OPINION OF ADVOCATE GENERAL JACOBS
delivered on 28 October 1999 *

1. This case concerns the customs classification of electronic circuits, referred to variously as network cards, boards or adapters, designed to be installed in personal computers ('PCs') in order to enable them to exchange information or data with other computers — PCs or file servers — over a local area network ('LAN') of which they all form part. I shall refer to them as 'network cards'.

2. Within the Community, goods are classified for customs purposes in accordance with the Combined Nomenclature ('CN') [1] based on the world-wide Harmonised System ('HS'), [2] to which it is identical as regards the headings and six-digit subheadings, only the seventh and eighth digits forming subdivisions specific to the CN. Since the CN and the HS refer to computers as 'automatic data-processing machines', I shall use the same term or the abbreviation 'ADP machine'.

3. The goods with which the main proceedings are concerned were imported between 1990 and 1995. During that period, headings 8471, 8473 and 8517 of the CN and of the HS were worded as follows:

8471 Automatic data-processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included;

8473 Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or princi-

* Original language: English.

1 — Annex I to Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff, OJ 1987 L 256, p. 1, as amended for the period in question by Commission Regulation (EEC) No 2886/89 of 2 August 1989, OJ 1989 L 282, p. 1, Commission Regulation (EEC) No 2472/90 of 31 July 1990, OJ 1990 L 247, p. 1, Commission Regulation (EEC) No 2587/91 of 26 July 1991, OJ 1991 L 259, p. 1, Commission Regulation (EEC) No 2505/92 of 14 July 1992, OJ 1992 L 267, p. 1, Commission Regulation (EEC) No 2551/93 of 10 August 1993, OJ 1993 L 241, p. 1, and Commission Regulation (EC) No 3115/94 of 20 December 1994, OJ 1994 L 345, p. 1.

2 — The Harmonised Commodity Description and Coding System, introduced by the International Convention of 14 June 1983, approved for the Community by Council Decision 87/369/EEC of 7 April 1987, OJ 1987 L 198, p. 1 (the 'HS Convention').

pally with machines of heading Nos 8469 to 8472;

8517 Electrical apparatus for line telephony or line telegraphy, including such apparatus for carrier-current line systems.

4. Headings 8471 and 8473 fall within Chapter 84 of the CN, Note 5(B) to which states that separately housed units of an ADP machine in the form of a system may be regarded as being a part of the complete system, but excludes from heading 8471 machines working in conjunction with an ADP machine and performing a specific function, which are to be classified under the headings appropriate to their functions or, failing that, under residual headings.

5. The issue in this case is essentially whether, at the material time, network cards were to be classified under headings 8471 or 8473 of the CN, as units, parts or accessories of ADP machines, or under heading 8517, as machines performing a specific function, namely telegraphy.

6. After the importations in issue in the main proceedings, Regulation No 1165/95 [3] classified under CN heading 8517 goods of the following description, which apparently corresponds to that of the goods in issue in the present case:

'An adapter card for incorporation in cable linked [ADP] machines enabling the exchange of data over a [LAN] without using a modem.

With such a card, an ADP-machine can be used as an input-output device for another machine or a central processing unit.

...'

3 — Commission Regulation (EC) No 1165/95 of 23 May 1995 concerning the classification of certain goods in the combined nomenclature, OJ 1995 L 117, p. 15.

The factual and procedural background to the main proceedings

7. According to the order for reference, Peacock AG ('the applicant'), a German company, imported large quantities of network cards from the United States of America and other non-member countries between July 1990 and May 1995, having them cleared through customs under CN subheading 8473 3000 as 'electronic circuits, for use solely as parts for computers falling under heading 8471 (cards)'. [4] In 1993, the applicant and two of its subsidiaries received binding customs tariff information ('BTIs') from the Danish, Netherlands and United Kingdom customs authorities, to the effect that such network cards were to be classified under heading 8473 of the CN.

8. The Hauptzollamt (Principal Customs Office) Paderborn ('the defendant'), however, subsequently issued amendment notices and claimed the extra customs duty which should have been paid had the goods been classified under what it considered to be the correct CN heading, namely 8517. The applicant challenged both those notices and the group customs declarations which it had made in compliance with them. By decision of 11 September 1995 the defendant rejected the objections as unfounded, holding that network cards were to be classified under heading 8517. The applicant appealed against that decision to the Finanzgericht (Finance Court) Düsseldorf, which seems inclined to favour the appeal but has requested the Court to rule on the following question:

'Is Note 5(B) to Chapter 84 of the Combined Nomenclature in the version which was in force from 1990 to 1995 to be interpreted as meaning that the transmission of data using the network cards described in more detail in the grounds of this order is not to be regarded as a specific function but as data processing, so that the network cards are to be classified under heading 8473?'

9. The national court has not sought a ruling on the validity of Regulation No 1165/95, which came into force after the importations with which the main proceedings are concerned, but has expressed the view that a ruling that the network cards were to be classified under heading 8473 would indirectly entail its invalidity in so far as it classified them elsewhere.

The wider context

10. Before turning to the detailed considerations relevant to the answer to be given

4 — The wording of subheading 8473 3000 at the relevant time was simply 'parts and accessories of the machines of heading No 8471'.

to the national court in the present case, I consider it useful to set out some of the aspects of the wider context of which this dispute forms a small part.

11. LANs are a relatively recent development in information technology. They follow on from earlier systems in which a central 'mainframe' computer performing all the data-processing operations was accessed from remote terminals having no independent data-processing capacity. A LAN links a number of PCs which are capable of processing data independently, together with other ADP machines, including file servers and more powerful mainframe computers, and computer peripherals, such as printers, in such a way that data may be transferred between them and that, at least in 'distributed networks', each ADP machine within the LAN may to some extent make use of the processing capacity of others. Although ADP machines may be analogue or digital, the types of LAN in issue are based on digital principles and data is transferred digitally. LANs are generally limited to a discrete area such as an office building or complex, although larger areas may be covered by networks known as WANs (wide area networks) and MANs (metropolitan area networks), which use the same technology.

