## CASE AT.40608 - Broadcom

(Only the English text is authentic)

## ANTITRUST PROCEDURE

Council Regulation (EC) 1/2003

Article 9 Regulation (EC) 1/2003

Date: 7/10/2020

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Brussels, 7.10.2020 C(2020) 6765 final

#### **COMMISSION DECISION**

of 7.10.2020

relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union (TFEU) and Article 54 of the EEA Agreement

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(Text with EEA relevance)

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#### of 7.10.2020

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#### THE EUROPEAN COMMISSION,

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

Having regard to the Agreement on the European Economic Area,

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, in particular Article 9(1) thereof,

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

Having expressed concerns in the interim measures Statement of Objections of 26 June 2019 and the interim measures Decision of 16 October 2019,<sup>2</sup>

Having given interested third parties the opportunity to submit their observations pursuant to Article 27(4) of Regulation (EC) No 1/2003 on the commitments offered to meet those concerns,

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

Having regard to the final report of the Hearing Officer,

Whereas:

OJ L 1, 4.1.2003, p.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 ("the Treaty"). The two sets of provisions are, in substance, identical. For the purposes of this Decision, references to Articles 101 and 102 of the Treaty should be understood as references to Articles 81 and 82, respectively, of the EC Treaty when where appropriate. The Treaty 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 Treaty will be used throughout this Decision.

<sup>&</sup>lt;sup>2</sup> Commission Decision of 16 October 2019, C(2019)7416.

#### 1. SUBJECT MATTER

- (1) The present Decision is addressed to Broadcom Inc. ("Broadcom").
- (2) In its Decision of 16 October 2019 pursuant to Article 8 of Council Regulation (EC) No 1/2003 imposing interim measures on Broadcom ("interim measures Decision"), the Commission came to the *prima facie* conclusion that Broadcom had entered into certain agreements with Original Equipment Manufacturers ("OEMs") that contained exclusivity-inducing provisions. The interim measures Decision concluded that the agreements had *prima facie* the object or effect of forcing or inducing the OEMs in question to obtain all or almost all of their requirements for Systems-on-a-Chip ("SoCs") for Set Top Boxes ("STBs") and SoCs for cable, fibre and xDSL residential gateways from Broadcom. The agreements did so, in particular, by means of (quasi-) exclusivity arrangements or leveraging restrictions. In the interim measures Decision, the Commission considered that such practices *prima facie* infringed Article 102 of the Treaty on the Functioning of the European Union ("the Treaty") and Article 54 of the EEA Agreement.<sup>3</sup>
- (3) In addition, the Statement of Objections ("SO") addressed to Broadcom on 26 June 2019, which outlined the Commission's preliminary conclusions as regards the need to impose interim measures pursuant to Article 8 of Regulation (EC) No 1/2003, also raised concerns as to the compatibility with Article 102 of the Treaty of leveraging restrictions into the markets for WiFi chipsets and Front-end chips.<sup>4</sup>
- (4) Together, the interim measures Decision and section 8.5.2.1. C) of the Statement of Objections concerning leveraging restrictions from the markets for STB SoCs, SoCs for xDSL residential gateways and SoCs for fibre residential gateways into the markets for WiFi chipsets and Front End chips constitute the scope of the concerns expressed by the Commission to Broadcom in its preliminary assessment, within the meaning of Article 9(1) of Regulation (EC) No 1/2003.
- While Broadcom disagrees with the conclusions reached by the Commission in its preliminary assessment,<sup>5</sup> it has nevertheless offered commitments under Article 9(1) of Regulation (EC) No 1/2003 to meet the Commission's concerns. The present Decision makes those commitments binding on Broadcom Inc.

Unless otherwise stated, references in this Decision to Article 102 of the Treaty also refer to Article 54 of the EEA Agreement.

See section 8.5.2.1. C) of the SO in this regard. The possible leveraging of Broadcom's market power from cable residential gateway SoCs into Front End chipsets and Wi-Fi chipsets are outside the scope of this Decision, insofar as the Commission has not retained in the interim measures Decision the finding of Broadcom being *prima facie* dominant in the market for cable residential gateway SoCs.

On 23 December 2019, Broadcom instituted proceedings before the General Court requesting the annulment of the interim measures Decision (Case T-876/19).

#### 2. THE PARTIES

- 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 and Europe.
- (7) Broadcom has three main business divisions: semiconductor solutions, infrastructure software and IP licensing. 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.
- (8) 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. The substantial majority of Broadcom's semiconductor sales is accounted for by sales to OEMs, or their contract manufacturers and distributors.

#### 3. PROCEDURAL STEPS UNDER REGULATION NO 1/2003

- (9) On 26 June 2019, the Commission opened proceedings with a view to adopting a decision under Chapter III of Regulation (EC) No 1/2003. On the same day, the Commission adopted an SO addressed to Broadcom outlining the Commission's preliminary conclusions as regards the need to impose interim measures pursuant to Article 8 of Regulation (EC) No 1/2003 relating to specific aspects of Broadcom's behaviour that was the subject of the Commission's investigation.
- (10) On 16 October 2019, the Commission adopted the interim measures Decision, which set out its conclusions as regards the existence of a *prima facie* infringement of Article 102 of the Treaty and the need to impose interim measures due to the risk of serious and irreparable harm brought about by Broadcom's conduct.
- (11) On 1 April 2020, Broadcom submitted initial commitments ("the Initial Commitments") to the Commission in response to the concerns related to (quasi-) exclusivity arrangements and leveraging restrictions that were outlined in the SO and the interim measures Decision.
- (12) On 30 April 2020, the Commission published a notice in the Official Journal of the European Union pursuant to Article 27(4) of Regulation (EC) No 1/2003, summarising the case and the Initial Commitments and inviting interested third parties to provide their observations on the Initial Commitments within six weeks following publication of the notice.
- On 29 June 2020, the Commission informed Broadcom of the observations received from interested third parties following the publication of the notice. On 31 July 2020, Broadcom submitted an amended proposal for commitments ("the Final Commitments").
- On 21 September 2020, the Advisory Committee on Restrictive Practices and Dominant Positions was consulted.

## 4. PRELIMINARY ASSESSMENT IN THE INTERIM MEASURES DECISION AND THE STATEMENT OF OBJECTIONS

- (15) In the interim measures Decision, the Commission reached the conclusion that, *prima facie*, Broadcom:
  - (a) held a dominant position in respect of the markets for: (a) STB SoCs; (b) SoCs for xDSL residential gateways; and (c) SoCs for fibre residential gateways;
  - (b) infringed Article 102 of the Treaty by abusing the dominant positions held in those markets by including in its agreements with OEM certain exclusivity-inducing provisions, which can be grouped into two different types of potential restrictions of competition: (i) exclusivity and quasi-exclusivity arrangements and (ii) leveraging restrictions.
- In addition, in the SO, the Commission preliminarily concluded that, *prima facie*, Broadcom had breached Article 102 of the Treaty by leveraging its market power from the STB SoCs, SoCs for xDSL residential gateways and SoCs for fibre residential gateways markets into Front-end chips and WiFi chipsets markets.

#### 4.1. Relevant markets

## 4.1.1. Principles

- (17) The definition of the relevant markets derives from an identification of the relevant competitive constraints in terms of demand-side and supply-side substitutability.
- (18) 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.<sup>6</sup> From a demand-side perspective, a relevant product market comprises all those products and/or services that are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use.
- (19) 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.<sup>7</sup>
- (20) 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

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

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

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.<sup>8</sup> 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.<sup>9</sup>

#### 4.1.2. Relevant products

- This Decision (and the interim measures Decision and SO that preceded it) 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.
- 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").
- A residential gateway is a hardware device that connects one or more electronic devices to a single Internet access point. Residential gateways do so by combining modem functionality (i.e. a component that converts analogue signals from service providers into digital signals suitable for computers and vice versa) with a wireless router (i.e. a centralised network device that allows, manages and secures Internet access for multiple wireless access points). Residential gateways allow access to the Internet by means of three main technologies: xDSL, cable and fibre.
- (24) More specifically, the products concerned by this Decision are:
  - (a) **SoCs** ICs combining electronic circuits of various components in a single unit, which constitute the core IC of an STB or residential gateway;
  - (b) **Front-end chips** ("FE chips") ICs which translate analogue input into a digital output which can then be processed by the SoC; and
  - (c) **WiFi chipsets** ICs which enable STBs or residential gateways to deploy wireless local area networks based on the IEEE 802.11 standards.<sup>10</sup>

See Commission Decisions in case COMP/37451, *Deutsche Telekom AG*, recitals 92-93; and case COMP/38.233, *Wanadoo Interactive*, recital 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*, EU:C:1988:469, paragraph 15.

