

Completed acquisition by Tobii AB of Smartbox Assistive Technology Limited and Sensory Software International Limited

Decision on relevant merger situation and substantial lessening of competition

ME/6780/18

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SUMMARY

1. On 1 October 2018, Tobii AB (**Tobii**) acquired Smartbox Assistive Technology Limited (**SATL**) and Sensory Software International Limited (**SSIL**) (together, **Smartbox**) (the **Merger**). Tobii and Smartbox are together referred to as the **Parties**.
2. The Competition and Markets Authority (**CMA**) believes that it is or may be the case that each of Tobii and Smartbox is an enterprise; that these enterprises have ceased to be distinct as a result of the Merger; and that the share of supply test is met. The four-month period for a decision, as extended, has not yet expired. The CMA therefore believes that it is or may be the case that a relevant merger situation has been created.
3. The Parties supply hardware, software, accessories and related services to enable people with speech, language and communication needs to communicate, known as augmentative and assistive communication (**AAC**) solutions. Dedicated AAC solutions are high-tech solutions developed for the primary purpose of meeting the communication needs of those with complex AAC needs and comprise of four key components: (i) AAC software, (ii)

dedicated AAC hardware; (iii) access methods¹; and (iv) customer support (and training).

4. The CMA assessed the Merger in product frames of reference for the (upstream) supply of dedicated AAC hardware and AAC software and the (downstream) supply of dedicated AAC solutions. The CMA also considered a product frame of reference for the upstream supply of eye gaze cameras for the purposes of assessing a vertical theory of harm.
5. In relation to the geographic frame of reference, for the upstream supply of dedicated AAC hardware, AAC software and eye gaze cameras, the CMA assessed the impact of the Merger on a worldwide basis, as customers, who are typically suppliers of dedicated AAC solutions, source these products globally. In the downstream supply of dedicated AAC solutions, the CMA found that the conditions of competition are different in the UK to those in other countries and that a local sales presence and customer support are important. Therefore, for this product frame of reference, the CMA assessed the impact of the Merger in the UK.
6. The CMA examined whether the Merger gives rise to horizontal unilateral effects in:
 - (a) the (upstream) supply of dedicated AAC hardware worldwide;
 - (b) the (upstream) supply of AAC software worldwide; and
 - (c) the (downstream) supply of dedicated AAC solutions in the UK.
7. For all three horizontal theories of harm, the CMA found that the merged entity has very high market shares and the Parties are each other's closest competitor, notwithstanding that Tobii has historically been stronger in hardware while Smartbox has been stronger in software. There are very few alternative providers in all three markets, providing only a very limited constraint on the Parties. Customers of the Parties raised significant concerns. On the basis of the evidence received, the CMA believes that the Merger could lead to a reduction in the range of products available, less innovation, worse service and increased prices.
8. The CMA also assessed three vertical theories of harm:

¹ Access methods allow for alternative means to operate dedicated AAC devices. An eye gaze camera, for example, tracks the user's eye movement to operate an AAC device.

- (a) input foreclosure, whereby the merged entity would restrict the provision of Smartbox's AAC software to rival suppliers of dedicated AAC solutions in the UK;
 - (b) input foreclosure, where the merged entity would restrict the provision of Tobii's eye gaze cameras to rival suppliers of dedicated AAC solutions in the UK; and
 - (c) customer foreclosure, whereby the merged entity (Smartbox in particular) would reduce its acquisition of eye gaze cameras from rivals of Tobii and/or degrade the interoperability of those rival cameras with Smartbox's AAC software, which might also affect sales of rival cameras through other distributors.
9. For all three vertical theories of harm, the CMA believes that the merged entity has or may have the ability and incentive to engage in the specified foreclosure strategy and that the effect of each strategy would be to harm competition in a relevant market.
 10. The CMA therefore believes that the Merger gives rise to a realistic prospect of a substantial lessening of competition (**SLC**) as a result of both horizontal unilateral and vertical effects.
 11. The CMA considered whether to exercise its discretion under the *de minimis* exception in section 33(2)(a) of the Enterprise Act (**the Act**) not to refer the merger for an in-depth investigation.¹ However, having considered the relevant factors, the CMA believes that the markets concerned are of sufficient importance to justify making a reference. In particular, the CMA believes that the Merger may have a significant detrimental impact on vulnerable end users who rely on dedicated AAC solutions to complete everyday tasks.
 12. The CMA is therefore considering whether to accept undertakings under section 73 of the Act. Tobii has until **1 February 2019** to offer an undertaking to the CMA that might be accepted by the CMA. If no such undertaking is offered, the CMA will refer the Merger pursuant to sections 22(1) and 34ZA(2) of the Act.

ASSESSMENT

Parties

13. Tobii is a leading supplier of, among other products, assistive technology solutions (**ATS**) and eye tracking solutions, with offices in Sweden, USA, China, Japan, UK, Norway, Taiwan and South Korea. Tobii is listed on the

Nasdaq Stockholm stock exchange and has three distinct business units: Tobii Dynavox, Tobii Pro and Tobii Tech. Tobii's global revenue in 2017 was approximately £90.3 million, of which approximately £2.8 million was generated in the UK.

14. Smartbox is a UK-based company which focuses on developing² and re-selling ATS, which help people with disabilities, including communication aids, environmental control devices, computer control technology and interactive learning solutions. Smartbox sells products mainly in the EEA and USA. Smartbox's global revenue in 2017 was approximately £9.3 million, of which approximately £4.8 million was generated in the UK.

Transaction

15. The Merger relates to the purchase by Tobii of the whole of the issued share capital of Smartbox.

Procedure

16. The CMA's mergers intelligence function identified this transaction as warranting an investigation.³
17. The Merger was considered at a Case Review Meeting.⁴

Jurisdiction

18. Each of Tobii and Smartbox is an enterprise. As a result of the Merger, these enterprises have ceased to be distinct.
19. The Parties overlap in the supply of dedicated AAC solutions to customers with complex AAC needs, with a combined share of supply of [70%-80%] (increment of [10%-20%]).⁵ The CMA therefore believes that the share of supply test in section 23 of the Act is met.
20. The Merger completed on 1 October 2018, and the CMA was aware the same day. The four month deadline for a decision under section 24 of the Act is 20 February 2019, following extension under section 25(2) of the Act.

² SSIL was historically the company that developed the software products and was owned by the same individuals as SATL. However, the business activities of SSIL were transferred to SATL over the last few years, which means SSIL no longer carries out any meaningful business activities.

³ See [Mergers: Guidance on the CMA's jurisdiction and procedure](#) (CMA2), January 2014, paragraphs 6.9-6.19 and 6.59-60.

⁴ See [Mergers: Guidance on the CMA's jurisdiction and procedure](#) (CMA2), January 2014, from paragraph 7.34.

⁵ See share of supply section below at paragraph 103.

21. The CMA therefore believes that it is or may be the case that a relevant merger situation has been created.
22. The initial period for consideration of the Merger under section 34ZA(3) of the Act started on 28 November 2018 and the statutory 40 working day deadline for a decision is therefore 25 January 2019.

Background

Products supplied by the Parties

23. The Parties supply ATS which assist people with disabilities. There are different forms of ATS:
 - (a) ATS for blindness and visual impairments, which include haptic aids and travelling aids;
 - (b) ATS for deafness and hearing impairments, which include hearing technologies, alarm and alerting systems; and
 - (c) ATS for people with a reduced ability to speak and communicate, including products which enable people with communication impairments (ie limited or no speech) to communicate, known as AAC solutions.
24. AAC solutions address communication impairments that may be due to physical, sensory, intellectual, learning or cognitive disabilities. Communication impairments are found in a variety of different diagnosed conditions ranging from people born with a communication impairment (resulting, for example, from cerebral palsy, developmental disorders or learning disabilities) to those who acquire a communication impairment (eg through stroke, cancer, brain and spinal injury or neurological diseases, such as Parkinson's, Alzheimer's, Multiple Sclerosis or Motor Neurone Disease).⁶
25. There is a wide range of communication impairments and AAC needs:
 - (a) At one end of the spectrum are people who have complex communication needs. There are 16 providers of specialised AAC services (NHS hubs) (each responsible for a different region of England) who provide equipment for individuals with these needs. These end users require an AAC device to achieve an extensive range of communication. Published NHS guidance states that the primary aim of a referral to an NHS hub

⁶ For a description of the population covered, see NHS England, [Publication 04790 Schedule 2 – The Services](#), page1.

must be related to a significant difficulty communicating through speech.⁷ However, the CMA is aware that not all end users with complex communication needs have access to NHS hubs.⁸

- (b) At the other end of the spectrum are end users who have more limited communication needs. An NHS local AAC service would have expertise in low-tech (ie direct access, text-based or simple symbol-based) solutions, and non-specialised AAC strategies and techniques, which it can provide to people with such needs.

Most users are between the two extremes. Even within a given condition, there is a high degree of variance in communication needs.

26. AAC solutions include both electronic and non-electronic aids:

- (a) Non-electronic AAC solutions - ie paper-based or rapid access communication aids that do not need electronics to meet the user's communication needs. These aids allow for communication by placing letters, words, phrases, pictures and/or symbols on a board or in a book (eg communication boards, books or flash cards).
- (b) Electronic AAC solutions - ie devices that allow for the storage and retrieval of messages and the use of speech output (eg Speech Generating Devices (**SGD**) and Voice Output Communication Aids (**VOCA**)). These solutions can be further divided into:
 - (i) Devices developed for the primary purpose of meeting the communication needs of those with complex AAC needs (referred to as **dedicated AAC devices**). Dedicated AAC devices integrate with AAC software and benefit from dedicated customer support.
 - (ii) Devices (such as computers, tablets and smartphones) which have other uses but which can be used (ie with certain apps) as a communication tool by some end users with AAC needs.

27. Smartbox and Tobii develop dedicated AAC devices with the aim of improving the communicative ability of people with complex AAC needs. Tobii submitted that the AAC solutions sold by the Parties enabled those end users with the most severe and complex needs, often requiring individually tailored solutions,

⁷ NHS England [Publication 04790 Schedule 2 – The Services](#) page 22 at 3.2.

⁸ Exclusions are, for example, pre-verbal communication skills, not having achieved cause and effect understanding and impaired cognitive abilities that would prevent the user from retaining information on how to use equipment which would mean that such people will not be referred to an NHS Hub. A decision tree to support referral to specialised AAC services is available in NHS England, [Publication 04790 Schedule 2 – The Services](#) page 19.

to complete fundamental tasks. These end users (and the network of carers around them) required a high level of support in using these products. The Parties also both develop AAC software which can be used on standard consumer tablets⁹ (eg Tobii's iOS apps and Smartbox's Grid for iPad¹⁰).

28. Dedicated AAC devices are typically made up of three key components:¹¹
- (a) AAC software, which is specifically designed for people with communication needs allowing them to communicate. Software allows the user to input a message in different ways, ranging from electronic picture boards to more complex language systems. The message can then be communicated in several ways, eg speech generation.
 - (b) Dedicated AAC hardware, which is designed primarily to address complex communications needs, integrating with AAC software.
 - (c) AAC access methods are needed by some users to access the hardware and to control the software. These include special keyboards, switches, joysticks, head mice and eye gaze cameras. The access method will depend on the user's disability and physical impairments.
29. As part of their supply of dedicated AAC devices, the Parties offer comprehensive customer support. The Parties and third parties told the CMA that this service is a critical element for the successful provision of AAC solutions to end users with complex needs. Part of this support is training in how to use the AAC products.
30. The CMA refers to the supply of a dedicated AAC device with a customer support (and training) service as a **dedicated AAC solution**. Tobii is active in the supply of all four key components of a dedicated AAC solution: dedicated AAC hardware, AAC software and AAC access methods (in particular, eye gaze cameras), and offers customer support. Smartbox also supplies all four components of a dedicated AAC solution to customers but, unlike Tobii, it does not produce its own eye gaze cameras.

⁹ Standard consumer tablets can be used with AAC software for some end users with less complex needs or adapted for use as a communication tool for users with more complex needs with AAC software and AAC accessories (at which point it becomes dedicated AAC hardware). Some of Smartbox's dedicated AAC hardware has been developed by adapting industrial tablets (tablets designed for business use).

¹⁰ See <https://www.tobiidynavox.com/en-gb/products/software/> and <https://thinksmartbox.com/our-software-2/>

¹¹ NHS England indicates that, for people with complex needs, the communication aids provided by NHS hubs may be based on "mainstream technology", such as tablet computers, or more dedicated hardware and will include: (a) specialist communication software (that takes a user's input and outputs synthesised speech); (b) vocabularies or language systems loaded into the software; and (c) accessories (such as access methods, speakers, etc).

The supply chain for products supplied by the Parties

31. The vast majority of dedicated AAC solutions are procured in the UK by the NHS, schools, charities and local authorities (**customers**) on behalf of individuals with complex AAC needs (**end users**).
32. When an individual requires an AAC solution, the individual will usually be referred to an expert (eg an NHS speech therapist). This expert will typically assess the needs of the individual, resulting in a recommendation for an appropriate communication aid. Suppliers of dedicated AAC solutions, such as the Parties, market their products to these experts, explain their functionality and provide training on their products.
33. The NHS is the largest customer for dedicated AAC solutions in the UK.¹² NHS England has dedicated funding to provide AAC services (including the provision of dedicated AAC solutions). As noted above (paragraph 25) there are 16 NHS hubs. Each NHS hub has an allocated budget to provide specialised AAC services to individuals within its region.¹³
34. NHS England sets out acceptance and exclusion criteria for access to a specialised AAC service.¹⁴ According to those criteria, an individual must have (i) a severe/complex communication difficulty associated with a range of physical, cognitive, learning, or sensory deficits and (ii) a clear discrepancy between their level of understanding and ability to speak. They must also be able to understand the purpose of a communication aid and have developed cause and effect understanding.¹⁵ As a result of these referral criteria, only individuals with the most complex AAC needs qualify for specialised AAC services from NHS hubs in England. All other needs are met either by local NHS AAC services or outside of the NHS. Similar criteria for referral to the specialised AAC service are set out for Wales and individuals will have been initially assessed by the local “Spoke level” service¹⁶. In Scotland, an assessment is usually multi-disciplinary, with the initial assessment carried out by staff having the necessary competencies from the local team and involving

¹² Over [X] of Tobii’s and Smartbox’s direct sales in the UK are to the NHS.

