclusivity-inducing provisions identified in section 8.5.2.1 above as well as measures of equivalent object or effect *vis-à-vis* the specifically named OEMs.

(517) Second, the implementation of the described measures does not require Broadcom to engage in any active conduct that it is not ongoing at present, such as requiring Broadcom to contract with a specific third party or provide a competitor with access to its technology.

(518) Third, Broadcom would be able to continue supplying the relevant products to its customers at the same conditions as before, but absent the exclusivity-inducing provisions. Therefore, Broadcom would still be allowed to compete on the merits with its competitors for every OEM, service provider and tender.

(519) Fourth, the interim measures are merely of a temporary nature. If the Commission were to find that Broadcom's conduct does not amount to an infringement of Article 102 TFEU, the exclusivity-inducing provisions could be reinstated.

(520) Broadcom contests the Commission's findings regarding proportionality and the balance of interests.

(521) First, Broadcom claims that the Commission failed to properly balance the alleged harm in the markets for STB SoCs and residential gateway SoCs against the harm that the interim measures would cause to Broadcom, OEMs and the market more broadly. In this regard, Broadcom argues that the proposed interim measures would inevitably

⁶⁸⁷ Case C-149/95 P(R) *Commission v Atlantic Container Line and Others*, EU:C:1995:257, paragraph 52.

⁶⁸⁸ See Case C-76/89 *RTE v Commission*, EU:C:1989:192, paragraph 15 and Case C-149/95 P(R) *Commission v Atlantic Container Line and Others*, EU:C:1995:257, paragraph 50.

have an impact on the level of bid support that Broadcom would be able to offer to OEMs, as compared to today.⁶⁸⁹

(522) Second, Broadcom argues that the proposed interim measures go beyond conservatory measures, as they would undermine the partnerships between Broadcom and OEMs and “*upset fundamental dynamics of the industry*”. Moreover, the requirement that Broadcom refrain from including provisions of equivalent object or effect in any future contracts or agreements with those OEMs would affect Broadcom’s commercial policy beyond the isolated clauses to which the Commission specifically objects. According to Broadcom, the proposed interim measures would “*radically alter*” the contractual balance freely reached by Broadcom and the OEMs in favour of the latter, causing renegotiation of the relationships, and constrain the scope and content of any future contract with OEMs that may be negotiated by Broadcom while the interim measures are in force. The proposed interim measures would also hamper Broadcom’s ability and incentive to continue to invest in bid support going forward, as it would no longer have the assurance of a minimum return on its investments. Broadcom further notes in this respect that in flat or declining markets such assurances are critical in driving R&D investments. The impact of the proposed interim measures on the design and implementation of Broadcom’s commercial policy would therefore affect the development of the industry for a number of years.⁶⁹⁰

(523) Third, Broadcom claims that the Commission has failed to assess whether the measures proposed are the least restrictive way to address its concerns. Broadcom argues that possible less restrictive remedies would have been: (i) to order Broadcom to terminate the agreements at the end of their term to avoid tacit renewal and to refrain from including specified clauses in future agreements, or (ii) to order Broadcom to limit the duration of the OEM commitments rather than require their immediate suspension, or (iii) to limit the scope of the interim measures to the products where there is existing or real potential competition that could be harmed.⁶⁹¹

(524) Broadcom’s arguments are without merit, for the following reasons.

(525) First, with regard to Broadcom’s arguments set out in recital (521) above, the Commission notes that, contrary to Broadcom’s allegation, the Commission has weighed the public interest in avoiding a serious and irreparable damage to competition against the likely impact of the envisaged interim measures. For the reasons set out in recitals (516) to (519) above, however, the Commission considers that the interim measures do not impose an undue burden on Broadcom. In particular, as noted in recital (518) above, Broadcom would be able to continue supplying the relevant products to its customers at the same conditions as before, simply absent the exclusivity-inducing provisions. The correctness of this position has been confirmed by Broadcom itself by the following statement contained in Broadcom’s filing to the United States Securities and Exchange Commission of 26 June 2019 in reaction to the SO: “*The interim measures, if adopted, will not preclude the continued sale by Broadcom of any products. Broadcom’s contracts with these customers would remain in force, other than the provisions at issue, and it intends to continue to support these customers going forward. Accordingly, Broadcom believes that this action will not*

⁶⁸⁹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 294-296.