See Case T-229/94 *Deutsche Bahn* v *Commission*, paragraph 92. See also Case T-139/98 *AAMS* v *Commission*, EU:T:2001:272, paragraph 39.

The IEEE is a standard-setting organisation for the computer and electronics industry, and the 802.11 standard pertains to a widely-used family of specifications for wireless LAN. See, *e.g.*, "802.11 IEEE wireless LAN standards", printed from https://www.webopedia.com/TERM/8/802\_11.html on 14 June 2019, Doc ID 1641.

- (25) In STBs, SoCs function as the "brain" of the system while FE chips convert incoming analogue signals to digital (or vice versa) and WiFi chipsets provide a wireless connectivity function. SoCs are the most important component of an STB and often an expensive one. 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.
- (26) In residential gateways, SoCs also represent the core component of the system, allowing the device to manage connectivity access to other devices. FE chips and WiFi chipsets perform equivalent functions in residential gateways as in STBs.
- 4.1.3. Market dynamics, customers and application
- (27) IC suppliers sell their SoCs, FE chips and WiFi chipsets to OEMs, which assemble them together with other components to manufacture STBs and residential gateways. Many OEMs typically supply both STBs and residential gateways.
- (28) 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.
- (29) Procurement at the level of service providers typically takes place by means of tender processes, also referred to as selection processes. 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.
- (30) 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. The tender process itself is typically lengthy and, as a result, requires IC 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 IC supplier's products selected by service providers, thereby obtaining a so-called "design win".

#### 4.1.4. Relevant product market

- (31) In its preliminary assessment, the Commission concluded that, *prima facie*, SoCs, FE chips and WiFi chipsets do not belong to the same product market. From a demand-side perspective, the responses to the Commission's requests for information confirmed that these products have different functions and are not substitutable, they are distinct from another, do not share a common technological base and have different functionalities, which are not interchangeable. Additionally, respondents to the Commission's requests for information indicated that there are several factors that impede supply-side substitution, including investment in engineering design resources, the acquisition and development of relevant integrated circuit designs, IP licensing costs as well as costs and time associated with certification and validation processes.
- Moreover, in its preliminary assessment, the Commission concluded that, *prima facie*, STB SoCs and residential gateway SoCs do not belong to the same product market. This preliminary conclusion was based on responses to the Commission's requests for information in which 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. 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 SoCs for residential gateways.

- As regards SoCs for different STB technologies, they belong to the same product market, with the exception of SoCs for retail over-the-top STBs ("retail OTT STBs"). From the demand-side, a majority of OEMs indicated that the same type of SoC can be incorporated into STBs regardless of the underlying technology (cable, IPTV, satellite and Digital Terrestrial Television) since only the FE chip component would differ. However, OEMs considered that retail OTT STB SoCs do not meet the content security and conditional access specifications required of most other types of STB SoCs. From the supply-side, evidence in the casefile shows that the key differentiating factor for the underlying technologies is the addition of the FE chip component and not the SoC in itself. Accordingly, the results of the market investigation indicate that all STB SoCs, with the exception of retail OTT STB SoCs, belong to the same product market.
- In its preliminary assessment, the Commission concluded that, prima facie, SoCs for residential gateways of different technologies belong to different product markets. 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, circuitery, safety qualifications, etc.) that are dependent on the different underlying technologies. Furthermore, chip suppliers unanimously indicated the lack of supply-side substitutability between SoCs for different residential gateway technologies.
- (35) Finally, as indicated in the preliminary assessment, SoCs, including STB and residential gateway SoCs, are differentiated in performance, features and price. In some regions of the world, particularly in the EEA and North America, there is more demand for higher perfoming features than in other regions. However, in the preliminary assessment, the Commission left open whether high and low-end SoCs form distinct product markets within STB SoCs or within the markets for cable, xDSL or fibre residential gateway SoCs and conducted its substantive assessment at the overall market level for SoCs for STBs and SoCs for xDSL and 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.
- (36) Consequently, in its preliminary assessment, the Commission concluded that, prima facie, there are separate relevant product markets for:
  - (a) STB SoCs;
  - (b) SoCs for (i) cable, (ii) fibre and (iii) xDSL residential gateways;
  - (c) FE chips; and
  - (d) WiFi chipsets.

#### 4.1.5. Geographic market definition

- On the basis of responses to its request for information, in its preliminary assessment the Commission concluded that, *prima facie*, each of the markets for (a) STB SoCs; (b) cable residential gateway SoCs; (c) fibre residential gateway SoCs; and (d) xDSL residential gateway SoCs are worldwide in scope.
- (38)The Commission's conclusion in its preliminary assessment was based on the following reasons. First, there are no barriers to trade and more specifically to importing products into the EEA. Second, despite the existence of some specific difference in standards applicable in certain countries/geographic regions, related for instance to frequency steps, output power level, or software configuration, these do not result in appreciable differences in the technical specification as between STBs and residential gateway SoCs. In general, the technical specifications are very similar. 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 performance requirements in certain regions, with more expensive high-end SoCs being integrated in end-devices destined 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. Such technical differences, therefore, appear to be the result of differentiation within the relevant product markets (see recital (35) above) rather than a geographic market narrower than worldwide.
- Given that the Commission's assessment of Broadcom's potentially abusive conduct in the preliminary assessment relied on Broadcom holding a dominant position in the markets for STB SoCs as well as fibre and xDSL residential gateway SoCs, the Commission considered that it was not necessary to establish whether the respective markets for FE chips and WiFi chipsets were worldwide or narrower. This was because the harm primarily identified with respect to those two ICs was Broadcom's leveraging its market power from those markets in which Broadcom prima facie holds a dominant position, into the markets for FE chips and WiFi chipsets.

#### 4.2. Dominant position

#### 4.2.1. Principles

- (40) 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".<sup>11</sup>
- (41) The existence of a dominant position derives in general from a combination of several factors which, taken separately, are not necessarily determinative. One important factor is the existence of very large market shares, which are in themselves, save in

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Case 27/76 United Brands and United Brands Continental v Commission, EU:C:1978:22, paragraph 65; Case C-85/76 Hoffmann-La Roche v Commission, EU:C:1979:36, paragraph 38; and Case T-201/04 Microsoft v Commission, EU:T:2007:289, paragraph 229.

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

- exceptional circumstances, evidence of the existence of a dominant position.<sup>13</sup> That is the case where an undertaking has a market share of 50% or above.<sup>14</sup>
- 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. Such barriers may result from a number of factors, including exceptionally large capital investments that competitors would have to match, network externalities 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.
- (43) The ability to act independently of competitors, which is a special feature of dominance,<sup>17</sup> 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.<sup>18</sup> 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.<sup>19</sup>

#### *4.2.2. Application to the case*

- (44) In its preliminary assessment, the Commission concluded that, prima facie, Broadcom holds dominant positions on the following markets:
  - (a) STB SoCs;
  - (b) SoCs for xDSL residential gateways; and
  - (c) SoCs for fibre residential gateways.
- (45) Such conclusion was based on the following elements.
- (46) First, with respect to market shares, Broadcom's market shares for STB SoCs have remained above 50% in terms of value throughout the 2015-2018 period, which, in line with the Akzo case-law is indicative of an undertaking holding a dominant position.<sup>20</sup> In addition, Broadcom's actual worldwide market shares might underestimate market power in the EEA given that several STB SoC manufacturers that were particularly

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.

