

***Case No COMP/M.4214 -  
ALCATEL / LUCENT  
TECHNOLOGIES***

Only the English text is available and authentic.

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

---

Article 6(1)(b) NON-OPPOSITION  
Date: 24/07/2006

***In electronic form on the EUR-Lex website under document  
number 32006M4214***



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 24.07.2006

**SG-Greffe(2006) D/204190**

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

PUBLIC VERSION

MERGER PROCEDURE  
ARTICLE 6(1)(b) DECISION

To the notifying parties

Dear Sir/Madam,

**Subject: Case No COMP/M.4214 – Alcatel / Lucent Technologies  
Notification of 16 June 2006 pursuant to Article 4 of Council Regulation  
No 139/2004<sup>1</sup>**

1. On 16/06/2006, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 by which the undertaking Alcatel (“Alcatel”, France) and Lucent Technologies (“Lucent”, USA) enter into a full merger within the meaning of Article 3(1)(b) of the Council Regulation. Alcatel and Lucent are hereinafter referred to as “the parties”.
2. After examination of the notification, the Commission has concluded that the notified operation falls within the scope of the Merger Regulation and does not raise serious doubts as to its compatibility with the common market and the EEA Agreement.

**I. THE PARTIES**

3. Alcatel designs, develops and builds communications networks that allow telecommunications operators and other companies to transmit all types of content (voice, data or multimedia) to customers on a global scale.

---

<sup>1</sup> OJ L 24, 29.1.2004 p. 1.

4. Lucent designs, delivers and maintains a wide range of systems, software and services for communications networks on a worldwide basis.

## **II. THE OPERATION**

5. Pursuant to the terms of an Agreement and Plan of Merger signed on 2 April 2006 (“the Agreement”), Lucent will merge with a direct, wholly-owned subsidiary of Alcatel. Lucent will be the surviving corporation and wholly owned by Alcatel.

## **III. CONCENTRATION**

6. Upon completion of the merger, Alcatel’s shareholders will own (indirectly) approximately 60 percent of the combined company and Lucent’s shareholders approximately 40 percent. The combined company’s board of directors will be comprised of five members designated by Alcatel from Alcatel’s current board of directors and five members designated by Lucent from Lucent’s current board of directors. Alcatel’s current chairman of the board of directors and chief executive officer will be appointed as non-executive chairman of the board of directors, whereas Lucent’s current chairman of the board of directors and chief executive officer will be appointed as chief executive officer of the combined company. Additionally, two persons (one French and one European) will qualify as independent directors and will be mutually agreed upon by Alcatel and Lucent. According to the parties, the merger was conceived, negotiated and agreed as a merger of equals and they submit that the corporate governance arrangements under the Agreement bear witness to this intention. Hence, according to the parties, it constitutes a concentration within the sense of Article 3(1)(a) of the Merger Regulation.
7. In the Commission’s view, the information provided by the parties on the form of control acquired does not necessarily warrant the conclusion that the transaction indeed concerns a full merger. In particular, i) the fact that post-merger Lucent will be a wholly-owned subsidiary of Alcatel and ii) the fact that Lucent’s current shareholders will ultimately receive Alcatel shares could be interpreted as evidence that Alcatel acquires sole control of Lucent. However, for the purpose of this case the question of the type of control acquired can be left open as in any case the proposed transaction constitutes a concentration within the sense of Article 3(1) of the Merger Regulation.

## **IV. COMMUNITY DIMENSION**

8. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 billion<sup>2</sup> (Alcatel: EUR 13,135 million; Lucent: EUR 7,588,742). Each of them have a Community-wide turnover in excess of EUR 250 million (Alcatel: EUR [...]; Lucent: EUR [...]), but they do not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The notified operation therefore has a Community dimension.

---

<sup>2</sup> 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, p25). To the extent that figures include turnover for the period before 1.1.1999, they are calculated on the basis of average ECU exchange rates and translated into EUR on a one-for-one basis.

## V. RELEVANT MARKETS

### Relevant product markets

9. The transaction has an impact on various markets in the communication networks industry.

#### *Optical network products*

10. Optical network products are high capacity telecommunications transmission networks used for long distance transmission.
11. As the Commission recognised in its *Ericsson/Marconi* case<sup>3</sup>, optical network products have traditionally been segmented into three categories based on the functions performed by devices in each category: i) bandwidth management (Cross-connects, DCS and OCS<sup>4</sup>, i.e., switches or multiplexers that sit at the core of the optical network); ii) aggregation devices (SONET/SDH devices<sup>5</sup>, such as ADM and OED devices<sup>6</sup>, i.e., switches or multiplexers that sit at the edge of the optical network); iii) wavelength division multiplexers (WDM), metro-WDM, LH-WDM, MR-DWDM<sup>7</sup>, i.e., systems which employ different wavelengths in order to transmit multiple signals on optical networks).
12. The parties consider it appropriate for purpose of this notification to identify a single market for optical network products, as the traditional segmentations would be blurred

---

<sup>3</sup> Case No COMP/M.4003 - Ericsson/Marconi.

<sup>4</sup> The primary function of Cross-connects is bandwidth management. Bandwidth is a measure of the capacity of the communication channel to carry and route information across a network. To help optimise the flow of information that traverse an optical network, network operators install cross-connects to manage the transmission of the light waves. DCS (digital cross-connects) are older generation cross-connects typically used by telecom carriers and large enterprises to switch and multiplex low-speed voice and data signals onto high-speed lines and viceversa. OCS (optical core switches) are newer generation cross-connects that perform the same bandwidth management functions as DCS but typically with substantially higher bandwidth management capability than DCS.