12. Telecommunications technology has also developed in recent years, and transmission over telephone networks now often takes place in digital form, although conversion from and into analogue form is necessary at each end of a voice telephony communication. In order to communicate over the telephone network, for example via the Internet or for electronic mail purposes, digital ADP machines need to use a modem (*mo*dulator-*demo*dulator) which converts signals to and from analogue form. With effect from 1 January 1996, the wording of CN heading 8517 was expanded[5] to include a reference to telecommunication apparatus for digital line systems.

13. The development of LANs and the convergence of the technology used in computer data transmission and telephony have engendered uncertainty as to where exactly the distinction is to be drawn between the two types of system. This distinction is clearly important for the purpose of customs classification, a matter which is in turn of some economic impor-

5 — By Commission Regulation (EC) No 3009/95 of 22 December 1995 amending Annex I to Council Regulation No 2658/87, OJ 1995 L 319, p. 1. That regulation reflected a substantial revision of the HS.

tance, since the rates of customs duty levied on imports into the Community were generally higher, during the years in issue in the present case, for goods classified under heading 8517 than for those classified under headings 8471 or 8473.

14. The degree of uncertainty prevailing in that area may be seen from the following illustrations, of which more could be cited.

15. The United States customs authorities classified LAN equipment under HS heading 8517 until 1992 and subsequently under heading 8471; as a result of the negotiations to set up the North American Free Trade Association (NAFTA), Canada followed suit in 1995. In the early 1990s, customs authorities of various Community Member States issued conflicting BTIs classifying items of LAN equipment variously under headings 8471, 8473 and 8517. When the proposal for Regulation No 1165/95 was considered by the Customs Code Committee,[6] no opinion was delivered on the classification of network cards, apparently because the requisite majority was not attained.

Other cases

16. The present case is one of a considerable number upon which various judicial or quasi-judicial bodies have been asked to decide.

17. Related cases are, for example, pending before this Court and the Court of First Instance. In Case C-463/98 *Cabletron* v *Revenue Commissioners*, the Appeal Commissioners, Ireland, have sought a preliminary ruling on the classification of a variety of LAN equipment, including network cards, and on the validity of Regulations No 1638/94[7] and No 1165/95. In Cases T-133/98 and T-134/98 *Hewlett Packard France* v *Commission*, brought before the Court of First Instance, the applicant seeks annulment of a Commission decision ordering the revocation of BTIs classifying under heading 8471

6 — Set up in accordance with Article 247 of Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code, OJ 1992 L 302, p. 1. The Customs Code Committee must be consulted before the adoption of such regulations — see Article 10(1) of Regulation No 2658/87, cited in note 1, as amended by Article 252(2) of Regulation No 2913/92.

7 — Commission Regulation (EC) No 1638/94 of 5 July 1994 concerning the classification of certain goods in the combined nomenclature, OJ 1994 L 172, p. 5, which classifies certain other items of LAN equipment under CN heading 8517.

switches and cards enabling several computers within a LAN to share control of one or more printers; the procedure in these cases has been suspended pending judgment in the present case or in *Cabletron*.

18. A number of cases are pending, or have been decided, in Germany and there appear to be others pending in France. The national court states that similar cases are pending both before it and before the Bundesfinanzhof (Federal Finance Court). The Commission states in its observations that the Finanzgericht Baden-Württemberg and the Bundesfinanzhof have previously classified network cards and other network-linked apparatus under heading 8517. At the hearing, the Netherlands Government informed us that cases were also pending in its courts.

The WCO and the WTO

19. Even more significantly, perhaps, the disagreements over the correct customs classification of LAN equipment, including network cards, have been raised in the fora of the World Customs Organisation (WCO) and the World Trade Organisation (WTO).

20. The WCO, formerly known as the Customs Cooperation Council, is the international body under whose auspices the HS is established. It includes the Harmonised System Committee ('HS Committee'), on which the European Community is represented as a party to the HS Convention. The HS Committee has the role, *inter alia*, of proposing amendments to the HS and preparing explanatory notes thereto ('HSENs'), classification opinions, other advice on interpretation and recommendations to secure uniformity in interpretation and application of the HS. [8] Such explanatory notes, classification opinions, advice and recommendations are deemed to be approved by the WCO Council automatically unless a contracting party requests re-examination. [9] Although not recognised as having binding authority, they are usually regarded as persuasive. [10]

21. In April 1997, following questions raised in 1996, the HS Committee decided, by varying majorities, to classify communication controllers or routers, cluster controllers, multistation access units and optical fibre converters — all items of LAN equipment — under heading 8471. In November 1998, following a reservation entered by the European Community, the committee confirmed those classifications. At the same meeting, it classified Ethernet

8 — See the HS Convention cited in note 2, Article 7.

9 — Ibid., Article 8.

10 — The Court has consistently held the HSENs to be a valuable aid to the interpretation of the CN. However, at paragraphs 22 to 24 of its judgment in Case C-280/97 *ROSE Elektrotechnik* v *Oberfinanzdirektion Köln* [1999] ECR I-689, it declined to follow the HSENs on the ground that 'they are contrary to the actual wording of heading 8536 and alter its meaning'.

Adapter Cards, which are products of the type in issue in the present case, also under heading 8471 by a majority of 25 votes to 13 (with 3 abstentions), after a discussion as to the nature of the distinction between headings 8517 and 8471.

22. On 26 January 1999, the European Community entered a further reservation, requesting that all those classifications be referred to the WCO Council, as a result of which they were due to be re-examined by the HS Committee in October 1999. From some of the correspondence in that regard, which has been produced before the Court, it appears that the Commission and the WCO share the concern that the demarcation between telecommunications and data-processing equipment should be definitively established within the context of the HS Committee.

23. While the WCO is responsible for customs classification matters, it does not have any say as to the tariffs applied, which are negotiated (and any disputes in relation to which are decided) in the context of the WTO.