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.

<sup>15</sup> Case T-79/12 Cisco Systems, Inc. and Messagenet SpA v Commission, EU:T:2013:635, paragraph 69.

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

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

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

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

<sup>&</sup>lt;sup>20</sup> Case C-62/86 AKZO v Commission, EU:C:1991:286, paragraph 60.

active in the EEA have meanwhile exited the market and certain Asian players only focus on their local markets.<sup>21</sup> Moreover, Broadcom focuses on the high-end of the market and serves the EEA and US markets, where customers require high video security and high privacy protection. It considers that its closest competitor in high-end STB SoCs was STMicroelectronics, which exited the market in 2016. Moreover, it argues that it does not monitor the behaviour of what it defines as "lower-end SoC suppliers".

- (47) For xDSL and fibre residential gateways SoCs, Broadcom's market shares have also remained above 50% in terms of value throughout the 2015-2018 period. Broadcom also presents itself as dominant in these markets in a customer presentation.
- (48) Second, in its preliminary assessment, the Commission took the view that there are barriers to entry that reinforce Broadcom's dominant position in those three markets.
- (49) In this regard, in the first place, significant R&D expenditure is necessary to develop a meaningful presence in the industry. In the second place, there is a scarcity of specialised engineering and other talented employees in the semiconductor sector, including in SoCs. In the third place, access to the IP rights that cover SoCs and other components, where Broadcom is a significant patent holder, constitutes a significant barrier to entry. In the fourth place, economies of scale are important to profitably start or continue supplying SoCs for STBs and residential gateways. In the fifth place, established relationships with customers can provide an advantage to existing suppliers. Finally, the fact that the markets at stake are unlikely to expand significantly in the future increases the importance of the aforementioned barriers to entry, given that it makes entry relatively less attractive.
- Third, in its preliminary assessment, the Commission also took the view that Broadcom's customers have insufficient bargaining power to countervail Broadcom's market power. First, the downstream markets are fragmented. For STBs, the main four OEMs accounted for approximately half of the global sale revenues at the end of 2017. For residential gateways, the same four OEMs accounted for approximately two fifths of the market in 2017. Moreover, there are few alternatives to Broadcom in both STB and residential gateway SoCs and Broadcom enjoys significantly broader scale than its competitors. Finally, most OEMs have confirmed having insufficient buyer power to impose their requests on Broadcom.

#### 4.3. Practices raising concerns

#### 4.3.1. Principles

(51) The fact that an undertaking holds a dominant position is not in itself contrary to the competition rules. However, a dominant undertaking has a special responsibility,

The role of local SoC manufacturers is particularly incisive in China, where demand for STBs and residential gateways is, moreover, satisfied to a significant extent by vertically integrated companies with captive production of SoCs whose STB and residential gateway business primarily focusses on the domestic market.

- irrespective of the causes of that position, not to impair genuine undistorted competition on the internal market.<sup>22</sup>
- (52) 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 on the market or the growth of that competition.<sup>23</sup>
- (53) Article 102 of the Treaty is aimed not only at practices that 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.<sup>24</sup>
- Article 102 of the Treaty prohibits, in particular, a dominant undertaking from tying 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, 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.<sup>25</sup>
- (55) In this regard, it must be recalled that a dominant undertaking 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 the customer remains free to obtain supplies from competitors in other segments.<sup>26</sup> 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.<sup>27</sup>
- (56) Article 102 of the Treaty prohibits not only practices by an undertaking in a dominant position which tend to strengthen that position,<sup>28</sup> but also the conduct of an undertaking

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.

<sup>&</sup>lt;sup>23</sup> Case C-85/76 *Hoffmann-LaRoche* v *Commission*, EU:C:1979:36, paragraph 91.

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.

<sup>&</sup>lt;sup>25</sup> 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.

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

<sup>&</sup>lt;sup>27</sup> Case C-549/10 P Tomra and Others v Commission, EU:C:2012:221, paragraph 42.

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.

with a dominant position on a given market that tends to extend that position to a neighbouring but separate market by distorting competition.<sup>29</sup> 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 of the Treaty.<sup>30</sup> It is not necessary that the dominance, the abuse and the actual or potential effects of the abuse are all in the same market.

- (57) For the purpose of establishing an infringement of Article 102 of the Treaty, 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.<sup>31</sup>
- 4.3.2. Exclusivity-inducing provisions
- In its preliminary assessment, the Commission took the view that, *prima facie*, Broadcom breached Article 102 of the Treaty by entering into agreements containing exclusivity-inducing contractual conditions with six OEMs, namely [...], [...], [...], [...], [...], [...] and [...] (the "Agreements"). These exclusivity-inducing provisions can be grouped into two different types of potential restrictions of competition: (i) exclusivity and quasi-exclusivity arrangements and (ii) leveraging restrictions.
- 4.3.2.1. Exclusivity and quasi-exclusivity arrangements
- (59) In its preliminary assessment, the Commission concluded that, *prima facie*, all Agreements contained obligations or promises from OEMs to obtain products in which Broadcom is *prima facie* dominant exclusively or almost exclusively from Broadcom. The Commission's conclusion was based on:
  - (a) explicit clauses requiring the relevant OEM to purchase exclusively or quasiexclusively STB SoCs, xDSL residential gateway SoCs and/or fibre residential gateway SoCs from Broadcom;
  - (b) clauses having an equivalent effect to the exclusivity or quasi-exclusivity clauses covered by (a) above;
  - (c) provisions making the granting of certain advantages conditional on the relevant OEM obtaining products in which Broadcom is *prima facie* dominant exclusively or almost exclusively from Broadcom. Such advantages included: (i) price advantages, such as rebates or preferential pricing arrangements compared to other customers; and (ii) non-price advantages, such as technical support, early

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.

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.

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

access to Broadcom's technology, [...], [...] or [...] compared to other customers.

### 4.3.2.2. Leveraging restrictions

- (60) In its preliminary assessment, the Commission concluded<sup>32</sup> that, *prima facie*, five of the Agreements<sup>33</sup> contained provisions enabling Broadcom to leverage its market power from one or more product markets to one or more adjacent but separate product markets. The Commission's conclusion was based on:
  - (a) clauses granting the relevant OEM price and non-price advantages in markets in which Broadcom is *prima facie* dominant, on the condition that the OEM purchases products exclusively or almost exclusively from Broadcom in a market in which Broadcom is not dominant, thereby extending Broadcom's potential dominance from one or more markets to a different market. This type of conduct concerns leveraging from the markets for STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs into the markets for cable residential gateways SoCs, FE chips and WiFi chipsets.
  - (b) clauses by which Broadcom can leverage its market power across markets by granting the relevant OEM advantages in markets in which Broadcom is *prima facie* dominant, on the condition that the OEM purchases exclusively or almost exclusively from Broadcom other products for which Broadcom is also *prima facie* dominant. This type of conduct concerns leveraging from and into the markets for STB SoCs, fibre residential gateway SoCs and xDSL residential gateway SoCs.

#### 4.3.3. Capability to affect competition

- In its preliminary assessment, the Commission noted that, in the absence of an objective justification, certain of the exclusivity-inducing provisions mentioned in section 4.3.2 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. Nonetheless, the Commission also took the view that, *prima facie*, Broadcom's exclusivity-inducing provisions, analysed as a whole, are 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. This conclusion was based on the following reasons.
- (62) First, the Commission's investigation demonstrated that the OEMs concerned were likely to comply with the exclusivity-inducing provisions for three main reasons.
- (63) In the first place, the investigation showed that the OEMs, either *de jure* or *de facto*, committed to fulfil their exclusivity-related obligations and that, in practice, they

With respect to the leveraging restrictions described in section 8.5.2.1.C) of the Statement of Objections concerning leveraging restrictions into the market for WiFi chipsets and FE chips, such conclusions were also preliminary.

The five OEMs concerned are [...], [...], [...], [...] and [...].