<sup>5</sup> SONET (Synchronous Optical Network) is the primary standard in North America, while SDH (Synchronous Digital Hierarchy) is the primary standard in regions outside North America, including Europe. SONET/SDH devices provide add-drop, multiplexing protection and transport capabilities. SONET/SDH is an intelligent fibre-optic transmission system for high speed (51 Mbps to 40 Gbps) digital traffic, providing advanced network management and a standard optical interface.

<sup>6</sup> ADM (add-drop multiplexers) are older generation aggregation devices that aggregate data from an access network into a larger data flow (for onward transport to the core network) and viceversa. OED (optical edge devices) are newer generation aggregation devices that have additional functionalities beyond ADM, such as the possibility to interface and map native data traffic, such as Ethernet, ATM etc. into the traditional transmission standards. OEDs are also sometimes known as Multi-Service Provisioning Platforms (“MSPPs”) or simply SONET/SDH Multi-Service devices.

<sup>7</sup> WDM (or DWDM, Dense wavelength division multiplexers) facilitate the transport of data over multiple wavelengths on a single optical fibre cable link between two points, by using a laser technology. Industry analysts distinguish between metro-WDM and long-haul WDM based on the distance that the WDM can send the data over an optical fibre line without the need of electrical regeneration of the signal (e.g. metro-WDM < 100-200 km distances, while the latest generation LH-WDM send a signal until a maximum of several hundreds Kms). Multi-Reach DWDM (MR-DWDM) is a new generation of “Dense WDM” system capable of supporting up to 3,000 km reach before re-generation is needed.

due to the rapid ongoing technological innovation. In particular, the most recent internet protocol (“IP”)-based technologies and architectures of most customers would put in competition suppliers of optical network products that traditionally had different functions; hence products that in the past would have been considered as belonging to “separate markets” would now be in the same market<sup>8</sup>.

13. The market investigation has revealed that optical network products cannot in general be considered as belonging to an overall product market. Cross-connects, SONET/SDH devices and WDMs serve different end purposes and have very different functionalities, hence they are not regarded as interchangeable by customers *inter alia* due to different management systems and protection mechanisms used. While it is true that suppliers are beginning to offer new products with increased functionalities and sometimes these products may contain some features and functions that slowly create a bridge between products categories (for example, some new SONET/SDH devices also include the function of switches and some WDM systems are beginning to offer functionality of SDH devices), nevertheless respondents have also clearly indicated that this convergence process is still in a nascent phase and the extent of deployment of these kinds of products is currently limited. Therefore, this does not allow the conclusion that the differences in the product categories within optical networks are blurred, or that the various products are substitutable from a competition law viewpoint.
14. In addition, it appears that within the individual market segments at stake (Cross-connects, SONET/SDH devices, WDM systems) each product is not necessarily a valid substitute for another product in the same category. Thus, as regards Cross-connects, as customers (mostly network operators) start upgrading their network and replacing digital technologies with optical-based ones, a DCS is not always a valid substitute for OCS, while an OCS (newer generation product) could be a replacement for DCS; the same goes for products within SONET/SDH devices. As regards WDM systems, the differentiation of the various products in terms of characteristics, price and intended use tend to be even more pronounced than for the other optical network categories and hence it is not always possible to substitute different types of WDMs<sup>9</sup>.
15. For the purpose of the present case, however, it is not necessary to delineate the precise scope of the relevant product market for optical network products, as in all alternative market definitions considered, effective competition would not be significantly impeded.

### *Broadband access solutions*

---

<sup>8</sup> The parties also provided information on alternative product market definitions based on different products/product groups. In particular, (i) regarding Cross-Connects, data was provided for DCS and OCS; (ii) regarding SONET/SDH, data was provided for ADM and OED; and (iii) regarding WDM, data was provided for metro-WDM, LH-WDM and MR-DWDM.

<sup>9</sup> For example, Metro systems are typically used in densely populated urban areas, whilst long-haul WDM is used for the carriage of traffic between regions. DWDM is similar to existing WDM devices but provides increased carriage capacity because of the ability of its optical fibres to carry more than one wavelength.

16. Broadband access solutions are telecommunication equipment components that are deployed at the level closest to the end-customer, in order to deliver broadband communication services, voice and data-related, including for instance a television signal as offered in so-called “triple-play” services.
17. Broadband access solutions concern either wireless or a fixed link to the end-consumer, including so-called “cable” networks. In the case of fixed line networks, the most widespread medium to carry the signal to the end-customer is still the old copper wire originally installed to carry only telephony, Digital Subscriber Line (“DSL”) technology having rejuvenated this transmission medium<sup>10</sup>. This has led to the rapid deployment of Digital Subscriber Line Access Multiplexers (“DSLAMs”), the main operator’s telecom equipment in this technology, which both enables a high speed connection with the end-user, and aggregates the signals from a number of end-user DSL lines. Prior to DSL, “Digital loop carrier” (DLC) technology had been introduced and provided incremental improvement over existing technology. Historically, substitutability between DSL and DLC is extremely limited. DLC’s main use is the extension in the geographic coverage of the networks. DLC avoids the need for the telecom operator to install additional cabinets to be able to reach subscribers that are at the edge of the network<sup>11</sup>.
18. The parties argue that, based on the strong demand for “triple play” services and developments, there is increasing substitutability between the different technologies discussed. The parties submit that telecom operators are engaged in a technological shift towards “triple play” oriented networks, based in particular on the IP architecture, thus reducing existing technological solutions, for instance ATM DSLAMs, to “legacy” status. Therefore, all access technologies should be considered as substitutable, as no distinction should be made *a fortiori* on the basis of different generations of products<sup>12</sup>.
19. There are instances of joint use of DSL and DLC, pointing to complementary rather than substitutable products. Indeed, with the growth in popularity of DSL and the benefits provided by shorter metallic loops used with DLC systems, digital loop carriers are sometimes integrated with DSLAMs. In any case, it appears substitutability of NG (Next Generation) DLC and DSLAMs is limited in terms of providing broadband access to end-customers; NG DLC has indeed remained focused on specific uses, including extension of networks, whereas DSLAMs have become the solution of choice to provide high speed Internet and triple play services.
20. A new generation of DLC, BLC or Broadband Loop Carrier, represents a major innovation in the DLC field by allowing to connect the end-consumer via a digital high speed link. At the current stage of the market, BLC having been introduced recently, it

