

***Case No COMP/M.5332 -
ERICSSON / STM / JV***

Only the English text is available and authentic.

**REGULATION (EC) No 139/2004
MERGER PROCEDURE**

Article 6(1)(b) NON-OPPOSITION
Date: 25/11/2008

***In electronic form on the EUR-Lex website under document
number 32008M5332***



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 25.11.2008
SG-Greffe(2008) D/207055
C(2008) 7596

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

NOT TO BE PUBLISHED

MERGER PROCEDURE
ARTICLE 6(1)(b) DECISION

To the notifying parties:

Dear Sir/Madam,

**Subject: Case No COMP/M.5332 – Ericsson / STM / JV
Notification of 21 October 2008 pursuant to Article 4 of Council
Regulation No 139/2004¹**

I. INTRODUCTION

- (1) On 21/10/2008, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 by which the undertakings STMicroelectronics N.V. ("STM", The Netherlands) and Telefonaktiebolaget LM Ericsson ("Ericsson", Sweden) acquire within the meaning of Article 3(1)(b) of the Council Regulation joint control of the undertakings JVD (Switzerland) and JVS (Switzerland) by way of purchase of shares in the newly created companies constituting a joint venture. STM and Ericsson are together referred to below as "the parties" or "the notifying parties".

II. THE PARTIES AND THE CONCENTRATION

- (2) STM is active in the semiconductor industry. It is a company registered in the Netherlands and headquartered in Switzerland, in which French and Italian public shareholders jointly hold 27.5% of the voting rights. STM produces a broad range

¹ OJ L 24, 29.1.2004, p. 1.

of semiconductor products, from discrete diodes and transistors to complex System-on-Chip devices, and complete platform solutions². On 27 June 2008, the Commission approved a transaction in which STM and NXP Semiconductor N.V. ("NXP", the Netherlands) acquired respectively 80% and 20% of ST-NXP Wireless ("ST-NXP", the Netherlands), a newly-created joint venture active in the area of semiconductors for wireless telecommunications³. Moreover, STM and NXP agreed on 19 August 2008 that STM would acquire NXP's 20% shareholding in ST-NXP.

- (3) Ericsson is a Swedish company active in telecommunications equipment and related services. It is the ultimate parent company of Ericsson Mobile Platforms ("EMP"), a business unit which operates as a designer of wireless platforms, currently incorporating 3G (HSPA) technology.
- (4) The joint venture will be set up by means of two separate legal entities: JVD, where Ericsson will hold [$>50\%$] and STM [$<50\%$], and JVS where STM will hold [$>50\%$] and Ericsson [$<50\%$]. The parties submit that although JVD and JVS will be two distinct legal entities, they have been set up to act as a single economic entity jointly controlled by Ericsson and STM.
- (5) JVD will take over the R&D activity currently within EMP that relates to the 3G and 4G cellular modems and will be responsible for the development of the 3G and 4G cellular modem technology (software and hardware) inherited from Ericsson and its evolution. JVD will employ approximately 1,000 out of the 3,100 staff currently working with EMP.
- (6) JVS will comprise the ST-NXP joint venture as well as the 2,100 staff from EMP that are not transferred to JVD. JVS will be responsible for the commercial operations of the newly created joint venture, including sales, marketing and supply of the full product range, including products currently sold by EMP, product development activities in non-cellular modem areas and commercialisation of modem technologies developed by JVD.
- (7) The joint venture will be a fabless⁴ entity, but will have its own back-end operations (assembly and testing), sales and marketing and product R&D development teams. The parties submit that the joint venture will enable EMP's cutting-edge HSPA platform technology to come together with ST-NXP's

² On 10 August 2007, the Commission approved the transaction by which STM transferred its non volatile NOR and NAND memory business into a new joint venture formed with Intel and named Numonyx, see Commission decision in Case COMP/M.4751 - STM/Intel.

³ See Commission decision in Case COMP/M.5173 - STM/NXP/JV

⁴ A "fab" is a foundry which produces silicon wafers, the main raw material used in the manufacturing of semiconductors. Silicon wafers represent the major cost for the manufacturing of a fully packaged integrated circuits ("IC"), amounting to approximately 85% of its cost. Many fully-fledged semiconductors companies do not produce their own silicon wafers, which are sourced from specialized manufacturers. In the present case, the parties submit that there will be no minimum requirements for the new joint venture to be supplied by STM, and that the joint venture will not receive any preferential treatment when sourcing from its parent STM from which it will buy wafers at market conditions.

wireless handset semiconductor capability to create a fully-integrated 2G, 2.5G and 3G (including HSPA) platform software and semiconductor supplier that is able to compete with Qualcomm, the world's largest fabless wireless semiconductor vendor and the only other fully-integrated supplier of 3G (including HSPA) platform software and semiconductors.

- (8) As a consequence, JVD and JVS will, on a lasting basis, perform all the functions of an autonomous economic entity and operate on the market as a full-function joint venture.
- (9) JVD and JVS will have boards composed of the same eight members, four of whom will be designated by STM and four by Ericsson. Ericsson's CEO will be the Chairman of JVD and JVS, STM's CEO will be the Vice-Chairman of JVD and JVS. Both companies will be under common management by the same management team. With regard to decision making procedures for JVD and JVS, all board decisions require unanimity and the Chairman is not entitled to a casting vote. In case of a deadlock, a resolution mechanism will be initiated and could eventually lead to a shareholders' vote on the matter. Given the [>50%] majority this mechanism would give a casting vote to Ericsson in JVD and to STM in JVS.
- (10) However, even if there is the theoretical possibility that the deadlock resolution procedure fails and the ultimate decision in JVS and JVD is made by the respective majority parent company, this constellation does not exclude joint control of the Joint Venture by Ericsson and STM.
- (11) As a result of the division of tasks between JVD and JVS described in paragraph (5) and (6) above, JVD and JVS will be two largely complementary and mutually dependent entities within the overall joint venture.
- (12) Although Ericsson will also have the right to use JVD's R&D capability for certain activities but not the obligation to do so beyond 2009, JVD will effectively be an R&D centre for JVS and wholly dependent on JVS. JVS will in practice be the sole customer for JVD's modem technology. JVD itself will have no commercial or sales capability and will rely on JVS for funding, as JVD's costs will be largely financed by development contracts it will enter into with JVS. JVD's R&D activities will be largely for the benefit of and commercialised by JVS.
- (13) JVS will be the customer facing entity and responsible for all cash management. It will commercialise the existing products (mature wireless platforms as well as semiconductors). However, JVS will depend on JVD's R&D for cutting edge products (3G and subsequent) and future successful product launches. JVS will be dependent on JVD for cutting edge modem technology that it can commercialise and sell to the merchant market. Therefore JVD's R&D capability will be essential for the future success of the joint venture.
- (14) In light of these aspects, there is a high degree of mutual dependency between JVD and JVS, which leads to a commonality of the parent companies' interests. Consequently, Ericsson and STM will jointly control the joint venture.
- (15) Thus, the transaction constitutes a concentration within in the meaning of Article 3(1)(b) of the Merger Regulation.