- complied with the exclusivity conditions and bought the products in the scope of the relevant Agreements exclusively or almost exclusively from Broadcom.
- (64) In the second place, regardless of whether the Agreements with the OEMs were *de facto* or *de jure* binding, Broadcom typically offered important commercial advantages to its customers that were conditional on compliance with the exclusivity-inducing provisions (see recital (59)(c) above). These advantages also ensured that the OEMs complied with the exclusivity-inducing provisions, to Broadcom's benefit.
- In the third place, in addition to granting substantial advantages to those OEMs entering into agreements containing exclusivity-inducing provisions, the Commission gathered evidence of Broadcom *inter alia* threatening to increase prices or terminate supplies to OEMs that did not enter into such agreements.
- (66) Second, the relevant provisions were likely to generate an even stronger loyalty effect given that they covered several product markets and that OEMs stood 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 leveraging restrictions. This would make it very unlikely that any of Broadcom's competitors would be able to compensate switching OEMs for the loss of the Broadcom benefits across the relevant product range resulting from a breach of the exclusivity-inducing provisions.
- (67) Third, the results of the Commission's investigation indicated that the exclusivity-inducing provisions covered major and strategic OEMs that were important for entry and expansion in the relevant markets for the following reasons: (i) they represented a significant part of the relevant markets, (ii) they had an established market position and benefitted from long-standing relationships with service providers downstream, and (iii) serving the needs of those OEMs is likely to have beneficial effects in terms of economies of scale, which are an important feature of this industry.
- (68) Fourth, in the context of the SoC industry, the relevant Agreements were of a long duration, ranging from one to three years, and, for the majority of them, contained renewal clauses for further periods. Given that multiple tenders take place each year, the exclusivity-inducing provisions would likely 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, the effects of the exclusivity-inducing provisions were likely to last for a long period even after their expiration.
- (69) Fifth, the Commission's investigation revealed that major and established competitors appeared to be losing existing customers or were prevented from finding new ones for reasons that are not dependent on competition on the merits.
- (70) Sixth, the Commission gathered evidence that Broadcom's conduct appeared to have a direct detrimental effect at the downstream level, that is *vis-à-vis* service providers. The investigation demonstrated 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 to providers other than Broadcom. By closing off access to major and strategic OEMs that represent a significant part of the market, Broadcom's conduct could potentially harm service providers, reducing the latter's sourcing opportunities and freedom of choice.

- 4.3.4. Absence of objective justification or efficiencies
- (71) It is open for 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.<sup>34</sup>
- (72) Although the burden of proof of the existence of the circumstances that constitute an infringement of Article 102 of the Treaty is borne by the Commission, it is for the dominant undertaking to raise any plea of objective justification or efficiency defence and to support it with arguments and evidence.<sup>35</sup>
- (73) In its preliminary assessment, the Commission took the view that, *prima facie*, Broadcom had not provided sufficient evidence that its conduct could be objectively justified or that it is necessary for the achievement of efficiency gains that could counteract any likely negative effects on competition, without eliminating effective competition.

#### 4.4. Effect on trade between Member States

## 4.4.1. Principles

- (74) Article 102 of the Treaty 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.
- (75) According to settled case-law, 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.<sup>36</sup> This is the case of 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.<sup>37</sup>

#### 4.4.2. Application to the case

(76) In its preliminary assessment, the Commission took the view that, *prima facie*, Broadcom's conduct is capable of affecting the pattern of trade in goods between Member States for the following reasons.

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 40-41. See also Case C-143/14 P Intel v Commission, EU:C:2017:632, paragraph 140.

Case T-201/04 Microsoft Corporation v Commission, EU:T:2007:289, paragraph 688; Case C-209/10 Post Danmark A/S v Konkurrencerådet, EU:C:2012:172, paragraph 42; Case C-23/14 Post Danmark A/S v Konkurrencerådet, EU:C:2015:651, paragraph 49.

See Joined Cases C-215/96 and C-216/96 Bagnasco v BNP and others, EU:C:1999:12, paragraph 47.

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.

- (77) First, the relevant Agreements have either a worldwide scope, a worldwide scope excluding China or relate to the sale of ICs for products destined for the entire European Union. Broadcom's conduct would therefore be capable of having an effect on trade in an area extending beyond a single Member State and even covering the entire European Union and EEA.
- (78) Second, tenders typically cover a service provider's demand for products in multiple Member States, or even in both European Union/EEA and non-European Union/EEA countries. The scope of such tenders further increases the likelihood that trade between Member States is affected.
- (79) Third, the exclusivity-inducing provisions have been implemented with regard to customers established in the European Union and EEA or in any event that are active in the European Union and the EEA. Furthermore, the Agreements 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/EEA.

#### 5. INITIAL COMMITMENTS

- (80) The key elements of the Initial Commitments offered by Broadcom on 1 April 2020 can be summarised as follows:
- (81) Within one month following the date on which Broadcom receives formal notification of the Commission decision according to Article 9 of Regulation (EC) No 1/2003:
- (82) At worldwide level (excluding China), Broadcom would:
  - (a) Suspend any existing agreements and not enter into new agreements that require an OEM to obtain more than 50% of its requirements for SoCs for STBs, SoCs for xDSL residential gateways or SoCs for fibre residential gateways ("the Relevant Products") from Broadcom, or condition non-price advantages or retroactive price advantages<sup>38</sup> related to the Relevant Products on the OEM obtaining more than 50% of its requirements for these products from Broadcom;
  - (b) Suspend any existing agreements and not enter into new agreements that condition the supply of, or the granting of advantages for, a Relevant Product on an OEM obtaining from Broadcom more than 50% of its requirements for any other Relevant Product, or for SoCs for cable residential gateways, FE Chips for STBs and residential gateways and/or Wi-Fi Chips for STBs and residential gateways (these latter together, "Other Products");

#### (83) At EEA level, Broadcom would:

(a) Suspend any existing agreements and not enter into new agreements that require an OEM to obtain more than 50% of its EEA requirements for the Relevant Products from Broadcom, or condition non-price advantages or retroactive price

Both terms have the same meaning as the equivalent terms defined in the Final Commitments annexed to this Decision.

- advantages related to the Relevant Products on the OEM obtaining more than 50% of its EEA requirements for these products from Broadcom;
- (b) Suspend any existing agreements and not enter into new agreements that condition (i) the supply of a Relevant Product on an OEM obtaining from Broadcom another Relevant Product or any Other Product, or (ii) the granting of price and non-price advantages for a Relevant Product on an OEM also obtaining or bidding another Relevant Product or any Other Product from Broadcom;
- (c) Suspend any existing agreements and not enter into new agreements that require an OEM to bid only devices based on Broadcom Relevant Products or condition advantages in relation to Relevant Products on an OEM bidding only devices based on Broadcom Relevant Products.
  - Subject to the fulfilment of specific conditions, Broadcom could grant advantages concerning individual EEA tenders on a tender-by-tender basis.
- (d) Suspend any existing agreements and not enter into new agreements by which an EEA service provider<sup>39</sup> (i) is required or incentivised through non-price advantages or retroactive price advantages to satisfy more than 50% of its requirements for STBs, fibre residential gateways or xDSL residential gateways with devices based on Broadcom Relevant Products; (ii) is required or incentivised to request that OEMs bid only devices based on Broadcom Relevant Products; or (iii) is required or incentivised to concurrently source together with a Broadcom Relevant Product another Broadcom Relevant Product and/or a Broadcom Other Product.
- (84) These commitments would remain in force for a period of five years from the date on which Broadcom receives formal notification of the Commission's decision pursuant to Article 9 of Regulation (EC) No 1/2003.
- (85) Broadcom would be obliged not to circumvent or attempt to circumvent these commitments in any way.
- (86) With respect to the monitoring of the implementation of these commitments, Broadcom would commit to submit a confidential report on their implementation to the Commission within two weeks from the date of their implementation, and on an annual basis thereafter for the duration of the commitments.