¹³ In Scotland AAC services are provided by Health Boards, Education and Integration Joint Boards often in collaboration with the third sector (voluntary) depending on the needs of the individual; in Wales, the AAC hub is multidisciplinary team which is part of Wales’ Electronic Assistive Technology Service (EATS) based at Rookwood Hospital in Cardiff; in Northern Ireland AAC equipment can be accessed via the Belfast Communication Advice Centre.

¹⁴ See NHS England [Publication 04790 Schedule 2 – The Services](#) at 3.4.

¹⁵ An individual may have experience of using low tech AAC which is insufficient to enable them to realise their communication potential. The NHS also stipulates that inclusion/exclusion criteria should be applied taking into account anticipated needs where an individual has a deteriorating condition.

¹⁶ [Referral Criteria for the AAC hub. \(Extracted from the AAC Service Specification\)](#); In Scotland referrals to specialist AAC services are via speech and language therapists.

specialists where required.¹⁷ In Scotland, legislation which came into force in May 2018 entitles people with communication needs to be provided with “communication equipment and support in using that equipment”.¹⁸

35. NHS England estimates that around 90% of the AAC population require local AAC services and 10% require specialised AAC services. Where end users are not eligible for AAC funding through their regional NHS hubs, they are often reliant on sourcing dedicated AAC solutions through specialist schools, charities and/or local authorities. Only a small proportion of dedicated AAC solutions are sold directly to end users.
36. Many suppliers of dedicated AAC solutions sell their products both directly to customers (eg NHS hubs, schools, charities, local authorities and end users) and to distributors, who sell to customers. In some cases, these distributors develop their own dedicated AAC solutions by combining components of the solution from different upstream suppliers. Some suppliers have developed their own product for one element of a dedicated AAC solution (eg hardware), which they combine with other components from upstream suppliers. For example, Smartbox sells its Grid software to Liberator and Techcess, both of which re-sell it on their own AAC hardware devices as a dedicated AAC solution. Depending on the agreement between the AAC supplier and the distributor, distributors can sell an AAC supplier’s products as a standalone product, in combination with other products from the same AAC supplier and/or in combination with other products from other AAC suppliers. While the Parties both use distributors in the UK, a large proportion of each Party’s sales is direct to customers (eg in 2017, [X] % of Smartbox’s UK sales (by revenue) and [Y]% of Tobii’s UK sales (by revenue) were direct).
37. In addition to Liberator and Techcess, both Tobii and Smartbox use Abilia and Inclusive Technology as distributors. Abilia develops its own ATS, mainly focussed on environmental control and home automation solutions. Inclusive Technology develops its own software solutions, primarily aimed at schools rather than end users.
38. The supply chain in relation to the Merger therefore involves two levels:
 - (a) the supply of dedicated AAC hardware, AAC software and eye gaze cameras (‘upstream’); and

¹⁷ Scottish Government, [Guidance on the Provision of Communication Equipment and Support in using that Equipment, Our Vision, Principles and Definitions of Communication Equipment and Support](#), May 2018, page 16.

¹⁸ Section 46A, Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016.

- (b) the supply of dedicated AAC solutions to end users ('downstream').
39. While the Parties overlap horizontally in the supply of dedicated AAC hardware, AAC software, and dedicated AAC solutions, they are also vertically related:
- (a) Tobii is active upstream in the supply of eye gaze cameras and Smartbox is active downstream in the supply of dedicated AAC solutions which sometimes incorporate an eye gaze camera (including Tobii's eye gaze cameras).
- (b) Smartbox's Grid software is an upstream input for many dedicated AAC solutions (including some offered by Tobii).

Counterfactual

40. The CMA assesses a merger's impact relative to the situation that would prevail absent the merger (ie the counterfactual). For completed mergers the CMA generally adopts the pre-merger conditions of competition as the counterfactual against which to assess the impact of the merger. However, the CMA will assess the merger against an alternative counterfactual where, based on the evidence available to it, it believes that, in the absence of the merger, the prospect of these conditions continuing is not realistic, or there is a realistic prospect of a counterfactual that is more competitive than these conditions.¹⁹
41. The Parties have not submitted an alternative counterfactual. Smartbox told the CMA that initial discussions between Tobii and Smartbox in relation to the Merger commenced in November 2017. The offer letter was signed by the Parties in June 2018 and the due diligence process began subsequently. Tobii announced its acquisition of Smartbox on 20 August 2018 (signing the Share Purchase Agreement the same day) and the acquisition completed on 1 October 2018.
42. In August 2018, the Parties entered into new mutual reseller agreements covering each other's hardware and software products. The Parties stated that they entered into these mutual reseller agreements to assist the integration process by enabling each Party to sell the combined product portfolio of Tobii and Smartbox to customers prior to completion of the Merger. These mutual reseller agreements are therefore related to the

¹⁹ [Merger Assessment Guidelines](#) (OFT1254/CC2), September 2010, from paragraph 4.3.5. The [Merger Assessment Guidelines](#) have been adopted by the CMA (see [Mergers: Guidance on the CMA's jurisdiction and procedure](#) (CMA2), January 2014, Annex D).

Merger. The Parties intended to discontinue the mutual reseller arrangements following completion of the Merger, as they would not be necessary once Smartbox was a subsidiary of Tobii.

43. Tobii told the CMA that the interaction between the Parties was more competitive before the new mutual reseller agreements entered into force. This was because of the historic relationship between the Parties:
- (a) In 2006, the Parties entered into mutual reseller agreements whereby: (i) Tobii appointed Smartbox as a reseller of its AAC products in the UK (including certain hardware devices, software products and eye gaze devices); and (ii) Smartbox appointed Tobii as a reseller of certain Smartbox software products (which were re-sold by Tobii pre-installed on Tobii's hardware devices).
 - (b) In January 2017, Tobii terminated its reseller arrangement with Smartbox, which meant Smartbox was unable to re-sell Tobii's products. Tobii stated that it took this decision because: (i) Smartbox had started to develop and sell its own hardware devices and was therefore competing more strongly with Tobii in relation to hardware devices; and (ii) Smartbox was selling some Tobii hardware devices with its own software products rather than selling Tobii hardware devices with Tobii software products.
44. On the basis of the evidence set out above, the CMA believes that, in the absence of the Merger, the reseller agreements would not be in place, and that this would represent a more competitive scenario than a scenario in which the August 2018 reseller agreements are in place.
45. Therefore, the CMA believes the pre-Merger conditions of competition to be the relevant counterfactual, taken to be the situation prior to the August 2018 reseller agreements being in place.

Frame of reference

46. Market definition provides a framework for assessing the competitive effects of a merger and involves an element of judgment. The boundaries of the market do not determine the outcome of the analysis of the competitive effects of the merger, as it is recognised that there can be constraints on merger parties from outside the relevant market, segmentation within the relevant market, or other ways in which some constraints are more important

than others. The CMA will take these factors into account in its competitive assessment.²⁰

47. The Parties overlap upstream in the supply of dedicated AAC hardware and AAC software and overlap downstream in the supply of dedicated AAC solutions. Tobii is also active upstream in the supply of eye gaze cameras.

Product scope

48. Dedicated AAC devices are designed to meet the needs of end users with a range of complex AAC needs. Therefore, the CMA has defined the frame of reference primarily with regard to the products and services that can meet those needs.

Upstream supply of dedicated AAC hardware

49. Tobii supplies a range of dedicated AAC hardware such as the I-110, the Indi or the I-15, which it describes as a “15 inch [screen] rugged medical grade speech generating device with built in eye tracker, wheelchair mount, front facing speakers and environmental controls”.
50. Smartbox also supplies a range of dedicated AAC hardware, including the Grid Pad 12, which it describes as a “12 inch [screen] rugged speech generating device with front facing speakers, wheelchair mount, and environmental controls”.

Dedicated AAC hardware

51. Tobii submitted that the relevant market should be the supply of all dedicated AAC hardware and consumer tablets suitable for fulfilling AAC needs.
52. The CMA considered whether the product scope should be widened to include consumer tablets, which can be used with AAC software and AAC accessories.
53. Tobii submitted that consumer tablets pose a competitive constraint on the Parties, stating that several firms (eg Saltillo, Prentke Romich (**PRC**), Forbes AAC and Logan Technologies) produce accessories for consumer tablets that can increase their ruggedness/robustness or enhance their AAC functionality. In addition, Tobii noted that several distributors actively sell consumer tablets with AAC software alongside Tobii’s dedicated AAC solutions. Tobii further submitted that for many user groups, such as those with Autism, Aphasia, and

²⁰ Merger Assessment Guidelines, paragraph 5.2.2.

all cognitive disabilities including Down Syndrome, an iPad was “just as good because they are less rugged, have better ergonomics and speakers.”

54. Customers who responded to the CMA’s merger investigation stated that AAC hardware products needed to have certain characteristics to be considered suitable for end users with complex needs. For example, AAC hardware products need to:
 - (a) be sufficiently portable to be fixed on a wheelchair, where relevant;
 - (b) have a reasonable battery life to ensure reliability (eg to last for the majority of the day);
 - (c) allow for different access methods;
 - (d) have a screen sufficiently large to be seen from a wheelchair; and
 - (e) be equipped with suitable speakers to project the user’s voice.
55. The Parties also told the CMA at the product demonstration on 6 November 2018 that these characteristics are important factors which distinguish their dedicated AAC hardware products from general consumer IT hardware used for AAC needs.
56. One competitor told the CMA that the more severe the communication needs and/or disability of the end user, the more likely a consumer tablet would be unable to meet the end user’s needs and a dedicated AAC hardware would be required.
57. One competitor of dedicated AAC solutions states on its website that AAC devices differ significantly from consumer tablets.²¹ It states that dedicated AAC devices contain important features for end users which have been developed over a long period and come with a comprehensive support service. It also states that certain access peripherals will only function with dedicated AAC devices and certain AAC software might have features only accessible on dedicated AAC devices (eg although Smartbox’s Grid software is available on some consumer tablets, features such as texting are unavailable when loaded on an iPad).
58. The CMA notes that, in addition to the high degree of differentiation between dedicated AAC hardware and consumer tablets as listed above, they are also differentiated with regard to innovation. For instance, recent trends in innovation in relation to consumer tablets have been aimed at reducing

²¹ <https://liberator.net.au/support/education/technology/hardware-devices>

weight, typically reducing battery life and ruggedness, whereas innovation in relation to dedicated AAC hardware has been aimed at extending battery life and ruggedness to meet the needs of their end users.ⁱⁱ In addition, there is also a difference in price with consumer tablets generally costing significantly less than the Parties' dedicated AAC devices (ie around £800 for a consumer tablet compared with between £1,950 and £5,200 for Smartbox's Grid Pad and more than £8,500 for Tobii's I-15 and I-12 devices).

59. On the basis of this evidence, the CMA believes that dedicated AAC hardware is sufficiently distinct from consumer tablets on which AAC software can operate to constitute a separate product frame of reference. Nevertheless, the CMA took into account constraints from consumer tablets in its competitive assessment (see paragraphs 153 to 165).

Medically and non-medically graded hardware

60. The CMA also considered whether the product scope should be narrowed to focus on particular types of dedicated AAC hardware.
61. Tobii submitted that Tobii Dynavox's hardware includes a range of medically graded devices. In contrast, no Smartbox device is medically graded to the same standards.²² However, Tobii stated that the extent to which this distinction limits demand-side substitutability is not clear, applying mainly to circumstances where a customer has a procurement policy that mandates medical grading. Tobii said that many hospitals overlook this requirement and therefore the distinction is not sufficient to warrant identifying separate frames of reference, though it does indicate a degree of differentiation between the Parties.
62. Tobii also submitted that there are different customer segments according to whether customers require medically graded AAC solutions (which require medically graded AAC hardware). However, the CMA found that customers in the UK did not support this view. NHS customers told the CMA that, while they may consider whether a product is medically certified when choosing a dedicated AAC solution, they have the flexibility to purchase non-medically certified products where their assessment shows that the product is suitable for the end user's needs. In support of this view, the CMA noted that Smartbox supplies significant volumes of its dedicated AAC solution to NHS hubs even though only its recent Grid Pad 12 hardware is medically certified. Most schools, charities and local authorities which responded to the CMA's questions said that they typically do not have a strong preference for

²² The CMA understands that Smartbox's most recent device, the Grid Pad 12, is medically graded.

medically certified products. Third parties generally told the CMA that, although there were some differences between types of dedicated AAC hardware, they were generally very similar in terms of their functionality and medical grading was not a key point of distinction.

63. On the basis of this evidence, the CMA has considered medically graded and non-medically graded dedicated AAC hardware together.