III. COMMUNITY DIMENSION

- (16) The undertakings concerned have a combined aggregate world-wide turnover for the year 2007 of more than EUR 5 billion⁵ (STM: EUR 7 300 million, Ericsson: EUR 20 300 million). Each of STM and Ericsson has a Community-wide turnover in excess of EUR 250 million [...], without achieving more than two-thirds of their aggregate Community-wide turnover within one and the same Member State.
- (17) The notified operation therefore has a Community dimension within the meaning of Article 1(2) of the EC Merger Regulation.

IV. RELEVANT MARKETS

- (18) The joint venture will be active worldwide in the supply to wireless handset manufacturers of (i) wireless platforms for wireless handsets, and (ii) semiconductors for wireless handsets.
- (19) The joint venture will integrate (i) EMP's activities which consist in designing wireless semiconductors and software for the most recent, cutting-edge 3G wireless handsets, with (ii) the activities of ST-NXP which consist in the supply of semiconductors and software for less technologically advanced 2G, 2.5G handsets, to a limited extent for the mature 3G (WCDMA release 99) handsets, and in the supply of semiconductors for EMP's customers of HSPA platforms (High Speed Packet Access – a wireless protocol improving the one of UMTS). STM will transfer to the joint venture its entire business in the area of semiconductors for wireless communications, with the exception of the manufacturing of silicon wafers, which will remain with the parent company STM.
- (20) In terms of vertical relationships, the joint venture will be active in the market for the supply of wireless semiconductors which is downstream of the market for the fabrication of wireless semiconductors. It will also be active in the market for the supply of wireless platforms which is downstream of the market for the supply of wireless semiconductors and upstream of the market for wireless handsets.
- (21) The joint venture will operate as a "fabless company" and therefore will not be active in the fabrication of wireless semiconductors. The parent company STM operates as a wafer manufacturer. The parties state that the joint venture will source its manufacturing requirements either from STM or from independent foundries depending on the competitive conditions being offered. Given that under any considered market definition STM's market share is [0-5]%, the parties submit that the manufacture of wafers should not be considered as an affected market. However, for the sake of completeness, the Commission has treated the fabrication of wafers as a vertically affected market.

⁵ Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission Notice on the calculation of turnover (OJ C66, 2.3.1998, p.25).

- (22) Ericsson, the parent company of EMP, is active in the market for wireless handsets which is downstream of the market in which the joint venture will be active, through its joint control of SonyEricsson, its joint venture with Sony. STM does not manufacture or supply wireless handsets.

1. Relevant product markets

A) Fabrication of wafers for wireless semiconductors

- (23) Semiconductors are made of solid-state substances which are halfway between electricity conductors and insulators. Transistors are the basic element used in building semiconductor devices, acting as on/off switches which open and close when electronically activated. More complex semiconductor devices, the integrated circuits ("ICs") also known as "chips", combine a large number of transistors and connectivity material arranged in specific patterns to perform complex processing or storage functions. Semiconductor devices contain transistor arrays etched onto pieces of silicon, which are called "silicon wafers".
- (24) Semiconductor device fabrication is the process used to create chips. Silicon wafers, thin slices of highly pure semiconductor material on which transistors are etched (8-12 inches in the shape of a disc), are processed and cut into up to a thousand smaller, individual dies. Each die is then encased in a plastic package, forming a semiconductor chip. Silicon wafers are the basic raw material for semiconductors, with processed silicon wafers representing the major cost for the manufacturing of a fully packaged integrated circuit (around 85% of its cost). Semiconductors are manufactured in semiconductor fabrication plants, also known as "fabs", "foundries" or "front-end facilities". The construction and maintenance of such facilities is very costly and therefore the manufacturing of semiconductors is often outsourced to specialized companies by "fabless" semiconductor suppliers.
- (25) As alleged by the parties and confirmed by the market investigation, due to supply side substitutability, the fabrication of wafers can be considered as a single relevant market. However, for the purposes of this investigation the parties have also provided information about a narrower market for the fabrication of wafers for wireless semiconductors.

Conclusion

- (26) Given that the proposed transaction does not raise competition concerns in relation to the fabrication of wafers, the exact definition of the relevant product market in relation to wafers can be left open for the purpose of the present case.

B) Supply of semiconductors for wireless communications

- (27) Semiconductors are used in a number of sectors within the electronic equipment industry, ranging from computing/data processing and communications, to consumer and industrial electronics. As concerns the communications sector, the most relevant applications for semiconductors are wireless handsets, networking equipment, telecom and wireless infrastructure, and voice and data access equipment.

- (28) A fabless semiconductor company specializes in the design and sale of hardware devices implemented on semiconductor chips. It achieves an advantage by outsourcing the fabrication of the devices to a specialized semiconductor manufacturer called a semiconductor foundry which may have several fabrication facilities, or "fabs".
- (29) A fabless company concentrates its research and development resources on the end market without investing capital resources to stay current in semiconductor manufacturing technology. In other words, they are fab-less, and do not own a fab or fabrication facility - instead they rely on semiconductor foundries to manufacture their semiconductor chips on their behalf.
- (30) Most semiconductor suppliers, including the proposed joint venture, are "fables" semiconductor companies: they design semiconductors and outsource their production to third-party "fabs". Foundries rely on the designs of the fabless semiconductor companies and usually manufacture for different segments (consumer, communication, computer and others) to avoid overdependence on one segment.
- (31) According to the parties and the majority of respondents⁶ to the market investigation, there is a noticeable trend towards offering single chips integrating several semiconductors previously sold separately, which integrate different functions of a wireless handset. This trend is particularly strong in low-end and ultra low-end segments and could support a wider market definition comprising all wireless handset semiconductors. However, the market investigation indicated that, particularly in the high-end segments of the market, the trend towards integration is less advanced and significant differences between different types of chips persist.
- (32) Therefore, a distinction could be made between single semiconductor chips integrating several functions and stand-alone semiconductors having a separate, distinct function. In the first case the different functionalities of a handset are integrated at the physical chip level. In the latter case, handsets include different semiconductors performing different functions in often different technologies.
- (33) With regard to dividing the relevant market according to sub-segments, the parties and respondents to the market investigation have indicated that it is generally difficult to exactly delineate the relevant markets due to the rapid changes in technology. They have however proposed a number of possible delineations which are examined below.

i) Traditional functions

- (34) In *STM/NXP/JV*, the Commission identified the relevant market based on a market segmentation by end-user application (i.e. semiconductors for wireless applications), further broken down according to a traditional classification used in the semiconductors industry based on the function of a semiconductor, namely (i) Analogue Basebands (ABB) and Power Management (PMU); (ii) Digital

⁶ Questionnaire to wafer manufacturers, question 12; questionnaire to semiconductor suppliers, question 7; questionnaire to wireless handset manufacturers, question 7.

Basebands (DBB); (iii) Application Processors (APE) and co-Processors; (iv) Radio Frequency (RF/IF); and (v) Connectivity/Bluetooth.