---

10 In terms of architecture, in the DSL case, a “Digital Subscriber Line Multiplexer”, installed by the telecommunications provider at its end of the “last mile”, “multiplexes” the signals coming from a series of Digital Subscriber Lines - that is it aggregates the signals from those lines before they are sent along towards the telco’s central office.

11 DLC here includes NG DLC, a development of DLC introduced in the 1990’s in order to allow for higher transfers towards the telco’s network.

12 The parties also provided information on alternative product market definitions based on different products/product groups, in particular for: (i) FTTP; (ii) DLC/BLC solutions; and (iii) DSLAMs.

would appear that BLC and NG DLC may not be substitutes. Additionally, because BLC technology is new and requires still very substantial investment, possible convergence with DSL technology and substitution to DSLAM equipment is not expected to occur rapidly.

21. Different generation of DSLAMs exist, i.e. ATM-based and IP-based. Rapid switching from ATM to IP DSLAMs is observed, most operators expecting generalization of IP DSLAMs in a couple of years. This movement's speed varies depending on the size of the operator, and appears to be slower with regard to wireless operators. In any case, it would appear that IP DSLAM technology exercises competitive constraint on ATM DSLAMs technology, more than the opposite.
22. Another broadband access technology, Fibre to the Premises" (FTTP), provides near higher bandwidth to the end-consumer thanks to the use of optical fibre. From a network operator's perspective, the economics of FTTP are substantially different from those of other broadband access technologies<sup>13</sup>. FTTP involves very high investment cost and its deployment is only financially viable in dense areas, concentrating customers which are first and foremost businesses. Even in those areas, both the cost of deployment, regulatory constraints as well as the possibilities of advanced DSL technology means that the roll-out of FTTP is set to be progressive and limited to major urban centres.
23. For the purpose of the present case, however, it is not necessary to delineate the precise scope of the relevant product market for broadband access solutions, as in all alternative market definitions considered, effective competition would not be significantly impeded.

*Switching and routing equipment (S/R equipment)*

24. A switch is a device that channels incoming data from an input port to the specific output port that will take the data to its intended destination. Over the past years switching devices have evolved from having only voice transport capability to include data transport capability and now multi-media or "triple-play" capability. The following are the *main categories* of switching devices, as they have evolved over time: TDM

---

<sup>13</sup> FTTP implies that the optical network which is at the heart of a telco's network be extended right up to the end-user premises, and replace the copper wire. The cost of laying new communications infrastructure however is extremely high, especially when compared to the other technologies which imply only adding equipment on both ends of the existing copper wire connecting the end-user to the telco's network. Conversely, operational costs are very low whereas DSL requires the maintenance and upgrading of thousands of active components situated at the last stage in the network before the end-consumers.

switches (see also paragraph 30 et seq. below)<sup>14</sup>, ATM switches<sup>15</sup>, MSS (multi-service switches)<sup>16</sup>, IP/ Ethernet switches<sup>17</sup> and MPLS switches<sup>18</sup>.

25. A router is a device that forwards and transmits data packets along networks from source to destination by controlling the path along which the packets are sent. It uses a configuration table (a collection of information that identifies which connections lead to which address groups and specifies connection priorities and rules for handling traffic). Routers have evolved from digital routers to IP routers as the Internet Protocol developed.
26. The Commission has examined transactions involving suppliers of switching and routing equipment (hereinafter referred to as “S/R equipment”) in a number of prior decisions<sup>19</sup> and, in particular, has considered to what extent the relevant product markets should be segmented on a product-by-product basis or instead encompass multiple products. Although the Commission did not adopt a definitive market definition in these earlier decisions, it did recognise the growing multi-functionality and convergence between switches and routers.
27. The parties submit that S/R equipment as a whole should be considered as the relevant product market, *inter alia* due to the growing technological convergence between traditionally distinct “ATM-based switches” and “IP-based routers” and the transition from ATM to IP/Ethernet transport technologies. Furthermore, the parties point at various supply and demand-side considerations in support of their view. This market would include all core and edge switches/routers based on ATM, IP/Ethernet and/or MPLS protocols<sup>20</sup>.

---

<sup>14</sup> TDM switches are older generation digital circuit switches using time division multiplexing technology to transport voice and data communications. This was the main switch technology used by network operators during the 1980s and early 1990s. TDM switches have subsequently been superseded by ATM switches.

<sup>15</sup> ATM switches use ATM technology – the main technology used for data (initially) and voice in the EEA and worldwide beginning in the early 1990s. ATM switches allow high speed voice and data transmission and Quality of Service capabilities. Beginning 1990s, ATM-based networks have started to be replaced by IP/Ethernet based transport networks.

<sup>16</sup> MSS are multi-service switches that were developed in the early 2000s to integrate multiple protocols, primarily ATM and older, Frame Relay, into one device. MSS operate on an ATM architecture and are also referred to as ATM/MSS switches or MS WAN switches. MSS are increasingly developed with added IP functionality.

<sup>17</sup> IP/Ethernet switches are switches that use IP/Ethernet protocols instead of ATM. IP/Ethernet switches allow multi-media and “triple play” services to be offered.