⁶⁹⁰ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 283, 285-287, 296; Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraphs 3.j.1) and 5.b.

⁶⁹¹ Broadcom’s SO Response, Doc ID 1843-15, paragraphs 298-301.

have a material impact on its set-top box or broadband modem businesses.”⁶⁹² In addition, for the avoidance of doubt, the interim measures will not affect Broadcom’s behaviour to the extent that such behaviour is not capable of affecting competition in the EEA.

- (526) As regards the impact of the interim measures on OEMs, the proposed interim measures would not in themselves cause the renegotiation of Broadcom’s whole relationships with OEMs, but solely affect the exclusivity-inducing provisions identified in sections 8.5.2.1.A and 8.5.2.1.B above. Under such circumstances, rather than facing detrimental effects from the proposed interim measures, OEMs would benefit from additional flexibility in their procurement choices.⁶⁹³
- (527) As regards the impact of the interim measures on the market more broadly, the Commission maintains, for the reasons already set out in section 9.2 above, that, in the absence of interim measures, serious and irreparable damage to competition is likely to arise if Broadcom’s conduct were allowed to continue.
- (528) Second, with regard to Broadcom’s arguments set out in recital (522) above, the Commission notes that the proposed interim measures solely intend to ensure that Broadcom does not continue to engage in the *prima facie* abusive behaviour identified in section 8.5.2 above or engage in behaviour equivalent thereto. As stated above in recital (518), they only affect the exclusivity-inducing provisions identified in sections 8.5.2.1.A and 8.5.2.1.B above and conduct of equivalent object or effect rather than the advantages granted to its customers by Broadcom. Given that the remaining terms of the Agreements are not subject to the interim measures, the proposed interim measures would not in themselves cause the renegotiation of Broadcom’s whole relationships with OEMs. Broadcom remains free to decide on its commercial policy and in particular on how to support its customers in individual tender processes; where to allocate its R&D resources; and how to position itself on the market. In this regard, the fact that at least one OEM submitted that it expects that Broadcom will maintain the advantages granted through its agreements with that OEM⁶⁹⁴ and Broadcom’s publicly announced intention that, if interim measures were to be adopted, it would “[...] continue to support [its] customers going forward” (see recital (525) above), highlights the implausibility of Broadcom’s claims.
- (529) Third, with regard to Broadcom’s argument set out in recital (523) above, the Commission refers to the considerations set out in recital (514) above, based on which a final decision which may be adopted by the Commission in this case would be unable to reverse the competitive harm that would likely have materialised in the meantime

⁶⁹² Broadcom’s form 8-K of 26 June 2019, printed from <https://investors.broadcom.com/static-files/8fdf8974-7641-4c5b-bf84-82edb4215a61>, page 2.

⁶⁹³ This is confirmed by [OEM B]’s written observations on the SO, Doc ID 2005, page 2, where it is stated: “[OEM B] understands that lifting the exclusivity would give [OEM B] more flexibility in sourcing its requirements.”

⁶⁹⁴ [...]” With regard to a statement from [OEM B] about its concern that the “adoption of the interim measures planned by the Commission may cause a disruption of supply, support or more generally in the commercial relationship between [OEM B] and Broadcom” ([OEM B]’s written observations on the SO, Doc ID 2005, page 3), invoked by Broadcom in support of its claim that the proposed interim measures would disrupt the commercial relationship between OEMs and Broadcom (Broadcom’s Comments on the Letter of Facts, Doc ID 2154, paragraph 3.j.1), the Commission is of the view that the referenced statement cannot be interpreted in a way to support Broadcom’s claim. Rather, the Commission views this statement as an expression of [OEM B]’s concern that Broadcom could apply less favourable conditions if [OEM B] did not source its SoC requirements exclusively from Broadcom.

(see section 9.2 above) absent the interim measures. For the reasons set out in section 9.2.1 above, the Commission's intervention by means of imposing interim measures is urgent. Consequently, any measures incapable of immediately rendering ineffective the exclusivity-inducing provisions in the Agreements would be unable to prevent the impending serious and irreparable damage to competition. Finally, contrary to Broadcom's claim, the proposed interim measures concern markets where there *is* existing competition that could be harmed, as evidenced by the examples provided in recital (438) above.