- (35) This possible product market segmentation was supported by a minority of respondents to the market investigation⁷. Others pointed out that there are already many examples of semiconductors integrating the ABB and DBB, DBB and RF or IC and DBB/ABB functions making it more difficult to separate them.

ii) Core / non-core functions

- (36) As in *STM/NXP/JV* the parties argue that the traditional functional sub-segmentation described above does not fully capture the competitive dynamics of the market, since the wireless semiconductors sector is undergoing profound changes in the way circuits are integrated in the various applications. They therefore also submit an alternative market segmentation - that in their view would better reflect this tendency and better capture the competitive dynamics of the market - based on the function that wireless handsets semiconductors perform: (i) cellular modems (ABB+PMU, DBB and RF); (ii) connectivity and broadcast (Bluetooth, FM Radio, WLAN, GPS, USB and TV-wireless); and (iii) multimedia (APE and co-processors). Cellular modems are considered to be core semiconductors which are offered in combination with dedicated software by the providers of wireless platforms. Connectivity and multimedia semiconductors are non-core and are often sourced separately by handset manufacturers from other companies than their wireless platform supplier.

- (37) The division into core and non-core semiconductors was supported by the majority of respondents to the market investigation⁸. They pointed out that core chipsets are increasingly highly interrelated and cannot be easily separated.

iii) Generation of radio access technology and the communication standards

- (38) Wireless communications are based on different telecommunications standards and use different generations of technologies. The most popular second generation wireless standards are cdmaOne (used in USA, South Korea, Canada, Mexico, India, Israel, New Zealand, Sri Lanka, Venezuela, Brazil, China PRC and Vietnam) and GSM (used in more than 212 countries and territories around the world including all European countries). The most popular third generation standards are CDMA2000 (used mainly in USA and Korea) and UMTS (used in Europe and other countries such as Japan).

Table 1. Technologies used in GSM and UMTS standards.

Technology generation	Telecommunication technology
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⁷ Questionnaire to wafer manufacturers, question 13, questionnaire to semiconductor suppliers, question 8; questionnaire to wireless handset manufacturers, question 7.

⁸ Questionnaire to wafer manufacturers, question 13, questionnaire to semiconductor suppliers, question 8; questionnaire to wireless handset manufacturers, question 7.

2G	GSM
	GPRS
	EDGE (2.5G)
3G	WCDMA (excluding HSPA)
	HSPA (3.5G)

- (39) The First Generation (“1G”) was deployed in the 1980s and is now obsolete in Europe. The Second Generation (“2G”) technology was deployed in the early 1990s. 2G is based on digital technologies and is widely used throughout the EU and the rest of the world. Work on Third Generation technology (“3G”) began during the 1990s and is currently being deployed. The two principal 3G wireless standards currently used are UMTS (used in Europe and other parts of the world) and CDMA2000 (used mainly in the US and Korea). WCDMA (Release 99) technology was the first implementation of the wireless standard that was adopted as part of the 3G UMTS standard in December 1999. Since its first release, WCDMA has continued to be developed, and currently High Speed Packet Access (“HSPA”) wireless handsets are widely considered in the industry as a “3.5G” technology given that they can operate at much higher speeds than WCDMA (Release 99) wireless handsets. Research and development work is also being undertaken for further evolutions of HSPA, towards 4G technology. Long Term Evolution (LTE) is a new technology being developed by the Third Generation Partnership Project (3GPP) as a next step after HSPA.
- (40) According to the parties, different communication standards have little impact on hardware manufacturing. They argue that wireless semiconductor suppliers offering 2G GSM or CDMA2000 semiconductors will be able to supply 3G UMTS semiconductors without incurring any significant expenditure or delay. The skills and manufacturing process technologies required for these types of semiconductors are equivalent. The market for wireless semiconductors should not therefore, in the parties' opinion, be subdivided according to communication standards.
- (41) The results of the market investigation confirmed that APE and connectivity semiconductors are independent of the technology generation (2G, 2.5G, 3G) of the modem. They also do not necessarily differ in their functions and features depending on the communication standard⁹.
- (42) With regard to core semiconductors (modems), some respondents pointed out that a handset manufacturer needs to choose a platform and semiconductor combination for each type of handset according to the telecommunication standard used in the system on which the handset operates¹⁰. Some respondents

⁹ Questionnaire to wafer manufacturers, question 14, questionnaire to semiconductor suppliers, question 9; questionnaire to wireless handset manufacturers, question 8.

¹⁰ Questionnaire to wireless handset manufacturers, question 12.

therefore suggested that the market for core semiconductors could be sub-divided into the CDMA segment (sold primarily in the US and Korea) and the GSM/WCDMA segment (sold in Europe and other parts of the world).

- (43) In addition, one respondent pointed out that while handsets which support only 2G telecommunication standards will rely on highly integrated low cost semiconductor solutions for price sensitive markets, 3G (and beyond) handsets will likely continue to use discrete solutions for the various sub-systems at least in the next three years¹¹.
- (44) From the supply side, while 2G and 2.5G technologies are considered largely commoditized, the required investment levels in 3G+ (HSPA, LTE and beyond) still create significant entry barriers, effectively sub-dividing the market into segments in which individual parties may or may not have the capabilities to participate. According to these respondents WCDMA (release 99) is borderline between the two markets and entry barriers should be considered as closer to the mature 2G/2.5G technologies.

iv) ASSP-ASIC

- (45) Core semiconductor devices can be manufactured on an application-standard basis (ASSPs - application specific standard products) or can be designed for a specific customer or platform (ASICs - application specific integrated circuits). The market investigation indicated that the demand-side substitutability might be considered limited because the Original Equipment Manufacturers ("OEMs") that purchase standard core semiconductors are unlikely to internally develop custom semiconductors and switch from purchasing ASSPs to ASICs. However, a change in the other direction was considered more likely. In addition, there is high supply-side substitutability because most chipset makers are easily able to adjust their standard architecture in response to specific customer requests and offer ASICs.

Conclusion

- (46) The parties submit that regardless of the exact product market definition retained in relation to semiconductors for wireless handsets, the transaction would not raise any competition concerns. In the STM/NXP/JV decision, the Commission left open the exact delineation of the product market, as the transaction was found not to raise any competition concerns. This decision was taken only four months ago and the market investigation in the present case has not pointed to major changes in the market conditions since then. The market investigation conducted in the present case confirmed the earlier findings.
- (47) As will be shown below, given that the proposed transaction will not give rise to any competition concerns under any alternative product market definition selected, the Commission takes the view that the exact product market definition in relation to wireless platforms can be left open.

C) Supply of wireless platforms for wireless handsets

¹¹ Questionnaire to wireless handset manufacturers, question 8.

