

*Case No IV/M.744 -
Thomson /
Daimler-Benz*

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**REGULATION (EEC) No 4064/89
MERGER PROCEDURE**

Article 6(1)(b) NON-OPPOSITION
Date: 21/05/1996

*Also available in the CELEX database
Document No 396M0744*



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 21.05.1996

PUBLIC VERSION

MERGER PROCEDURE
ARTICLE 6(1)(b) DECISION

Registered letter with advice of delivery

To the notifying parties

Dear Sirs,

**Subject : Case No IV/M.744 - THOMSON / DAIMLER-BENZ
Notification of 12.04.1996 pursuant to Article 4 of (EEC) Council Regulation
No 4064/89**

1. The above mentioned notification concerns the proposed acquisition by Thomson-CSF Semiconducteurs Specifiques SA, Paris ("TCSS"), of 50%, by Daimler-Benz Aerospace AG, Munich ("DASA"), of 30% and by TEMIC TELEFUNKEN microelectronic GmbH, Heilbronn ("TEMIC"), of 20% of the sharecapital of a newly created company, ATDM Holding SAS, Orsay ("ATDM Holding"), into which the parent companies will merge their worldwide business activities in the field of Gallium Arsenide based microwave components.
2. After the examination of the notification, the Commission has concluded that the notified operation falls within the scope of application of Council Regulation (EEC) No 4064/89 and does not raise serious doubts as to its compatibility with the common market and with the functioning of the EEA Agreement.

I. THE PARTIES

3. TCSS is a majority owned subsidiary of Thomson-CSF SA, Paris ("TCSF"), which is a majority owned subsidiary of Thomson S.A. ("Thomson"). Thomson is a holding company, majority owned by the French state, mainly being active in the fields of consumer electronic products and electronics for industrial applications and defence

systems. The Thomson group of companies has a total worldwide turnover (1995) of ECU 11.015 billion, ECU 3.524 billion of which was generated within the Community.

4. DASA is a (indirect) subsidiary of Daimler-Benz AG, Stuttgart ("Daimler-Benz"), mainly being active in the field of aerospace and defence technology. TEMIC is a joint venture of AEG Aktiengesellschaft, Frankfurt/M. ("AEG"), and of DASA, being active in the development and manufacture of electronic components for the automotive industry and for the electronic industry. The Daimler-Benz group of companies has a total worldwide turnover (1994) of ECU 54.078 billion, ECU 31.961 billion of which was generated within the Community. Turnover figures for 1995 were not available at the date of notification.

II. THE OPERATION

5. The operation consists of two steps: First, Thomson, through its subsidiary TCSS, and Daimler-Benz, through its subsidiaries DASA and TEMIC, will acquire each 50% of the sharecapital of the newly created venture ATDM Holding. In a second step ATDM Holding will acquire two operating companies, one located in Orsay/France named ADTM SAS, to which Thomson shall transfer its Gallium Arsenide activities, and the other named ATDM GmbH located in Ulm/Germany to which Daimler-Benz shall contribute its Gallium Arsenide activities.
6. The business to be transferred consists mainly of development contracts for specific processes and products, foundry fabrication of application specific circuits and devices and the small to medium scale production and supply of GA based devices and circuits. The global turnover of the contributed activities to the joint venture amounted in 1995 to ECU 26.4 million. In 1996 the turnover of the joint venture is expected to be around ECU 18.5 million.

III. CONCENTRATIVE JOINT VENTURE

Joint control

7. The Supervisory Board of ATDM Holding will consist of six members, three of whom will be appointed by TCSS, two by DASA and one by TEMIC. The Chairman, who will not have any casting vote, will be chosen by the parties among the members of the Supervisory Board. The Supervisory Board will have the full power to direct and supervise the management of the joint venture. The Management Board of ATDM Holding will be in charge of ATDM SAS and ATDM GmbH operations. All decisions of the Supervisory Board will be reached by unanimous vote, including decisions concerning the appointment and removal of all members of the Management Board, approval of the business plans and budgets as well as decisions on all other substantial business issues such as development of new product lines, investment decisions involving amounts in excess of [...] ⁽¹⁾ and matters that are out of the ordinary course of business or in the ordinary course of business but involving amounts in excess of [...] ⁽²⁾.