Upstream supply of AAC software

64. AAC software refers to a range of focussed software tools which can be used to support end users with their communication needs, including: special educational needs software; software that supports a wide range of language solutions; gesture-controlled software; simple communication software applications (eg picture boards); and software that supports speech generation. Tobii supplies a range of software such as Communicator 5 and Snap+Core First. Smartbox also supplies a range of software, including the Grid 3.
65. Tobii submitted that the relevant product frame of reference is a single market for the provision of all software to support AAC solutions (which can be used in conjunction with AAC hardware). Tobii said that there is software available on consumer tablets that competes with the Parties' AAC software products, eg Proloquo2Go, Avaz and the built-in accessibility and communication features of Microsoft Windows and Apple iOS.
66. The CMA considered whether the appropriate product scope should be narrowed to focus on specialist software which addresses AAC needs for end users with complex communication needs or widened to include all software which has been designed to help people with communication needs (eg accessibility and communication features in Microsoft and Apple products).
67. The CMA noted that the Parties overlap in the supply of a range of AAC software, including communication systems (ie Smartbox's Grid and Tobii's Communicator 5), educational software and software add-ons (eg Smartbox's Switch Driver software, which replicates mouse and keyboard commands with switches). The CMA found that there are significant differences between this software and other communication (or ATS) software, which AAC suppliers emphasise in their marketing material. As examples, Smartbox clearly highlights: (i) in its Grid software, the ability to link into powerful communication tools like Text Talker; and (ii) in its 'Interactive Learning software', the ability to help learners develop language and access skills through play and engaging activities. The CMA noted how the end user's needs determined the type of software required. The software which is best

suiting for more complex communication needs supports and facilitates a range of access methods, functionalities and specialist features (eg auditory scanning and pre-programmed scanning routines), which more basic software do not include and/or support. Even for software that performs the same function, there are quality differences, eg in the range of vocabulary used. One customer told the CMA that apps like Proloquo2Go are “more limited than software like ‘The Grid’ and ‘Communicator’.”

68. The CMA also found that the competitor set is different for software serving complex communication needs and software serving less complex communication needs. For less complex communication needs, suppliers such as Therapy Box and AssistiveWare²³ are active in the supply of iOS and Android apps, whereas for more complex communication needs, the competitor set is limited to Tobii, Smartbox, PRC and Jabbla.
69. On the basis of this evidence, the CMA believes that software which serves less complex communication needs, or broader ATS needs, is not a demand-side substitute for software which serves more complex communication needs, given the significant differences in their functionality. They are also not supply-side substitutes given the different competitor set and different features. For these reasons, the CMA has not widened the product scope to include all software which addresses communication needs, or even broader ATS needs, but has assessed the impact of the Merger in a frame of reference for AAC software.
70. The CMA recognises that AAC software still incorporates a range of products which serve different needs and, for any end user, these products might not be demand-side substitutes. However, on the supply side, there is a consistent set of four competitors who supply AAC software, and the CMA has seen no evidence to suggest that particular suppliers are seeking to address the needs of particular end users (eg by condition or complexity). Rather, all four providers are focussed on providing AAC software which can be used in dedicated AAC solutions for end users with complex communication needs. For this reason, the CMA has not identified narrower frames of reference within AAC software, but has considered any differences between products in its competitive assessment.

²³ Both discussed in the competitive assessment below.

Upstream supply of eye gaze cameras

71. Access methods refer to the ways in which an individual can interact and control a communication system. There are several different methods, according to different skills. For example:
- (a) direct selection requires the user to move a body part to make direct contact with the device screen;
 - (b) head pointing involves the use of an infra-red beam emitted from the device and a reflective dot placed on the user's forehead, cap or glasses;
 - (c) eye gaze technology involves tracking the movement of an individual's eyes through the combination of sensor and camera technology; and
 - (d) switching allows a user to control scanning patterns across locations pre-programmed into a device.
72. While the Parties both supply a variety of access methods as part of their dedicated AAC solutions in the downstream market, there is no overlap between them in these products upstream. Only Tobii supplies eye gaze cameras at the upstream level.
73. Third parties told the CMA that there is limited (if any) demand-side substitution between eye gaze cameras and other types of access methods. This is because the different skills required for the different access methods must either be already present in the end user or be capable of development through repetitive practice.
74. Eye gaze cameras are typically supplied to suppliers of AAC hardware to be integrated into the hardware or made available as accessories. They are also supplied to suppliers of AAC software to ensure that they are compatible.
75. There are several providers of eye gaze cameras in addition to Tobii: EyeTech, Irisbond, Alea, and LC Technologies.²⁴
76. On the basis of this evidence, the CMA believes that the upstream supply of eye gaze cameras is a separate product frame of reference.

Downstream supply of dedicated AAC solutions

77. The Parties overlap in the downstream supply of dedicated AAC solutions, consisting of dedicated AAC hardware, AAC software and, depending on the

²⁴ Until its acquisition by Apple in 2017, SMI was a provider of eye gaze cameras. Tobii submitted that some resellers still retain stock and continue to sell SMI eye gaze cameras.

specific needs of the end user, an eye gaze camera, along with customer support and training.

78. Customers typically procure dedicated AAC hardware, AAC software and, if required, access methods, as a package, along with customer support. Almost all the customers who responded to the CMA's merger investigation said that they considered these components to be equally important when making purchasing decisions (ie none was an overriding consideration).
79. Customers told the CMA that their assessment of an individual end user is bespoke and will consider all elements of an appropriate dedicated AAC solution. Customers will combine hardware, software and access methods to respond to the end user's individual needs.²⁵
80. Several customers told the CMA that they prefer to purchase a dedicated AAC solution from one supplier, rather than sourcing components (eg hardware and access methods) from different suppliers and then assembling them into a solution. This is in part to ensure that the components integrate effectively and in part to gain one point of contact for customer support (ie servicing, training, etc).
81. The vast majority of downstream sales therefore comprise integrated solutions, rather than standalone hardware or software products. For example, around [X] UK sales and [X] UK sales comprise integrated hardware and software products (eg [X] sells a [X] hardware device pre-installed with Smartbox's Grid software).²⁶ Smartbox submitted that [X] of the sales of its Grid software in 2017 in the UK (in terms of volume) were pre-integrated with hardware, and Tobii submitted that all its devices sold in 2017 in the UK were sold with Tobii's software installed.
82. On the basis of this evidence, the CMA believes that competition is between suppliers for dedicated AAC solutions and it has therefore assessed the effects of the Merger in this product frame of reference.

²⁵ Some customers noted that, for some end users, some functions and vocabularies will be a priority. For example, one customer noted that a certain combination of components might reflect the prioritisation of certain functions/features over others to match a user's needs. Another customer said that, in some instances, the features of a software's vocabulary package are prioritised over the hardware because having the most suitable language features can be more critical.

²⁶ Smartbox noted that, where a customer is sourcing a Liberator hardware device with Smartbox software, the customer would typically purchase the solution from Liberator rather than the two components separately (the same solution is not available from Smartbox as it does not distribute Liberator hardware).

Segmentation by customer type

83. The CMA considered whether this downstream frame of reference should be segmented by customer type, namely NHS hubs, schools, local authorities, charities, and end users.
84. However, the CMA found that suppliers of dedicated AAC solutions operate across all customer segments and there are no restrictions to serving any customer segment.²⁷ The CMA understands that different suppliers might focus on and/or be more successful in serving specific customer segments but, based on evidence from customers, the CMA believes that the conditions of competition are similar across all segments.
85. On the basis of this evidence, the CMA has not identified separate product frames of reference by customer type.

Conclusion on product scope

86. For the reasons set out above, the CMA has assessed the impact of the Merger in the following product frames of reference:
 - (a) the (upstream) supply of dedicated AAC hardware;
 - (b) the (upstream) supply of AAC software;
 - (c) the (upstream) supply of eye gaze cameras; and
 - (d) the (downstream) supply of dedicated AAC solutions.

Geographic scope

Upstream supply of dedicated AAC hardware, AAC software and eye gaze cameras

87. Suppliers of dedicated AAC solutions source dedicated AAC hardware, AAC software and eye gaze cameras globally. The suppliers of these upstream components therefore compete on a global level. The CMA found that the competitor set for dedicated AAC hardware, AAC software and eye gaze cameras is broadly the same in the UK as in the rest of the world. With regard to AAC software, the CMA found that, while certain smaller local software providers are present, the main AAC software providers, Tobii, Smartbox, PRC and Jabbla, are all active worldwide.

²⁷ All suppliers are in the NHS framework, either directly or through distributors.

88. The CMA therefore believes that the appropriate geographic frame of reference for the upstream supply of dedicated AAC hardware, AAC software and eye gaze cameras is global.

Downstream supply of dedicated AAC solutions

89. The CMA found that competition in the downstream supply of dedicated AAC solutions typically occurs on a national level, due to various features. In particular, differences in health care systems at a national level affect how end users access solutions and how the factors informing a purchase decision are considered by customers. For example, in Germany and the US, costs are covered by insurers, which generally require medically graded products, while in the UK, the NHS does not typically require medical certification.
90. Tobii told the CMA that, in certain geographic markets, public tenders supersede the Tobii/Smartbox price list (eg in the US, Sweden and Norway), while, in the UK, suppliers of AAC solutions are often asked to agree to price caps when supplying the public sector.
91. Suppliers told the CMA that having a local presence was important, both to understand the local health care system and to provide training and support to customers. The CMA found that all purchasing decisions are local. Indeed the CMA has not identified any customer in the UK which was also a customer in another territory.
92. On the basis of this evidence, the CMA believes that the conditions of competition in the downstream market are different in the UK to those in other countries and that it is appropriate to assess the impact of the Merger in this downstream market in the UK.
93. The CMA also considered whether the geographic frame of reference could be narrower than the UK. The CMA found that, although different NHS organisations operate in the different home nations, the same competitors are active with the same range of products and on the same terms. The conditions of competition are therefore similar across the UK.
94. Therefore, the CMA has assessed the impact of the Merger in the downstream supply of dedicated AAC solutions in the UK.

Conclusion on frame of reference

95. For the reasons set out above, the CMA has assessed the impact of the Merger in the following frames of reference:

(a) the (upstream) supply of dedicated AAC hardware worldwide;

- (b) the (upstream) supply of AAC software worldwide;
- (c) the (upstream) supply of eye gaze cameras worldwide; and
- (d) the (downstream) supply of dedicated AAC solutions in the UK.

Competitive assessment

Theories of harm

- 96. The CMA assessed horizontal and vertical theories of harm.
- 97. The CMA assessed whether the Merger has resulted, or may be expected to result, in an SLC due to horizontal unilateral effects in each of the three product frames of reference in which the Parties overlap ((a), (b) and (d) in paragraph 95).
- 98. The CMA also assessed whether the Merger has resulted, or may be expected to result, in an SLC due to the following vertical effects:
 - (a) Input foreclosure of Smartbox's AAC software to the Parties' rivals in the (downstream) supply of dedicated AAC solutions in the UK;
 - (b) Input foreclosure of Tobii's eye gaze cameras to the Parties' rivals in the (downstream) supply of dedicated AAC solutions in the UK; and
 - (c) Customer foreclosure by the merged entity (Smartbox in particular) of Tobii's eye gaze camera competitors worldwide.

Horizontal unilateral effects

- 99. Horizontal unilateral effects may arise when one firm merges with a competitor that previously provided a competitive constraint. The concern is that the removal of one party as a competitor could allow the Parties to increase prices, lower the quality of their products or customer service, reduce the range of their products/services, and/or reduce innovation. After the Merger, it is less costly for the merged entity to raise prices or lower quality because it will recoup the profit on recaptured sales from those customers who would have switched to the offer of the other merging party.
- 100. Given that the evidence in relation to the three horizontal theories of harm overlaps significantly, and taking into account the interconnectedness between the frames of reference due to supply arrangements, these theories of harm are discussed together. The CMA's findings in the downstream

market follow significantly from its findings in the upstream markets, given the products in these upstream markets feed into the downstream market.

101. To assess the likelihood of the Merger resulting in unilateral effects, the CMA considered:
- (a) shares of supply;
 - (b) the closeness of competition between the Parties; and
 - (c) competitive constraints from alternative suppliers.

Shares of supply

102. The CMA estimated shares of supply on a number of different measures. However, the CMA found that it is difficult to produce reliable estimates because dedicated AAC hardware, AAC software and AAC access methods are sold in various combinations, making it difficult to assign a value to individual components. Nevertheless, while individual estimates should be approached with caution, the CMA's consistent finding was that the Parties have a high combined share of supply both in the relevant upstream markets and in the downstream market on any measure.

Downstream supply of dedicated AAC solutions in the UK

103. The Parties did not submit share of supply estimates for dedicated AAC solutions.
104. The CMA estimated shares of supply based on the total UK revenue of the Parties and their competitors supplying dedicated AAC solutions in the UK. The CMA estimated that, in 2017, the Parties' combined share of supply by revenue from the supply of dedicated AAC solutions in the UK was [70%-80%] (with an increment of [10%-20%] resulting from the Merger), as shown in Table 1. Revenues from distributors were not included separately to avoid double counting.²⁸

Table 1: Estimated share of supply by revenue, 2017

	Share of supply (%)		
	2016	2017	2018 (up to August)
Smartbox	[REDACTED]	[REDACTED]	[REDACTED]
Tobii	[REDACTED]	[REDACTED]	[REDACTED]
Liberator	[REDACTED]	[REDACTED]	[REDACTED]

²⁸ Double-counting might still exist for sales made by, for example, Smartbox through competitors (eg Liberator selling the Grid software). This double-counting would have the effect of overestimating competitors' revenue and, therefore, underestimate the Parties' shares of supply.

Techcess	[REDACTED]	[REDACTED]	[REDACTED]
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Source: CMA calculations based on Parties' submissions and competitors' responses.

105. The CMA also estimated shares of supply based on the expenditure by customers of dedicated AAC solutions who responded to the CMA's merger investigation. While this is not a complete dataset for all NHS hubs and charities in the UK, this data indicates that the Parties' combined share of supply of dedicated AAC solutions in the UK was [70%-80%] (with an increment of [10%-20%] arising from the Merger) in 2017, as shown in Table 2. This result is broadly consistent with Table 1.