- (48) The relevant components of a wireless platform comprise (i) core wireless handset semiconductors which are sophisticated integrated circuits for voice, data processing, transmission and power supply of the wireless handset, and (ii) the platform software, including middleware, modem, driver, the real time operating system, multimedia protocols and codec, security protocols and algorithms, data communication protocol, file system, databases and Java components.
- (49) The core wireless handset semiconductors are typically supplied to wireless handset manufacturers in a package together with the platform software. The core semiconductors include the digital baseband (DBB), the analogue baseband/power management (ABB + PMU), and the radio frequency (RF) functions. They are typically designed or co-designed by the wireless platform vendor and cannot be sourced separately by the customer. Other “non-core” wireless handset semiconductors can be more easily procured separately by the wireless handset manufacturer.
- (50) With regard to dividing the relevant market according to sub-segments, the parties and respondents to the market investigation have indicated that it is generally difficult to exactly delineate the relevant markets due to the rapid changes in technology. They have however proposed a number of possible delineations which are examined below.

i) Generation of radio access technology

- (51) Wireless platforms are typically distinguished within the industry based on the generation of radio access technology supported by the platform, i.e. 2G, 2.5G and 3G. Platforms supporting 2G, 2.5G or 3G technology provide different performance and functionalities to the handset.
- (52) For example, many low-end and ultra-low-end 2G GSM mobiles are voice-only phones with black and white screens. 2G-2.5G GPRS and EDGE phones are considered mid-range, typically supporting a small colour display with modest web browsing, texting, SMS and MMS services. 3G phones are considered high-end, offering full (2.4-inch) colour displays frequently supporting an open operating system (e.g. Symbian, Microsoft), Java execution, Bluetooth, web browsing, email, GPS and/or Wi-Fi.
- (53) This distinction has been confirmed by the market investigation. From the demand side (handset manufacturers), wireless platforms belonging to different technology generations offer different data transmission rates, spectrum efficiencies and costs. With regard to supply-side substitutability, the respondents pointed out that potential entrants into the cutting-edge 3G (and beyond) segments face very high costs in terms of required investment and time.
- (54) The parties submit that there are clear differences in the conditions of competition on 2G, 2.5G and 3G platforms and that accordingly, within the wireless platforms business, the market could be subdivided between 2G, 2.5G and 3G platforms. As each technology generation becomes more mature, market penetration grows, new players enter the market and compete aggressively for supplying major handset manufacturers with wireless platform solutions including both software and core semiconductors. In 2G and 2.5G, several semiconductor suppliers other

than ST-NXP are now established providers of platform solutions, notably Texas Instruments, Infineon and Mediatek.

- (55) In the 3G segment new entrants including TI, Infineon and Mediatek are now competing to supply their first software and hardware packages for the more mature 3G handsets based on WCDMA (Release 99) technology. As far as the more advanced, cutting-edge HSPA wireless platforms are concerned, there are only two large players (EMP and Qualcomm) and new entry in the mid-term is unlikely due to time and significant costs which would be required for successful entry.
- (56) The parties therefore consider that the market can be further subdivided within the 3G platforms into mature WCDMA (Release 99) platforms and cutting-edge HSPA platforms given that more mature 3G platforms have now nearly reached the level of commoditisation that has already been seen in the case of 2G and 2.5G platforms.
- (57) The results of the market investigation confirm the view of the parties that new successful entry into the HSPA market is unlikely in the short-run¹². Respondents to the market investigation have pointed out that the development of state-of-the-art 3G HSPA platforms requires significantly higher efforts in comparison to more mature technologies. Some respondents suggested that the relevant product market should be divided between cutting-edge 3G HSPA platforms and the older technologies including the more mature 3G WCDMA (Release 99).

ii) Telecommunication standards

- (58) For each technology generation, one or more telecommunication standards can be identified. Different standards can be adopted in different countries or clusters of countries. Manufacturers develop handsets incorporating a wireless platform which is based on a telecommunications standard used in the countries where the handsets are to be sold. Within the 3G segment, there are two different telecommunication standards. CDMA2000 wireless platforms are sold almost exclusively by Qualcomm predominantly in the US and Korea. UMTS wireless platforms are sold by several vendors including Qualcomm and EMP in other parts of the world.
- (59) According to the parties, CDMA2000 and UMTS wireless platforms belong to two different relevant product markets. They point out that there is no demand-side substitutability because manufacturers developing a handset for a certain geographic market have to conform to the telecommunication standard adopted in that market. They also argue that there is limited supply-side substitutability which explains why, with the exception of Qualcomm, no UMTS wireless platform supplier offers CDMA2000 wireless platforms. However, Qualcomm which supplies nearly 100% of CDMA2000 wireless platforms also has a strong presence in the UMTS segment.

¹² Questionnaire to semiconductor suppliers, question 22; questionnaire to wireless handset manufacturers, question 32.

Conclusion

- (60) As will be shown below, given that the proposed transaction will not give rise to any competition concerns under any alternative product market definition selected, the Commission takes the view that the exact product market definition in relation to wireless platforms can be left open.

D) Supply of wireless handsets

- (61) Wireless handsets (also called wireless, cellular, or mobile phones) are becoming increasingly complex, with current handsets supporting on top of the standard voice function of a telephone, SMS for text messaging, e-mail, packet switching for access to the internet, gaming, Bluetooth, camera and MMS for sharing photos and videos.
- (62) The principal building blocks of a wireless handset include: (i) the wireless platform comprising core hardware components (semiconductors) and key software which together provide the basic technology allowing a wireless handset to operate, (ii) the wireless application framework and application software such as menus, browsers, phone book and media players, (iii) non-core semiconductors and electromechanical components such as memories, connectors, printed circuit board, battery and display, and (iv) mechanical parts making up the body of the wireless handset.
- (63) The parties submit that the demand for wireless handsets is driven by the needs of the customer (end user experience), by the acceptance by mobile network operators ("MNOs") which typically conduct thorough tests on the wireless handsets that are intended to be used on their networks and can have a degree of influence regarding the wireless handsets, and the manufacturer's brand image. The parties express the view that there is a complicated chain of substitution among 2G and 2.5G wireless handsets and 3G wireless handsets from the demand side, with a high degree of substitutability from the supply side. The parties therefore argue that the relevant product market should encompass all handsets.
- (64) In *Nokia/Trolltech*¹³, the Commission considered the relevant product markets for wireless handsets, but left open the exact product market definition.
- (65) In *Nokia/NAVTEQ*¹⁴, the Commission defined the relevant product market as encompassing all wireless phones, including handheld computers with wide area connectivity.

Conclusion

- (66) As will be shown below, given that the proposed transaction is unlikely to give rise to any competition concerns, the exact product market definition in relation to wireless handsets can be left open.

¹³ Case COMP/M.5094 Nokia/Trolltech.

¹⁴ Case COMP/M.4942 Nokia/NAVTEQ.