- (530) In light of the above, the alternative measures referred to by Broadcom as less restrictive would be incapable of preventing the likely serious and irreparable damage to competition (as described in section 9.2 above) from occurring before a decision on the substance of the case. In particular, (i) ordering Broadcom to terminate the agreements at the end of their term to avoid tacit renewal and to refrain from including specified clauses in future agreements would be insufficient, as it would defer the effects of the measure to the end dates of the Agreements, which may be set at more than two years from the day of adoption of this Decision (see, *e.g.*, recital (56) above); (ii) ordering Broadcom to limit the duration of the OEM commitments rather than require their immediate suspension would be equally ineffective, as it is paramount that Broadcom's competitors are urgently enabled to compete with Broadcom on the merits for OEMs' business (see section 9.2.1 above); and (iii) the scope of the interim measures is already limited to the products in respect of which the Commission has identified existing or real potential competition that could be harmed, if the exclusivity-inducing provisions in the Agreements were left in place (see sections 8.4.3.2 and 9.2.1 above).
- (531) In any case, the Commission considers that the proposed interim measures are rendered proportionate by the fact that they are limited to a maximum time period of three years after their entry into force (see recital (510) above). Such duration does not exceed the period that the Commission considers to be necessary to prevent serious and irreparable harm to competition from occurring in light of the length of product life-cycles and the related long-lasting consequences of a chipset supplier's failure to win tenders, as well as the duration of, and the time of entry into force of, the Agreements (see section 9.2.1 and, in particular, recitals (434) to (436) above; see also recital (510) above), while still being of sufficient duration for the Commission to undertake its review of Broadcom's conduct with a view to reaching a final determination of whether, through the Agreements, Broadcom is breaching Article 102 TFEU (see footnote 598 above). It is therefore assured that the interference with Broadcom's contractual freedom brought by the proposed interim measures does not extend over an undue period of time.

12. PERIODIC PENALTY PAYMENTS

12.1. Principles

- (532) Pursuant to Article 24(1)(b) of Regulation (EC) No 1/2003 and Article 5 of Council Regulation (EC) No 2894/94 of 28 November 1994 concerning arrangements for implementing the Agreement on the European Economic Area ("Regulation (EC) No 2894/94"),⁶⁹⁵ the Commission may, by decision, impose on undertakings or associations of undertakings periodic penalty payments not exceeding 5% of the

⁶⁹⁵ OJ L 305, 30.11.1994, pages 6–8.

average daily turnover in the preceding business year per day and calculated from the day specified in the decision, in order to compel them to comply with a decision ordering interim measures taken pursuant to Article 8 of Regulation (EC) No 1/2003.

12.2. Application to this case

- (533) The Commission concludes that it is necessary to impose periodic penalty payments pursuant to Article 24(1)(b) of Regulation (EC) No 1/2003 and Article 5 of Regulation (EC) No 2894/94 if Broadcom were to fail to comply with the measure set out in Articles 2 to 4 of this Decision.
- (534) In setting the level of the periodic penalty payments, the Commission has taken into account the need to impose periodic penalty payments sufficient to ensure compliance by Broadcom with this Decision. The Commission has also taken into account the need to set periodic penalty payments that are sufficient to ensure compliance by other undertakings of a similar size and with similar financial resources, as well as the fact that in this case periodic penalty payments would be imposed on the basis of a *prima facie* finding of an infringement.
- (535) Consequently, if it fails to comply with any of the requirements set out in Articles 2 to 4 of this Decision, Broadcom shall incur a periodic penalty of up to 2% of Broadcom's average daily turnover in the business year preceding such failure to comply for each day in which it is in breach.

