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**D E C I S I O N**  
**of 27 September 1999**

**Case Number:** T 0651/99 - 3.5.1

**Application Number:** 94200004.3

**Publication Number:** 0608011

**IPC:** H04Q 1/50

**Language of the proceedings:** EN

**Title of invention:**

Communication between a telephone exchange and connected telephone sets

**Applicant:**

Telefonaktiebolaget LM Ericsson

**Opponent:**

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**Headword:**

-

**Relevant legal provisions:**

EPC Art. 52(1), 56, 84

**Keyword:**

"Inventive step (no)"

**Decisions cited:**

T 1055/92

**Catchword:**

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Boards of Appeal

Chambres de recours

**Case Number:** T 0651/99 - 3.5.1

**D E C I S I O N**  
**of the Technical Board of Appeal 3.5.1**  
**of 27 September 1999**

**Appellant:** Telefonaktiebolaget LM Ericsson  
126 25 Stockholm  
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**Representative:** Rosenquist, Per Olof  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 1 March 1999  
refusing European patent application  
No. 94 200 004.3 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** P. K. J. van den Berg  
**Members:** A. S. Clelland  
M. J. Vogel

## Summary of Facts and Submissions

- I. This is an appeal against the decision of the Examining Division to refuse application No. 94 200 004.3 on the ground that claim 1 did not comply with Article 84 EPC because it did not contain all the technical features essential to the invention and was not supported by the description.
- II. In the statement of grounds of appeal the appellant argued that claim 1 met the requirements of Article 84 and Rules 29(1) and (3) EPC. In particular, the wording of claim 1 was said to be supported by the description. On the Examining Division's interpretation of the invention it would be necessary to restrict the number of conversion units to the specific number of four shown in the preferred embodiment, an unreasonable limitation. The appellant also drew attention to the Examining Division's approach in assessing support for claim 1, namely a notional claim based on the "problem-solution approach" against which the actual claim 1 was compared.
- III. In a communication on behalf of the Board the rapporteur took the view that it was more profitable to consider claim 1 in the light of the common general knowledge in the art than to enter into a debate on support or "essential features"; extracts from two books were cited as representative of the common general knowledge:
- D5: Bellamy: "Digital Telephony", Wiley, New York  
1982, pages 21, 22, 221, 222

D6: Noll: "Introduction to Telephones & Telephone Systems", Artech House, Boston, 1991, pages 124 to 127

It was not clear to the rapporteur that what was claimed involved an inventive step having regard to the common general knowledge.

IV. Oral proceedings were held on the 27 September 1999, in the absence of the appellant. Prior to these proceedings the appellant indicated in a submission received by fax that he would not be attending the proceedings. He also questioned the absence in the rapporteur's communication of any discussion of Article 84 EPC, the basis for the Examining Division's rejection of the application, and the introduction of two documents not previously cited in the prosecution of the application. It was argued that the subject-matter of claim 1 involved an inventive step since the underlying problem on which the application was based was not known in the prior art.

V. The appellant's **main request** as set out in the statement of grounds of appeal is that the Examining Division's decision be set aside and that "processing of the application is continued", which the Board understands as a request that the application be remitted to the Examining Division for examination to continue, on the basis of the following documents:

**Claims:** 1 to 12 as received on 17 November 1998

**Description:** pages 2 to 6 as originally filed;  
pages 1 and 1a as received on

17 November 1998

**Drawings:** Sheet 1 as originally filed.

VI. Independent claim 1 of the main request reads as follows:

"A telephone network comprising a number of telephone sets (1) connected to an exchange, a first kind of information between the telephone sets and the exchange being sent in such a shape that therefor a conversion unit is required and the telephone sets (1) being collected in groups, characterized by

- a number of conversion units (19) arranged for each group, the number being greater than one,
- a first switch unit (21) connected between the number of conversion units arranged for a group and the exchange and a second switch unit (15) connected between the number of conversion units for the group and the telephone sets of the group, and
- control means (17) controlling the first and second switch units and assigning to information of the first kind, which is to be forwarded, a signal path between a telephone set of the group and the exchange through a conversion unit included in the number of conversion units, which conversion unit is not already occupied."

Claim 7 is a further independent claim directed to a telephone exchange arranged to have telephone sets

connected to it and having substantially the same features as claim 1.

VII. In accordance with a **first auxiliary request** the claims of the main request are replaced by claims 1 to 10 as received on 10 May 1999. Claim 1 of this request reads as follows:

"A telephone network comprising a number of telephone sets (1) connected to an exchange, a first kind of information between the telephone sets and the exchange being sent in such a shape that therefor a conversion unit is required and the telephone sets (1) being collected in groups, characterised by

- a number of conversion units (19) arranged for each group, the number being greater than one and less than the number of telephone sets (1) in a group,
- a first switch unit (21) connected between the number of conversion units arranged for a group and the exchange and a second switch unit (15) connected between the number of conversion units for the group and the telephone sets of the group, and
- control means (17) controlling the first and second switch units and assigning to information of the first kind, which is to be forwarded, a signal path between a telephone set of the group and the exchange through a conversion unit included in the number of conversion units, which conversion unit is not already occupied."