2. *Relevant geographic markets*

A) Wafers, semiconductors for wireless handsets, and wireless platforms

- (67) In previous decisions dealing with semiconductors in general and more specifically with wireless handset semiconductors, the Commission considered the geographic markets as worldwide although it left open the exact scope of the geographic market¹⁵. The Commission took into consideration that the clients of semiconductor manufacturers have production plants located all around the world, that there are no quotas, tariffs or technical specifications limiting trade and that transport costs are very low. As a consequence, there are no significant price differences between countries. Moreover, suppliers of semiconductor for wireless applications are international firms established worldwide. The costs of establishing a local presence are not high since there is no need to produce locally and to have a local sales network. Furthermore, wireless handset manufacturers are big companies which buy their semiconductors or micro-components on a worldwide scale.
- (68) The parties submit that the arguments supporting the view that the market for semiconductors is worldwide also apply to the markets for wafers and for cutting-edge 3G wireless platforms. As a consequence, the parties submit that the market for wafers and the markets for wireless platforms are worldwide in scope.
- (69) The market investigation broadly confirmed that the markets for the fabrication of wafers, supply of wireless semiconductors and wireless platforms for a given telecommunication standard are worldwide.
- (70) For the purpose of the present transaction, the exact definition of the relevant geographic market in relation to wafers, semiconductors and wireless platforms can be left open. However, the geographic scope of these markets seem worldwide or at least EEA wide.

B) Wireless handsets

- (71) In *Nokia/Trolltech*, the Commission left open the exact geographic scope for the market of wireless handsets. In that case, Nokia considered the market for the manufacture and supply of wireless handsets to be worldwide in scope. In *Nokia/NAVTEQ* the geographic market was defined as at least EEA-wide. Although the parties agree with this view, they consider that it is not necessary to conclude on the exact geographic market definition as the proposed transaction would not give rise to vertically affected markets in relation to SonyEricsson's manufacturing of wireless handsets under any alternative definition of the relevant geographic market.
- (72) For the purpose of the present transaction, the exact definition of the relevant geographic market in relation to wireless handsets can be left open. However, the geographic scope of these markets seem worldwide or at least EEA wide.

¹⁵ Cases COMP/M.4751 - STM/Intel; COMP/M.2820 - STM/Alcatel; COMP/M.2439 - Hitachi/STM/JV, and the more recent COMP/M.5173 - STM/NXP/JV.

V. COMPETITIVE ASSESSMENT

- (73) Although the activities of the parties seem a priori complementary, the transaction would give rise to horizontal overlaps in relation to wireless platforms if a broad definition of the relevant product market encompassing all wireless platforms is retained.
- (74) According to the parties, the proposed transaction will not lead to any horizontal overlaps as EMP and ST-NXP do not compete in the supply of the same type of wireless platforms, and EMP does not supply wireless semiconductors. The parties submit that the proposed transaction will be pro-competitive as it will allow EMP to better compete with Qualcomm, the only other supplier of cutting-edge wireless platforms on the merchant market (3G and higher), by supplying the integrated wireless platform (including core semiconductors) that the market now demands.
- (75) Furthermore the proposed transaction gives rise to vertical links between the markets for the supply of semiconductors for wireless handsets (in which ST-NXP is active) and the market for the supply of wireless platforms (in which EMP is active), as well as with the market for the supply of wireless handsets (in which SonyEricsson is active).
- (76) The parties further submit that the proposed transaction is unlikely to lead to any risk of input foreclosure of wireless platform suppliers competing with EMP or vertically-integrated handset manufacturers competing with SonyEricsson as there are significant alternative wireless semiconductors suppliers and Qualcomm, the only competitor to EMP that is active on the merchant market for 3G HSPA wireless platforms, is vertically-integrated in the production of wireless semiconductors. Finally, the parties submit that the proposed transaction is also unlikely to lead to any risk of customer foreclosure of semiconductors suppliers competing with ST-NXP and of wafers suppliers competing with STM, given the small size of ST-NXP and of STM in their respective markets.

1. Non-coordinated effects

A) Horizontal assessment

- (77) As regards an overall market for all wireless platforms regardless of the technology generation, both EMP and ST-NXP are active in the supply of wireless platforms. However, the parties submit that the joint venture would bring together two complementary businesses. EMP is active in the supply of 3G HSPA wireless platforms, while ST-NXP offers wireless platforms in less mature technologies (2G, 2.5G and low end 3G platforms). This different focus in relation to wireless platform technologies would entail a very different market positioning of ST-NXP and EMP within the overall market for wireless platforms: while more mature wireless platforms are commoditised products and a larger number of suppliers compete, the cutting-edge wireless platforms are characterised by more sophisticated and R&D-intensive products and a smaller number of competing suppliers.
- (78) Although market share data for all wireless platforms are unavailable, it can nevertheless be noted that there are numerous competitors of EMP and ST-NXP

in the market encompassing all wireless platforms: Broadcom, Dialog, Freescale, Infineon, Mediatek, Qualcomm, Renesas/NEC and Texas Instruments. The large majority of these suppliers are active globally.

- (79) The market investigation confirmed the parties' arguments regarding the complementarity of their product offerings and the delineation between the wireless platform activities of EMP and ST-NXP¹⁶. The large majority of wireless handset manufacturers considered that EMP and ST-NXP do not compete or only compete marginally in the market for wireless platforms, and do not have overlapping offers.
- (80) Therefore, even if the joint-venture will *de facto* entail a reduction of the number of wireless platform suppliers, the market investigation showed that it will not decrease the number of alternative sources of wireless platforms for a given technology or limit the choice of suppliers for a given wireless platform technology. Furthermore, even after the possible exit of some of the alternative suppliers from the market in the near future, the combined entity would continue to face competition from a number of rivalling wireless platform vendors.
- (81) In light of these elements, the proposed transaction does not raise any competition concerns in an overall market for all wireless platforms regardless of whether the market for wireless platforms has an EEA-wide or global scope.
- (82) As regards a delineation of the relevant product market for wireless platforms by technology (i.e. 2G – GSM, 2.5G – GPRS/EDGE, 3G – WCDMA, CDMA, HSPA), the parties submit that EMP does not compete to supply platforms for more mature technologies, in particular 2G and 2.5G GSM/GPRS/EDGE, and low-end (mature) 3G platforms (WCDMA) where ST-NXP has just started operating through the technology platforms inherited from NXP in the context of the creation of ST-NXP. ST-NXP, in turn, does not compete with EMP in the market for 3G HSPA platforms. The parties also submitted that ST-NXP does not currently have the technical expertise or experience to produce HSPA platforms and cannot be regarded as a credible new entrant in this market capable of exerting a significant competitive constraint on the current market players within the near future.
- (83) As regards mature technologies (2G and 2.5G GSM/GPRS/EDGE) EMP does not market such wireless platforms anymore. Conversely, these are the wireless platform technologies in which ST-NXP is mostly active. Furthermore, the market investigation did not reveal any competition concerns in this respect either¹⁷. The proposed transaction does not therefore raise any competition concerns in relation to more mature wireless platforms.
- (84) As regards the relatively mature technologies amongst the 3G wireless platforms (WCDMA release 99), EMP has also recently ceased to develop or supply these.

¹⁶ Questionnaire to semiconductor suppliers, question 27; questionnaire to wireless handset manufacturers, question 23.

¹⁷ Questionnaire to semiconductor suppliers, question 31, questionnaire to wireless handset manufacturers, question 24 and 36.