13. JURISDICTION

13.1. Principles

- (536) Article 102 TFEU is intended to prevent conduct of undertakings limiting competition within the internal market. In particular, Article 102 TFEU prohibits the abuse of a dominant position "within the internal market or in a substantial part of it".⁶⁹⁶
- (537) In order to justify the Commission's jurisdiction, it is sufficient that conduct is either implemented in the EEA ("implementation doctrine") or is liable to have immediate, substantial and foreseeable effects in the EEA ("qualified effects doctrine").⁶⁹⁷ The implementation doctrine and the qualified effects doctrine constitute alternative and not cumulative approaches to establishing the Commission's jurisdiction.⁶⁹⁸
- (538) The criterion of implementation is satisfied by mere sale within the Union, irrespective of the location of sources of supply and of production plants.⁶⁹⁹ It follows that direct sales of the products covered by the conduct to customers in the EEA are not the only means of implementation. For example, conduct can be considered as implemented in the territory of the EEA where a customer of a dominant undertaking, which is present and makes sales in the internal market, receives payments from the dominant

⁶⁹⁶ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 42.

⁶⁹⁷ Joined Cases 89/85, 104/85, 114/85, 116/85, 117/85 and 125/85 to 129/85 *Ahlström Osakeyhtiö and Others v Commission*, EU:C:1988:447, paragraphs 11-18; Case T-102/96 *Gencor v Commission*, EU:T:1999:65, paragraphs 89-101; Case C-413/14 P, *Intel v Commission*, EU:C:2017:632, paragraphs 42-46.

⁶⁹⁸ See, to that effect, Case T-447/14, *NKT Verwaltungs GmbH and Others v Commission*, EU:T:2018:443, paragraphs 79-82.

⁶⁹⁹ Joined Cases 89/85, 104/85, 114/85, 116/85, 117/85 and 125/85 to 129/85 *Ahlström Osakeyhtiö and Others (Wood Pulp) v Commission*, EU:C:1988:447, paragraph 17; Case T-102/96 *Gencor v Commission*, EU:T:1999:65, paragraph 87.

undertaking conditional upon that customer obtaining all or almost all of its requirements of certain inputs from the dominant undertaking. This is because such payments ensure that the customer will exclusively or almost exclusively sell products incorporating the dominant undertaking's inputs in question throughout the world, including in the EEA.⁷⁰⁰

- (539) The qualified effects doctrine requires that the conduct in question have immediate, substantial and foreseeable effects of conduct in the EEA. This test is satisfied when the conduct in question is capable of having such an effect, there being no need to show actual effects.⁷⁰¹ A relevant factor in conducting this assessment is whether the conduct was intended to produce effects within the internal market.⁷⁰²

13.2. Application to this case

- (540) The Commission concludes that it has jurisdiction to apply Article 102 TFEU and Article 54 of the EEA Agreement to Broadcom's conduct described in this Decision.
- (541) First, the Commission's jurisdiction is justified under the implementation doctrine. The exclusivity-inducing provisions were meant to be implemented *inter alia* in the EEA as the Agreements were concluded with customers established in the EEA or that are in any event active in the EEA (see recital (423) above).
- (542) Second, in any event, the Commission's jurisdiction is justified under the qualified effects doctrine. Broadcom's conduct is capable of having immediate, substantial and foreseeable effects in the EEA.
- (543) In the first place, Broadcom's conduct is capable of producing a substantial effect in the EEA. It is intended to ensure that the six OEMs obtain exclusively or almost exclusively SoCs for STBs and residential gateways destined to be sold in the EEA from Broadcom and is therefore intended to produce effects in the EEA.⁷⁰³ Broadcom's conduct is capable of foreclosing competing suppliers of SoCs in or into the EEA for STBs and residential gateways (see section 8.5.2.2 above). In the absence of the Commission's intervention, it is likely that Broadcom's competitors will become increasingly marginalised and may ultimately be forced to exit the relevant markets (see section 9.2.1 above).
- (544) In the second place, Broadcom's conduct is capable of producing an immediate effect in the EEA by restricting sourcing options for OEMs located in and selling their products within the EEA, with a consequential restriction of product offerings available to service providers in the EEA which source STBs and residential gateways from OEMs (see section 8.5.2.2 above).
- (545) In the third place, it is likely that Broadcom knew, or at least could reasonably have foreseen, that the likely effect of its conduct would be that:
- (a) Broadcom's competitors would be excluded from winning business in the EEA with the six OEMs with which it entered into the Agreements; and

⁷⁰⁰ See, to that effect, Case T-286/09 *Intel Corp. v Commission*, EU:T:2014:472, paragraphs 311-314, annulled but not on this point.