<sup>18</sup> MPLS switches are multi-protocol label switches, developed to function with both digital (ATM/Frame Relay) protocols and newer IP protocols and to provide both switching and routing capability. These switches create a bridge between ATM and IP protocols. ATM/MSS switches are evolving to also handle MPLS efficiently and are also referred to as ATM/MPLS switches.

<sup>19</sup> Case No IV/M.1263 – Nortel / Bay; Case No IV/M.1440 - Lucent/Ascend Communications; Case No. COMP/M.1908 – Alcatel / Newbridge Networks; Case No COMP/M.3995 – Belgacom / Telindus.

<sup>20</sup> The parties also submitted provided information on alternative product market definitions based on different products/product groups, in particular: (i) ATM/MPLS switches alone; (ii) core IP/MPLS



28. Third parties have expressed mixed views on the scope of the relevant product market for S/R equipment. The majority of respondents were of the opinion that a market segmented on a product-by-product basis is still valid today. However, a significant number considered that ongoing technological innovations are blurring the lines between S/R equipment categories in such a way that the products can now be regarded as interchangeable, thus belonging to one overall product market.
29. For the purpose of the present case, however, it is not necessary to delineate the precise scope of the relevant product market for S/R equipment, as in all alternative market definitions considered, effective competition would not be significantly impeded.

*TDM switches (narrowband switches)*

30. The traditional way in which voice communication has been delivered is through circuit-switches, also referred to as narrowband switches. A switch is a device which connects calls from one phone line to another through a dedicated circuit between two nodes. There are two principal types of digital switching technology: (i) Time division multiplexing (“TDM”) switching and (ii) softswitch solutions for newer IP-based networks.
31. The Commission considered in its *Ericsson/Marconi* case whether TDM switching and softswitch solutions for newer IP-based networks perform comparable switching functionalities. In this context, it noted that TDM switching, which involves reserving time slots for the transmission of voice and data, performs that function through hardware, whereas softswitches utilise computer software to perform the switching functions. It also noted that the notifying party and some competitors considered that the two are not substitutable, both from a demand and supply-side perspective, and that accordingly softswitches constitute a separate product market. The Commission did not, however, conclude on the exact definition of the market.
32. The parties submit that TDM switches should be considered as a separate market for in particular two reasons. First, softswitches are rather complements than substitutes to TDM switches. Upgrades of traditional circuit-switched networks using next-generation softswitch technology are typically implemented by building a separate overlay softswitch system, rather than by replacing existing TDM switches. Secondly, there is effectively no significant future “new” demand for TDM switches in the EEA, so that even when next-generation softswitch solutions replace (rather complement) legacy TDM systems, this does not reflect the type of competitive constraints being exercised by softswitch suppliers on TDM switch suppliers that would normally be deemed sufficient to include the two products in the same relevant product market<sup>21</sup>.
33. The market investigation supports the view of the parties. From a demand-side perspective, the market investigation indicates that softswitch systems have different technical characteristics, a different functionality and price than TDM switching systems. Indeed, softswitch solutions are based on horizontal architectural layering with open interface specifications whereas TDM switching solutions are based on standards

---

routers; (iii) IP/Ethernet switches and routers; (iv) edge IP/MPLS routers and ATM/MPLS switches; and (v) edge IP MPLS routers, IP/Ethernet switches/routers and ATM/MPLS switches.

<sup>21</sup> The parties also submitted information and market share data for an alternative market for softswitches.

but adapted to national carrier dependent requirements. Softswitch technology appears to be better at supporting multi-media services whereas TDM switching is mainly used for high quality voice services. Finally, softswitch technology is claimed to be cheaper than the corresponding TDM switching technology.

34. TDM switches may interwork under certain conditions with softswitches. The full softswitch architecture is not interchangeable with TDM switches but certain elements of the softswitch architecture can be overlaid on a TDM architecture. Finally, from a supply-side perspective, TDM switches in advanced economies such as the EEA are currently limited predominantly to “legacy” demand, i.e., repair and maintenance, as well as minor upgrades and extensions, as carriers increasingly overlay (and eventually replace) existing circuit-switched networks with IP-based networks.
35. For the purpose of the present case, however, it is not necessary to delineate the precise scope of the relevant product market, as in all alternative market definitions considered, effective competition would not be significantly impeded.

### **Relevant geographic markets**

36. The parties contend that, in line with the Commission’s prior decisional practice in this industry<sup>22</sup>, the geographic market for telecommunications equipment is at least EEA-wide and possibly broader (world-wide). This would *inter alia* be borne out by the existence of international standards (established by e.g. ETSI, European Telecommunications Standards Institute), the lack of significant transport costs, the existence of European and global trade-flows and the presence of large equipment manufacturers that are active on a pan-European (and often broader) basis. In addition, the increasing globalisation in the provision of communications network products would be testified by the rapid inroad of Chinese low-cost suppliers into these markets, which are increasingly winning sales and shares at the expense of European and other (westerns) vendors.
37. The Commission’s market investigation has confirmed that the geographic market for all categories of networking products is at least EEA-wide, if not broader, for similar reasons: e.g. customers and suppliers having an EEA (if not worldwide) presence, the evolution of IP technology and EEA/worldwide standardisation. Prices and tenders for these products are normally negotiated on an EEA (if not worldwide) basis and transport costs are not a determining factor when considering suppliers<sup>23</sup>.
38. For the purpose of this decision it is not necessary to decide on the exact geographic market definition, given that in any case the concentration will not significantly impede effective competition in the common market or in a substantial part of it.

## **VI. COMPETITIVE ASSESSMENT**

### **Bidding markets**

---

<sup>22</sup> See Case COMP/M. 4003 - Ericsson/Marconi, para. 15-16.