24. In the course of the Uruguay Round negotiations, which culminated in 1994 with the revised General Agreement on Tariffs and Trade ('GATT 1994') and the setting-up of the WTO, the European Community 'bound' its tariffs (that is to say, undertook not to increase them *vis-à-vis* other contracting parties) for, *inter alia*, headings 8471, 8473 and 8517. When, following the period of uncertainty referred to above, [11] the Commission adopted Regulations No 1638/94 and No 1165/95, thus definitively classifying certain items of LAN equipment, including network cards, under heading 8517 and thereby levying on them a higher rate of duty than had they been classified under heading 8471 or 8473, the United States considered that to amount to a change in tariff treatment and in 1997, supported by India, Japan, Korea and Singapore, brought the matter before a panel of the WTO's Dispute Settlement Body. It argued not that the Community had wrongly classified the items in question but that classification under heading 8517 of goods previously classified under heading 8471 or 8473 amounted to a breach of the Community's undertaking not to increase its bound rates of duty on those goods, thus infringing the United States' legitimate expectations in that regard.

25. On that specific ground, the WTO panel upheld the United States' claim on 5 February 1998, although it found in favour of the European Community on

11 — See paragraph 15.

certain other aspects. Its decision was, however, overturned on 5 June 1998 by the WTO Appellate Body, essentially on the ground that the panel had mistakenly assumed that GATT 1994 could be read in the light of the 'legitimate expectations' of a single party thereto rather than of the common intentions of all the parties. [12]

26. Although the parties to that dispute, the WTO panel and the Appellate Body were all at pains to stress that it concerned tariff treatment rather than customs classification, it is clear that the two strands are intertwined. The main purpose, other than statistical, of customs classification is to apply different tariffs to different goods, and the main origin of classification disputes lies in the conflicting desires of traders and exporting countries for lower tariffs and of the revenue authorities of importing countries for higher tariffs. It proved, moreover, practically impossible for either of the WTO bodies to determine the question without adverting to the classification issue and, in any event, the existence of that dispute serves to illustrate the possible extent of the repercussions of the question on which the Court has to decide in the present case.

12 — The Appellate Body's decision has been produced before the Court; the WTO panel report, although not produced, is a public document and available, *inter alia*, on the Internet.

The ITA

27. Lastly, mention should be made of the Agreement on Trade in Information Technology Products ('ITA'). [13]

28. The ITA, the parties to which include the European Community and together account for some 90% of world trade in information technology products, was concluded in Singapore on 13 December 1996 and came into effect in 1997. Under it, all customs duties on information technology products are to be eliminated as between the parties by 1 January 2000, with progressive reductions in 1997, 1998 and 1999. It covers, on the one hand, HS heading 8471 and its subheadings, subheading 8473 30 (parts and accessories of the machines of heading 8471) and heading 8517 and its subheadings [14] and, on the other hand, 'Network equipment: local area network (LAN) and wide area network (WAN) apparatus, including those products dedicated for use solely or principally to permit the interconnection of automatic data-processing machines and units thereof for a network that is used primarily for the sharing of resources such as central processor units, data storage

13 — Approved on behalf of the Community by Council Decision 97/359/EC of 24 March 1997 concerning the elimination of duties on information technology products, OJ 1997 L 155, p. 1.

14 — See Attachment A to the Annex to the ITA.

devices and input or output — including adapters, hubs, in-line repeaters, converters, concentrators, bridges and routers and printed circuit assemblies for physical incorporation into automatic data-processing machines and units thereof', wherever they are classified in the HS. [15]

29. Such network equipment is stated in the EC-ITA Schedule CXL, appended to the ITA, to fall under HS headings 8471 and 8517. In response to a question from the Court, however, the Commission has stated that those headings are given for purposes of information only and are not binding.

30. Finally in this connection, it is noteworthy that, at point 5 of the Annex to the ITA, the contracting parties agree that: 'Participants shall meet as often as necessary ... to consider any divergence among them in classifying information technology products ... Participants agree on the common objective of achieving, where appropriate, a common classification for these products within existing HS nomenclature, giving consideration to interpretations and rulings of the [WCO]. In any instance in which a divergence in classification remains, participants will consider whether a joint suggestion could be made to the WCO with regard to updating existing HS nomenclature or resolving divergence in interpretation of the HS nomenclature.'

The place of the present case within the wider context

31. It is clear that there is a wide-ranging conflict of views as to the correct customs classification of LAN equipment in general, of which network cards such as those in issue in the present case form one example. The difference of opinion dates from at least the early 1990s, although a solution should not now be long in forthcoming.

32. For one thing, discussions appear to be under way in the HS Committee of the WCO in order to reach a definition of the demarcation between telecommunication and data-processing functions, and in the context of the ITA in order to agree on the correct classification of LAN equipment.

33. Furthermore, under the ITA, [16] rates of customs duty are due to converge at zero for products under headings 8471, 8473 and 8517 as from 1 January 2000, and it is

15 — See Attachment B to the Annex to the ITA.

16 — See Article 2 thereof and EC-ITA Schedule CXL.

unlikely that the Court will be troubled with requests for a ruling on the correct classification of computer network equipment with regard to imports made after that date (at least to the extent that the exporting countries are parties to the ITA and for as long as that agreement remains in force for the Community).

34. The present case, however, concerns the customs classification of imports made between 1990 and 1995, at a time when the rate of duty claimed by the defendant under heading 8517 (apparently 7.5%, the same as the duty imposed in accordance with Regulation No 1165/95) was some 2.5 to 4 percentage points higher than the various rates which might have been levied under headings 8471 or 8473. Those imports were made, moreover, at a time before Regulation No 1165/95 was adopted, classifying network cards under heading 8517, before the revision of the HS and CN in 1996 and before the WCO classification opinions and the WTO rulings in 1997 and 1998.

35. The Court will also have to answer similar questions in *Cabletron*, with regard to a wider range of LAN equipment imported over a period extending from 1993 onwards and thus including those events. In order to avoid prejudging those questions, which include that of the validity of Regulations No 1638/94 and No 1165/95, therefore, I shall limit consideration to the single product and the specific period in issue.