#### 6. COMMISSION NOTICE PURSUANT TO ARTICLE 27(4)

(87) In response to the publication on 30 April 2020 of a notice pursuant to Article 27(4) of Regulation (EC) No 1/2003 ("the Market Test"), the Commission received observations

Telecommunication operators and cable service providers that provide STBs and/or fibre residential gateways and/or xDSL residential gateways to end-users in the EEA.

from twelve<sup>40</sup> interested third parties, including from competitors to Broadcom, OEMs, service providers and an industry association.

## 6.1. Summary of the main comments from third parties during the Market Test

(88) A majority of respondents was generally supportive of the Initial Commitments offered by Broadcom to meet the Commission's competition concerns. Two respondents did not comment on, or request amendments to, the Initial Commitments, while the other respondents suggested certain amendments. The main comments received during the Market Test are set out in sections 6.1.1 to 6.1.8 below. The Commission sets out its position with respect to the main comments raised in section 6.2 (with respect to those comments that the Commission considered raised doubts as to the Initial Commitments' ability to effectively address the competition concerns outlined in the Commission's preliminary assessment) and section 8.2 (with respect to those concerns that the Commission considers fall to be rejected).

#### 6.1.1. Definitions

- (89) One respondent considered that it would be unclear whether the definition of "Agreements" would cover all forms of agreements, such as verbal agreements. It therefore proposed that the definition of "Agreements" be revised accordingly.
- (90) The Commission rejects that claim for the reasons set out in section 8.2.2.1 below.
- 6.1.2. Product and geographic scope of the commitments
- (91) First, three respondents considered that the product scope of the Initial Commitments was too narrow. They proposed that the commitments should also cover additional products, such as Ethernet PHYs, Ethernet switches, network processors etc., or that the definition of "Relevant Products" should also include cable residential gateways.
- (92) Second, one respondent considered that the geographic scope of the commitment with respect to EEA service providers (as described in recital (83)(d) above) was too narrow. It proposed that the aforementioned commitment should apply to Broadcom's dealings with service providers worldwide.
- (93) The Commission rejects both of those claims for the reasons set out in section 8.2.2.2 below.
- 6.1.3. Purchase thresholds in the commitments
- (94) Some respondents considered that the threshold of 50% included in the Initial Commitments would be too high and would not overcome the potential anti-competitive effects brought about by the exclusivity-inducing provisions identified in the Commission's preliminary assessment for the following reasons.
- (95) First, two respondents argued that, due to the markets in question being characterised by large-scale, periodic tenders, the 50% threshold would effectively lead to OEMs or

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Two of the twelve interested third parties are also represented by the industry association that submitted separate observations.

service providers relying on Broadcom for much more than 50% of their requirements. This would be for two reasons: in the first place, in order to secure the advantages conditional on reaching that threshold, OEMs may tend to submit Broadcom-based bids in much more than 50% of all tenders in which they participate; in the second place, while OEMs and service providers could have an incentive to dual-source SoC components, practice shows that if one supplier provides 50% of a certain component, this may lead the OEM to *de facto* single source. The respondents therefore proposed that the threshold should be brought down to zero or, at least, be significantly reduced.

- (96) Second, two respondents submitted that the fact that the Initial Commitments did not prevent Broadcom from conditioning the supply of Relevant Products on the purchase of a minimum quantity of Relevant Products or Other Products would unduly restrict OEMs in their sourcing decisions. The respondents therefore proposed that it should not be possible for Broadcom to make the supply of Relevant Products conditional on the purchase of any minimum quantity of Relevant Products or Other Products.
- 6.1.4. Duration of the commitments
- (97) Three respondents considered that the five-year duration of the Initial Commitments was too short to eliminate the potential anti-competitive effects brought about by the exclusivity-inducing clauses, given the long duration of relevant tender processes and product lifecycles. They proposed that the duration of the commitments should be extended to at least seven years.
- 6.1.5. Effectiveness of the commitments
- (98) One respondent considered it unlikely that the Opt Out contemplated by the Initial Commitments<sup>41</sup> will be used in practice by OEMs or that service providers would explicitly request that OEMs bid both Broadcom and non-Broadcom Relevant Products, with the consequence that the related commitment would remain ineffective.
- (99) The Commission rejects both of those claims for the reasons set out in section 8.2.2.5 below.
- 6.1.6. Monitoring of Broadcom's compliance with the commitments and reporting obligations
- (100) First, two respondents raised concerns about the fact that the Initial Commitments did not foresee the appointment of a trustee to monitor Broadcom's implementation and compliance with the commitments, in particular in light of the behavioral nature of the latter. They proposed that the commitments should provide for the appointment of a Monitoring Trustee.

Under the Initial Commitments, Broadcom can grant advantages concerning individual EEA tenders on a tender-by-tender basis. This possibility is however not allowed if (1) the service provider has requested that the OEM bids both Broadcom and non-Broadcom Relevant Product(s), or (2) the OEM chooses to opt out for one or more Relevant Product(s). The opt out consists in a notification in writing to Broadcom by the OEM, which has engaged Broadcom on one or more Relevant Products or Other Products in relation to an individual EEA-request for proposal ("RFP"), of its decision not to bid exclusively, or at all, one or more Broadcom Relevant Products or Broadcom Other Products in response to that EEA-RFP ("Opt Out").

- (101) Second, one respondent considered that the reporting obligation provided for by the Initial Commitments should be reinforced in order to ensure Broadcom's compliance with the commitments. That respondent proposed, in particular, that the reporting obligation should identify the key elements that the report should cover and that such report should be submitted to the Commission twice a year instead of once.
- 6.1.7. Circumvention and retaliation
- (102) Some respondents raised concerns about Broadcom's ability to circumvent the Initial Commitments.
- (103) First, two respondents considered that Broadcom could deliberately refuse to support adequate interoperability between Broadcom SoCs and third party components of STBs and residential gateways. They proposed that the anti-circumvention clause should specifically refer to conduct relating to interoperability. In order to prevent such circumventing conduct, one of the two respondents also specifically proposed that the definition of "Non-Price Advantages" should not exclude "advantages for which there is no variability across OEMs, such as advantages that are intrinsic to product properties, product quality or general product availability".
- (104) Second, two respondents considered that Broadcom could attempt to circumvent the commitments by adopting retaliatory behavior that would have the same effects as the exclusivity-inducing provisions. In particular, they argued that the anti-circumvention clause should make explicit mention of any threats (including of vexatious IP litigation) against OEMs, service providers or other undertakings that choose to procure non-Broadcom Relevant Products.
- (105) Third, two respondents considered that the sole reference to percentage thresholds measured in unit volumes could invite circumventions, (i) as Broadcom could make the granting of Price and Non-Price Advantages conditional on pure volume thresholds rather than percentage thresholds being reached, and (ii) given that thresholds measured in unit volumes may not reflect the importance in terms of value or for the development of future sales of a specific share of an OEM's or a service provider's requirements. They proposed that the commitments should be adapted to specifically address these concerns.
- (106) Fourth, one respondent considered that Broadcom could circumvent the commitment not to grant Price or Non-Price Advantages for a Relevant Product that are conditional on an OEM purchasing (or bidding only) another Broadcom Relevant Product or a Broadcom Other Product by granting Price Advantages or Non-Price Advantages for a Broadcom Other Product that are conditional on an OEM purchasing (or bidding only) a Broadcom Relevant Product. That respondent proposed that the commitments should specifically address that scenario.
- (107) Fifth, one respondent considered that the fact that the Initial Commitments do not refer to a specified reference period (e.g. a calendar year) for calculating total requirements for Relevant Products or Other Products invites circumvention, as Broadcom could require or induce customers to purchase more than 50% of their requirements during a first part of the duration period of a written long-term contract, while easing purchase

- conditions during subsequent parts of the duration period of that contract. That respondent proposed that the commitments should indicate a specified reference period.
- (108) With the exception of the first claim referred to in recital (103) above, the Commission rejects all of those claims for the reasons set out in section 8.2.2.7 below.