<sup>23</sup> For instance, contracts for optical network products normally stipulate that shipment costs will be borne by vendors.

39. At the outset, it must be observed that for some years the industry has witnessed a downward pressure on prices. Customers (mostly, but not exclusively, network operators) tend to carry out their purchases of relevant products through multi-step competitive bids and other sophisticated procurement procedures (e-auctions in some cases) in which they can maximise their bargaining power vis-à-vis suppliers. Where possible, customers tend to use a dual/multiple sourcing strategy (“mix and match” of products from different vendors for different parts of their network) and award “framework contracts” in which the most important parameters (prices, cost, performance benchmarks, etc.) can be renegotiated at periodic intervals, thus allowing customers to have a significant degree of flexibility. This is to be borne in mind when considering the market share figures below, since in this scenario the possible high combined market shares are not necessarily (in themselves) to be considered indicative of future market power of the merged entity.

### **Market shares 2005**<sup>24</sup>

40. The tables below show the parties’ shares in those areas of networking equipment where their activities overlap, giving rise to affected markets within the EEA<sup>25</sup>. The market shares for Europe, Middle East and Africa (“EMEA”) have been used as a proxy for the EEA as, according to the parties, there are no independent or internal sources to provide reliable estimates of EEA shares<sup>26</sup>. The parties have also provided market share data on a global basis. However, even on a worldwide basis, the competitive assessment would not change as the parties’ combined position is similar, if not lower.

---

<sup>24</sup> Sources: Optical network products: Ovum-RHK Optical Networks EMEA Report, February 26, 2006 and Ovum-RHK Optical Networks Global Report, February 27, 2006; Broadband access solutions: MSAP/DLC Equipment Market Reaches Nearly €3 Billion in 2005 – 28 February 2006 (broadbandtrends.com); S/R equipment: Ovum-RHK Quarterly Market Update: 4Q05; Market Alert: 4Q05, IP Service Infrastructure, March 1, 2006; TDM switches: DTTBERNER ASSOCIATES INC. - 2003-2005 EU TDM Shipments.

<sup>25</sup> Other overlaps between the parties that do not result in an affected market include wireless (mobile) network products, next-generation network (NGN”) multimedia products (softswitches and media gateways), enterprise LAN switches/routers, communications network services, and applications software and solutions. There are also a limited number of non-overlap categories where Alcatel alone is active, including space solutions, transport automation solutions and submarine networks. The competitive impact of the proposed operation on these markets has been assessed and the conclusion is that the merger will not bring about any significant impediment to effective competition. Therefore, these markets shall not be further addressed.

<sup>26</sup> In response to a Commission request, the parties have made their best attempt to estimate market size and shares at the EEA level as regards the product categories/segments for which post-merger they would be leading supplier based on EMEA market shares. These EEA estimates would not materially change the picture as it results from data at the EMEA level.

*Optical network products (“ONP”)*

Europe Middle East and Africa (“EMEA”) / in terms of value								
	<i>ONP</i>	<i>Cross-connects</i>		<i>SONET/SDH</i>		<i>WDM devices</i>		
		<i>DCS</i>	<i>OCS</i>	<i>ADM</i>	<i>OED</i>	<i>Metro-</i>	<i>LH-</i>	<i>MR-D</i>
Alcatel	[20-30]	[30-40]	[20-30]	[0-10]	[30-40]	[10-20]	[20-30]	[20-30]
Lucent	[0-10]	-	[20-30]	[10-20]	[0-10]	[0-10]	[0-10]	[0-10]
<b>Combined</b>	<b>[30-40]</b>	<b>[30-40]</b>	<b>[50-60]</b>	<b>[20-30]</b>	<b>[30-40]</b>	<b>[10-20]</b>	<b>[20-30]</b>	<b>[20-30]</b>
Competitors	>20 vendors: Ericsson/ Marconi [10-20] Siemens [10-20] Huawei [0-10]	Ericsson/ Marconi [40-50] ECI [10-20] Siemens [0-10]	Ericsson/ Marconi [10-20] Huawei [0- 10] Sycamore [0-10] Nortel [0- 10] Ciena [0- 10]	7 vendors: Siemens [20-30] ZTE [10-20] Huawei [10- 20] Ericsson/ Marconi [10-20]	Siemens [10-20] Ericsson/ Marconi [10-20] ECI [5-15] Nortel [0-10] Huawei [0- 10] Tellabs [0- 10]	9 vendors: ADVA [20- 30] Nortel [10- 20] Cisco [0-10] Huawei [0- 10] Tellabs [0- 10]	>7 vendors: ZTE [10-20] Ericsson/ Marconi [10-20] Nortel [10-20] Huawei [10-20]	> 6 vendors: Huawei [20- 30] Ericsson/ Marconi [10-20] Ciena [10-20]

*Broadband access solutions*

EMEA / in terms of value (first) and volume (second)								
	<i>BAS</i>	Competitors	<i>FTTP</i>	Competitors	<i>DLC/BLC</i>	Competitors	<i>DSLAM</i>	Competitors
Alcatel	[25-35] / [30-40]	Ericsson/ Marconi [10-20]/ [10-20] Huawei [10-20]/ [10-20] Siemens [10-20]/[10- 20] ECI [0-10]/ [0-10]	[0-10]	> 15 vendors	[10-20]/[0- 10]	> 8 vendors: Ericsson/ Marconi [30-40]/[30- 40] Siemens [20-30]/[0-10] Huawei [10-20]/[20- 30]	[30-40] / [30-40]	Siemens [10-20]/[10-20] Huawei [10-20]/[10-20] Ericsson/Marconi [10-20]/[10-20] ECI [0-10]/[0-10]
Lucent	[5-15]/ [5-15]	[0-10] Fujitsu [0-10]/ [0-10]	-		[0-10]/[10- 20]		[10-20] / [5-15]	
Combined	<b>[35-45]/ [40-50]</b>		<b>[0-10]</b>		<b>[20-30]/[20- 30]</b>		<b>[40-50] / [40-50]</b>	