Table 2: Estimated share of supply based on customer expenditure, 2017

	Share of supply (%)		
	2016	2017	2018 (up to September)
Smartbox	[REDACTED]	[REDACTED]	[REDACTED]
Tobii	[REDACTED]	[REDACTED]	[REDACTED]
Liberator	[REDACTED]	[REDACTED]	[REDACTED]
Techcess	[REDACTED]	[REDACTED]	[REDACTED]

Source: CMA calculation based on customers' responses.

106. Focussing on expenditure by NHS hubs (ie excluding schools, charities, local authorities and direct users), the Parties' combined share of supply of dedicated AAC solutions in the UK was [70%-80%] (with an increment of [10%-20%]) in 2017.²⁹

107. The CMA believes that these very high combined shares of supply indicate *prima facie* competition concerns. Moreover, the CMA notes that the significant shares for Tobii and Smartbox in the upstream markets for dedicated AAC hardware, AAC software and eye gaze cameras (as set out below) suggests that the Parties' downstream shares as indicated in Tables 1 and 2 may over-represent the constraint from alternative suppliers, many of whom are dependent on the Parties for source inputs.

Upstream supply of dedicated AAC hardware and AAC software

108. Tobii submitted estimates for the supply of dedicated AAC hardware and AAC software in the UK, in the EEA and worldwide. The CMA adjusted these estimates by excluding suppliers which were not active in the relevant frame of reference.³⁰ The adjusted estimates showed that:

(a) For the supply of dedicated AAC hardware, the Parties have a combined share of supply of [60%-70%] (increment of [5%-10%]) in the UK, [50%-

²⁹ The CMA received responses from 8 of the 16 NHS hubs under NHS England.

³⁰ For UK figures, the CMA excluded (i) from the hardware competitors' set: consumer tablets and Abilia; (ii) from the software competitors' set: AssistiveWare, Widgit Software and Therapy Box.

60%] (increment of [10-20]%) at the EEA level, and [50%-60%] (increment of [5%-10%]) at the global level; and

(b) For the supply of AAC software, the Parties have a combined share of supply of [60%-70%] (increment of [5%-10%]) in the UK, [50%-60%] (increment of [20%-30%]) at the EEA level, and [50%-60%] (increment of [20%-30%]) at the global level.

109. Smartbox submitted estimates for the supply of dedicated AAC hardware and AAC software in the EEA and worldwide. These estimates were based on volume and revenue data sourced from Companies House, companies' public reports and Smartbox's own assumptions. These estimates showed:

(a) For dedicated AAC hardware, the Parties' combined share of supply is [70%-80%] (increment of [20%-30%]) at the EEA level, and [70%-80%] (increment of [5%-10%]) at the global level; and

(b) For AAC software, the Parties' combined share of supply is [80%-90%] (increment of [40%-50%]) at the EEA level, and [70%-80%] (increment of [20%-30%]) at the global level.

110. The CMA sought to generate its own estimates of shares of supply for dedicated AAC hardware and AAC software at the global level. Due to the difficulties in gathering consistent data (see paragraph 102), the CMA estimated shares based on dedicated AAC hardware with or without AAC software installed and, separately, shares of supply based on AAC software as a standalone product (ie provided separately from the hardware).³¹ The CMA believes these shares of supply to be informative of the Parties' and competitors' presence in these markets. The CMA estimated that the Parties have a combined share of supply of:

(a) [70%-80%] for dedicated AAC hardware in the UK (increment of [10%-20%]), [70%-80%] in the EEA (increment of [20%-30%]) and [60%-70%] worldwide (increment of [5%-10%]); and

(b) [90%-100%] of AAC software in the UK (increment of [10%-20%])³², [60%-70%] in the EEA (increment of [10%-20%]) and [30%-40%] worldwide (increment of [10%-20%]).

³¹ As a result, revenues for AAC hardware will be inflated by revenue due to AAC software installed onto it, whereas AAC software revenue will underestimate the true position in software.

³² Shares of supply based on standalone software sales. These shares of supply do not take into account the presence of software products on hardware devices when they are sold with pre-installed software. As devices are always sold with pre-installed software the CMA also estimated market shares by attributing the hardware revenues to the party whose software is installed on a device (eg if a Liberator's device is sold with the Grid, the

111. The CMA believes that, irrespective of the method, the estimates consistently show that the Parties have very high combined shares of supply in dedicated AAC hardware and AAC software, which indicate *prima facie* competition concerns at the UK, EEA and global levels.

Closeness of competition

112. The CMA's assessment of the closeness of competition between the Parties included:

- (a) The Parties' views;
- (b) Evidence from internal documents;
- (c) Evidence relating to innovation; and
- (d) Views of third parties.

Parties' views

113. Tobii told the CMA that it and Smartbox each focus on different components of a dedicated AAC solution. Tobii stated that, to date, it had primarily (but not exclusively) been focussed on hardware, whereas Smartbox had been primarily (but not exclusively) focussed on software. Tobii submitted that the limited horizontal overlap between the Parties was due to the highly individualised nature of consumer demand, which led to the development of a heterogenous set of products.

Internal documents

114. The internal documents provided by the Parties indicate that, prior to the Merger, they saw each other as a close competitor, as set out below.

115. For example, from the internal documents submitted by Tobii:

- (a) [redacted].
- (b) [redacted].
- (c) [redacted].

116. For example, from the internal documents submitted by Smartbox:

sales are attributed to Smartbox). Based on this alternative approach the Parties have an estimated share of supply of AAC software of [80%-90%] in the UK (increment of [10%-20%]).

(a) [REDACTED]

(b) [REDACTED]

(c) [REDACTED]

(d) [REDACTED]

117. The CMA notes that some of Smartbox's internal documents monitor or highlight developments by Liberator and Techcess alongside Tobii, though Tobii's documents do not identify these competitors as often.
118. The internal documents of the Parties also show clearly that competition between the Parties was significant in their respective decision making about new products (as discussed further below). Each Party benchmarked its products against those of the other Party, and monitored each other's development activity ([REDACTED]) when generating their product development plans.
119. The CMA believes this evidence indicates that the Parties are close competitors to each other in the supply of dedicated AAC hardware and AAC software, and in the downstream supply of dedicated AAC solutions, with only two other significant competitors (Liberator and Techcess).

Evidence relating to innovation

120. Tobii submitted that the innovation undertaken by the Parties was very important, noting that developing the tailored solutions to meet each individual vulnerable end users' complex needs required ground-breaking innovation and, therefore, significant investment.
121. Third parties told the CMA that competition between the Parties was an important driver for product development and innovation in the market, which was ultimately improving the quality of life for end users.
122. The CMA noted that, historically, Smartbox's main focus was in developing software products, with its flagship product being the "Grid 3" software. Smartbox told the CMA that it adopted an open "platform" approach with its Grid software, enabling third party hardware devices and access method devices to integrate easily. Smartbox told the CMA that it was "*the only AAC company to allow other hardware device manufactures to pre-install and sell [its] software*". Smartbox noted that many customers and users highly valued this flexibility, being able to combine the Grid software with third party products to form a dedicated AAC solution to best suit an end user's requirements. Third parties supported this view.

123. The CMA understands that Smartbox’s open “platform” approach means that it has enabled its Grid software to interact and be compatible with hardware devices manufactured by all its key competitors (ie Tobii, Liberator and Techcess). Smartbox noted that, on multiple occasions, it has taken steps to enable compatibility between its Grid software and third party hardware devices (eg “*some features of Liberator and Jabbla devices required specific development from the Smartbox R&D team*”). Smartbox said that Liberator and Techcess wanted this relationship with Smartbox as being able to offer the Grid software increased the sales of their dedicated AAC hardware devices.
124. The CMA understands that, historically, Tobii’s main focus was developing eye gaze cameras but since 2005 it has been developing and selling AAC hardware and software. Tobii expanded its presence in the AAC sector through the acquisition of DynaVox Systems, LLC (**DynaVox**), who was a leading global provider of AAC products. In contrast to Smartbox’s “open” platform approach, Tobii’s AAC software is typically not available on other AAC hardware.
125. Smartbox told the CMA that its recent strategy, absent the Merger, [X]. In the third quarter of 2017, Smartbox launched a new purpose-built device, the “Grid Pad 12”.ⁱⁱⁱ Prior to the launch of this device, Smartbox competed against Tobii’s dedicated AAC hardware by adjusting industrial tablets (ie tablets that are manufactured for business use) for AAC needs to become dedicated AAC hardware. The CMA understands that Tobii terminated its reseller arrangement with Smartbox in January 2017 (under which Smartbox was selling its Grid software on Tobii devices) in part because Smartbox was promoting its own tablet-based dedicated AAC hardware products (so was marketing Tobii’s products less). This decision by Tobii accelerated Smartbox’s decision to develop the Grid Pad 12. Since its launch, the Grid Pad 12 has been competing more strongly with Tobii’s hardware devices than Smartbox’s previous tablet-based dedicated AAC hardware products.
126. Just as competition with Tobii influenced Smartbox to develop new hardware, competition with Smartbox led Tobii to innovate in software. Tobii stated that, absent the Merger [X]:
127. The CMA believes that the parallel innovation of the Parties in competing dedicated AAC hardware and AAC software products, and therefore dedicated AAC solutions, is clear evidence of the closeness in competition between them.
128. During the Parties’ negotiations about the Merger, the Parties decided that Smartbox would discontinue several hardware development projects and

Tobii would discontinue certain software development projects where the Parties considered that these development projects would overlap with each other's market-leading products. In particular:

- (a) Smartbox would discontinue³³ some existing hardware devices because [REDACTED] (eg the Grid Pad Pro 11 and the Grid Pad Pro 13), and would discontinue other devices (eg the Grid Pad Go 8, the Grid Pad Go 10 and the Power Pad) [REDACTED]. In addition, Smartbox would discontinue future³⁴ hardware developments for [REDACTED].
- (b) Tobii would: (i) discontinue certain software products (eg the Compass software); and (ii) put certain software products into maintenance mode³⁵ (eg the Communicator 5 software) as Tobii would instead transition customers to Smartbox's Grid software. Tobii has also discontinued certain software development projects [REDACTED].

- 129. These product discontinuations and the decision to place certain products into maintenance mode were announced to customers at the same time as the Merger. This suggests, consistent with the pre-Merger planning internal documents, that the reduction in innovation was entirely due to the Merger.
- 130. The CMA asked the Parties to outline the research and development (**R&D**) synergies that they expected to achieve as a result of the Merger. The synergies outlined by Tobii suggested that the amount spent on R&D would be slightly lower post-Merger, in particular through [REDACTED]. However, an internal document from Tobii indicated that it believed the savings arising from the Merger in R&D would be much more significant, estimating a saving of more than [REDACTED] a year.
- 131. On the basis of this evidence, the CMA believes that the Parties are very close competitors in the development and supply of both dedicated AAC hardware and AAC software, and consequently in the downstream supply of dedicated AAC solutions.
- 132. The CMA notes that some adverse effects of the Merger on competition may have already materialised as reduced innovation and some product terminations have resulted in less choice for customers and end users.

³³ When a product is discontinued by Smartbox or Tobii, it is no longer sold by the Party but it is supported for existing users for a number of years (eg to fix bugs and to update it for new operating system releases).

³⁴ As noted above, these development projects were part of Smartbox's strategy absent the Merger [REDACTED].

³⁵ When a product is put into maintenance mode, Tobii continues to sell and support the product but it no longer adds major features to the product.

Third party views

133. All customers told the CMA that the Parties' dedicated AAC solutions are close substitutes. Some customers noted that there are differences with regard to the Parties' price and service, with Tobii's products being more expensive and Smartbox having a better customer service in the UK, but customers consistently said that the Parties are each other's closest alternative.
134. All distributors also said that the Parties compete closely with each other in the supply of dedicated AAC solutions in the UK.
135. Competitors said that the Parties compete closely upstream in the development and supply of both dedicated AAC hardware and AAC software. For example, a competitor told the CMA that, when Smartbox started to develop and sell its own hardware products, Tobii and Smartbox became competitors and, for this reason, Tobii stopped its reseller arrangements with Smartbox.
136. An overwhelming majority of customers were concerned that the Merger would reduce choice in an already concentrated market. A particular concern was that Smartbox's open platform approach and lower priced products would not be continued following the Merger.
137. Many customers told the CMA that the merged entity would have an incentive to reduce the current product range and discontinue some product development. A reduction in both the range of products and innovation was consistently identified as the most concerning effect of the Merger, given the variety in end users' communication needs. For example:
 - (a) one customer stated that Smartbox and Tobii have pushed each other in terms of technology, innovation and product development, which has led to better products. While Smartbox has been particularly good at bringing in and integrating products from elsewhere, Tobii has developed its products itself.
 - (b) Another customer stated that the advantage of having multiple competing suppliers is that they are incentivised to create new features and products and specific solutions for certain types of patients. The Merger will therefore likely have a long-term adverse effect on innovation.
 - (c) Another customer noted that Smartbox was recognised for serving end users' needs, for example in how it had championed the development of a wide range of access methods, sought to provide lower cost Windows-based solutions and offered wider communication functions through the

Grid 3. It expressed concern that Tobii might not serve users' needs as effectively, in particular through how it might limit innovation.