Conversely, this is the most advanced wireless platform technology currently offered by ST-NXP. Moreover, ST-NXP is a relatively new entrant in this technology and has never competed with EMP while EMP was still active in this market. According to bidding data provided by the parties for EMP and covering the years 2005 and 2006 (the last year when EMP participated in a tender for 3G WCDMA release 99 wireless platforms) EMP never faced competition from ST-NXP, but almost exclusively competed with Qualcomm. Furthermore, the market investigation did not point towards any competition concerns in this respect¹⁸. As a consequence, the proposed transaction does not raise competition concerns in relation to 3G WCDMA release 99 wireless platforms either.

- (85) As regards the cutting-edge 3G HSPA wireless platforms, the parties take the view that there are only four companies that have proven expertise as well as product sales in high volumes in the market for 3G HSPA platforms: EMP, Motorola/Freescale, Nokia and Qualcomm. Nokia and Motorola develop and source most of their wireless platforms internally. Only Qualcomm and EMP are active on the merchant market for 3G HSPA wireless platforms, in which Qualcomm achieved a global market share of [70-80]% and EMP of [20-30]% in 2007. Both Qualcomm and EMP are active globally.
- (86) The market investigation in relation to wireless platforms and in particular in relation to 3G HSPA platforms showed that wireless handset manufacturers did not identify any horizontal overlaps between the activities of EMP and ST-NXP¹⁹. Therefore, the proposed transaction will not decrease the number of alternative suppliers of HSPA wireless platforms. A large majority of customers furthermore took the view that there is currently a sufficient number of alternative suppliers of wireless platforms and that the creation of EMP/ST-NXP would not lead to a reduced choice of alternative suppliers.
- (87) Moreover, according to the market investigation, the proposed transaction would not result in the elimination of a potential competitor or new entrant into the market for HSPA platforms, as ST-NXP's entry into this market was not considered as likely and timely²⁰. In particular respondents to the market investigation pointed to the time and financial resources required for successful entry into the market for HSPA wireless platforms.
- (88) In the parties' view, the proposed transaction would even be pro-competitive since it would follow the market trend towards supplying integrated wireless platforms including the software and the core semiconductors. It would therefore allow EMP to better compete with Qualcomm. The market investigation has however shown mixed results in this respect, with some market participants claiming that the creation of the joint venture would either have limited impact on

¹⁸ Questionnaire to semiconductor suppliers, question 31, questionnaire to wireless handset manufacturers, question 24 and 36.

¹⁹ Questionnaire to semiconductor suppliers, question 27; questionnaire to wireless handset manufacturers, question 23.

²⁰ Questionnaire to semiconductor suppliers, question 22; questionnaire to wireless handset manufacturers, question 31.

the market for the sale of wireless platforms as the joint venture does not have any significant advantage in wireless technology compared to other wireless platform suppliers or would be pro-competitive as it would enable it to offer packages that could credibly compete with Qualcomm's offering on the merchant market²¹.

- (89) Since the market investigation did not indicate any horizontal overlaps between ST-NXP and EMP in relation to 3G HSPA wireless platforms and furthermore ST-NXP's successful entry into this market was not considered as likely and timely, the Commission concludes that, even when assuming a narrow definition of the relevant product market by wireless platform technology, the proposed transaction does not raise any competition concerns in relation to HSPA wireless platforms, regardless of whether this market has an EEA-wide or global scope.

B) Vertical assessment

i) Input foreclosure in relation to wireless handset semiconductors to the detriment of competing wireless platform suppliers

- (90) As EMP is only active in the supply of cutting-edge 3G HSPA wireless platforms, the Commission considers that any risk of potential input foreclosure by ST-NXP post merger vis-à-vis competing suppliers of more mature 2G, 2.5G, and 3G wireless platforms, where EMP is not present, would not be merger-specific as the proposed transaction does not lead to any change in vertical integration with respect to more mature 2G, 2.5G and 3G wireless platforms and is therefore irrelevant for the purpose of this decision.
- (91) Therefore, the Commission limited its analysis of potential foreclosure to 3G HSPA platforms, either produced by wireless platform suppliers on the merchant market (Qualcomm, EMP) or produced in-house by wireless handset manufacturers (Nokia, Motorola). The Commission examined whether post-merger, the joint venture would have the ability and incentive to foreclose access to its wireless semiconductors currently produced by ST-NXP to the detriment of competitors of EMP.
- (92) The merged company could in theory restrict sales of ST-NXP wireless semiconductors to other developers of 3G HSPA wireless platforms competing with EMP. However, the parties submit that ST-NXP does not have any “must have” or dominant semiconductor components which could be denied to wireless platform suppliers currently competing with EMP and could not be obtained from other sources.
- (93) Nokia and Motorola develop their HSPA wireless platforms in-house, using semiconductors from a range of suppliers, including ST-NXP for Nokia. Apart from Nokia and Motorola, which do not offer their HSPA platforms on the merchant market, EMP and Qualcomm are the only suppliers of HSPA platforms on the merchant market. As Qualcomm is vertically-integrated in the manufacture of wireless semiconductors and does not source from ST-NXP, it would be

²¹ Questionnaire to semiconductor suppliers, question 28; questionnaire to wireless handset manufacturers, question 35.

unaffected by any theoretical foreclosure attempts by the joint venture. Although the parties might theoretically decide to stop supplying their wireless semiconductors to Nokia, or Motorola in the future, the parties would not have the ability to foreclose access to a key input because they do not provide any "must have" technologies and other semiconductor suppliers would be ready to replace the parties' sales of wireless semiconductors, such as Broadcom, Dialog, Freescale, Infineon, Mediatek, Renesas/NEC and Texas Instruments. There is therefore no risk of input foreclosure.

- (94) Furthermore, during the market investigation none of the companies developing 3G HSPA wireless platforms for their own use or for the merchant market raised concerns related to possible risks of input foreclosure to their detriment²². Wireless handset manufacturers who develop 3G HSPA wireless platforms for their own use confirmed that the creation of the joint venture would either have limited impact on the market for the sale of wireless platforms as the joint venture should not have any significant advantage in wireless technology compared to other wireless platform suppliers, or would be pro-competitive as it would enable it to offer packages that could credibly compete with Qualcomm's offering on the merchant market.
- (95) Based on the above considerations the proposed transaction does not raise any competition concerns due to input foreclosure in relation to wireless handset semiconductors to the detriment of competing wireless platform suppliers.

ii) Input foreclosure in relation to wireless handset semiconductors to the detriment of competing wireless handset manufacturers

- (96) The Commission also examined whether post-merger, the joint venture could restrict access to its wireless semiconductors currently produced by ST-NXP to the detriment of competitors of SonyEricsson.
- (97) The parties submit that ST-NXP does not have any "must have" or dominant semiconductor components which could be denied to wireless handset manufacturers competing with SonyEricsson and which could not be procured from other sources. All semiconductor components can be sourced by handset manufacturers from several alternative suppliers, including TI, Infineon and Freescale, which provide the full range of core and non-core semiconductor components.
- (98) As regards core components, the parties claim that on the wireless handset semiconductors market worldwide in 2007, ST-NXP had significant market shares exceeding 25% only in ABB ([30-40]%) but that this is a competitive segment where other players such as TI ([20-30]%), Qualcomm ([10-20]%) and Freescale ([5-10]%) also have a strong presence. In addition, the strong position of ST-NXP is a legacy of STM's significant sales in stand-alone analog baseband ICs manufactured for customer-specific requirements (ASICs). As described in paragraph 30, there is currently a strong trend toward integration. According to

²² Questionnaire to wireless handset manufacturers, question 36.

the parties, the integrated chipset solutions and DBB (digital baseband)-integrated analog ICs, segments where TI and Qualcomm are particularly strong, are growing at an annual rate of [20-30]%²³. Stand-alone baseband revenues are projected by industry analysts to decline by [0-5]% annually²⁴.