### Switching and routing equipment (S/R equipment)

	EMEA / in terms of value (first) and volume (second)			
	<i>S/R equipment</i>	Competitors	<i>ATM/MPLS switches</i>	Competitors
Alcatel	[10-20]/[0-10]	> 7: Cisco [40-50]/[70-80] Nortel [10-20]/[0-10] Juniper [10-20]/[0-10]	[25-35]/[30-40]	Nortel [40-50]/[30-40]
Lucent	[0-10]/[0-10]		[0-10]/[10-20]	Ericsson/Marconi [0-10]/[0-10]
<b>Combined</b>	<b>[10-20]/[10-20]</b>		<b>[30-40]/[50-60]</b>	Cisco [0-10]/[0-10]

### TDM switches

	EMEA / in terms of value (first) and volume (second)	
	<i>TDM switches</i>	Competitors
Alcatel	[20-30]/[20-30]	Siemens [60-70]/[60-70]
Lucent	[0-10]/[0-10]	Ericsson [0-10]/[0-10]
<b>Combined</b>	<b>[20-30]/[20-30]</b>	Nortel [0-10]/[0-10]

### Assessment of affected markets

41. It follows from the tables above that in most of the affected markets the increment in market share is around [0-10]% or below (at the EMEA level). This concerns in particular the following product areas: ADM, OED, Metro WDM, LH-WDM, MR-DWDM, DLC/BLC and overall S/R equipment. In these markets the combined shares of the parties reaches at most [30-40]% (in OED) and, post-merger, there will remain a number of competing suppliers that are able to constrain the merged entity. In the cross-connect submarket, DCS, there is no competitive overlap, given that Lucent discontinued its sales for this product in 2005. As regards FTTP, Lucent does not supply these solutions in the EMEA<sup>27</sup>, and therefore there is no overlap. Therefore, as regards the potential markets above, i.e. DCS, ADM, OED, Metro WDM, LH-WDM, MR-DWDM, overall S/R equipment and FTTP, the transaction does not bring about any significant impediment to effective competition.
42. As regards DLC/BLC, although the increment in market share exceeds 0-10%, the parties' combined market share would only be [20-30]% in value ([20-30]% in volume). The market position of the parties also appears balanced by that of competitors, with both a large, established, integrated player, such as Ericsson/Marconi with a market share of [30-40]% in value ([30-40]% in volume) and a newer competitor Huawei with a market share of [10-20]% in value ([20-30]% in volume). Therefore as regards the potential markets for DLC/BLC, the transaction does not bring about any significant impediment to effective competition. This conclusion would not change if subsegments were to be considered as relevant markets<sup>28</sup>.

<sup>27</sup> Lucent does provide optical fibre aggregating capability in its new Multimedia Access Platform, which remains mostly an IP DSLAM product.

<sup>28</sup> With regard to DLC /NG DLC, in Q4/2005 Alcatel remains leading player in the EMEA, with around [30-40]%, while Lucent has a [0-10]% market share. Huawei has [20-30]% market share, while Tellabs has a [0-10]% market share. Based on [...], there are strongly diverging growth rates between product generations (NG DLC / BLC). The NG DLC segment is set to decrease by 13% per year on average, while the BLC segment is expected increase very rapidly, by 66% annually. On the BLC segment alone, neither Alcatel nor Lucent were present in 2005. It should be noted that those subsegment figures are

43. As regards the parties' combined position in TDM switches, following the merger they would represent [20-30]% of the market, both in value and in volume (Lucent's incremental share is limited to [0-10]% only). With a market share of [60-70]% in value and [60-70]% in volume, clear market leader Siemens will continue to exercise a competitive constraint on the merged entity. Third party respondents have confirmed the parties' view that the demand for TDM switches in the EEA is limited to legacy demand, as carriers increasingly overlay (and eventually replace) existing circuit-switched networks with broadband or IP networks. Therefore as regards the potential markets for TDM, the transaction does not bring about any significant impediment to effective competition<sup>29</sup>.
44. The five remaining areas resulting in affected markets, where the increment in market share is more significant, exceeding [0-10]%, are: (i) optical network products, (ii) OCS, (iii) broadband access solutions (iv) DSLAM and (v) ATM/MPLS switches.

#### *Optical Network Products*

45. Based on data from the parties, the merged entity's combined 2005 EMEA share is [30-40]% (Alcatel [20-30]%, Lucent [0-10]%). The market appears to be relatively fragmented. Post-merger, there will remain at least 20 suppliers active in the EMEA, including (i) Ericsson/Marconi (2005 EMEA share of [10-20]%), Siemens ([10-20]%), Huawei ([0-10]%), Nortel ([0-10]%), ECI Telecom ([0-10]%), and a variety of firms with [0-10]% shares (e.g., ADVA, Ciena, Cisco, Fujitsu, Sycamore, Tellabs, ZTE and others). Based on the above the transaction does not bring about any significant impediment to effective competition.

#### *OCS*

46. Lucent is currently the leading OCS supplier in EMEA with a [20-30]% share. Alcatel is the second largest supplier with a [20-30]% share. Other OCS suppliers in EMEA include Ericsson/Marconi ([10-20]%), Huawei ([0-10]%), Nortel ([0-10]%), Sycamore ([0-10]%) and Ciena ([0-10]%).
47. Despite the high leading combined share ([50-60]%), the parties contend that the proposed transaction will not significantly impede effective competition by removing an important competitive constraint in the supply of OCS in the EMEA/EEA. The parties insist that the most recent IP-based technologies and architectures of most customers would put in competition suppliers of optical and non-optical network products that traditionally had different functions. In particular, the parties submit that suppliers of traditional OCS (such as Alcatel and Lucent) would face growing

---

provided by Infonetics Research, the data for DLC/BLC combined coming from OVUM/RHK research, therefore introducing possible inconsistencies.