36. I shall thus proceed on the basis that the present case is to be approached within the circumscribed context of the specific product and time-scale to which the main proceedings relate, although it will clearly not be possible to ignore entirely the broader considerations. In particular, I shall not consider the question of the status of Regulation No 1165/95, which it will be more appropriate to examine in the context of *Cabletron*.

37. A further consideration is that this Court is a court of law, specifically of Community law. Its role clearly includes the task of interpreting, as a matter of law, the terms of the CN. It is not a technical body qualified to settle disputes on purely technical matters, nor should it intervene in any way in a process of technical negotiation concerning the content of various HS headings, in which those with the appropriate expert knowledge will be seeking international agreement on what is clearly a vexed and highly technical question. That process may involve amendments clarifying the wording of the HS and is the most

appropriate means of achieving a long-term settlement of the differences of opinion involved. The Court may, however, contribute by stating how the relevant terms of the CN are to be interpreted, at a given moment, as a matter of Community law.

38. With those reservations in mind, I turn to my consideration of the present case.

Description of network cards

39. Before looking at the detailed criteria for interpreting the CN and the submissions made to the Court in that regard, it will be helpful to set out a rather fuller account of the operation of a network card. The national court has provided a detailed description, having commissioned an expert report concerning the manner in which such cards transform data and ensure communication over a distance.

40. It appears from the national court's explanations that all communication processes within a LAN conform to the same model, laid down in ISO [17] standard IS 7498. The model comprises seven layers, of which the highest is used by a data-processing application in the end system — a server or PC — and the lowest uses the transmission medium, the cable. Data is transferred downwards, via the successive layers, by the sending system until it reaches the lowest layer, which formats the data into 'data frames' and transmits these to the lowest layer of the receiving system which then repeats the transfer in reverse. Network cards correspond to the two lowest layers of the model. During that process, the data remains unchanged, in binary form, although other data indicating the source and destination addresses and similar items may be added in the data frames, and it may or may not, depending on the technology used, be necessary to convert the signals into a rising (1) or falling (0) current, as opposed to discrete voltages to indicate binary values (this does not amount, however, to the modulation and demodulation performed by modems). The standard used for communication over a LAN is IEEE [18] standard 802. External transceivers or repeaters may be used to cover distances of up to 4 000 metres within a building or building complex; otherwise distances of 185 metres may be achieved. Data frames are dispatched throughout the network so that they reach all the other end systems in the LAN, but

17 — International Standards Organisation.

18 — Institute of Electrical and Electronics Engineers.

are accepted only by those whose addresses they contain. [19]

Provisions for the interpretation of the CN

41. The CN and the HS are prefaced by six general rules for their interpretation, the first of which provides that '... for legal purposes, classification shall be determined according to the terms of the headings and any relative section or chapter notes and, provided such headings or notes do not otherwise require, according to the following provisions'.

42. Of those 'following provisions', Rules 2, 3(b), 4 and 5 do not appear applicable to the present case; Rule 6 applies to classification under a subheading, whereas the issue here is that of the correct heading. However, under Rule 3(a), when goods are prima facie classifiable under two or more headings, the heading which provides the most specific description is to be preferred, failing which, according to Rule 3(c), they are to be classified under the heading which occurs last in numerical order among those which equally merit consideration. Those last two rules might seem relevant but, as will appear below, I do not consider that they come into play in the present case.

43. The Court has, furthermore, consistently held that, in the interests of legal certainty and ease of verification, the decisive criterion for the customs classification of goods is in general to be sought in their objective characteristics and properties, as defined in the relevant CN headings and section or chapter notes. Likewise, for the purpose of interpreting the CN, both the chapter notes and the HSENs are important means for ensuring the uniform application of the tariff and as such may be regarded as useful aids to its interpretation. [20]

44. The terms of headings 8471, 8473 and 8517 have been set out above. [21]

45. Chapters 84 and 85, of which those headings form part, fall within Sec-

19 — This latter detail is apparently true specifically of the 'Ethernet' system, whilst other types of LAN technology operate on a slightly, though not materially, different basis.

20 — See, for example, the judgments in Case C-67/95 *Rank Xerox* v *Inspecteur der Invoerrechten en Accijnzen* [1997] ECR I-5401, paragraph 17, and Case C-382/95 *Techex* v *Hauptzollamt München* [1997] ECR I-7363, paragraph 12.

21 — See paragraph 3.

tion XVI, Note 2 to which states, in so far as is relevant, that parts of machines, if they are goods included in any of the headings of Chapters 84 or 85 — in other words, if there is a specific heading for them, as for example heading 8473 — are to be classified within their respective headings (Note 2(a)); otherwise, if suitable for use solely or principally with a particular kind of machine, they are to be classified with the machines of that kind (Note 2(b)); and all other parts are to be classified under the residual heading for the relevant chapter (Note 2(c)).

46. Under Section Note 3, composite machines consisting of two or more machines fitted together and other machines performing complementary or alternative functions are to be classified in accordance with the principal function and, under Note 4, a machine consisting of individual components contributing together to a clearly defined function covered by a heading in Chapter 84 or 85 is to be classified under that heading.

47. Section Note 5 provides:

'5. For the purposes of these notes, the expression "machine" means any machine, machinery, plant, equipment, apparatus or appliance cited in the headings of Chapter 84 or 85.'

48. Chapter 84 is entitled 'Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof' — an unlikely heading under which to find computers, but it is here that they are to be found. Note 5 to that chapter, part (B) of which has been summarised above,[22] reads in full, in so far as it relates to digital ADP machines:

'(A) For the purposes of heading No 8471, the expression "automatic data-processing machines" means:

(a) digital machines, capable of

(1) storing the processing program or programs and at least the data immediately necessary for the execution of the program;

(2) being freely programmed in accordance with the requirements of the user;

22 — See paragraph 4.

(3) performing arithmetical computations specified by the user; and

(4) executing, without human intervention, a processing program which requires them to modify their execution, by logical decision during the processing run;

...

(B) Automatic data-processing machines may be in the form of systems consisting of a variable number of separately housed units. A unit is to be regarded as being a part of the complete system if it meets all the following conditions:

(a) it is connectable to the central processing unit either directly or through one or more other units;

(b) it is specifically designed as part of such a system (it must, in particular, unless it is a power supply unit, be able to accept or deliver data in a form (code or signals) which can be used by the system).

