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D E C I S I O N
of 25 November 1998

Case Number: T 0398/97 - 3.5.1

Application Number: 91906166.3

Publication Number: 0472700

IPC: H04J 3/08

Language of the proceedings: EN

Title of invention:
Switch for multiplexes

Patentee:
GPT Limited

Opponent:
Alcatel Kabel Beteiligungs-AG

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-



Case Number: T 0398/97 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 25 November 1998

Appellant:
(Opponent)

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Representative:

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Respondent:
(Proprietor of the patent)

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Representative:

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 3 March 1997
rejecting the opposition filed against European
patent No. 0 472 700 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: P. K. J. van den Berg

Members: A. S. Clelland
C. Holtz

Summary of Facts and Submissions

I. The European patent in the suit was opposed by the present appellant on the ground that the subject-matter of the claims lacked an inventive step having regard to the disclosure, *inter alia* of the following documents:

D1: "Experimental broadband drop/insert/cross-connect system: 1.8 Gbit/s optical shuttle bus", Fujimoto et al, IEEE Global Telecommunications Conference and Exhibition, Hollywood, RL, USA, 1988, Conference record, pages 954 to 959,

D3: "Basiswissen der Datenkommunikation", G. Kafka, Franzis-Verlag, 1987, Munich, DE, pages 122-141.

II. In its decision the opposition division found that the claims as granted were both novel and inventive. The opposition was rejected.

III. The appellant filed an admissible appeal and requested that the decision be set aside and the patent revoked; an auxiliary request was made for oral proceedings.

The respondent (proprietor) requested that the appeal be dismissed.

IV. Oral proceedings were held on 25 November 1998.

V. Claim 1 of the patent as granted reads as follows:

"1. An add/drop multiplex comprising a matrix switch (30) the drop side of which is connected via buses (31, 32) to respective time slot assignment function circuits (33, 34) and characterised in that the time slot assignment function circuits (33, 34) are interconnected by at least one bus (35) capable of relieving the load on the matrix switch (30) and of transferring traffic in one direction only from the add to the drop functions of the multiplex, the bus (35) providing interconnectivity between tributaries."

VI. At the oral proceedings it was argued by the appellant that the skilled person, starting out from the add-drop multiplex known from acknowledged prior art document D1 and faced with the problem of network loading, would find it obvious to provide a by-pass for local traffic in order to avoid loading the external network. In particular, the skilled person would find the solution to the problem of network loading in Figure 7.12 of D3, the associated text of which stated that local subscribers can be connected by way of the multiplexer without loading the network. Although the respondent sought to make a distinction between the various components shown in the preferred embodiment of the patent at Figure 4, it was clear that they all formed part of the multiplex and were components of the interchange matrix switch shown in Figure 2 of the patent. The skilled person would, given the matrix switch known from D1, find it obvious to provide a by-pass as disclosed by D3.

VII. The respondent argued that D3 was exclusively concerned

with a particular form of data communication in which individual terminals were connected to a host computer. D3 made no mention of switches and was not concerned with add-drop multiplexing. The connection made between the individual terminals and the host, shown as dotted lines in Figure 7.12, was inadequately described and was not clearly by way of the multiplexer itself; it might well be a hard-wired connection. Moreover, the claim was explicitly limited to the use of a bus for transferring traffic in one direction only, whereas the D3 device apparently permitted the transfer of traffic in both directions. The skilled person, starting out from D1, would not consider the disclosure of D3 relevant to his problem, so that the subject-matter of claim 1 of the patent involved an inventive step.

Reasons for the Decision

1. The only issue to be decided is that of inventive step; the question before the Board is whether the skilled person, starting out from the add-drop multiplex acknowledged as known from document D1 and faced with the problem of network loading in consequence of local traffic, would find it obvious to provide a bus to transfer local traffic from the add to the drop side of the multiplex directly. The appellant argued that such an arrangement is known *per se* from document D3 in the context of multiplexes in general, whereas the respondent took the view that the disclosure of D3 was unclear and had no relevance to an add/drop multiplex.

2. It was common ground at the oral proceedings that the single most relevant document is acknowledged prior art document D1 and that it discloses an add-drop multiplex in accordance with the preamble of claim 1; referring to Figures 1, 3 and 6 of D1 it can be seen that in the context of an optical loop network a plurality of multiplexes are provided around the loop, a multiplex being referred to in D1 as an "optical shuttle node" (OSN). The function of an OSN can be seen in Figure 3 as permitting either a through connection, a cross-connect, or an add-drop, referred to in D3 as a "drop/insert". From Figure 6 the architecture of an OSN can be seen to consist of three layers, a first layer having electro/optic and opto/electric converters, a second layer having a matrix switch providing add, drop and cross-connect functions and a third layer having plurality of interface modules which from page 958, right hand column, third paragraph, *inter alia* serve as time slot assignment function circuits.

3. D1 does not provide any mechanism for by-passing the network if a local connection is to be made, i.e., a signal on the add side is to be supplied to the drop side of the same matrix switch. It is necessary for such a signal to traverse the network.

4. In the Board's view this is a well-known problem in the telecommunication field. For example, one of the functions of a PABX is to perform internal connections without the need for access to an external switch, thereby saving trunk capacity and costs. The present problem is analogous to this and is not exclusive to an add-drop multiplex; once the skilled person has posed

the problem the solution becomes obvious: monitor the data at the add side and divert purely local data to the drop side. D3, which is a textbook, shows this in the context of a generalised multiplexed system. In particular, Figure 7.12 of D3 shows a networked system in which individual terminals are connected to the network by way of a multiplexer. The associated text explicitly states that local subscribers can be connected by way of the multiplexer without building up a network connection. Figure 7.12 shows in dashed lines connection between a subscriber and a host computer. It was argued by the respondent that this was not analogous to what was done in the patent and the document would accordingly have had no relevance to the skilled person. The Board agrees that D3 is not concerned with add-drop multiplexes. It does however show that the idea of avoiding network connections where possible was appreciated in the multiplex art. Although the respondent asserted that the dashed line connections shown in Figure 7.12 did not constitute a bus and were arguably hard-wired rather than a separate path within the multiplexer, the Board takes the view that the reference in the text to local connections by way of the multiplexer (German: "die Möglichkeit, auch lokale Teilnehmer über den Multiplexer anzusprechen") makes clear that the multiplexer itself provides a path. Claim 1 of the patent is not limited to any particular kind of device being connected to the network.

5. Finally, the respondent argued that claim 1 is limited to a bus which transfers traffic in one direction only, from add to drop, as set out in the description at

column 4, lines 44 to 52. It is however self-evident that if a data path between an add and a drop is being created to avoid loading the network then this path will be unidirectional. Whether the resultant data path is referred to as a bus is a matter of terminology, but since every subscriber can be expected to have access to this data path it would seem likely that a bus will be used.

6. The Board accordingly considers that the skilled person, starting out from the add-drop multiplex of D1 and faced with the patentee's problem, would without the exercise of invention be led to apply the teaching of Figure 7.12 of D3 and provide a data path between the add and drop sides of the multiplex. The skilled person would thereby arrive at the structure as claimed in claim 1 of the patent. The subject-matter of this claim accordingly does not involve an inventive step.
7. There being no other requests, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar: The Chairman:

M. Beer

P. K. J. van den Berg