- (d) Another customer submitted that there are already only a small number of suppliers of dedicated AAC solutions and a further reduction in the number of suppliers would lead to less competition and innovation.
 - (e) One customer told the CMA that that some product lines (from both Smartbox and Tobii) will be discontinued or not properly supported.
 - (f) Another customer ([redacted]) stated that there is the potential, post-Merger, that the Parties' range of hardware and software will be reduced, which would limit choice and potentially increase costs if only the higher priced options were retained. The same point was made by some competitors. For example, one competitor told the CMA that the acquisition means there will be less choice for customers in an already small market, particularly if many products are discontinued by Tobii.
138. Some customers also expressed concern about the Merger having an impact on the level of customer support received by end users. Third parties said that Smartbox is widely recognised as the market leader in providing a high-quality customer support service, which could be removed following the Merger. Customers said that the Merger could change the incentives of the Parties to continue offering high quality support.
139. Some customers raised concerns about price increases, in particular in the merged entity's dedicated AAC solutions. Customers told the CMA that price was generally a secondary consideration in the choice of a dedicated AAC solution, as the main focus was finding the best solution for the individual end user, but, after the Merger, the range of solutions could reduce, and costs could rise.³⁶
140. The CMA believes that this evidence from third parties supports the view that the Parties are very close competitors in the development and supply of both dedicated AAC hardware and AAC software, and in the downstream supply of dedicated AAC solutions based on this hardware and software. A feature of this close competition has been the constant innovation by both companies to develop new products, and the Merger has already resulted in a rationalisation of each Party's existing products and product development plans. Some customer harm may therefore have already materialised.

³⁶ Tobii's products are typically more expensive than those of Smartbox. For example, a Grid Pad 12 by Smartbox costs around £3950 without eye gaze (£5200 with eye gaze) whereas Tobii's I-12 and I-15 costs more than £8,500.

Competitive constraint from alternative providers

141. Unilateral effects are more likely where customers have little choice of alternative supplier. The CMA considered whether there are alternative suppliers which, post-Merger, would provide a sufficient competitive constraint on the merged entity.

Parties' views

142. Tobii submitted that, in addition to Jabbla/Techcess,³⁷ Saltillo, Abilia and AssistiveWare, there are other companies active in the sector, for example Hypertec (which sells via its Keytools brand in the UK) and Voiceonics Ltd. However, no further details were provided on these other companies and no third party mentioned them.

Third party views

143. Third parties indicated that there are few alternative providers of dedicated AAC solutions in the UK. Most said that Liberator and Techcess are the only significant alternative providers.
144. Liberator, a subsidiary of PRC, is a US-based company which operates worldwide. PRC develops dedicated AAC hardware and AAC software products as well as some AAC access methods (including eye gaze cameras). In the UK, Liberator sells PRC's dedicated AAC hardware with either PRC's AAC software or Smartbox's Grid 3 and, if required, with an access method. From January 2019, Tobii is the exclusive supplier of eye gaze cameras to PRC.
145. Techcess is the UK business of Jabbla, a Belgium-based provider of dedicated AAC solutions. Techcess sells dedicated AAC hardware from Jabbla with either Jabbla's AAC software or Smartbox's Grid 3 and, if required, with an access method. Jabbla sources eye gaze cameras from EyeTech, Alea and Tobii (and sometimes LC Technologies).
146. Other smaller alternative suppliers of dedicated AAC solutions in the UK identified by third parties are:
- (a) Inclusive Technology. This company is mainly a reseller and is therefore almost entirely dependent on suppliers of dedicated AAC solutions (eg the Parties). Both the Parties and third parties described Inclusive Technology as a 'catalogue-based reseller' of others' products, which includes

³⁷ Techcess is the UK business of Jabbla see paragraph 145.

dedicated AAC solutions. Only a small proportion of Inclusive Technology's revenue is gained through the sale of products it develops. These products, which are focused on the education sector, represented [REDACTED] of its revenues in 2017. Moreover, Inclusive Technology told the CMA that it does not compete with the Parties. Therefore, the CMA believes that Inclusive Technology is not an effective competitor to the Parties in the supply of dedicated AAC solutions in the UK.

(b) AssistiveWare. A small proportion of customers which responded to the CMA's questionnaire mentioned this company as an alternative provider. However, AssistiveWare only develops software for iOS, which is therefore only available on Apple's iPads. These solutions are not suitable for users with complex needs and are therefore not dedicated AAC solutions which compete with the Parties products. Therefore, the CMA believes that AssistiveWare is not an effective competitor to the Parties' in the supply of dedicated AAC solutions in the UK.

(c) One customer and one competitor mentioned Abilia as an alternative provider. However, Tobii told the CMA that Abilia's focus is home automation/environment control. In 2017, Abilia earned [REDACTED] of its revenues from low-tech AAC electronic typewriters (and the remainder from non-AAC products). Therefore, the CMA believes that the extent to which Abilia competes with the Parties, either upstream in dedicated AAC hardware or downstream in dedicated AAC solutions, is very limited.

147. The CMA explored with third parties whether there are suppliers upstream which operate globally in the supply of dedicated AAC hardware or AAC software which would not be captured by the competitor set for the downstream market for dedicated AAC solutions in the UK. However, third parties indicated that the only additional competitors would be small local firms (eg Lingraphica in the US or KMD in the Netherlands), which would impose only a very small constraint on the Parties globally. Third parties told the CMA consistently that the principal global competitors to the Parties in the upstream markets for dedicated AAC hardware or AAC software are also PRC/Liberator and Jabbla/Techcess.

Internal documents

148. Some of the Parties' internal documents provide an overview of the competitive constraints posed by alternative suppliers.

149. Smartbox's internal documents focus almost entirely on [REDACTED]. For example:

(a) [REDACTED]

(b) [REDACTED]

(c) [REDACTED]

(d) [REDACTED]

150. The CMA found some internal documents which indicate that the Parties occasionally highlight developments by other suppliers. For example:

(a) [REDACTED].

(b) [REDACTED].

However, overall, while companies other than Liberator and Techcess are occasionally mentioned in each Party's internal documents, this is infrequent.

Conclusion on alternative suppliers

151. For the reasons set out above, the CMA believes that only Liberator/PRC and Techcess/Jabbla are credible competitors to the Parties in the supply of dedicated AAC solutions in the UK, and in the upstream supply of dedicated AAC hardware and AAC software globally.

152. The CMA asked [REDACTED] about their future development plans. [REDACTED]. On the basis of this evidence, and consistent with the Parties' post-Merger plans as outlined in the internal document section, the CMA does not believe that [REDACTED] will become a closer competitor to the merged entity in the foreseeable future.

Constraints from consumer tablets

Parties' views

153. Tobii submitted that 'off the shelf' consumer tablet devices, such as Apple's iPad, can often fulfil an end user's requirements (particularly end users with a high degree of mobility, who do not require a wheelchair mount, extra ruggedness or more complex access methods).

154. Tobii stated that end users who have particularly 'complex' needs often require tailored solutions. For these end users, suppliers need to undertake significant investment to develop customised solutions to meet the user's precise needs. However, many end users have relatively 'simple' needs which can be met by a wide range of solutions, whether dedicated AAC solutions or other AAC solutions, such as Apple iPads and Windows tablets loaded with appropriate software. For end users with 'simple' needs, the Parties therefore compete with 'big-tech' firms such as Apple and Microsoft, who benefit from

large economies of scale. Tobii said that in between these two extremes is a spectrum of end users who can use dedicated AAC solutions and/or consumer tablets adapted with necessary peripherals (eg rugged cases, wheelchair mounts, etc).

155. Tobii highlighted that several distributors actively market consumer tablets alongside Tobii's devices. For example, Inclusive Technology lists iPad accessories alongside Tobii's products. Similarly, Apple markets the AAC functionality of its iPad, describing it as including: "*powerful accessibility technology for anyone with extensive physical motor limitations.*"³⁸
156. Tobii added that there are several manufacturers (including PRC, Saltillo (which is part of the PRC group), Logan Technologies and Forbes AAC) who specially produce accessories for consumer tablets that can increase their ruggedness or enhance their AAC functionality (eg incorporating eye-tracking features, or improved speakers). Consequently, many customers with more demanding requirements could, and did, readily switch between consumer tablet-based devices and dedicated AAC solutions.

Internal documents

157. The CMA found that the Parties did make some sales to end users with less complex needs, in particular through resellers. For example, Smartbox has supplied Grid 3 as an app on both iOS and Windows consumer tablets for many years. Consistent with this activity, the CMA noted some internal documents which consider the activities of the 'big-tech' firms in this sector, ie Apple and Microsoft. For example:

(a) [REDACTED].

(b) [REDACTED].

158. However, overall, the CMA found very little reference to consumer-tablet based solutions, or to the Parties' competitors for these products, in their internal documents. This is consistent with this activity being a small part of the Parties' overall activity, which is rather focussed on supplying dedicated AAC solutions and the upstream components of those solutions.

³⁸ <https://www.apple.com/uk/accessibility/ipad/physical-and-motor-skills/> The CMA notes that none of these functionalities addresses communication impairments.

Third parties' views

159. Third parties consistently emphasised customer support as one of the key advantages of buying a dedicated AAC solution compared with buying a consumer tablet based solution.
160. Third parties also noted several features of dedicated AAC hardware which were not typically part of consumer tablet hardware, including: louder speakers for communication aids, built-in mounting points, robustness and fitness for purpose, the availability and range of access methods, such as eye gaze, and battery life. Third parties said that consumer tablets would be preferable on the basis of their weight, size and price.
161. Customers also mentioned differences in software which might affect the suitability of the solution to the end user, in particular its compatibility with different access methods. Several customers said that the iPad was not an option for users that needed eye gaze technology. Smartbox also noted that its Grid software did not provide a user with text messaging on an iOS device. One customer expressed a preference for sophisticated communication software, which is supported by speech and language therapists, rather than the simpler communications software that is available on consumer tablets. Another customer said that, due to the limitations in software compatibility, the iPad was good for users with learning disabilities only.
162. Overall, customers said that the suitability of the solution depended on the end users' needs. Some NHS hubs said that a standard or adapted consumer tablet might be an alternative for some users with less complex needs but not for the majority of users with complex needs, who would require a bespoke device. Given the significant price difference between a dedicated AAC solution and a consumer tablet based solution, customers did not consider the two solutions as substitutable alternatives for most users. Where a consumer tablet based solution would meet the user's needs, this would always be preferred (on the basis of price), but for many end users this solution was not suitable.

CMA's assessment of constraints from consumer tablets

163. The evidence obtained by the CMA indicates that there is a great variety of communication needs and that the suitability of a solution depends on the specific needs of an end user. The more complex the needs of the end user, the more limited are the options available.
164. The CMA has found that there are significant differences between dedicated AAC solutions and consumer tablet based solutions. In particular:

- (a) AAC software includes features that address specific needs of end users. Some of these features are not available on some consumer devices (eg texting or compatibility with some access methods). The Parties' dedicated AAC solutions enable all these features.
 - (b) Ruggedness and access methods are important features of the Parties' dedicated AAC hardware as these products serve end users with complex needs. The NHS selection criteria for a user's needs to be met through an NHS hub show that these users are likely to rely on an access method and need their device to be mounted on a wheelchair. In contrast, the iPad, for example, does not enable eye tracking.
 - (c) Innovation in dedicated AAC solutions is targeted at meeting the complex needs of end users, while innovation in consumer devices is focussed more on the general market.
 - (d) The price difference between consumer tablet based solutions and dedicated AAC solutions is very significant, with consumer tablets costing around £300 to £1,000 compared with the Parties' products costing up to £5,200 for Smartbox and over £8,500 for Tobii.
 - (e) Dedicated AAC solutions come with individual support, both in training and after-sales service. In contrast, consumer tablet providers offer little if any support.
165. On the basis of this evidence, the CMA does not believe that consumer tablet based solutions can meet the complex communication needs of the end users principally served by the Parties. The CMA recognises that some of the Parties' solutions may face some constraint from consumer tablet based solutions but these solutions are not substitutes for the dedicated AAC solutions which are the focus of the Parties' business. Therefore the CMA cannot rely on the suppliers of these products (eg Apple and Microsoft) to constrain the Parties post-Merger.

Conclusion on horizontal unilateral effects

166. For the reasons set out above the CMA believes that, both upstream in the supply of dedicated AAC hardware and AAC software, and downstream in the supply of dedicated AAC solutions, the Parties have very high shares of supply, they are each other's closest competitor, and there are limited alternative providers. The CMA believes that competition between the Parties has driven innovation in the sector, to the benefit of end users, as well as lower prices, better quality and a wider range of products than would

otherwise be the case. Accordingly, the CMA believes that the Merger raises significant competition concerns as a result of horizontal unilateral effects in:

- (a) the (upstream) supply of dedicated AAC hardware worldwide;
- (b) the (upstream) supply of AAC software worldwide; and
- (c) the (downstream) supply of dedicated AAC solutions in the UK.

Vertical effects

167. Vertical effects may arise when a merger involves firms at different levels of the supply chain. Vertical mergers may be competitively benign or even efficiency-enhancing but, in certain circumstances, can weaken rivalry, for example when they result in foreclosure of the merged firm's competitors at either level of the supply chain. The CMA only regards such foreclosure to be anticompetitive where it results in an SLC in the foreclosed market(s), not merely where it disadvantages one or more competitors.³⁹
168. The CMA has assessed three vertical theories of harm in relation to the Merger:
- (a) input foreclosure, whereby the merged entity would restrict the provision of Smartbox's AAC software as an important input into rival suppliers of dedicated AAC solutions in the UK;
 - (b) input foreclosure, whereby the merged entity would restrict the provision of Tobii's eye gaze cameras as an important input to rival suppliers of dedicated AAC solutions in the UK; and
 - (c) customer foreclosure, whereby either through Smartbox's role as an important distributor of rival eye gaze cameras or through degrading the interoperability of those cameras with the Grid (which might affect sales of rival cameras through other distributors which sell the Grid), rival eye gaze cameras are weakened, benefitting Tobii in its supply of eye gaze cameras.
169. The CMA's approach to assessing vertical theories of harm is to analyse (a) the ability of the merged entity to foreclose competitors, (b) its incentive to do so, and (c) the overall effect of the strategy on competition.⁴⁰ The CMA discusses each of these aspects for each strategy below.