⁷⁰¹ Case T-286/09 *Intel Corp. v Commission*, EU:T:2014:472, paragraphs 251-252 and 296, annulled but not on this point.

⁷⁰² Case T-286/09 *Intel Corp. v Commission*, EU:T:2014:472, paragraphs 253-255, annulled but not on this point.

⁷⁰³ See, to that effect, Case T-286/09 *Intel Corp. v Commission*, EU:T:2014:472, paragraph 255, annulled but not on this point.

- (b) as a result, competitors would become increasingly marginalised and may ultimately be forced to exit the relevant markets in the EEA.

14. ADDRESSEE

14.1. Principles

- (546) Article 102 TFEU and Article 54 of the EEA Agreement are addressed to undertakings. The concept of an undertaking refers to any entity engaged in an economic activity, regardless of its legal status and the way in which it is financed.⁷⁰⁴ The term “undertaking” must also be understood as designating an economic unit even if in law that economic unit consists of several persons, natural or legal.⁷⁰⁵
- (547) The principle of economic continuity means that liability may be attributed to the legal successor of the legal person responsible for the infringement of the competition rules.⁷⁰⁶

14.2. Application to this case

- (548) Based on the findings set out in section 8 above, the Commission concludes that Broadcom has *prima facie* engaged in an infringement of Article 102 TFEU and Article 54 of the EEA Agreement.
- (549) Broadcom Inc. itself is party to one of the Agreements. This Decision is therefore addressed to Broadcom Inc. as the company which entered into the [OEM E] SoC SPA.⁷⁰⁷
- (550) In addition, this Decision is addressed to Broadcom Inc. as the ultimate parent company of the Broadcom group and the company exercising control over⁷⁰⁸ (i) Broadcom Corporation, *i.e.* the company that entered into the [OEM A] CSA, and (ii) Avago Technologies International Sales Pte. Ltd., the company that entered into the [OEM B] TPA, the [OEM C] TPA, the [OEM F] LoI and the [OEM D] MoU Amendment. Broadcom Corporation and Avago Technologies International Sales Pte. Ltd. are direct subsidiaries of Broadcom Inc.⁷⁰⁹
- (551) Finally, this Decision is addressed to Broadcom Inc. in its capacity as the legal successor of Broadcom Limited, which was, until its dissolution on 4 April 2018, the

⁷⁰⁴ Case C-90/09 P *General Química and Others v Commission*, EU:C:2011:21, paragraph 34 and the case-law cited.

⁷⁰⁵ Case C-90/09 P *General Química and Others v Commission*, EU:C:2011:21, paragraph 35 and the case-law cited.

⁷⁰⁶ Case C-448/11 P *SNIA v Commission*, EU:C:2013:801, paragraph 22.

⁷⁰⁷ Broadcom Inc. entered into this agreement by means of signature by [...].

⁷⁰⁸ See Broadcom Inc.’s Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1>) on 13 June 2019, Doc ID 1574, Exhibit 21.1, page 373. The Commission understands all subsidiaries listed in Exhibit 21.1 to be wholly owned by Broadcom Inc. with the exception of subsidiaries marked with an asterisk, *e.g.* Silicon Manufacturing Partners Pte. Ltd., whose shareholdings are further specified. Based on this understanding the Commission concludes that Broadcom Corporation as well as Avago Technologies International Sales Pte. Ltd. are wholly owned subsidiaries of Broadcom Inc. and that Avago Technologies General IP (Singapore) Pte. Ltd. was a wholly owned subsidiary of Broadcom Limited.

⁷⁰⁹ See Broadcom Inc.’s Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1>) on 13 June 2019, Doc ID 1574, Exhibit 21.1, page 373.

ultimate parent company of Avago Technologies General IP (Singapore) Pte. Ltd., the company that entered into the [OEM D] MoU and that, on the basis of public information, appears to no longer exist. Avago Technologies General IP (Singapore) Pte. Ltd. was at the time of the conclusion of the [OEM D] MoU (see at recital (49) above) a subsidiary of Broadcom Limited and Broadcom Cayman L.P.⁷¹⁰

- (552) Broadcom Inc. is the legal successor to Broadcom Limited, a company organised under the laws of the Republic of Singapore, as a result of the group's redomiciliation to the United States on 4 April 2018. At the same time and as part of the redomiciliation, Broadcom Cayman L.P., a subsidiary of Broadcom Limited, was integrated into Broadcom Inc. and subsequently deregistered.⁷¹¹
- (553) In light of the above, the Commission addresses this Decision to Broadcom Inc. as the entity within Broadcom that is factually and legally in the position to effectively implement the interim measures as described in section 10 above and should therefore be the addressee of this Decision.