29 This conclusion would not change when considering an alternative market for softswitches where (including within narrower "class 4" and "class 5" softswitch categories) the parties' combined share stays well below [10-20]% (with a maximum of [0-10]% in overall softswitches, by value, in the EMEA), the incremental market share being very limited ([0-5]%).

competitive constraints from suppliers of other optical products (OED and ROADM<sup>30</sup>) and, more fundamentally, suppliers of IP routers<sup>31</sup>. As a result, narrow OCS-only shares would not reflect this growing cross-product competition. Thus, OCS-only shares would not create a credible presumption of post-merger unilateral market power.

48. Even within the narrow OCS product category, the transaction will not significantly impede effective competition. Alcatel and Lucent do not appear to be the closest competitors or “next best” substitutes<sup>32</sup>. Their products are not necessarily the most advanced ones. There are a number of competing suppliers of OCS whose products are viewed by customers as being technologically equivalent to, and price competitive with, the parties’ products. Post-merger there are at least five alternative OCS suppliers to the merging parties: Ericsson/Marconi, Nortel, Sycamore, Ciena and Huawei, having a significant share of sales.
49. Customers are able to countervail the potential market power of the merged entity by virtue of their sophisticated multi-step tender procedures, as well as through their multi-source purchasing strategy as regards different parts of their networks. Therefore, if the combined firm were to attempt to implement a sustained unilateral exercise of market power as regards OCS, customers have the ability of potentially retaliating also by threatening/limiting their purchases of products other than OCS for which Alcatel/Lucent may still be suppliers in competition with other vendors. Based on the above the transaction does not bring about any significant impediment to effective competition as regards Optical network products and all possible sub-segments thereof (including OCS).

#### *Broadband Access Solutions*

50. With regard to Broadband Access Solutions taken as a whole, Alcatel holds a [25-35]% market share in the EMEA, followed by Ericsson/Marconi with [10-20]%, Siemens with [10-20]% and Huawei with [10-20]%. Lucent has a [5-15]% share, which gives the merged entity a combined market share of [35-45]%. Broadband access solutions are one of Alcatel’s key activities, the majority being represented by DSLAMs, while Lucent is mainly active in the US in relation to broadband access solutions. Alcatel’s market share has been declining substantially in the EMEA in the last three years (from [40-50]% in 2003).
51. Broadband access is an area of strong growth, in particular in the EMEA. This dynamic has been fuelled by the exponential development of broadband Internet, in particular via DSL. Indeed, estimates are that the market will grow by an average of [10-20]%

---

30 ROADM, Reconfigurable Optical Add Drop Multiplexers are a new form of multiplexers that essentially add the ability to switch signals in the optical domain.

31 There would be a number of suppliers of these alternative products (e.g., ADVA, Cisco, ECI Telecom, Juniper, Siemens and Tellabs) who do not have any significant presence in the supply of traditional OCS and, therefore, have incentive to continue this innovation competition against traditional OCS players such as Alcatel and Lucent.

32 The parties have provided an analysis of competitive tenders in which Alcatel or Lucent submitted bids to supply OCS to EEA customers. This would reveal in summary that Alcatel and Lucent each bid more frequently against [...] than they bid against each other and both Alcatel and Lucent have lost OCS tenders more often to [...] than to each other.

each year up to 2009<sup>33</sup>. The current deployment of broadband-intensive applications such as IPTV, in the context of so-called “triple play” services, promises sustained evolution in the years to come, and is increasing the case for more broadband-intensive infrastructures such as FTTP. Such developments have hastened the roll-out of new technologies to meet both the demand for increased bandwidth and that for more sophisticated services, including the provision of fixed and mobile services together, also referred to as “quadruple play”.

52. Based on the above, and in view of the presence of sufficient number of alternative vendors in this sector, the transaction does not bring about any significant impediment to effective competition on a potential market for broadband access solutions.

#### *DSLAMs*

53. Alcatel enjoys a high market share in the supply of DSLAMs, reflecting its status as one of the main inventors and promoters of this technology. In particular as a result of its “first mover” status, Alcatel at the EMEA level has a [30-40]% market share. Though Lucent has historically been a major innovator in this area, its market share is now reduced in the EMEA to [10-20]%, thus leading to a combined [40-50]% share of the DSLAM market. Competitors are Siemens ([10-20]%), Huawei ([10-20]%), Ericsson/Marconi ([10-20]%) and ECI ([0-10]%).
54. As regards a distinction per generation of product, Alcatel remains leading player in the EMEA in both the ATM and IP DSLAM segments<sup>34</sup>, but an overlap only occurs in ATM DSLAMs. Any potential concern with regard to the ATM DSLAM segment would be strongly mitigated by the very divergent trends in ATM and IP DSLAMs. Based on [...], the ATM segment is set to decrease by 40% a year, while IP DSLAMs conversely to increase by 40%. By 2009, ATM DSLAMs should be reduced in turnover terms to less than a tenth of IP DSLAM turnover. In any event, while ATM DSLAMs is increasingly being reduced to “legacy” status, new competition takes place as regards IP DSLAMs where several vendors are present in the EMEA such as Huawei ([20-30]%), Ericsson/Marconi ([10-20]%), UTStarcom ([0-10]%) and others.
55. Customers tend to consider that the DSLAM market is competitive. This is due in part to players, present in other geographical markets, being able to enter the EMEA market and win substantial bids<sup>35</sup>. Secondly, they can also partner with established players to extend their reach; this strategy has been adopted by Huawei in North America where it has partnered with Ericsson. The DSLAM field is R&D intensive, and niche players managed to make an inroad with innovative products<sup>36</sup>. Based on the above, the

---

<sup>33</sup> NSG Optical, Access - Competitive Analysis 2QFY06.