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8. In case of disagreement on substantial matters, a deadlock procedure is provided in which put and call options are granted to either party. If no mutually acceptable solution is agreed upon within a certain time limit either of the parties will have the right to notify the other that it wishes to terminate the joint venture and unless both parties agree to dissolve the joint venture an auction procedure takes place. In the end of that auction procedure it is provided that one of the parent companies acquires the all shares in the joint venture of the other party.
9. Having regard to the provisions in the joint venture agreement, the Commission has concluded that ADTM Holding will be jointly controlled by its parent companies.

Autonomous full function entity on a lasting basis

10. The joint venture will be active in all phases from design, research and development, production, marketing and sales and will be established on an indefinite basis. It will have its own independent organisation with regard to marketing and sales of its products. The joint venture will also perform all research and development activities in the field of Gallium Arsenide and it will fully replace its parent companies in tender procedures for R&D contracts awarded by public organizations in the same field. In addition, the joint venture may, on a case by case basis, place some research and development projects at the research centres of the parent companies at normal commercial conditions.
11. The respective activities which remain with the parent companies only concern basic research that is not specifically related to Gallium Arsenide technology or that is related to materials not covered by the joint venture. They are needed to demonstrate the feasibility of new semiconductor technologies and do not in any case include modifications to devices structures used by the joint venture nor complete process development, qualification and production of prototypes. None of these activities are necessary for the near and mid-term activities of the joint venture. As this research is long term research, no impact on the joint venture's GA business is expected before 5 years or more. Moreover, according to the JV Agreement, all new GA-specific intellectual property rights resulting from such basic research activities will be offered for license to the joint venture on a royalty-free, non-exclusive basis.
12. Sales to companies of the same group currently account for more than two thirds of both parties product sales. However, the parties intend to broaden the joint venture's customer base in the future. They expect sales to third parties will increase during the next five years from 18% to 76% of product sales. Taking into account that the GA technology is an immature technology which is about to be developed and that its importance within the overall semiconductor field is likely to increase in the years to come, the period of five years can be regarded as reasonable for the joint venture to achieve significant sales to third parties.

Absence of coordination of competitive behaviour

13. Daimler-Benz will transfer to the joint venture its activities related to the three-inch Gallium Arsenide production line that are carried out at the Daimler-Benz Research Centre in Ulm. TCSS will transfer to the joint venture its activities related to the four-inch Gallium Arsenide production line (for the product description see paragraph 17ff). In addition, TCSS's three-inch technologies and processes will be licensed to the joint venture on a royalty-free, non-exclusive basis for a 10 year term, with an automatic renewal for subsequent 10 year periods unless terminated by either party.

14. TCSS will retain its three-inch production line for a period of twelve months and the joint venture will subcontract the manufacture of three-inch line wafers to TCSS. This ongoing production of TCSS in the start-up phase of the joint venture is necessary, because some of TCSS's processes are not yet available in the Daimler-Benz three-inch production line. Such subcontracting will therefore enable the joint venture to perform all existing contracts awarded to TCSS until the transfer of these TCSS's technologies to the joint venture is completed. After this period TCSS will phase out its three-inch production line and the joint venture will have the complete capability to meet the customer's needs.
15. By transferring to the joint venture all their assets in the field of Gallium Arsenide, the parent companies will completely withdraw from the market assigned to it. Therefore, the fact that they will retain their basic research activities does not raise any risk of coordination of their competitive behaviour.

Conclusion

16. With the contribution to the joint venture by Thomson and Daimler-Benz of all their assets related to design, development, manufacture and sale in the field of GA based microwave components with the exception of some basic research activities the ADTM Holding will have the means to perform on a lasting basis all the functions of an autonomous economic entity. Hence, as the parent companies will not be active in the market of the joint venture, it is unlikely that the concentration will lead to a coordination of the competitive behaviour of the parent companies.