Such units presented separately are also to be classified within heading No 8471.

Heading No 8471 does not cover machines incorporating or working in conjunction with an automatic data-processing machine and performing a specific function. Such machines are classified in the headings appropriate to their respective functions or, failing that, in residual headings.'

49. None of the notes to Chapter 85 relates to heading 8517.

50. In the HSENs, Note I to heading 8471 defines data processing as 'handling information of all kinds, in pre-established logical sequences and for a specific purpose or purposes', and states that ADP machines 'may be self-contained, all the elements required for the data processing being combined in the same housing, or they may be in the form of systems consisting of a variable number of separate units'. The heading also covers separately presented constituent units of ADP systems. However,

it excludes 'machines, instruments or apparatus' incorporating or working in conjunction with an automatic data-processing machine and performing a specific function.

51. Note I(A) states, *inter alia*:

'Digital data-processing machines usually consist of a number of separately housed interconnected units. They then form a "system".

A complete digital data-processing system must comprise, at least:

(1) *A central processing unit* which generally incorporates the main storage, the arithmetical and logical elements and the control elements; in some cases, however, these elements may be in the form of separate units.

(2) An *input unit* which receives input data and converts them into signals which can be processed by the machine.

(3) An *output unit* which converts the signals provided by the machine into an intelligible form (printed text, graphs, displays, etc.) or into coded data for further use (processing, control, etc.).

Two of these units (input and output units, for example) may be combined in one single unit.

These systems may include remote input or output units in the form of data terminals.

Such systems may also include peripheral units, apart from the input or output units, designed to increase the capacity of the system, for instance, by expanding one or more of the functions of the central unit (see Part (D) below).'

The note goes on to state:

'Appliances such as measuring or checking instruments adapted by the addition of devices (signal converters, for example) which enable them to be connected directly to a data-processing machine, are, in particular, **not** to be regarded as specifically designed as parts of automatic data-proces-

sing machines. Such appliances fall to be classified in their own appropriate heading.'

52. Note I(D) to heading 8471 concerns separately presented units. It states, *inter alia*:

'Apart from central processing units and input and output units, examples of such units include:

(1) *Additional input and output units* ...

...

(4) *Control and adaptor units* such as those to effect interconnection of the central processing unit to other digital data-processing machines, or to groups of input or output units which may comprise visual display units, remote terminals, etc.

This category includes channel to channel adaptors used to connect two digital systems to each other.

(5) **Signal converting units.** At input, these enable an external signal to be understood by the machine, while at output, they convert the output signals that result from the processing carried out by the machine into signals which can be used externally.

...'

53. However, the note for that heading specifically excludes modems, 'which modulate, in transmittable form over a telephone network, information obtained from an [ADP] machine, and reconvert it into digital form' and which are to be classified under heading 8517. [23]

54. The note for heading 8473 describes the accessories to which it relates as 'interchangeable parts or devices designed to adapt a machine for a particular operation, or to perform a particular service relative to the main function of the

23 — It may be stated here that it seems to be common ground that network cards are not to be classified as modems.

machine, or to increase its range of operations'. The only example which it gives of particular relevance to ADP machines is that of diskettes for cleaning disk drives.

55. With regard to heading 8517, the HSENs state: 'The term "electrical apparatus for line telephony or line telegraphy" means apparatus for the transmission between two points of speech or other sounds (or of symbols representing written messages, images or other data), by variation of an electric current or of an optical wave flowing in a metallic or dielectric (copper, optical fibres, combination cable, etc.) circuit connecting the transmitting station to the receiving station.'

Analysis

56. Although the national court expressly seeks a ruling on the interpretation of Note 5(B) to Chapter 84 of the CN with regard to classification under heading 8473, the real question is what the correct heading for the classification of network cards was at the material time. In order to give a useful reply, it may therefore be helpful to examine all relevant headings and notes — comparing heading 8473 not only with heading 8517 but also with heading 8471 — when answering that question.

57. I shall look first at the relevance of the distinction between data processing and telecommunications techniques, then at the definition of a machine performing a specific function within the meaning of Note 5(B) and finally at the distinction between units, parts and accessories of an ADP machine.

The relevance of the distinction between data processing and telecommunications

58. The issue has been raised, and discussed in some detail both before the national court and here, as to whether network cards are to be regarded as data-processing or telecommunications equipment.

59. The applicant argued before the national court that network cards do not use telecommunications technology, which involves transformation, amplification and modulation over the carrying medium, requiring a live wire; they function in the same way as other computer input or output equipment such as a keyboard or screen. Data is not modulated or demodu-

lated, an essential feature of telecommunications technology; it is transmitted with the help of the network cards but under the control of the ADP machines, in a form unaltered but for the addition of control data.

60. In its observations to the Court, the applicant considers that the exchange of data between different levels, its formatting into data frames and its transmission by cables corresponds to the definition of data processing given in the HSENs as 'handling information of all kinds, in pre-established logical sequences and for a specific purpose'. The fact that such handling or processing includes transmission is of no consequence, since transmission within a LAN is an essential part of the data processing by the LAN and by the ADP machine, and is strictly comparable to the transmission between the various units (keyboard, screen, printer, central processing unit, or 'CPU') of an ADP machine, to which ISO standard IS 7498 also applies and where conversion into data frames also takes place. [24] Note 5(B)(b) to CN Chapter 84 states that an ADP machine must be able to 'accept or deliver data in a form (code or signals) which can be used by the system'. Thus, network cards do not perform any function other than that of data processing. The fact that communication can take place over distances of up to 4 000 metres is due to the use of ancillary equipment such as repeaters; in accordance with the judgment in *Techex*, [25] it is the characteristics and properties of the unit in question, not of the network as a whole, which have to be taken into account. At the hearing, the applicant stressed that an essential characteristic of telephonic or telegraphic communication is the establishment, solely for the duration of the communication, of a link between the individual receiving and sending stations involved, whereas in a LAN all stations are in constant communication, regardless of whether they are sending data or not, or whether the data they are receiving is addressed to them or not.