#### 6.1.8. Additional comments

- (109) First, six respondents raised concerns about potential changes in Broadcom's business behavior in the future. In particular, respondents considered that Broadcom may (i) withdraw certain Price and Non-Price Advantages granted to customers under agreements affected by the commitments; (ii) apply less advantageous conditions in its dealings with OEMs and service providers in the future; or (iii) make continued support in relation to already deployed STBs or residential gateways conditional on the purchases of Broadcom Relevant Products or Broadcom Other Products, or the selection of Broadcom-based STBs or residential gateways by service providers. They proposed that the commitments should prevent Broadcom from adapting established conditions and business practices to the detriment of its customers.
- (110) Second, one respondent considered that Broadcom should not be allowed to demand additional fees from its customers for the subsequent integration of third party applications in STBs that are not included in the launch profile. It proposed that the commitments should prevent Broadcom from requesting such subsequent additional fees.
- (111) The Commission rejects both of those claims for the reasons set out in section 8.2.2.8 below.

# 6.2. The Commission's assessment of the Initial Commitments in light of the comments from third parties during the Market Test

- (112) In light of the comments received from third parties during the Market Test, as summarised in sections 6.1.1 to 6.1.8 above, the Commission concluded that some of those comments raised doubts about the Initial Commitments' ability to effectively address the competition concerns outlined in its preliminary assessment. In particular:
  - (a) With regard to the purchase thresholds in the Initial Commitments (see recitals (95) and (96) above), the Commission concluded that, if all these thresholds were to apply indiscriminately as foreseen in the Initial Commitments, this may be insufficient to meet its competition concerns. In particular, the Commission acknowledged that, in order to secure the advantages conditional on reaching the 50% threshold, OEMs could tend to submit Broadcom-based bids in potentially more than 50% of all tenders in which they participate.
  - (b) With regard to the duration of the Initial Commitments (see recital (97) above), the Commission concluded that a five-year duration as foreseen in the Initial Commitments may fall short of meeting its competition concerns. In particular, the Commission acknowledged that, in light of the long duration of relevant tender processes and product lifecycles (see recital (30) above), a five-year duration may be too short to ensure effective competition in the relevant markets.

- (c) With regard to the monitoring of Broadcom's compliance with the commitments and reporting obligations as set out in the Initial Commitments (see recitals (100) and (101) above), the Commission concluded that the relevant provisions in the Initial Commitments may not be sufficient or specific enough to ensure Broadcom's compliance with the commitments. In particular, the Commission acknowledged that, in particular in light of the behavioral nature of the commitments, reporting obligations incumbent on Broadcom may need to be reinforced in order to allow for proper monitoring of Broadcom's compliance with the commitments.
- (d) With regard to concerns about circumvention of the commitments in relation to interoperability between Broadcom SoCs and third party components of STBs and residential gateways (see first part of recital (103) above), the Commission concluded that there might be uncertainty as regards the possibility for the anti-circumvention clause included in the Initial Commitments to address such specific conduct by Broadcom. As such, the Commission acknowledged that a specific reference to interoperability-related conduct may be required to prevent such behaviour.
- (113) In relation to the above aspects, the Commission therefore considered that improvements to the Initial Commitments were necessary. Conversely, in relation to the remaining other aspects and concerns raised by respondents to the Market Test as summarised in sections 6.1.1 to 6.1.8 above, the Commission concluded, for the reasons set out in sections 8.2.2.1, 8.2.2.2, 8.2.2.5, 8.2.2.7 and 8.2.2.8 below, that no additional changes to the Initial Commitments were required to meet the concerns expressed in the preliminary assessment.

#### 7. THE REVISION OF THE INITIAL COMMITMENTS IN THE LIGHT OF THE MARKET TEST

- (114) In response to the comments received in the Market Test, Broadcom modified the Initial Commitments and submitted the Final Commitments on 31 July 2020. The Final Commitments modified the Initial Commitments in a number of aspects, in particular:
  - (a) The 50% threshold of the Initial Commitments is removed with respect to OEM's EEA Requirements for Relevant Products<sup>42</sup> and EEA Service Providers' Total Requirements<sup>43</sup> for Relevant Products. Consequently, pursuant to the Final Commitments, Broadcom will:
    - (1) Suspend any existing agreements and not enter into new agreements that require an OEM to obtain any minimum percentage of its EEA

<sup>&</sup>quot;EEA Requirements for a Relevant Product" is defined in the Final Commitments annexed to this Decision as follows: "an OEM's demand as measured in unit volumes over the reference period as defined in relevant Agreement(s) for each of the Relevant Products for incorporation into Service Provider Equipment to be provided to End-users in the EEA".

<sup>&</sup>quot;EEA Service Provider's Total Requirements" is defined in the Final Commitments annexed to this Decision as follows: "EEA Service Provider's demand, over the reference period as defined in the relevant Agreement(s), as measured in unit volumes for each of the Relevant Markets".

- Requirements for Relevant Products from Broadcom, or condition non-price advantages or retroactive price advantages related to the Relevant Products on the OEM obtaining any minimum percentage of its EEA requirements for these products from Broadcom; and
- (2) Suspend any existing agreements and not enter into new agreements by which an EEA service provider is required or incentivised through non-price advantages or retroactive price advantages to satisfy any minimum percentage of its requirements for STBs, fibre residential gateways or xDSL residential gateways with devices based on Broadcom Relevant Products.
- (b) The duration of the commitments is extended to seven years from the date on which Broadcom receives formal notification of the Commission's decision pursuant to Article 9 of Regulation (EC) No 1/2003;
- (c) The reporting obligations incumbent on Broadcom are reinforced, providing for a total of ten reports which Broadcom will submit to the Commission at specific points in time during the duration of the commitments. These reports will cover the various steps taken by Broadcom to ensure compliance with the commitments and include, as of the second report, detailed information on relevant agreements as well as the submission of contractual documentation and specific documentation relating to the implementation of the commitments or issues arising in that respect; and
- (d) The non-circumvention clause is complemented by a separate commitment concerning interoperability, pursuant to which Broadcom will not change standard-based interfaces used in Relevant Products in such a manner that would degrade interoperability between Broadcom Relevant Products and Other Products not made by Broadcom.

#### 8. PROPORTIONALITY OF THE FINAL COMMITMENTS

#### 8.1. Principles

- (115) The principle of proportionality requires that the measures adopted by institutions of the Union must be suitable and not exceed what is appropriate and necessary for attaining the objective pursued.<sup>44</sup> Where there is a choice between several appropriate measures, recourse must be had to the least onerous, and the disadvantages caused must not be disproportionate to the aims pursued.<sup>45</sup>
- (116) In the context of Article 9 of Regulation (EC) No 1/2003, application of the principle of proportionality entails, first, that the commitments in question are sufficient and respond

See, e.g., Case T-260/94 Air Inter v Commission, EU:T:1994:265, paragraph 144; Case T-65/98 Van den Bergh Foods v Commission, EU:T:2003:281, paragraph 201; Case T-76/14 Morningstar v Commission, EU:T:2016:481, paragraph 84.