³⁹ In relation to this ToH 'foreclosure' means either exit of a rival or to substantially competitively weaken a rival.

⁴⁰ See section 5.6 of the CMA's Merger Assessment Guidelines.

Input foreclosure of Smartbox's AAC software to rival suppliers of dedicated AAC solutions

170. The CMA considered whether the merged entity may have the ability and incentive to foreclose competitors that resell Smartbox's AAC software (eg the Grid), including Liberator and Techcess (and Abilia, Sensory Guru, DH2, Inclusive Technology and RSL Steeper,⁴¹ although as these firms are not close competitors to the Parties in the supply of dedicated AAC solutions (see horizontal effects section), the Parties would have less incentive to foreclose them and the effect in the downstream market would be limited).
171. The Parties said that they typically use a distributor when it offers "added value" to the products being re-sold, eg where they integrate the Parties' products into larger systems and solutions, such as sensory room solutions or environmental control and home adaptation systems.

Ability

172. The merged entity could restrict the resale of its Grid software through competitors by ceasing to sell the Grid, or selling it only on worse terms, to rival distributors. Competitors (including both Liberator and Techcess) told the CMA that they were concerned about this possibility. The CMA notes that, while distributors could circumvent a refusal to supply strategy by buying the Grid as standalone software directly from the Smartbox website to install on their hardware, they would pay the retail price instead of the wholesale price, which would increase the distributors' costs and make them less competitive in the supply of dedicated AAC solutions.
173. Smartbox submitted that it offers the Grid software at a discount to distributors. Discounts vary according to the type of distributor but range between [redacted] off the retail prices. The increased cost to a distributor of switching to the retail version of the Grid (at current retail prices) would be approximately [redacted], which equates to an increase of around [redacted] on a £[redacted] dedicated AAC solution like the Accent 1000 from Liberator. This could be sufficient to weaken the distributor's position in the downstream market.
174. Overall, the sales of the Grid represents a small share of competitors' and resellers' total revenues, ranging from [redacted] for DH2 (a pure reseller) [redacted] for Inclusive Technology in 2017. Liberator's and Techcess's shares were around [redacted] in both 2017 and 2018.

⁴¹ There are also companies that are not Smartbox distributors but are offered Smartbox products at discounted "dealer" prices [redacted].

175. However, third parties told the CMA that the effect on competition through foreclosure of the Grid was potentially very significant as the Grid is an important driver of retail sales. This issue was central to most competitors' concerns about the Merger. One competitor stated that up to [X] of its UK sales have been 'influenced' by the Grid (ie [X] of its hardware was sold with the Grid installed). Another competitor submitted that, in the UK in 2017, [X] of its hardware which is compatible with the Grid was sold with the Grid. The CMA estimated that this equates to [X] of its total revenue being related to the Grid.
176. The CMA found that, given the Parties' high upstream shares in the supply of AAC software worldwide and the closeness of competition between the Parties in AAC software, with very limited alternative providers, rival distributors would have few options in the event of a price increase or degradation in quality (eg functionality, compatibility with other products or support) of the Grid.
177. The CMA explored the possibility of Liberator and Techcess introducing new or updated software products as alternatives to the Grid. [X].
178. Based on this evidence, the CMA believes that the merged entity would have the ability to impose cost increases or degrade the quality of competing distributors' dedicated AAC solutions involving the Grid, and that those competitors would have a limited ability to substitute to alternative software. Therefore, the CMA believes that the merged entity would have the ability to harm its downstream competitors through this input foreclosure strategy.

Incentive

179. An input foreclosure strategy implies a loss of profits in the input market upstream, in this case in sales of the Grid to AAC competitors and resellers, and a gain in the retail market downstream, in this case in sales of the merged entity's dedicated AAC solutions.
180. In response to a cost increase or degradation in quality, affected customers could do one of three things:
- (a) Some customers may not switch provider and the rival would retain the sale, though with reduced profitability assuming that the cost increase is not fully passed through. Smartbox would be charging a higher price for the sale of the same product to the same customer so its profitability would increase.
 - (b) Some customers may switch away from the rival to the Parties' dedicated AAC solution. In these cases, the Parties would lose the wholesale

margin from selling the Grid to a distributor, but would gain the overall margin made on selling an additional dedicated AAC solution. Smartbox estimated that its wholesale margin on a sale of the Grid to a distributor is about [REDACTED]. Tobii estimated that, in the period between January 2017 and July 2018, it made an average profit of more than £[REDACTED] per unit on its dedicated AAC hardware (which includes the software margin).⁴² In the same period, Smartbox made an average profit of more than [REDACTED] per unit on its dedicated AAC hardware (including the software margin).⁴³ The CMA has used these figures as proxies for the overall margin made on selling an additional dedicated AAC solution.⁴⁴ Since the margin on either of the Parties' dedicated AAC solutions is significantly higher than the wholesale margin made on the Grid, the foreclosure strategy would be highly profitable for each migrating customer.

(c) Some customers may switch to a dedicated AAC solution with alternative software not from the Parties, or not purchase a dedicated AAC solution at all. In this case, the Parties would lose the wholesale margin made on the Grid, with no gain.

181. The Merger increases Smartbox's incentives to carry out such a strategy because it would recapture customers that switch to Tobii's dedicated AAC solutions, as well as those that switch to Smartbox's hardware.
182. Since the merged entity's overall profit on the sale of dedicated AAC solutions is considerably higher than the wholesale margin made on the Grid software, even a small proportion of sales diverted to the Parties' dedicated AAC solutions in comparison to those diverted away from the Parties' software would be sufficient to make the foreclosure strategy profitable. For example, even if all customers in outcome (b) bought the cheaper Smartbox dedicated AAC hardware, the margin gained from one customer switching would be more than [REDACTED] than the margin lost per customer switching in outcome (c). Therefore, even if [REDACTED] customers switched away from the Grid than switched to Smartbox hardware, this strategy would still be profitable.

⁴² [REDACTED], Tobii submitted that during the period January 2017-July 2018 it earned an average per-unit gross profit margin of £[REDACTED], whereas [REDACTED], it submitted a gross margin of £[REDACTED] and £[REDACTED] for its I-12 and I-15 hardware products, respectively. Tobii did not provide variable profit margins.

⁴³ [REDACTED], Smartbox submitted that during the period January 2017-July 2018 it earned an average per-unit gross profit margin [REDACTED] on Grid Pad 12 with Grid software sold to customers, and [REDACTED] on other hardware devices with Grid software sold to customers.

⁴⁴ The profit margin estimates are based on the Parties' allocation of costs across different products. However, given the large differences between margins, the CMA's results are not particularly sensitive to changes in cost allocations.

183. Moreover, the CMA believes that the diversion to the Parties' dedicated AAC solutions would actually be far higher than the diversion away from the Grid because:
- (a) The Grid is the market leading AAC software in the UK, reflected in very high shares of supply;
 - (b) Both customers and competitors consistently confirmed the popularity of the Grid software; and
 - (c) Customers and competitors suggested that switching is less likely to occur with respect to AAC software than dedicated AAC hardware, ie if end users need to change their dedicated AAC solution (eg at the end of product life or if their needs change), they are more likely to change dedicated AAC hardware than they are to change AAC software.
184. Based on this evidence, the CMA believes that the loss from engaging in a strategy to foreclose Smartbox's AAC software to rival suppliers of dedicated AAC solutions would be clearly outweighed by the gain from the merged entity winning additional downstream customers. Therefore, the CMA believes the Parties would have the incentive to engage in this input foreclosure strategy.

Effect

185. The effect of the merged entity foreclosing Smartbox's AAC software to rival suppliers of dedicated AAC solutions would be to increase rivals' costs (or to otherwise degrade their offering). This would weaken competitors and increase further the merged entity's already very strong position in the supply of dedicated AAC solutions in the UK.

Conclusion on input foreclosure of Smartbox's AAC software

186. For the reasons set out above, the CMA believes that the Parties may have the ability and incentive to engage in a (partial) input foreclosure strategy in relation to the supply of Smartbox's AAC software to rival suppliers of dedicated AAC solutions in the UK. This would have the effect of increasing rival's costs (or otherwise degrade their offering), resulting in significant competition concerns in relation to the supply of dedicated AAC solutions in the UK.

Input foreclosure of Tobii's eye gaze cameras to rival suppliers of dedicated AAC solutions

187. The CMA considered whether the merged entity may have the ability and incentive to foreclose competitors that resell Tobii's eye gaze cameras. Tobii's distributors in the UK for its eye gaze cameras are PRC and Jabbla, (and others such as Inclusive Technology and Sensory Guru, although as these firms are not close competitors to the Parties in the supply of dedicated AAC solutions (see horizontal effects section) the Parties would have less incentive to foreclose them and the effect in the downstream market would be limited).
188. While the Parties do not overlap in the upstream supply of eye gaze cameras, the Merger might change the incentive to foreclose rivals due to the Parties' overlap in the downstream supply of dedicated AAC solutions in the UK.

Ability

189. Tobii could cease supplying its eye gaze cameras to rival distributors of dedicated AAC solutions (total foreclosure), or could increase the wholesale price of those eye gaze cameras, worsen the terms on which they are supplied, or develop its eye gaze cameras in ways that favour its own dedicated AAC hardware and AAC software (partial foreclosure). One competitor told the CMA that it was concerned that, after the Merger, Tobii would stop supplying its eye gaze cameras.
190. Tobii's strong position in the supply of eye gaze cameras is evidenced by several factors:
- (a) Customers and competitors identified a limited set of worldwide competitors for eye gaze cameras: Irisbond, EyeTech, LC Technologies and Alea. These competitors confirmed to the CMA that there is no other company supplying eye gaze cameras for AAC use worldwide.
 - (b) Among these five suppliers, Tobii has the largest share of supply at the UK, EEA and global level. The CMA estimated that Tobii has a [50%-60%] share of supply of eye gaze cameras in the UK, [40%-50%] at the EEA level and [40%-50%] at a global level.
 - (c) [REDACTED].
 - (d) [REDACTED] told the CMA that, in 2017, [REDACTED] of its sales by value ([REDACTED] by volume) of dedicated AAC solutions included eye gaze cameras. [REDACTED]. [REDACTED] estimated that losing Tobii's eye gaze cameras would affect [REDACTED] of its business and prompt it to [REDACTED]. [REDACTED] estimated that this would take [REDACTED].

(e) [X] company, told the CMA that, in 2017, [X] of its products were sold with eye gaze cameras. Of these, [X] were supplied by Tobii, with the remaining [X] supplied by EyeTech.

191. Based on this evidence, the CMA believes that the merged entity could have the ability to impose cost increases or degrade the quality of competing distributors' dedicated AAC solutions involving eye gaze cameras. Therefore, the CMA believes that the merged entity could have the ability to harm its downstream competitors through this input foreclosure strategy.

Incentive

192. This foreclosure strategy would imply a loss of profits in the upstream supply of Tobii's eye gaze cameras to rival distributors and a gain in the downstream supply of the merged entity's dedicated AAC solutions in the UK.

193. As above in relation to the (partial) input foreclosure of Smartbox's AAC software, in response to an input foreclosure strategy of Tobii's eye gaze cameras, three outcomes could occur:

(a) Some customers may not switch their provider of dedicated AAC solution or their eye gaze product. The rival would retain the sale of the dedicated AAC solution, and – depending on the exact form of (partial) foreclosure – Tobii's profit is likely to increase at the expense of the distributor and/or the customer.

(b) Some customers might switch away from the distributor's dedicated AAC solution (ie dedicated AAC hardware, AAC software and eye gaze camera) to the Parties' dedicated AAC solution in order to continue using Tobii's eye gaze camera. In this case, the Parties would lose the wholesale margin made on the sale of Tobii's eye gaze camera to the rival distributor, but gain the overall margin made on the supply of the dedicated AAC solution (including the retail margin made on the camera).⁴⁵ The size of the net gain under this scenario would depend on several factors, including whether the rival distributor was supplying hardware or software from the Parties (in which case there would be a greater loss of wholesale margin through this strategy).

(c) Some customers might stay with their distributor but switch to a different eye gaze camera, or switch to a different distributor with a different eye

⁴⁵ See paragraph 180(b) for margins.

gaze camera. In this case, Tobii would lose the wholesale margin made on the sale of its eye gaze camera.⁴⁶

194. The Merger would increase Tobii's incentives to carry out this strategy because, post-Merger, it would also capture any customers who switch to Smartbox as a distributor.
195. Since the merged entity's overall profit on the sale of its dedicated AAC solutions is significantly higher than the wholesale margin made on Tobii's eye gaze cameras, this foreclosure strategy would be profitable if a reasonable proportion of customers chose options (a) and (b) rather than (c). For example, even if all customers in outcome (b) bought the least profitable Smartbox dedicated AAC solution, the margin gained from one customer switching would be more than [redacted] higher than the margin lost per customer in outcome (c).⁴⁷ Therefore, in the most conservative scenario it is enough for the Parties to recapture [redacted] of the customers who switched away from Tobii's eye-gaze cameras to Smartbox's dedicated AAC solution for the strategy to be profitable. This proportion decreases to roughly 17% if customers switch to Tobii's more profitable dedicated AAC solution.
196. Moreover, the CMA believes that the diversion to the Parties' dedicated AAC solutions would actually be sufficiently higher than the diversion away from Tobii's eye gaze cameras because:
- (a) Customers indicated that eye gaze cameras are an important component of a dedicated AAC solution;
 - (b) Several third parties indicated that the choice of eye gaze camera will drive the choice of dedicated AAC solution for some users; and
 - (c) Customers and competitors, including Smartbox, said that Tobii is the most popular and best performing eye gaze camera in the AAC market. This is reflected by Tobii's high share of supply in eye gaze cameras both in the UK and worldwide.
197. Based on this evidence, the CMA believes that the loss from engaging in a strategy to foreclose Tobii's eye gaze cameras to rival suppliers of dedicated AAC solutions may be outweighed by the gain from the merged entity winning additional downstream customers. Therefore, the CMA believes the Parties would have the incentive to engage in this input foreclosure strategy.