61. The defendant's arguments before the national court emphasised that IEEE standard 802 relates to telegraphic transmission, covering up to 4 000 metres, rather than the 25 to 30 metres possible between computer interfaces. Network cards are

24 — Although this last detail was denied by the Netherlands Government at the hearing.

25 — Cited in note 20, paragraph 19 of the judgment: 'The Court observes that such an appraisal [although it processes information, a Vista board performs a specific function within the meaning of the last paragraph of Note 5(B) to Chapter 84 of the Combined Nomenclature because it enables an automatic data-processing machine to perform a specific technical function, namely process images] is not based on the objective characteristics and properties of the unit in question but on the functions which the unit enables an entire automatic data-processing machine to perform.'

telegraphy interfaces connecting the network to the computer and are controlled by the network. The transmission cables used are telegraphy cables and not data-processing cables.

62. The Commission considers that network cards perform a specific function other than data processing. The upward and downward transfers between the various levels in a LAN involve changes in form or format but not in content; they thus constitute signal transmission and not data processing. The transmission techniques used between computers (mainly pulse code modulation) are, moreover, those of telecommunications and classification must thus be under heading 8517. If heading 8517 were to be excluded, only the residual heading 8543 would be appropriate, as the cards still perform a specific function other than data processing.

63. The Netherlands Government considers network cards to form part of the LAN — which it appears to regard as an entity in its own right, separate from the machines which it links together — rather than of the ADP machines in which they are installed. A LAN, it reasons, transmits data and does not process it, so that network cards should be classified, with the LAN, as telecommunications equipment under heading 8517.

64. Much of that argument relates to the distinction between data processing and telecommunication in general, often in the context of a LAN viewed as a whole. To that extent, it goes in my view beyond what is necessary to decide this particular case. Here, we are concerned with the classification of network cards alone, which must be based on their objective characteristics and properties, examined in the light of the relevant headings and notes. [26] Despite the submissions made by the Netherlands Government at the hearing, LAN equipment is not a category recognised by the CN, whether network cards are covered by that concept or not. It is thus neither necessary nor wise, particularly in view of the wider issues raised in *Cabletron*, [27] to formulate any general definition of the distinction between data processing and telecommunications for our present purposes. The answer can in my view be found more simply, whilst still taking due account of the arguments summarised above, which will prove relevant when considering the function of a network card.

65. What is essential, as the national court has recognised, is the interpretation of Note 5(B) to Chapter 84 of the CN. I shall therefore first consider whether network cards are 'machines incorporating or working in conjunction with an automatic data-processing machine and performing a specific function' within the meaning of that

26 — See paragraph 43 above and paragraph 19 of the judgment in *Techex*, quoted in note 25.

27 — See above, paragraphs 35 and 36.

note. If they are, then it must be decided what heading is appropriate to that function and, if not, it must be decided what they actually are in relation to an ADP machine.

Machines performing a specific function

— Machines

66. The Commission has contended, on the basis of Note 5 to Section XVI,[28] that a network card is to be regarded as a 'machine' because it can be classified only in Chapters 84 or 85. At the hearing, the applicant dismissed that argument as specious and contrary to the commonsense meaning of the word, and I am inclined to agree.

67. It may be pointed out, first, that Note 5 to Section XVI refers not to items which can be classified only in Chapters 84 or 85 but to 'any machine, machinery, plant, equipment, apparatus or appliance cited in the headings of Chapter 84 or 85'. Network cards are not 'cited' there.[29]

68. Quite apart from such a literal exegesis, a consideration of the note in its context argues against the Commission's interpretation.

69. Note 5 is the last note to Section XVI[30] and it follows three others covering the classification of, respectively, parts of machines, composite machines and machines consisting of individual components. It begins, in English: 'For the purposes of *these* notes ...'[31] In the context of the notes preceding it, it serves an obvious purpose, but I do not believe that it was meant to apply also to the interpretation of Note 5(B) to Chapter 84, from which it is separate. Indeed, the French version (the other authentic language version of the HS) makes it clear that the definition of a machine relates to the *preceding* notes, and is followed in most of the remaining Community language versions of the CN.

28 — Quoted above, in paragraph 47.

29 — Note 5 may be contrasted with Note 2(a), which speaks of goods 'included' in any of the headings in Chapters 84 or 85. This point is borne out by most of the language versions of the CN, although it may be a little less clear in some others. What is most important, however, is that it is clear in English and in French (*'cités'* in Note 5 and *'compris'* in Note 2(a)), the two authentic language versions of the HS, which is the basis of the CN and the origin of all the (main) section and chapter notes.

30 — Although it is followed by a number of 'additional notes' to the section, which are specific to the CN.

31 — My emphasis.

The German version refers specifically to the notes to Section XVI.

70. But even the English version is not capable of extending the definition to Note 5(B) to Chapter 84. If 'machine' in the latter context were to be taken to refer *only* to items cited in the headings of Chapters 84 and 85, as must be the case in Note 5 to Section XVI, then Note 5(B) would *not* exclude appliances such as measuring or checking instruments (Chapter 90) working in conjunction with an ADP machine, which it would be absurd not to exclude on its terms and which are specifically mentioned as being excluded in the HSENs. Moreover, the notes to Chapter 84 (in particular Note 1(b)) specifically refer to 'machinery' falling within Chapter 69, a fact which argues strongly against the use of the more formal definition in the context of the chapter notes. Finally, the HSENs [32] formulate the exclusion as relating to 'machines, instruments or apparatus' and not to 'items to be classified in Chapters 84 or 85'.

71. The expression 'machines incorporating or working in conjunction with' an ADP machine should thus in my view be interpreted in Note 5(B) to Chapter 84 in accordance not with Note 5 to Section XVI but with its ordinary meaning. That ordinary meaning includes, I consider, at least the presence of moving, movable, removable or interchangeable parts, in other words, some *mechanical* feature. On that basis, I am satisfied that it does not cover elements such as network cards.