- (99) As regards wireless semiconductors for 3G applications only, ST-NXP is a leading supplier of the core semiconductor components RF ICs ([30-40]%) and ABB ([30-40]%), and has no market share above 25% in other core components. In the 3G RF segment ST-NXP faces strong competitor including Qualcomm ([20-30]%) and Infineon ([20-30]%). ST-NXP's significant market share in this segment is due to sales to one large customer. The competitive conditions in 3G ABB and ABB are generally similar.
- (100) Any strategy of the parties to increase the sales of SonyEricsson's wireless handsets by restricting access to ST-NXP's semiconductors to competing wireless handset manufacturers would therefore be unsuccessful. Here again, although the parties might have the ability to restrict sales of their wireless semiconductors to some customers in the future, they would not have the incentive to forego such opportunity for additional revenues. The parties submit that in the future, more and more of the semiconductors for the development of their platforms will be sourced in-house. However, even assuming that this strategy resulted in a semiconductor production capacity constraint – which none of the market participants raised as a concern during the market investigation – that would lead the joint venture to stop supplying semiconductors to other wireless handset manufacturers than SonyEricsson, there would remain alternative sources of semiconductors supply for them. There is therefore no risk of input foreclosure.
- (101) The market investigation confirmed the continued existence of multiples suppliers of wireless semiconductors, and wireless handset manufacturers raised no competition concerns related to the possibility of input foreclosure induced by the transaction²⁵.
- (102) Based on the above considerations, the proposed transaction does not raise any competition concerns due to input foreclosure in relation to wireless handset semiconductors to the detriment of competing wireless handset manufacturers.

iii) Customer foreclosure to the detriment of competing wireless handset semiconductor suppliers

- (103) The parties submit that there is no risk of customer foreclosure in the case of non-core components. An integrated offer by the joint venture of platform software and wireless handset core semiconductor solutions will not prevent final customers from sourcing non-core semiconductors from other semiconductor suppliers. In addition, customers often have strong preferences for the use of non-core semiconductors (particularly connectivity and multimedia semiconductors)

²³ Notification, section C, page 21.

²⁴ Idem

²⁵ Questionnaire to wireless handset manufacturers, question 36, 37.

from specific third-party suppliers, not necessarily endorsed by the wireless platform vendor.

- (104) With regard to core-semiconductors, during the market investigation, a third party complained that post-merger, through the vertical integration of EMP and ST-NXP, the joint venture could restrain the access of current ST-NXP competitors in the market for the supply of core wireless semiconductors to SonyEricsson or other handset manufacturers previously supplied through EMP wireless platforms.
- (105) In particular, the complainant claimed that EMP will post-merger source as much of its semiconductors as possible from ST-NXP to the detriment of other competing semiconductor suppliers, which will lose this channel to access to market.
- (106) The parties submit that the transaction will not give rise to risks of customer foreclosure for competing semiconductor suppliers. They claim that EMP is not a key route to the market for suppliers of semiconductors for wireless handsets as EMP wireless platforms only accounted for [5-10]% of all core semiconductors and [10-20]% of non-core semiconductors sold to wireless handset manufacturers worldwide in 2007.
- (107) The parties confirm that over time, the strategy of the joint venture will be to source internally more and more of the semiconductors used in wireless platforms created by EMP. However, they submit that as ST-NXP has already been the preferred design and manufacturing partner for core wireless handset semiconductors for EMP's wireless platforms for several years and is projected to supply over [80-90]% of EMP's requirements in 2009, the potential loss of EMP as a route to market for the other suppliers will in any event be insignificant. Moreover, EMP and SonyEricsson altogether only represent a small share of the wireless handset semiconductor demand (less than 15%).
- (108) According to the parties, the proposed transaction will not affect the possibility post-merger for semiconductor suppliers to sell their products to wireless handset manufacturers that produce their wireless platforms in-house. In 2007, these wireless handset manufacturers had a [20-30]% share of the worldwide sales of HSPA wireless handsets. That year, the remaining [70-80]% of wireless handset manufacturers sourced their wireless platforms on the merchant market, where Qualcomm was the largest supplier with a market share of [70-80]% and EMP, the remaining supplier, had a market share of [20-30]%. Qualcomm is already sourcing its semiconductors internally and will continue to do so in the future. The market investigation did not contradict these statements.
- (109) Given that EMP is not a key route to the market for suppliers of semiconductors for wireless handsets, that there will remain alternative routes for the supply of wireless semiconductors, and that ST-NXP is already in practice the the supplier of [80-90]% of EMP's core wireless semiconductors, the Commission considers that the transaction will not create significant competition concerns with respect to customer foreclosure.
- (110) In the response to the market investigation, the same third party also informed the Commission that Ericsson owns a significant portfolio of "essential patents"

(patents necessary to comply with telecommunication standards) and benefits, together with its subsidiaries, from reductions in royalty fees due to the cross licensing agreement between companies which contributed intellectual property essential to the operation of the UMTS wireless telecommunication standards. EMP, as subsidiary of Ericsson is already benefiting from this system. This third party complained that post-merger ST-NXP will also benefit from this system and enjoy a cost advantage in relation to his company and other competitors in the supply of wireless semiconductors to wireless handset manufacturers. The parties however indicated that ST-NXP's existing operations will be continued by JVS, which will not have the benefit of Ericsson's existing cross-licensing agreements [...].

- (111) Ericsson would also not have the ability to discriminate with regard to royalties between the merged company and competing wireless semiconductor suppliers as it only charges royalties at the handset level and not at the level of wireless semiconductors.
- (112) The third-party based this complaint on the assumption that the entire joint venture, including the current ST-NXP, would benefit from reductions in royalties resulting from the access to Ericsson's IP. As confirmed by the parties, this assumption does not hold. Therefore the Commission concludes that the proposed transaction will not give any merger specific advantages with regard to IP royalties to current ST-NXP over competing wireless semiconductor suppliers.
- (113) Finally, the same third party complained that even if the new joint venture continued to do business with other wireless semiconductor suppliers, competition could be harmed due to the transfer of confidential information. Such information, both technical and commercial, could be passed from competing semiconductor suppliers which are bidding to supply the joint venture to the joint venture's wireless semiconductor manufacturing arm. This information would give ST-NXP an unfair competitive advantage. It should be noted that no other semiconductor manufacturers, including those which are not vertically integrated, complained about similar risks during the market investigation.
- (114) According to the parties, the scope for such action would be very limited because the strategy of the joint venture will be to source internally most of the semiconductors used in the new joint venture's wireless platforms. They submit that by 2009, the Joint Venture will source in-house (via JVS) [80-90]% of core semiconductor components for its wireless platforms, meaning that [20-30]% of the Joint Venture's core semiconductor requirements will be satisfied by third party semiconductor suppliers. However, as these [20-30]% represent expected sales of core semiconductor components produced by third party semiconductor suppliers that have already been selected as EMP's partners, competition for such selection already took place some time ago and the transaction should therefore have no impact in that respect. In the future, it is expected that this 20% share will diminish as the Joint Venture increasingly sources its semiconductor requirements from JVS.
- (115) In addition, the amount of sensitive information passed from wireless semiconductor suppliers to the joint venture will be limited to what is necessary for the semiconductors and the software to work together. Since wireless semiconductor manufacturers will be able to choose not to supply the new joint