Case 265/87 Schräder, EU:C:1989:303, paragraph 21; Case C-174/05 Zuid-Hollandse Milieufederatie and Natuur en Milieu, EU:C:2006:170, paragraph 28.

adequately to the concerns expressed by the Commission and, second, that the undertakings concerned have not offered less onerous commitments that also address those concerns adequately.<sup>46</sup> When carrying out that assessment, the Commission must take into consideration the interests of third parties.<sup>47</sup> The Commission enjoys discretion when assessing the appropriateness of proposed commitments.<sup>48</sup>

## **8.2.** Application to the case

- (117) For the reasons set out in this Section 8, and in the absence of Broadcom having offered less onerous commitments that adequately address the concerns set out in the preliminary assessment (including in the light of the concerns raised by third parties during the Market Test; see section 6 above), the Final Commitments comply with the principle of proportionality.
- 8.2.1. Adequacy of the Final Commitments to address the concerns raised in the preliminary assessment
- (118) The Final Commitments adequately respond to the concerns expressed in the Commission's preliminary assessment.
- (119) First, the Final Commitments ensure that Broadcom will suspend any agreements which, according to the Commission's preliminary assessment, may have an exclusivity-inducing effect and therefore may be in violation of Article 102 of the Treaty, and refrain from entering into equivalent agreements.
- (120) In particular, the Final Commitments prevent Broadcom on a worldwide level<sup>49</sup> from making the supply of Relevant Products or the granting of non-price advantages or retroactive price advantages related to the Relevant Products conditional on an OEM obtaining more than 50% of its requirements for that Relevant Product, another Relevant Product or Other Product from Broadcom.
- (121) Further, with regard to the EEA, the Final Commitments prevent Broadcom from making the supply of Relevant Products or the granting of non-price advantages or retroactive price advantages related to the Relevant Products conditional on an OEM obtaining a minimum percentage of its requirements for that Relevant Product, another Relevant Product or Other Product from Broadcom, with equivalent limitations applying to Broadcom's dealings with EEA service providers.

Case C-441/07 P Commission v Alrosa, EU:C:2010:377, paragraphs 41 and 61; Case T-76/14 Morningstar v Commission, EU:T:2016:481, paragraphs 45 and 86; Case T-873/16 Canal+ v Commission, EU:T:2018:904, paragraph 114.

<sup>&</sup>lt;sup>47</sup> Case C-441/07 P *Commission* v *Alrosa*, EU:C:2010:377, paragraph 41.

Case T-76/14 *Morningstar* v *Commission*, EU:T:2016:481, paragraph 40; Case C-441/07 P *Commission* v *Alrosa*, EU:C:2010:377, paragraph 94.

Excluding China. The Commission considers that the exclusion of China from the scope of the commitments is justified and will not negatively impact their effectiveness, given the significant differences between the competitive environments in China and elsewhere in the world (see footnote 21 above), in particular in comparison with the US and Europe (see recitals (38) and (46) above).

- (122) Additionally, the possibility for Broadcom to grant advantages concerning individual EEA tenders conditional on exclusivity on a tender-by-tender basis for Relevant Products is counterbalanced by OEMs' right to opt out and the possibility for service providers to request bids based both on Broadcom and non-Broadcom Relevant Products.
- (123) Second, Broadcom will be bound by the Final Commitments for a period of seven years from the date on which it receives formal notification of this Decision. Consequently, and in light of the factual context of the SoC industry in particular the duration of product life-cycles and tendering processes (see section 4.1.3 above) the Final Commitments will be in place for a sufficiently long period of time to cover multiple design, selection and deployment cycles of STBs and residential gateways at each service provider and thereby provide sufficient opportunities for Broadcom's competitors to engage in economically sustainable business activity in the markets at stake.
- (124) Consequently, the Final Commitments will have a direct impact on Broadcom's dealings with OEMs and service providers with respect to the Relevant Products and are capable of preventing the conduct set out in the Commission's preliminary assessment and the conduct temporarily brought to an end by the interim measures Decision from being put in place again during a seven-year period.
- (125) Indeed, the Final Commitments ensure that Broadcom will not put in place equivalent conduct with regard to all OEMs or service providers active in the market.
- 8.2.2. Interests of third parties
- (126) With regard to the interests of third parties, the Commission notes that Broadcom has not offered an alternative to the Final Commitments that addresses equally adequately the competition concerns expressed in the preliminary assessment, but that would have a less pronounced effect with respect to third parties.<sup>50</sup>
- (127) Moreover, pursuant to the Final Commitments, Broadcom is merely required to remove contractual provisions (*i.e.* "Agreements", as defined in the Final Commitments annexed to this Decision) *conditioning* the supply of products or the granting of various advantages on OEMs or service providers following a certain purchasing, bidding or sourcing behavior. In this regard, (i) no other commitment seems to be manifestly adequate to address the concerns expressed in the preliminary assessment as effectively without requiring Broadcom to suspend such Agreements and to refrain from entering into equivalent Agreements for the duration of this Decision;<sup>51</sup> and (ii) the Final Commitments do not affect Broadcom's ability to grant its customers advantages other than those covered by the Final Commitments. The Commission considers, therefore, that the Final Commitments are unlikely to hinder third parties' legitimate commercial interests, including those of third parties having an existing contractual relationship with Broadcom.

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<sup>&</sup>lt;sup>50</sup> Case T-873/16 *Canal*+ v *Commission*, EU:T:2018:904, paragraph 117.

<sup>&</sup>lt;sup>51</sup> Case T-873/16 Canal+ v Commission, EU:T:2018:904, paragraph 119.

(128) Concerning the issues raised by third parties that responded to the Market Test, sections 8.2.2.1 to 8.2.2.8 below set out the Commission's position on the concerns raised by those parties during the Market Test (see sections 6.1.1 to 6.1.8 above).

#### 8.2.2.1. Definitions

- (129) The Commission considers that the definitions used in the Final Commitments are adequate to address the concerns expressed by the Commission in its preliminary assessment and the concerns raised by respondents to the Market Test.
- (130) In particular, the definition of "Agreements" is not confined to specific forms of agreements, but includes any concurrence of wills, whether binding or non-binding, formal or informal. It is therefore apparent that this also includes verbal agreements.

#### 8.2.2.2. Product and geographic scope of the commitments

- (131) The Commission considers that the product and geographic scope of the Final Commitments are adequate to address the concerns expressed by the Commission in its preliminary assessment and the concerns raised by respondents to the Market Test insofar as they ensure that Broadcom does not foreclose competition in the relevant markets.
- (132) The Commission considers that it is not necessary that the commitments extend to additional products or apply to the same extent in all geographic areas.
- (133) First, the Final Commitments cover all products in relation to which the Commission expressed concerns in its preliminary assessment.<sup>52</sup>
- (134) Second, the Final Commitments have a sufficiently wide geographic scope to prevent Broadcom from engaging in conduct identified by the Commission in its preliminary assessment which could be capable of unduly affecting competition in the EEA in violation of Article 102 of the Treaty. In particular, by including specific provisions that apply not only to the EEA but also to the rest of the world (excluding China), the Final Commitments provide sufficient opportunities for competitors to maintain and/or develop the economies of scale necessary for engaging in economically sustainable business activity in the markets at stake in the EEA.

#### 8.2.2.3. Purchase thresholds in the commitments

- (135) The Commission considers that the scope of application of the Final Commitments with respect to the purchase thresholds set therein is appropriate to address the concerns expressed by the Commission in its preliminary assessment and the concerns raised by respondents to the Market Test.
- (136) In this regard, the Commission notes that the Final Commitments only provide for a 50% threshold with respect to the worldwide (except China) geographic scope. In relation to the EEA, the Final Commitments provide for more stringent limitations. In particular:

<sup>&</sup>lt;sup>52</sup> Case C-441/07 P Commission v Alrosa, EU:C:2010:377, paragraphs 40 to 41.

- (a) With regard to OEMs' EEA requirements for Relevant Products, Broadcom is prevented from requiring that OEMs purchase any specified minimum percentage of Relevant Products from Broadcom, and from conditioning Non-Price Advantages or Retroactive Price Advantages on OEMs purchasing any specified minimum percentage of Relevant Products from Broadcom;
- (b) With regard to STBs and residential gateways to be provided to End-users in the EEA, Broadcom is prevented from:
  - (1) conditioning the supply of a Relevant Product on an OEM obtaining other Relevant Products and/or Other Products from Broadcom;
  - (2) conditioning any Price Advantage or Non-Price Advantage for a Relevant Product on an OEM also obtaining other Relevant Products or Other Products from Broadcom; and
- (c) Broadcom is further prevented from:
  - (1) requiring EEA service providers or incentivising them through non-price advantages or retroactive price advantages to satisfy *any* specified minimum percentage of their requirements for STBs, fibre residential gateways or xDSL residential gateways with devices based on Broadcom Relevant Products; and
  - (2) requiring EEA service providers or incentivising them through non-price advantages or retroactive price advantages to concurrently source together with a Broadcom Relevant Product other Broadcom Relevant Products and/or Broadcom Other Products.
- (137) In consideration of the above, the Commission is of the view that the Final Commitments provide for sufficient opportunities for Broadcom's competitors to maintain and/or develop the economies of scale necessary for engaging in economically sustainable business activity in the markets at stake, without restricting Broadcom's ability to compete on the merits. The Commission considers that the more stringent limitations in the EEA are also appropriate to ensure the effectiveness of the commitments, insofar as the industry is tender-based and demand may follow an irregular and "lumpy" trend. Finally, the more stringent limitations in the EEA also ensure that OEMs enjoy ample freedom in making their sourcing decisions.