72. The relevant paragraph of Note 5(B) is, I consider, designed rather to exclude from heading 8471 all machines, in the normal sense of the word, regardless of where they may be classified under the CN, which incorporate an ADP machine (which is certainly not the case for network cards) or which operate on their own but are in some way connected to an ADP machine.

— Specific function

73. This brings me, independently of the question of the definition of a 'machine', to the issue of the 'specific function'. I do not consider that the standards used in LAN technology or the distance covered by a LAN are determining factors; the criterion is explicitly one of the function performed and not of the technical means by which it is performed.

32 — Note 1 to heading 8471, quoted in paragraph 50 above.

74. In the case of machines incorporating an ADP machine, the reference to a specific function presumably relates to machines which use an ADP machine to help them carry out a particular task other than data processing. One might think, for example, of an automated industrial production line. Similarly, for a machine working in conjunction with an ADP machine, I take it to mean that the former is designed to perform a specific function, and is capable of doing so, but that in fact some advantage is derived from its being linked to an ADP machine. A good example here is given in the HSENs — a measuring machine linked by a signal converter to an ADP machine, presumably for the purpose of allowing the ADP machine to process the data from the measurements, and perhaps thus to provide feedback as to which measurements are to be made. There are many instances in industry and elsewhere [33] of such computer-assisted technology.

75. The criterion common to those examples, and it is one which seems to me to flow from a normal reading of the last paragraph of Note 5(B), is that the type of machine excluded from heading 8471 is an entity in its own right performing a specific task which either could also be performed, albeit more laboriously, without an ADP machine or is in any event quite distinct from data processing.

76. That is not the case with network cards. There is no specific function which they can perform without an ADP machine or which is distinct from data processing, since the function which they do perform is to convert signals sent or received by the ADP machines in which they are installed in the course of, or with a view to, processing. In that, they are comparable to any other means whereby ADP machines accept or deliver data but cannot sensibly be described as machines performing a specific task in conjunction with an ADP machine.

— Data processing

77. To take the analysis a step further, and to return to the submissions on the nature of data processing outlined above, [34] I shall consider briefly the argument presented to the Court as to whether network cards

33 — Computer-assisted tomography, in the field of medicine, is an example which springs to mind.

34 — See paragraphs 59 to 63.

themselves perform a data-processing function in converting data between a form usable by the ADP machine and a form which can be transmitted over the LAN. On the one hand, it is said that such conversion meets the HSENs' definition of 'handling information of all kinds, in pre-established logical sequences and for a specific purpose or purposes'. On the other, it does not involve any arithmetical computation or logical decision, nor are network cards freely programmable, as required by Note 5(A)(a) to Chapter 84.

78. In view of my conclusion as to what is meant by 'specific function' in the context of the last paragraph of Note 5(B), it might be thought unnecessary to answer this last question. Whether the function performed by network cards is that of 'data processing' or not, I take the view that it is not a 'specific function' for the purposes of that note. It is not necessary to establish that each and every component of a computer system processes data before it can be classified as a unit, part or accessory of an ADP machine — power supply units in particular do not perform such a function.

79. However, I think it worth pointing out that the definition in Note 5(A)(a) is of an ADP machine, and not of the function of data processing. Moreover, it is noteworthy that the HSENs use the term 'handling' (in French *'mise en œuvre'*) which to me includes lesser degrees of intervention than transformation through arithmetical or logical operations. The conversion effected by network cards, as described in the order for reference and the submissions before the Court, may in my view be included in the definition given in the HSENs.

80. Finally, at paragraph 20 of its judgment in *Techex*,[35] the Court found that Vista boards, whose function is to convert external signals into a form which can be processed by the ADP machine in which they are incorporated and to represent the results of that processing on screen, perform no function other than data processing. That finding seems equally applicable to the function performed by network cards.

81. As regards Note 5(B) to Chapter 84 of the CN, therefore, I conclude that network cards are not 'machines ... performing a specific function', within the meaning of

35 — Cited in note 20.

that note. They are thus not excluded, on that basis, from heading 8471.

Units, parts or accessories

82. However, that does not necessarily imply that they *must* be classified under heading 8471. Since network cards are designed for, and only for, installation in ADP machines, which are apparently designed to receive them, they might well be regarded as 'units' within the meaning of that heading, but they might also fall within the definition of 'parts' or 'accessories' under heading 8473.

83. It should be pointed out here that units, parts and accessories of ADP machines are expressly mentioned in those two headings. Thus, in accordance with Note 2(a) to Section XVI, there is no need for any recourse to Notes 2(b) or (c), which relate to parts for which there is no specific heading. The same is true of Section Notes 3 and 4, which are clearly intended to afford guidance as to the classification of the elements of combined or composite machines where there is no express provision in headings or subheadings.[36] It is scarcely conceivable that the authors of the HS, having taken the trouble to provide for units, parts and accessories of ADP machines in general, and for specific instances thereof by name, should have envisaged further innominate categories of components to be classified in accordance with different rules.

84. The distinction to be drawn, therefore, is between 'units' under heading 8471 and 'parts' or 'accessories' under heading 8473.

— Parts

85. If component elements of an ADP machine are to be divided into those three categories, the first which I would eliminate is that of 'parts'.

86. The Netherlands Government submitted at the hearing, and the Commission appeared to agree, that part of the definition of a 'part' must be that it is essential for the operation of the whole. The applicant, on the other hand, argued that the essence of a 'part' was that it must be incorporated (as network cards are) into the machine and could not 'stand alone'.

36 — See paragraphs 45 and 46 above.

87. It seems to me that, since a network card is not essential to the operation of an ADP machine, it should not be regarded as a 'part' within the meaning of heading 8473, regardless of whether it can or cannot stand alone. On the latter point, it appears from a document produced by the Commission in response to a request for information from the Court that network cards may come in various configurations, such as 'a slot-in card, a *stand-alone unit* or a credit-card-like device' which slips into a computer (my emphasis).

— Units or accessories

88. That does not, however, solve the problem of classification, since network cards might still be 'units' within the meaning of heading 8471 or 'accessories' within the meaning of heading 8473.