IV. COMMUNITY DIMENSION

17. The combined aggregate worldwide turnover of Thomson and Daimler-Benz group of companies exceeds ECU 5,000 million. Each of the undertakings has a Community-wide turnover in excess of ECU 250 million, 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 according to Article 1(2) of the Merger Regulation.

V. COMPATIBILITY WITH THE COMMON MARKET

Relevant product market

GA based microwave components

18. The proposed operation affects the overall market for the manufacture and sale of Gallium Arsenide ("GA") based microwave components. GA is a compound of the metallic element Gallium and of the nonmetallic element Arsenic serving as a semiconductor material for the manufacture of integrated electronic circuits which are attached to wafers. GA based semiconductor components are manufactured in several consecutive sequences of process steps. First, semiconductor devices (also called chips) will be "printed" through a certain number of operations on a disc shaped GA wafer which is of three or four inch diameter. After processing on the wafers, the chips are separated and are attached on a ceramic or plastic substrate.

19. There are two distinct market segments within GA. First, Digital GAs which normally have high packing densities, each chip may have up to 10,000 or even 500,000 transistors. The transistor design is adapted to digital operation. Second, Analog GAs (monolithic microwave integrated circuits and discrete integrated circuits) which normally have low packaging densities and usually the number of components on the individual chip is limited to 10 up to 100 transistors. The transistor design is different from the Digital one, as it must operate in the analog domain.
20. GA is primarily used for the manufacture of monolithic microwave integrated circuits (MMIC) and discrete components. GA based microwave components have specific electronic characteristics that are required for applications operating at very high frequency from 1 to 100 GHz. Such components especially are used for military and aerospace technology (radar sensors, satellite receivers, navigation), mobil and wireless communications (cellular telephone, base stations, mobile broadband systems, radio links), traffic and automotive applications (collision avoidance systems, cruise control radars) and consumer electronics (cable TV tuner, video, computer workstations).
21. Compared to the well known Silicon based components the GA based components are used for high frequency applications. GA based components can be used in high frequency applications due to GA's higher mobility. Furthermore, GA based components are available in a highly insulating form which is required for the fabrication of transmission lines on GA substrates which are necessary for high frequency applications. The frequency that is covered by GA's ranges from 1 to 100 GHz whereas Silicon based components predominantly operate with frequencies ranging from 1 MHz to 1 GHz. The production line of GA based components and that of Silicon based components is different because first, GA wafers are normally smaller than Silicon wafers; second, GA is much more brittle than Silicon; third, GA wafers are much heavier than Silicon wafers and finally the metals used in GA based components cause degradation in Silicon based components so that after a short period of operation they cease to function. Because both kinds of components are aimed at different applications and are not generally interchangeable it can be concluded that they belong to distinct markets.

R&D activities relating to GA

22. In addition, the joint venture will perform research and development activities consisting in own research, studies and development works for public and industrial customers in the field of technology development (wafer fabrication process, assembly process) as well as in the field of product development (definition and design, test and validation). A large share of these activities are financed by public administrations and agencies of each Member State through specific military and civil national programs. Since GA technology is still immature, the turnover generated by R&D activities is particularly high in comparison with that coming from product sales. In fact the turnover generated from such activities and services will, at start-up, largely exceed the turnover from sales of GA based components. However, according to the estimates provided by the parties, the research and development activities of the new joint venture are expected to fall to 17% of its total turnover within the next five years.
23. No reliable estimates are available on the relevance of GA development activities within the overall field of R&D contracts. However, it is significant that, notwithstanding the relatively high proportion of its turnover generated at present by R&D activities, the joint venture will be a small player in the market for GA components in comparison with other strong competitors (see assessment below). Therefore, given the significant links

between R&D and production activities in this field, the joint venture is likely to face a number of other companies at least as advanced in GA research and technology. Thus, even if GA related research activities were considered to constitute a distinct activity, the proposed concentration would be unlikely to give rise to any serious competitive concerns in this respect. The Commission has therefore concentrated its assessment on the product market of GA based components.

Relevant geographic market

24. Because of relatively low transportation costs and the lack both of structural barriers to market entry and of import tariffs GA based semiconductors are distributed worldwide. Hence, the geographical scope of the market for the manufacture and sale of these products is considered to be at least European-wide.