<sup>34</sup> Based on data from Infonetics Research, Alcatel had [50-60]% market share in ATM DSLAMs in 2005, and [30-40]% in IP DSLAMs. Lucent is only present as regards ATM DSLAMs with [0-10]% in 2005.

<sup>35</sup> For instance, Huawei has been selected to participate in British Telecom’s next generation network project 21CN.

<sup>36</sup> Adtran having for instance introduced in March 2006 a sophisticated product being able to support different technologies, with a compatibility with FTTP, and that can be used in a number of different scenarios



transaction does not bring about any significant impediment to effective competition as regards DSLAMs.

### *Switches and Routers*

56. On the basis of an overall market for S/R equipment the parties' combined market share in EMEA amounts to [10-20]% in terms of value, Lucent representing an incremental market share of [0-10]%. However, when subdividing this market on a product-by-product basis, the parties would have a significantly stronger position, in the supply of *ATM/MPLS switches*: [30-40]% in terms of value and [50-60]% terms of volume (increment Lucent [0-10]% and [10-20]%, respectively).
57. Nevertheless, in the EEA, in an overall market for switches and routers, the parties would continue to face strong competition from other suppliers, such as Cisco, Juniper, and Nortel. Cisco alone will account for over twice the combined sales of the parties in terms of value and for almost three-quarters of the market in terms of volume.
58. Even on the basis of a narrow ATM/MPLS switch sub-segment, the market investigation has not evidenced that the transaction would give rise to a significant impediment to effective competition. In this product category the combined entity would continue to face competition from Nortel, the market leader by value, which represents [40-50]% compared to the new entity with [30-40]% (in terms of volume, however, with a [30-40]% share Nortel remains behind the merged entity representing [50-60]%).
59. Data provided by the parties support that total demand in this sub-segment is declining and increasingly limited to "legacy" demand, whereas demand for IP/Ethernet-based equipment is expected to increase in the near future. Ongoing convergence between IP/Ethernet routers and ATM switches is occurring due to growing multi-functionality and multi-protocol capabilities. This is blurring traditional distinctions between these product categories. Thus, competition seems to occur increasingly within an overall S/R equipment market where the parties are under significant competitive constraint, in particular from Cisco.
60. Customers generally appear to be in a position to countervail the potential market power of the merged entity as regards supply of S/R equipment, in particular through their conduct in competitive bidding procedures. Customers unanimously expressed the view that there would remain alternative suppliers of S/R equipment available after the merger, from whom they could source the S/R equipment that they need.
61. Based on the above, the transaction does not bring about any significant impediment to effective competition, either in an overall S/R equipment market or in any sub-segment thereof.

### **Standardisation**

62. There is strong standardisation in the telecom sector, pushed by both competitors and customers. Indeed, it is essential for suppliers that their products remain interoperable with those of other suppliers. In fact, all major suppliers participate in the

standardisation process<sup>37</sup>. Moreover, network operators are also members of the main Standard Defining Organizations (“SDOs”) and any attempt by the parties to dominate the standardisation process in order to obtain market power in a certain technology would – if undesired- meet opposition from these customers.

63. SDOs require both disclosure of essential patents and licensing of such patents on fair, reasonable and non-discriminatory terms (“FRAND”). This limits the risk that a supplier would unduly influence the standardisation process in the industry, and/or third party access to the market through discriminatory licensing behaviour. In this respect, the market investigation has not indicated that access to relevant patents is generally hindered in the industry; due to requirements of the standardisation bodies regarding fair, reasonable and non-discriminatory licensing, the required licenses can usually be obtained.

### **Discontinuation of product lines**

64. Some customers have raised concerns that, following the transaction, they might be confronted with the discontinuation of certain product-lines of the parties. In addition, due to a limited interoperability between products of different vendors, these customers would not always be able to switch suppliers as regards upgrades and/or replacements of optical network products/elements in their optical network and may be forced to accelerate replacement of their installed network base at an even higher cost.
65. It should be observed that the parties may also decide, independently of one another and regardless of the merger, to discontinue/phase out some of their product lines. As a factual matter, the incentives to adopt such a (phasing out) decision may just depend on the successfulness of the product line at stake and on the technological developments going forward. If customers were to be locked-in with Alcatel or Lucent as regards the replacement or upgrades of their installed products, post-merger they may *inter alia* have the ability and the incentive to exclude or retaliate against the merged entity in future tenders for new products.
66. In any event, customers have contractual methods of protection. The parties’ contracts generally contain customer support clauses that require the vendor to provide adequate notice of its intention to discontinue the products in question (normally from 12 to 18 months’ notice). In addition, in response to a Commission request, the parties have declared that they have no plans to discontinue certain existing products because of the merger, and that any “natural” replacement programme will have to be implemented according to a standard phase-out process in which support for the installed base is guaranteed for at least 3/5 years or longer. Based on the above, the transaction does not bring about any significant impediment to effective competition as regards discontinuation of product lines.

## **VII. CONCLUSION**

67. 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.

---

<sup>37</sup> As an illustration, Alcatel is a member of all major organisations that define technical standards for telecommunications equipment, including ITU, ETSI, IEEE, IETF, DSL Forum (for broadband access solutions) and the MFA Forum (for S/R equipment).

This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

For the Commission  
signed  
Joaquin ALMUNIA  
Member of the Commission