Claim 6 of this request is an independent claim directed to a telephone exchange arranged to have telephone sets connected to it and having substantially the same features as claim 1.

VIII. A **second auxiliary request** consists of claims 1 to 5 of the first auxiliary request.

### **Reasons for the Decision**

#### 1. *Background to the application*

1.1 In local-loop digital telephone communications serial signals are passed between the individual subscriber and an exchange over the usual twisted pair. These signals consist both of data and control information, requiring separate processing. A problem which arises is that the control information must be converted at or near the exchange from the serial form sent over the twisted pair to a parallel form used in the exchange or in an exchange line board. The use of an individual serial-to-parallel converter (and vice versa) for each subscriber raises costs, whilst sharing one such converter between a plurality of subscribers runs the risk of contention between subscribers and consequent blocking.

1.2 This problem is solved by providing a number of converters to be shared between a larger number of subscribers; claim 1 of the main request refers to the subscribers (or in the language of the claim "telephone sets") being collected in groups with a number of

conversion units arranged for each group, the number being greater than one. Switch units (multiplexers) are arranged between the subscribers and the converters, and between the converters and the exchange. Since each subscriber has access by way of the multiplexer to a plurality of converters the likelihood of contention is reduced.

- 1.3 Claim 1 of both auxiliary requests differs from claim 1 of the main request in specifying that the number of conversion units is not only greater than one but less than the number of telephone sets or subscribers in a group.

2. *Inventive step*

- 2.1 The Board, making use of its powers under Article 114(1) EPC introduced into the proceedings extracts from two books, D5 and D6, which are considered to represent the common general knowledge in the telephone network art at the claimed priority date. The cited passages from these documents deal with the problem of the efficient use of resources in the standard analog telephone network. To this end concentrators are provided which enable a larger number of subscribers to be connected to a smaller number of lines. The probability of blocking of any individual subscriber can be calculated from the percentage of use by the subscriber and the number of lines provided for a group of subscribers, and can be arranged to be at an acceptably low level. The extracts from D5 and D6 make clear that such concentration is standard practice in the analog telephone art.



2.2 The application acknowledges as known a digital system in which a plurality of subscribers are connected to a single series/parallel converter. It solves the resulting problem of contention by providing a plurality of converters for a group of subscribers. As discussed above however, this is what is done in the related problem of resource allocation in analog systems. In the Board's view the skilled person, starting out from the acknowledged digital telephone system and faced with the appellant's problem of contention between individual subscribers would without the exercise of invention apply the common general knowledge in the analog telephone art and in doing so would arrive at exactly the arrangement claimed.

2.3 The subject-matter of claim 1 of the main request accordingly lacks an inventive step.

2.4 Claim 1 of the auxiliary requests merely adds to claim 1 of the main request that the number of conversion units is less than the number of telephone sets in a group; the above analysis is based on this premise, so that the subject-matter of claim 1 of each of the auxiliary requests also lacks an inventive step.

2.5 The above comments on claim 1 of each request apply equally to claim 7 of the main request and claim 6 of the first auxiliary request.

3. There being no other requests, it follows that the application must be refused.

4. The Board considers it appropriate to comment on the

objection raised by the Examining Division which led to refusal of the application. The Examining Division's reasoning is based on the problem as set out above but then goes on to refer to the "problem-solution approach formulated in the description" and to define what the Examining Division sees as the "essence of the invention". Based on what it sees as the "essence of the invention" as derived by the "problem-solution approach" the Examining Division concludes that claim 1 lacks an "essential technical feature". The primary reason for refusal of the application is therefore that claim 1 "does not meet the requirement following from Article 84 taken in combination with Rules 29(1) and (3) EPC that any independent claim must contain all the technical features essential to the invention".

The Board considers that this approach confuses two entirely separate issues, namely inventive step and support. In an analysis of inventive step the so-called "problem-solution approach" is a recognised tool in determining whether or not claimed subject-matter would be obvious to a person skilled in the art. Its application to the question of whether a claim is supported by the description is based on a misunderstanding of what constitutes an "essential feature". The Board wishes in this connection to draw attention to its decision T 1055/92, point 5 of the Reasons:

"During proceedings before an Examining Division, it often happens that pertinent documents are cited with the result that the core of a claimed invention has to be changed and also the corresponding problem to be solved appears in modified form. In such cases often

new essential features must be added to the claim in order to identify clearly the solution and to distinguish the invention from the prior art".

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

M. Kiehl

P. K. J. van den Berg