Assessment

25. According to the parties the worldwide market for the manufacture and sale of GA based microwave components in 1994 had a value of about ECU 628.9 million, of which about ECU 129.3 million were generated within the Community. In Europe, most of the components were used for applications in the field of mobile communication (about ECU 60.8 million), followed by military and aerospace technology (about ECU 27.5 million), consumer electronics (about ECU 13.7 million) and traffic or automotive applications (about 3.0 million).
26. According to the parties the GA based microwave components represents less than 1% of the semiconductor production by values. The annual average of GA market growth is expected at 19% in the 1995-98 period. The parties estimate that the demand trend for the overall GA market within the EEA will rise from about ECU 147 million in 1996 to about ECU 274 in the year 2000. At the same time they expect that the overall Silicon market within the EEA will rise from about ECU 25,8 billion in 1996 to about ECU 47,1 billion in the year 2000.
27. In 1994 Daimler-Benz generated a total turnover in the field of GA based microwave components of [...] ⁽³⁾, most of it achieved through research and development activities and [...] ⁽⁴⁾ generated through the sale of GA components in the market. Thomson generated a total turnover of [...] ⁽⁵⁾, most of it achieved through research and development activities and [...] ⁽⁶⁾ generated through the sale of GA components in the market.
28. In the Community-wide market for the manufacture and sale of GA based microwave components the parties reach a combined market share of about [$<5\%$] ⁽⁷⁾. Moreover, even looking at narrower segments as those of traffic and automotive applications, military and aerospace applications and applications in mobile communication, the parties' shares are generally quite low and never above 25%.

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⁽⁷⁾ Business secret replaced by range

29. Besides the parties there are five other suppliers based in Europe: Siemens, Philips Microwave Limeil, GEC-Marconi-Material Technologies, Alcatel-Telettra and Alenia. Among the Europe-based companies Siemens is the leading supplier, having a market share of about [$<10\%$]⁽⁸⁾ in the overall market for GA based microwave components and of about [$<10\%$]⁽⁹⁾ in the segment for military and aerospace applications and of about [$<10\%$]⁽¹⁰⁾ in the segment for mobil communication. Philips and GEC at present have only minor market shares of [$<5\%$ or $<5\%$]⁽¹¹⁾ respectively. Alcatel Telettra and Alenia currently produce predominantly for their internal need.
30. On a Community-wide basis the concentration is unlikely to raise serious competition concerns as even after the merger there will be several suppliers and market shares will be relatively widely spread. In addition, the European suppliers face strong competition from companies based in USA and Japan. Imports into the Community reach a total of ECU 106.2 million representing about 82.1% of the overall market value. The largest non-European suppliers are the big industrial groups Texas Instruments, TRW, Rockwell, FUJITSU and Toshiba as well as the small and medium-sized companies ANADIGICS, VITESSE and MACOM. Motorola is a large producer of GA based microwave components predominantly for internal need.
31. Because the market share of the combined undertakings will remain relatively limited and there will be several suppliers of more or less the same size as well as sizeable imports into the Community, the proposed concentration is not likely to impede effective competition within the different markets for the manufacture and sale of GA based microwave components.

VI. ANCILLARY RESTRAINTS

32. The notifying parties have requested that the clauses and agreements described below be considered as ancillary to the concentration.
33. The parties to the concentration have agreed not to compete with the joint venture in the field of GA based microwave components. This restriction expresses the reality of the lasting withdrawal of the parent companies from the markets assigned to the joint venture. This clause may be considered as directly related and necessary to the implementation of the concentration, in order to protect the value of the assets transferred.

⁽⁸⁾ Business secret replaced by range.

⁽⁹⁾ Business secret replaced by range.

⁽¹⁰⁾ Business secret replaced by range.

⁽¹¹⁾ Business secrets replaced by ranges.

VII. CONCLUSION

34. It follows from the above that the proposed concentration would not create or strengthen a dominant position as a result of which competition would be significantly impeded in the common market or in a substantial part of it.
35. 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 functioning of the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EEC) No 4064/89.

For the Commission