⁴⁶ Tobii submitted that the profit margin made on its PCEye products ranges from £[redacted] to £[redacted]. the profit margin is [redacted] lower when sold through third parties: £[redacted].

⁴⁷ Based on the average variable margin made between January 2017 and July 2018 for the sale of Smartbox dedicated AAC hardware devices other than Grid Pad 12 and the most profitable Tobii PCEye product.

Effect

198. The effect of the merged entity foreclosing Tobii's eye gaze cameras to rival suppliers of dedicated AAC solutions would be to increase rivals' costs (or to otherwise degrade their offering). This would weaken competitors and increase further the merged entity's already very strong position in the supply of dedicated AAC solutions in the UK.

Conclusion on input foreclosure of Tobii's eye gaze cameras

199. For the reasons set out above, the CMA believes that the Parties may have the ability and incentive to engage in a (partial) input foreclosure strategy in relation to the supply of Tobii's eye gaze cameras to rival suppliers of dedicated AAC solutions in the UK. This would have the effect of increasing rival's costs (or otherwise degrade their offering), resulting in significant competition concerns in the supply of dedicated AAC solutions in the UK.

Customer foreclosure of eye gaze camera competitors

200. Before the Merger, Tobii's dedicated AAC solutions exclusively used Tobii's own eye gaze cameras, while Smartbox used eye gaze cameras produced by Alea, EyeTech, Irisbond and LC Technologies, all of which are compatible with the Grid. These four companies competed with Tobii in the supply of eye gaze cameras globally, dependent largely on sales either to Smartbox or to distributors selling dedicated AAC solutions involving Smartbox's AAC software. All four of these competing suppliers of eye-gaze cameras expressed concern that the merged entity would reduce their ability to sell their cameras to suppliers of dedicated AAC solutions. This would weaken their position in the supply of eye gaze cameras globally, strengthening Tobii's already strong position.

Ability

201. The merged entity could implement a customer foreclosure strategy in two ways:
- (a) Strategy 1: Through Smartbox's position as a distributor, it could:
- (i) cease sourcing eye gaze cameras from Tobii's rivals; or

(ii) promote Tobii's eye gaze cameras as a 'preferred' or 'recommended' solution in bundles with its hardware and/or software.⁴⁸

(b) Strategy 2: Through Smartbox's position in AAC software, it could make Tobii's rivals' products incompatible with the Grid (or develop the Grid to favour integration with Tobii's eye gaze products), limiting the sales of competing eye gaze suppliers to all distributors supplying Grid software.⁴⁹

202. In relation to Strategy 1, the Parties' ability to vary the way they source eye gaze cameras is evidenced by Smartbox's recent changes. After signing the reseller agreement with Tobii in August 2018, Smartbox switched a large proportion of its eye gaze camera requirements to Tobii. This happened in a short period and at no significant financial cost.
203. However, to have an effect on competition in the upstream supply of eye gaze cameras, which is a global market, Smartbox would need to be a significant customer for rival eye gaze camera suppliers on a global basis.
204. At a global level, amongst the four suppliers of dedicated AAC solutions, Smartbox has a small share (around [X]). However, the largest suppliers of dedicated AAC solutions are Tobii (around [X]) and PRC (around [X]). Tobii uses only its own eye gaze cameras and PRC told the CMA that, from January 2019, all of its eye gaze cameras will be provided by Tobii, and only Tobii cameras will be compatible with its dedicated AAC hardware and AAC software. Therefore, neither Tobii nor PRC represents a route to market for alternative eye gaze camera suppliers. The only remaining customer for eye gaze suppliers is Jabbla, which has a very small share of dedicated AAC solutions globally (the CMA estimates Jabbla to have around 2% share worldwide). The CMA notes that eye gaze camera suppliers also make sales to distributors or directly to customers, but not to distributors or customers using either Tobii or PRC solutions. Therefore, the CMA believes that, for Tobii's rivals in the supply of eye gaze cameras at the global level, Smartbox and distributors selling dedicated AAC solutions involving Smartbox products (typically its AAC software), are significant customers.
205. Tobii's rivals in the supply of eye gaze cameras confirmed that there are only very limited alternative customers worldwide to Smartbox, identifying Jabbla as the only remaining route to market. For example:

⁴⁸ The CMA asked customers who decides which eye gaze camera is to be included in a dedicated AAC solution: the distributor or the customer. Most customers told the CMA that the decisions regarding eye gaze cameras are made by the customer working with the end user. However, one customer told the CMA that, in the context of a purchase from Smartbox, the eye gaze cameras purchased would be those recommended by Smartbox itself.

⁴⁹ Several eye gaze producers told the CMA that it would be enough for Smartbox to change a few lines of code to make the Grid software incompatible with their eye gaze cameras.

- (a) One eye gaze camera competitor told the CMA that it sells eye gaze cameras through Jabbla, but that sales via Jabbla represent [X] sales and there was [X] through this route (estimating Jabbla to have [X] of global volumes of dedicated AAC hardware). It told the CMA that, in several countries, the merged entity will be the only distributor of dedicated AAC solutions, leaving no route to that downstream market.
 - (b) Another eye gaze camera competitor said that its products are compatible with Jabbla's software and hardware, but Jabbla does not resell its cameras. It said that Jabbla represents the most viable alternative to Smartbox, but its software does not have all of the Grid's functionalities.
 - (c) Another eye gaze camera competitor told the CMA that there are a few alternatives to Smartbox, identifying Jabbla as an alternative in Europe, though with much smaller market shares, and PRC in the US.
206. In relation to Strategy 2, to have an effect on competition in the upstream supply of eye gaze cameras, which is a global market, Smartbox's Grid software would need to be present in a high proportion of dedicated AAC solutions on a global basis, and it would need to be the case that customers could not easily switch to a different AAC software provider. Smartbox's share of supply in AAC software on a global basis is around [20%-30%]. However, as for strategy 1, due to the lack of compatibility with Tobii and PRC's software (which collectively account for around [X], see paragraph 204), the only remaining compatible software would be Jabbla (around [X]).
207. Eye gaze camera suppliers raised serious concerns about this potential foreclosure strategy since the vast majority of their global AAC sales are related to the Grid software. For example:
- (a) [X] told the CMA that [X] of its sales are made through Smartbox. [X] told the CMA that a foreclosure strategy, however done, would [X].
 - (b) [X] told the CMA that [X] of its sales are linked to the Grid software (either through Smartbox or distributors). Therefore, incompatibility with the Grid [X].
 - (c) [X] said that [X] of its sales are linked to the Grid software.
 - (d) [X] told the CMA that [X] of its European sales, and approximately [X] of its worldwide sales, are linked to the Grid software.
208. Eye gaze camera suppliers told the CMA that standalone sales of eye gaze cameras through resellers are possible, but that these sales occur mostly in combination with the Grid software.

209. Based on this evidence, the CMA believes that the merged entity would have the ability to foreclose Tobii's eye gaze camera rivals through a customer foreclosure strategy.

Incentive

210. In response to a (total) customer foreclosure strategy by Smartbox, customers would have two choices:

(a) Customers could keep their planned eye gaze camera but switch their purchase route to Jabbla, or to a third party distributor offering Jabbla (the only remaining alternative compatible with the rival's eye gaze camera). In this case, the merged entity would lose either the profit made on the sale of its dedicated AAC solution (Strategy 1) or the wholesale margin made on its sale of the Grid (Strategy 2, for solution sales not made through Smartbox).

(b) Customers could switch to Tobii's eye gaze camera. In this case, the Parties would lose the retail margin made on the resale of the third party eye gaze camera but would gain the overall profit made on the sale of Tobii's eye gaze camera. Smartbox estimated that, in the period January 2017-July 2018, Smartbox's margin on third party cameras was on average [redacted] per unit, whereas the total profit on Tobii's cameras was more than £[redacted] per unit (£[redacted] if sold through PRC). Under Strategy 2, the Parties may also attract customers who would otherwise have bought a rival dedicated AAC solution with an eye gaze camera to a Tobii/Smartbox dedicated AAC solution, with a significantly higher gain (see paragraph 180(b)).

211. The merged entity's longer term incentive could be even higher if this strategy were to make rival eye gaze camera suppliers unviable, or unable to invest in developing their products. This would increase further Tobii's already strong position in the supply of eye gaze cameras worldwide.

212. Although the CMA has limited evidence on likely diversion rates (noting that the importance of different parts of a dedicated AAC solution varies for different customers), the very limited options for Tobii's eye gaze rivals, the difference in profit gained compared with that lost for the merged entity, and the likely long-term effects, together indicate that a foreclosure strategy may be profitable.

Effect

213. The effect of the merged entity foreclosing Tobii's eye gaze camera rivals would be to increase further Tobii's already strong global position in the supply of eye gaze cameras worldwide (and possibly consequently the merged entity's position in dedicated AAC solutions in the UK).

Conclusion on customer foreclosure of eye gaze camera competitors

214. For the reasons set out above, the CMA believes that the Parties may have the ability and incentive to engage in a customer foreclosure strategy in relation to Tobii's rival suppliers of eye gaze cameras. This would have the effect of increasing further Tobii's already strong position in the supply of eye gaze cameras, resulting in significant competition concerns in the supply of eye gaze cameras worldwide.

Barriers to entry and expansion

215. Entry, or the expansion of existing firms, can mitigate the initial effect of a merger on competition, and in some cases may mean that there is no SLC. In assessing whether entry or expansion might prevent an SLC, the CMA considers whether such entry or expansion would be timely, likely and sufficient.⁵⁰
216. Tobii submitted that it was "difficult...to identify barriers to entry in a brand new market that is at a very early stage of its development" and that "market penetration remains extremely low". Tobii also noted that "the next major market entry may ... take the form of a completely new product/solution" and remarked, as an example, that consumer tablets have been quickly adapted to the needs of AAC users. Tobii did not expand on these views. Tobii said that the main barrier to expansion was the lack of end user awareness about how to use/implement AAC products (hardware and software).
217. However, evidence from third parties did not support the Parties' views.
218. With regard to AAC software, one software provider told the CMA that it would likely take between 18 to 24 months, along with a dedicated team, to develop a software product like Grid or Communicator.⁵¹ Another stated that any expansion in AAC software was dependent on Apple, as this was the only firm which could become a strong software competitor to Smartbox and Tobii.

⁵⁰ [Merger Assessment Guidelines](#), from paragraph 5.8.1.

⁵¹ [REDACTED].

However, this depended on where end users with complex AAC needs ranked in Apple's development priorities.

219. With regard to eye gaze cameras, [X].
220. For the reasons set out above, the CMA believes that entry or expansion would be neither timely, likely nor sufficient to prevent a realistic prospect of an SLC as a result of the Merger.

Third party views

221. The CMA contacted customers and competitors of the Parties and received evidence from many parties.
222. Every customer who responded raised concerns regarding the impact of the Merger. Customers were concerned that the Merger would lead to a reduction in choice of available products, reduced innovation, reduced customer service and support and higher prices.
223. Competitors were concerned both about the horizontal and vertical effects of the Merger, as set out in the competitive assessment above.
224. A number of third parties (including from outside the UK) proactively expressed their concern about the Merger.
225. Third party comments have been taken into account where appropriate in the competitive assessment above.

Conclusion on substantial lessening of competition

226. Based on the evidence set out above, the CMA believes that it is or may be the case that the Merger has resulted, or may be expected to result, in an SLC as a result of:
 - (a) horizontal unilateral effects in the (upstream) supply of dedicated AAC hardware worldwide;
 - (b) horizontal unilateral effects in the (upstream) supply of AAC software worldwide;
 - (c) horizontal unilateral effects in the (downstream) supply of dedicated AAC solutions to customers in the UK;
 - (d) input foreclosure of Smartbox's AAC software to the Parties' rivals in the (downstream) supply of dedicated AAC solutions to customers in the UK;

- (e) input foreclosure of Tobii's eye gaze cameras to the Parties' rivals in the (downstream) supply of dedicated AAC solutions to customers in the UK; and
- (f) customer foreclosure by the merged entity (Smartbox in particular) of Tobii's eye gaze camera competitors worldwide.

Exceptions to the duty to refer

227. Where the CMA's duty to refer is engaged, the CMA may, pursuant to section 22(2)(a) of the Act, decide not to refer the merger under investigation for a Phase 2 investigation on the basis that the markets concerned are not of sufficient importance to justify the making of a reference (the *de minimis* exception).
228. The CMA has considered whether it is appropriate to apply the *de minimis* exception to the present case.

Markets of insufficient importance

229. In considering whether to apply the *de minimis* exception, the CMA will consider, in broad terms, whether the costs involved in a reference would be disproportionate to the size of the market(s) concerned, taking into account also the likelihood that harm will arise, the magnitude of competition potentially lost and the duration of such effects.⁵²

'In principle' availability of undertakings in lieu

230. The CMA's general policy, regardless of the size of the affected market, is not to apply the *de minimis* exception where clear-cut undertakings in lieu of a reference (**UiLs**) could, in principle, be offered by the parties to resolve the concerns identified.⁵³ The CMA's judgment as to whether UiLs are available (at the time of considering the '*de minimis*' exception) is an 'in principle' one that does not depend on the actual offer, if any, of UiLs (or indeed whether the CMA believes they are likely to be offered).⁵⁴ The CMA takes a conservative approach to assessing whether UiLs are in principle available. To the extent that there is any doubt as to whether UiLs would meet the 'clear-cut' standard, they will not be included in the 'in principle' assessment.⁵⁵ In most cases, a clear-cut UiL will involve a structural divestment.