15. CONCLUSION

- (554) In light of the above considerations regarding the presence of a *prima facie* finding that Broadcom infringed Article 102 TFEU and Article 54 of the EEA Agreement and regarding the urgent need to avoid serious and irreparable damage to competition, as set out in sections 8 and 9 above, the Commission considers it necessary and appropriate to impose interim measures on Broadcom pursuant to Article 8(1) of Regulation (EC) No 1/2003, in the terms set out in Articles 2 to 4 of this Decision.

HAS ADOPTED THIS DECISION:

Article 1

Through the practices described in this Decision, Broadcom Inc. is *prima facie* infringing Article 102 of the Treaty on Functioning of the European Union and Article 54 of the EEA Agreement. In light of the urgent need to avoid serious and irreparable damage to competition, pursuant to Article 8(1) of Regulation (EC) No 1/2003, the Commission imposes on Broadcom Inc. the measures described in Articles 2 to 4.

Article 2

Broadcom Inc. shall unilaterally cease to apply with immediate effect the exclusivity-inducing provisions contained in the agreements described in this Decision concerning [OEM A]'s, [OEM B]'s, [OEM C]'s, [OEM D]'s, [OEM E]'s and [OEM F]'s purchases of systems-on-a-chip for set-top boxes and systems-on-a-chip for cable, fibre or xDSL residential gateways (as appropriate) from Broadcom. Broadcom shall, without delay, inform [OEM A], [OEM B], [OEM C], [OEM D], [OEM E] and [OEM F] of such disapplication.

⁷¹⁰ See Broadcom Limited and Broadcom Cayman L.P.'s Form 10-K for the fiscal year 2017, printed from <https://investors.broadcom.com/static-files/d5474142-edf4-4b7c-a5d9-cf7691f15167> on 20 June 2019, Doc ID 1656, Exhibit 21.1, pages 427-428.

⁷¹¹ See Broadcom's Form 10-K for the fiscal year 2018, printed from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NzAyODM1fENoaWxkSUQ9NDE0OTEyfFR5cGU9MQ==&t=1> on 13 June 2019, Doc ID 1574, pages 4, 37, 65.

Article 3

Broadcom Inc. shall refrain from agreeing the same exclusivity-inducing provisions or provisions having an equivalent object or effect as those identified in Article 2 in any future contracts or agreements (written or otherwise) with [OEM A], [OEM B], [OEM C], [OEM D], [OEM E] or [OEM F], and refrain from implementing punishing or retaliatory practices having an equivalent object or effect.

Article 4

Broadcom Inc. shall have 30 days from the date of notification of this Decision to implement the measures described in Articles 2 and 3. By the same deadline, Broadcom shall inform the Commission of the measures it has put in place to ensure compliance with the Decision, with such notification to be accompanied by supporting documentation. The interim measures will apply for (i) a time period of three years as from the date on which Broadcom informs the Commission in accordance with this Article of the measures that it has adopted pursuant to Article 2 or (ii) until the date of adoption of a final decision on the substance of Broadcom's conduct covered by this Decision or the closure of the Commission's investigation concerning that conduct, should either of these events occur prior to the end of the aforementioned three-year period.

Article 5

Should Broadcom Inc. fail to comply with any of the orders set out in Articles 2 to 4 above, it shall incur a periodic penalty of up to 2% of its average daily turnover in the business year preceding such a failure to comply for each day in which it is in breach.

Article 6

This Decision is addressed to Broadcom Inc., 1320 Ridder Park Drive, San Jose, CA 95131, United States of America.

Done at Brussels, 16.10.2019

For the Commission
Margrethe VESTAGER
Member of the Commission