#### 8.2.2.4. Duration of the commitments

(138) For the reasons set out in recital (123) above, the Commission considers that the duration of the Final Commitments is adequate to address the concerns expressed by the Commission in its preliminary assessment and is consistent with the outcome of the Market Test. This time limitation does not go beyond what is needed to address the competition concerns.

#### 8.2.2.5. Effectiveness of the commitments

(139) For the reasons set out in section 8.2.1, the Commission considers that the Final Commitments will be effective in addressing the concerns set out in the preliminary assessment.

- (140)As regards the concern raised by one respondent to the Market Test that it would be unlikely that the Opt Out contemplated by the Initial Commitments will be used in practice by OEMs and that it is unlikely that service providers would explicitly request that OEMs bid both Broadcom and non-Broadcom Relevant Products, the Commission considers that concern to be unfounded. First, it should be noted that this concern was raised in the context of the Initial Commitments which included a 50% purchase threshold in the EEA. The Final Commitments remove this 50% threshold in the EEA, which means that Broadcom can only reward exclusivity on a tender-by-tender basis. Competitors, therefore, already have a far greater opportunity to compete for OEMs' requirements than they did under the Initial Commitments. Second, the Commission's investigation found evidence that both OEMs and service providers are interested in sourcing non-Broadcom components for STBs and residential gateways and in purchasing STBs and residential gateways incorporating non-Broadcom components, respectively. In the EEA, the Final Commitments enable OEMs and service providers to bid or request non-Broadcom based solutions without the OEM or service provider losing the benefit of Price Advantages and/or Non-Price Advantages on other Broadcom Relevant Product(s) which the OEM Bids. Thirdly, in any event, the Commission will be in the position to monitor the concrete exercise of the Opt Out provision based on the specific reporting obligations provided for by the Final Commitments. Finally, as described in more detail in section 8.2.2.7 below, the non-circumvention clause included in the Final Commitments will prevent Broadcom from circumventing the commitments, including by discouraging OEMs to opt out.
- 8.2.2.6. Monitoring of Broadcom's compliance with the commitments and reporting obligations
- (141) The Commission considers that the reporting obligations set out in the Final Commitments are adequate to ensure effective monitoring of Broadcom's compliance with the commitments and address the concerns raised by respondents to the Market Test.
- The Final Commitments provide for detailed reporting obligations, pursuant to which Broadcom will provide the Commission with clearly defined information and documentation at specific points in time during the duration of the commitments. These reporting obligations, complemented by the Commission's investigative powers set out in Chapter V of Regulation (EC) No 1/2003, ensure that any potential infringement of the commitments can be rapidly detected and thoroughly assessed. While the Final Commitments do not include provisions establishing a monitoring trustee, the Commission considers that, in this specific case, a monitoring mechanism based on the abovementioned reporting obligations will be sufficient to ensure compliance. This is because regular monitoring of the commitments will mainly be based on contractual compliance with the Final Commitments and the Commission is well placed to ensure such compliance.

#### 8.2.2.7. Circumvention and retaliation

(143) The Commission considers that the Final Commitments contain a far-reaching noncircumvention clause which prohibits Broadcom from circumventing the Final Commitments in any way. The clause covers any circumventing conduct and thus also retaliatory behaviour that would allow Broadcom to bypass the commitments given,

- without it being necessary to explicitly identify upfront specific forms of circumvention.<sup>53</sup>
- (144) The Commission also considers that the circumvention concerns raised by one respondent to the Market Test in relation to the definition of "Non-Price Advantages" are unfounded. This is because that definition covers any kind of advantages not directly linked to price, as long as such advantages are not offered indiscriminately to all relevant customers (e.g. in the form of certain features or performance characteristics which are intrinsic to a specific product) and are thus entirely unrelated to the fulfillment or not of conditions of any kind by those customers.
- Moreover, a breach of the Final Commitments could lead to the application of a number of measures provided for in Regulation (EC) No 1/2003, namely reopening of the proceedings pursuant to Article 9(2), imposing a fine pursuant to Article 23(2)(c), and/or the imposition of periodic penalty payments pursuant to Article 24(1)(c).
- (146) Concerning specific circumvention concerns related to interoperability between Broadcom Products and non-Broadcom products, in contrast to the Initial Commitments, the Final Commitments contain a specific commitment pursuant to which Broadcom is prevented from changing standard-based interfaces used in Relevant Products in such a manner that would degrade interoperability between Broadcom Relevant Products and Other Products not made by Broadcom.<sup>54</sup> The Commission considers that this provision is appropriate to prevent that the commitments are rendered ineffective by the deviation from a commonly recognised interoperability standard.

#### 8.2.2.8. Additional comments

- (147) With regard to concerns raised by respondents to the Market Test about potential changes in Broadcom's business behavior in the future, the Commission considers that it would neither be warranted nor proportionate to reject the Final Commitments on the basis that they do not impose limits to Broadcom's ability to define its commercial policy beyond the concerns identified in the preliminary assessment. The Commission notes, however, that the non-circumvention clause included in the Final Commitments prevents Broadcom from putting in place any practices which circumvent the commitments.
- (148) With regard to one respondent's claim that Broadcom should be prevented from demanding from its customers additional fees for the subsequent integration in STBs of third party applications not included in the launch profile, the Commission considers that it would be unwarranted and disproportionate to reject the Final Commitments on this basis, as the respondent's observations appear to be unrelated to the concerns expressed by the Commission in its preliminary assessment.

<sup>53 [...]</sup> 

For the avoidance of doubt, Broadcom also remains subject to the general applicability of Article 102 of the Treaty with regard to conduct related to interoperability.

#### 9. CONCLUSION

- (149) By adopting a decision pursuant to Article 9(1) of Regulation (EC) No 1/2003, the Commission makes binding the commitments offered by the undertaking concerned to meet the Commission's concerns expressed in its preliminary assessment. Recital 13 of the Preamble to Regulation (EC) No 1/2003 states that such a decision should not conclude whether or not there has been or still is an infringement.
- (150) The Commission's assessment of whether the Final Commitments offered by Broadcom are sufficient to meet its concerns as set out in its preliminary assessment is based on the underlying investigation and analysis, and the observations received from third parties following the publication of a notice pursuant to Article 27(4) of Regulation (EC) No 1/2003.
- (151) In the light of the Final Commitments, the Commission considers that there are no longer grounds for action on its part as regards the concerns as set out in the preliminary assessment and, without prejudice to Article 9(2) of Regulation (EC) No 1/2003, the proceedings with respect to those concerns should be brought to an end.
- (152) The Commission retains full discretion to investigate and open proceedings under Articles 101 and 102 of the Treaty and Articles 53 and 54 of the EEA Agreement as regards practices that are not the subject matter of this Decision.

#### HAS ADOPTED THIS DECISION:

#### Article 1

The commitments as listed in the Annex shall be binding on Broadcom Inc.

#### Article 2

It is hereby concluded that there are no longer grounds for action in this case as regards the concerns as set out in the preliminary assessment.

### Article 3

This Decision shall apply for seven years from the date on which it is notified to Broadcom Inc.

Article 4

This Decision is addressed to:

Broadcom Inc.

1320 Ridder Park Drive

San Jose, CA 95131

United States of America

Done at Brussels, 7.10.2020

For the Commission

Margrethe VESTAGER Executive Vice-President