89. Neither 'units' nor 'accessories' are defined in the section or chapter notes to the CN, although it is stated that units classifiable under heading 8471 must be connectable to the CPU and specifically designed as part of the system — both of which criteria are fulfilled by network cards, a fact which militates in favour of classification under that heading. However, the HSENs to heading 8473 also offer a tempting definition of 'accessories' — that of 'interchangeable parts or devices' — in French 'organes d'équipements interchangeables' — 'designed to adapt a machine for a particular operation, or to perform a particular service relative to the main function of the machine, or to increase its range of operations'. That too could apply to network cards as they have been described in the present proceedings.

90. Nevertheless, the authors of the HS clearly intended a distinction to be drawn between 'units' and 'accessories' of ADP machines. Since neither of the headings, even read in conjunction with the relevant section or chapter notes, provides a more specific description, General Rule 3(a) cannot apply but Rule 3(c) would call for classification under heading 8473.[37] First, however, it is necessary to look at the relevant HSENs which, in accordance with the Court's case-law,[38] should be taken as providing authoritative guidance as to the correct classification of network cards. It is, in any event, appropriate that the Community should apply, whenever possible, the classification which flows from the HSENs,

37 — See paragraph 42 above.

38 — See note 20. There is no suggestion here that the HSENS are in any way inconsistent with the wording of the headings (see *ROSE Elektrotechnik*, cited in note 10).

both pursuant to its commitments under the HS Convention [39] and because those notes are drawn up by the committee which has the most detailed responsibility for determining the interpretation of the HS, on which the CN is based, the Community and its Member States being represented on that committee and taking part in its deliberations.

91. The HSENs give only one example of an accessory for an ADP machine covered by heading 8473 — diskettes for cleaning disk drives — and it is clearly of a very different nature from that of network cards. The descriptions given of units included under heading 8471, on the other hand, are just as clearly of a very similar nature.

92. For example, it is stated that a complete digital data-processing system *must* comprise an input unit which receives data and converts it into signals to be processed by the machine and an output unit which converts the signals provided by the machine into, *inter alia*, coded data for further use. [40] Other examples given include additional input and output units, control and adaptor units connecting the CPU to other ADP machines (including channel to channel adaptors used to connect two digital systems to each other) and signal converting units which enable an external signal to be understood by the machine or convert output signals into signals which can be used externally. [41] Those functions appear very closely comparable to those of the network cards in issue in the present case.

93. It might be objected that network cards are not 'separately housed units' according to the terms of Note 5(B) to Chapter 84 of the CN (and of the HSENs), since they are designed to be inserted into the housing of the ADP machine itself. Indeed, counsel for the applicant produced a network card at the hearing to demonstrate that it was not separately housed, and argued that it could therefore not be regarded as a unit.

94. I do not consider such an objection to be valid. We have seen [42] that network

39 — Cited in note 2; see Article 3 thereof and Case C-267/94 *France* v *Commission* [1995] ECR I-4845, paragraph 20 of the judgment.

40 — HSEN Note I(A) to heading 8471, quoted in paragraph 51 above.

41 — HSEN Note I(D), quoted in paragraph 52 above.

42 — See paragraph 87 above.

cards may take the form of stand-alone devices. Moreover, the wording of heading 8471 refers merely to 'units', not 'separately-housed units', and it would be absurd if an item were to be classified under that heading when separately housed but not when placed in the same housing as the ADP machine itself. It is clear, in any event, from the wording of subheading 8471 20, which refers to ADP machines 'containing in the same housing' at least a CPU and an input and output unit, and from subheadings 8471 91, 8471 92 and 8471 93, which refer to units 'whether or not presented with the rest of a system', that units need not be separately housed. The Court has, furthermore, regarded Vista boards, intended to be incorporated into ADP machines, as 'units' for the purposes of Note 5(B) to Chapter 84,[43] and the Commission, in reply to a question put by the Court in the present case, has indicated that graphics cards and serial interface cards, which are installed in a similar manner, may be classified under heading 8471.

95. Furthermore, a very close parallel to the function of a network card is exemplified by the 'floppy' disk drive which is a feature of the vast majority of PCs. The function of such a unit is to transpose data from the PC on to a disk, and vice versa, by converting it between two different formats. The disk may be used merely as a backup for the PC (ADP machine) in question, or it may be used (and in the absence of a LAN is frequently used) to transfer data or software between ADP machines. It seems to me that network cards should have the same classification for customs purposes as such disk drives. It is clear from the Court's judgment in *Vobis*[44] that such disk drives are to be classified under heading 8471, and I thus take the view that network cards should be classified under the same heading.

96. Classification under heading 8471 is both consistent with and confirmed by HSENs I(A) and (D), cited above.[45] A network card clearly meets the criteria, laid down in both HSEN I(A) and Note 5(B) to Chapter 84, of being connectable to the CPU and specifically designed as part of an ADP system. It is capable of (indeed specifically designed for) accepting and delivering data in a form usable by the

43 — See the judgment in *Techex*, cited in note 20.

44 — Case C-121/95 *Vobis Microcomputer* v *Oberfinanzdirektion München* [1996] ECR I-3047, paragraph 18 of the judgment.

45 — Paragraphs 51 and 52.

system. On input it receives data, which it converts into signals which can be processed by the ADP machine; on output, it converts signals provided by the machine into coded data for further use, or signals which can be used externally. It is used to effect interconnection of the CPU to other ADP machines, or to connect two ADP systems to each other.

97. I therefore conclude that the network cards in issue should be regarded as units of ADP machines for the purposes of CN heading 8471 — a conclusion which is in conformity with the Court's past practice and, moreover, with the positions subsequently taken by the WCO's HS Committee.

Conclusion

98. In the light of all the above considerations, I take the view that the answer to the national court's question should be that:

Between July 1990 and May 1995, network cards designed to be installed in automatic data-processing machines of heading 8471 of the Combined Nomenclature, in order to enable them to exchange information or data with other such machines over a local area network, were to be classified under heading 8471 as units of such machines.