⁵² Mergers: Exception to the duty to refer in markets of insufficient importance (**CMA64**), 16 June 2017.

⁵³ CMA64, paragraph 21.

⁵⁴ CMA64, paragraph 22.

⁵⁵ CMA64, paragraph 27.

231. In the present case, the competition concerns are extensive and relate to all business areas of Smartbox. The CMA has considered whether the Parties could divest Smartbox to address all of these competition concerns in a clear-cut way. However, this divestment would be tantamount to prohibiting the Merger, which indicates that UiLs are not available ‘in principle’.⁵⁶ Accordingly, the CMA does not believe that ‘in principle’ clear-cut UiLs are available in this case.

Relevant factors

232. Where the CMA concludes that clear-cut UiLs are not in principle available, the CMA will then consider the likely level of consumer harm arising from the merger when deciding whether or not to apply the *de minimis* exception. The CMA will consider several factors in this assessment: the size of the market, the strength of the CMA’s concerns that harm will occur as a result of the merger, the magnitude of competition that would be lost by the merger, and the likely durability of the merger’s impact.⁵⁷ The CMA will also consider the wider implications of a *de minimis* decision.⁵⁸ Each of these factors is discussed in turn below.

Market size

233. Tobii submitted that the Merger would be a candidate for the application of the CMA’s *de minimis* exception. Tobii submitted that the market of concern “is likely to be below £5 million” if either (i) “sales of products that are most closely aligned with “less complex” needs” or (ii) sales to end users with “less complex” needs are excluded.

234. The CMA found that the total annual sales attributable to the supply of dedicated AAC solutions in the UK is [£5-10 million].⁵⁹ Based on estimates provided by the Parties, and applying conservative filters,⁶⁰ the CMA believes that the size of the market for the downstream supply of dedicated AAC solutions in the UK exceeded £5 million in each of the last three years. The

⁵⁶ CMA64, paragraph 25.

⁵⁷ CMA64, paragraph 28.

⁵⁸ CMA64, paragraphs 40-44.

⁵⁹ Based on the Parties’ and competitors’ revenue from sales in the UK for dedicated AAC solutions (hardware, software and eye gaze cameras) in 2017.

⁶⁰ Taking the most conservative approach, ie excluding software sales on consumer tablets and sales of dedicated AAC hardware devices to end users Tobii identified to be those with less complex needs, the CMA estimates that the affected market is around [£5 -10 million]. The CMA also notes that the Parties’ combined revenue from sales of dedicated AAC solutions exceeded £5 million in all years from 2015 to 2018.

market size is therefore within the CMA's margin of discretion for applying the de minimis exception.⁶¹

235. In determining the market size, the CMA does not view markets statically but takes into account any factors which indicate that the market may be expanding or contracting.⁶² Tobii told the CMA that the Parties currently serve less than 1.5% of the addressable market, which suggests that the potential market for the supply of dedicated AAC solutions in the UK is significantly greater than indicated by current sales. Tobii told the CMA that expected growth in the global AAC market in the three years to 2020 was 26%. The CMA noted that this view was supported by the recent significant allocation of ring-fenced funding for dedicated AAC solutions by NHS England and entry into force of legislation in Scotland introducing a "right to speak".⁶³ On the basis of this evidence, the CMA believes that the current market size might under-represent the size of the expected market in the near future.
236. The CMA also noted that the effects of the competition concerns it had identified arising from the Merger would be felt in markets beyond the downstream supply of dedicated AAC solutions in the UK, both in upstream supply markets and in other geographic markets.
237. For these reasons, the CMA believes that the affected market is of a size which is of sufficient importance to justify a reference.

Strength of the CMA's concerns

238. The CMA may attach weight to the strength of its belief that the merger will have an anti-competitive effect (ie whether its level of belief is on or nearer to the 'is the case' (more likely than not) standard than the 'may be the case' standard).⁶⁴
239. In the present case, the CMA's competition concerns with regard to the Merger are nearer to the 'is the case' standard, based on the very high number of concerns raised by third parties, and the Parties high shares of supply, their closeness of competition and the presence of limited alternatives in all relevant markets. The CMA notes that the Parties' product ranges and

⁶¹ Where the annual value in the UK, in aggregate, of the market(s) concerned is between £5 million and £15 million, the CMA will consider whether the expected customer harm resulting from the merger is materially greater than the average public cost of a phase 2 reference. The assessment of expected customer harm will be based on: the size of the market concerned; the likelihood that an SLC will occur; an assessment of the magnitude of any competition that would be lost, and the duration of the SLC. CMA 64, paragraph 3.

⁶² CMA 64, paragraph 30.

⁶³ See above paragraph 35.

⁶⁴ CMA64, paragraph 33.

their development plans have both already reduced following completion of the Merger.

240. For these reasons, the CMA believes that the strength of its concerns support the making of a reference.

Magnitude of competition lost

241. As explained in the competitive assessment above, the CMA believes that the Merger involves the two largest suppliers of dedicated AAC solutions in the UK, with a combined share of supply by value of [70% to 80%]. The Parties also have very high shares of supply in all other relevant markets.
242. The CMA believes that, in the supply of dedicated AAC solutions in the UK and in all other relevant markets, Tobii and Smartbox are each other's closest competitor and the competitive constraint imposed on the Parties by other rivals is weak.
243. The CMA's concerns about the horizontal effects of the Merger are amplified by its vertical concerns. For example, the merged entity could weaken its downstream rivals by limiting their access to key inputs (ie Smartbox's Grid software and Tobii's eye gaze cameras). This would strengthen further the Parties' combined position in the supply of dedicated AAC solutions in the UK.
244. On the basis of the evidence set out in the competitive assessment, the CMA has very significant concerns about the Merger's detrimental effect on competition and its consequential customer harm. Post-Merger, some customers (eg NHS hubs) and end users (ie individuals with complex communication needs) could be forced to adopt a dedicated AAC solution which is less suitable, pay more for their solutions and/or be priced out of having a solution, than would be the case in the absence of the Merger. The CMA notes that a substantial proportion of the detriment arising from the Merger would be suffered by vulnerable end users (see paragraph 255).⁶⁵ Moreover, post-Merger, the Parties would have a reduced incentive to invest in improving or maintaining their wide range of products as they would have a reduced risk of losing customers to an alternative supplier.
245. For these reasons, the CMA believes that the magnitude of competition lost as a result of the Merger supports the making of a reference.

⁶⁵ CMA 64, June 2017, paragraph 37.

Durability

246. The CMA considered the factors affecting the likely durability of the Merger in its consideration of barriers to entry and expansion (see paragraphs 217 to 220). As set out in that analysis, the CMA believes that entry or expansion would be neither timely, likely nor sufficient to prevent a realistic prospect of an SLC as a result of the Merger.
247. Moreover, the CMA notes that the Parties have a strong combined position in both key upstream markets worldwide and the downstream supply of dedicated AAC solutions in the UK (as well as in the EEA and globally). The CMA believes this position, indicating the merged entity's ability to foreclose new rivals either from key inputs or as a customer, increases the challenges for successful new entry or expansion.
248. For these reasons, the CMA believes that the durability of harm arising from the Merger supports the making of a reference.

Replicability

249. Third parties told the CMA that they were concerned about further acquisitions by Tobii in this market. One third party told the CMA that Tobii had acquired numerous companies in multiple countries to create a dominant, if not monopolistic, market position. Two third parties told the CMA that over the past 15 years, there has been a steady decline in the number of companies involved in AAC from around nine companies to just four companies and that the Merger would leave only three firms which have development activities anywhere in the world.
250. The CMA believes that further consolidation in the supply of dedicated AAC solutions in the UK, possibly through the acquisition of small target businesses, would increase even further the detriment to customers and end users. Therefore, the CMA believes the case should be treated cautiously in the consideration of the *de minimis* discretion.

Conclusion on the application of the de minimis exception

251. Taking all the factors discussed above into consideration, the CMA believes that the markets concerned in this case are of sufficient importance to justify the making of a reference. Therefore, the CMA does not believe that it is appropriate to exercise its discretion to apply the *de minimis* exception.

Relevant Customer Benefits

252. The CMA may take into account relevant customer benefits as a potential exception to the duty to refer.
253. As set out in the CMA's Guidance,⁶⁶ to count as relevant customer benefits, customers need to be better off with the merger, despite the fact that the CMA believes that the merger raises the realistic prospect of an SLC. These will be rare cases since, ordinarily, the CMA would expect an SLC to lead to harm to customers in the form of higher prices, lower quality, reduced service and/or reduced innovation.
254. Under section 30 of the Act, the CMA must believe that the claimed relevant customer benefits have accrued or may be expected to accrue as a result of the merger. For the CMA to consider exercising its discretion, the claimed relevant customer benefits must be clear, and the evidence in support of them must be compelling. In other words, the parties should be able to produce detailed and verifiable evidence of any anticipated price reductions or other benefits. Parties should also be able to provide evidence that the claimed benefits will be:
- (a) merger specific (ie unlikely to accrue without the merger);
 - (b) timely (ie expected to accrue within a reasonable period from the merger);
 - (c) likely; and
 - (d) sufficient (ie large enough to outweigh the SLC that arises as a result of the merger).
255. In setting out the potential benefits of the Merger, Tobii submitted that the AAC solutions sold by the Parties enable the most vulnerable end users (ie those with the most complex communication needs) to complete basic everyday tasks. These most vulnerable end users (and the support network around them) require a high level of support in using these products. Tobii stated that:
- (a) Whilst mainstream suppliers of consumer devices will continue to innovate and further 'encroach' along the 'complexity of need continuum', there are likely to remain customer segments consisting of the most severely disabled, where the combination of high investment costs and low margins will be a deterrent for the large-scale tech firms.

⁶⁶ Mergers: Exceptions to the duty to refer (OFT1122), paragraph 4.8.

(b) At this 'complex' end of the spectrum, developing tailored solutions to meet each individual vulnerable end user's 'complex' needs requires innovation and significant investment. Tobii stated that, if the Parties are unable to compete and remain profitable against/alongside these 'big-tech' firms, it is likely that the needs of the 'more complex' end users will cease to be met at all.

256. Tobii submitted that the Merger would enable the merged entity to have more resources available for the development of new products.⁶⁷ In particular, it would bring together complementary skills, with Tobii being an expert in hardware and Smartbox being an expert in software. The Parties also said that the merged entity would have greater scale, enabling it to reach users currently not using dedicated AAC solutions.⁶⁸
257. The CMA noted some of the Parties' internal documents, which indicated that one motivation for the Merger was to create better products for customers, increasing the number of end users gaining access to AAC solutions. However, the Parties provided no evidence to support their views on the benefits arising from the Merger, or to indicate why these benefits could only arise as a result of the Merger, or to quantify these benefits.
258. On the basis of the limited evidence provided, the CMA does not believe that there is compelling, detailed, and verifiable evidence of relevant customer benefits arising from the Merger. The CMA therefore does not have sufficient evidence that relevant customer benefits will outweigh the competition concerns it has identified to warrant exercising its discretion not to refer the Merger.

Decision

259. Consequently, the CMA believes that it is or may be the case that (i) a relevant merger situation has been created; and (ii) the creation of that situation has resulted, or may be expected to result, in an SLC within a market or markets in the UK.
260. The CMA therefore believes that it is under a duty to refer under section 22(1) of the Act. However, the duty to refer is not exercised whilst the CMA is considering whether to accept undertakings under section 73 of the Act instead of making such a reference.⁶⁹ Tobii has until 1 February 2019⁷⁰ to

⁶⁷ Tobii, *Project Leap: Go/No-Go decision material*, 15 August 2018.

⁶⁸ See, for example, Tobii's presentation to Smartbox employees from August 2018.

⁶⁹ Section 22(3)(b) of the Act.

⁷⁰ Section 73A(1) of the Act.

offer an undertaking to the CMA.⁷¹ The CMA will refer the Merger for a phase 2 investigation⁷² if Tobii does not offer an undertaking by this date; if Tobii indicates before this date that it does not wish to offer an undertaking; or if the CMA decides⁷³ by 8 February 2019 that there are no reasonable grounds for believing that it might accept the undertaking offered by Tobii, or a modified version of it.

261. The statutory four-month period mentioned in section 24 of the Act in which the CMA must reach a decision on reference in this case expires on 20 February 2019. For the avoidance of doubt, the CMA hereby gives Tobii notice pursuant to section 25(4) of the Act that it is extending the four-month period mentioned in section 24 of the Act. This extension comes into force on the date of receipt of this notice by Tobii and will end with the earliest of the following events: the giving of the undertakings concerned; the expiry of the period of 10 working days beginning with the first day after the receipt by the CMA of a notice from Tobii stating that it does not intend to give the undertakings; or the cancellation by the CMA of the extension.

Mike Walker
Chief Economist
Competition and Markets Authority
25 January 2019

ⁱ Paragraph 11 first sentence should read: The CMA considered whether to exercise its discretion under the *de minimis* exception in section 22(2)(a) of the Enterprise Act (**the Act**) not to refer the merger for an in-depth investigation.

ⁱⁱ Paragraph 58 second sentence should read: For instance, recent trends in innovation in relation to consumer tablets have been aimed at reducing weight, which can cause reduced battery life and ruggedness, whereas innovation in relation to dedicated AAC hardware has been aimed at extending battery life and ruggedness to meet the needs of their end users.

ⁱⁱⁱ Paragraph 125 first sentence should read: Smartbox told the CMA that its recent strategy, absent the Merger, [3<]. In the third quarter of 2018, Smartbox launched a new purpose-built device, the “Grid Pad 12”.

⁷¹ Section 73(2) of the Act.

⁷² Sections 22(1) and 34ZA(2) of the Act.

⁷³ Section 73A(2) of the Act.