venture in response to confidentiality concerns, it will be in the parties' interest to enforce the existing confidentiality protection mechanisms. Therefore, there is no risk to competition resulting from a potential leakage of confidential information from competing semiconductor suppliers which are bidding to supply the new joint venture wireless platforms to the joint venture's wireless semiconductors business.

- (116) Given that the scope of the information exchanged between the wireless semiconductor suppliers and the wireless platform suppliers is limited, that ST-NXP is already in practice the supplier of [80-90]% of EMP's core wireless semiconductors and, in the medium term, this proportion is likely to increase, the Commission considers that the transaction will not create significant competition concerns with respect to the transfer of confidential information.
- (117) Based on the above considerations the proposed transaction does not raise any competition concerns due to customer foreclosure to the detriment of competing wireless semiconductor manufacturers.

v) Customer foreclosure to the detriment of competing wafer manufacturers

- (118) The Commission examined whether the fact that STM, the parent company of ST-NXP, has its own foundries and is active in the manufacturing of wafers for wireless semiconductors could lead to customer foreclosure to the detriment of wafer suppliers competing with STM.
- (119) The parties submit that since the proposed merger of EMP with ST-NXP does not result in foreclosure of customers for wireless handset semiconductors, it is unlikely to cause foreclosure at the level of foundries.
- (120) In addition, the parties note that the joint venture's wafer requirements will account for a trivial portion of the overall market for wafers for all semiconductors, and for a share below 15% even if the market were to be defined as the global market for wafers for wireless handset semiconductors only. They further submit that the joint venture will always purchase wafers at market conditions also from third party foundries. Finally, they forecast that overall the joint venture will source approximately [70-80]% of its wafer needs from third party suppliers by 2011.
- (121) During the market investigation no wafer manufacturer complained about the risk of customer foreclosure to their detriment post-merger²⁶. On the contrary, one wafer manufacturer claimed that if the joint-venture is successful at gaining market shares and expanding to new businesses, because of production capacity limitations at STM, outsourcing to wafer manufacturers will increase and the transaction will be beneficial to them.
- (122) Based on the above considerations the proposed transaction does not raise any competition concerns due to customer foreclosure to the detriment of competing wafer manufacturers.

²⁶ Questionnaire to wafer manufacturers, question 21.

2. Coordinated effects

- (123) The Commission also examined whether the proposed joint venture between EMP and ST-NXP would create any concerns as regards coordinated effects. Following existing case-law on this issue, as well as its application to mergers as developed both by the Horizontal and Non-Horizontal Merger Guidelines, the Commission found that the proposed transaction is unlikely to lead to anti-competitive effects through coordination for the reasons mentioned below. In addition, no coordination issue was raised by the competitors, suppliers and customers of EMP or ST-NXP during the market investigation²⁷.
- (124) In the light of existing market characteristics, the Commission examined whether coordination would be likely to take place, notably with Qualcomm, the leading integrated supplier on the merchant market of semiconductors and platforms for wireless handsets. In its *Airtours*²⁸ judgment, the Court of First Instance ruled that a collective dominant position requires that the companies reach a common understanding about the terms of coordination and that the following three conditions are met in order for the coordination to be sustainable. Firstly, the coordinating firms must be able to monitor whether the terms of coordination are adhered to. Secondly, discipline requires that there is some form of deterrent mechanism in case of deviations. Thirdly, the reaction of outsiders, such as current and future competitors not participating in the coordination, as well as customers, should not be able to jeopardise the results expected from the coordination.
- (125) In light of these criteria, effective coordination appears unlikely in this market, which is characterised by several features that are contrary to coordination. This includes differentiated products, long-term contracts, infrequent bidding and large volume of individual tenders, asymmetry of players' market shares post joint venture, significant buyer power of customers and importance of innovation in the market.
- (126) First, wireless core semi-conductors and wireless platforms are complex and differentiated products, partially designed according to the requirements of the wireless handset manufacturers. Platform prices are consequently not transparent and it would therefore be difficult both to agree on the terms of coordination and to effectively monitor prices.
- (127) Second, the usual length of supplying contracts in these markets, and the consequently infrequent bidding and large volume of individual tenders create important incentives for companies to deviate from a coordinated behaviour.
- (128) Third, market shares will remain strongly asymmetric after the joint venture between Ericsson and STM, with Qualcomm still being much larger than the joint venture. It is consequently likely that a collusive agreement would not be sustainable, because incentives to coordinate prices or to share customers will be

²⁷ Questionnaire to wafer manufacturers, question 23; Questionnaire to semiconductor manufacturers, question 32; Questionnaire to wireless handset manufacturers, question 38.

²⁸ Case T-342/99 (*Airtours plc v. Commission*), paragraph 59.

limited, especially for the joint venture which would have higher incentives to deviate from the coordinated behaviour. Moreover, one of the rationales of the transaction for the joint venture parties is actually to compete more effectively with Qualcomm, by adopting a similar integrated model, in order to better address the needs of wireless handset manufacturers, making such coordinated behaviour unlikely.

- (129) Finally, the industry is characterised by the strong countervailing buyer power of a few customers (wireless handset manufacturers). Would coordination occur, the latter could react by self supplying through in-house platform development, as this is already the case for Nokia and Motorola, or sponsor new entry. In an innovation-driven market, this could notably happen if merchant players tend to compete and innovate less. The market investigation carried out by the Commission actually showed that at least one of the large handset manufacturers could consider entering the wireless platforms merchant market in the future depending on market conditions²⁹. As a result, any attempt to coordinate behaviour is likely to be unsustainable. Moreover, any collusion with Qualcomm would directly affect SonyEricsson as a customer, with Ericsson being one of the parent companies of the joint venture between EMP and ST-NXP. For this reason, collusion appears unlikely to be backed by the parent companies and therefore to occur.
- (130) Bearing these considerations in mind, the Commission concludes that the proposed operation is unlikely to lead to anti-competitive effects through coordination.

²⁹ Questionnaire to wireless handset manufacturers, question 17

VI. CONCLUSION

- (131) On the basis of its examination of the likely impact of the creation of the joint venture, the Commission concludes that the concentration is unlikely to significantly impede effective competition in the common market or in a substantial part of it.
- (132) For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the common market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

For the Commission,

Signed

Neelie KROES
Member of the Commission