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D E C I S I O N
of 30 November 2004

Case Number: T 1017/01 - 3.5.3

Application Number: 89101118.1

Publication Number: 0332818

IPC: H04Q 7/22

Language of the proceedings: EN

Title of invention:

Cellular telephone system with shared radio data channels

Patentee:

MOTOROLA, INC.

Opponent:

ALCATEL
Northern Telecom Ltd.
Telefonaktiebolaget L M Ericsson

Headword:

Shared radio data channels/MOTOROLA

Relevant legal provisions:

EPC Art. 100(a), 100(c), 56, 69(1), 54(2)

Keyword:

"State of the art - burden of proof not discharged"
"Interpretation of unclear granted claims - recourse to the
description"
"Added subject-matter - no"
"Inventive step - no"

Decisions cited:

T 0077/94, T 0037/96

Catchword:

-



Case Number: T 1017/01 - 3.5.3

D E C I S I O N
of the Technical Board of Appeal 3.5.3
of 30 November 2004

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
5 July 2001 concerning maintenance of European
patent No. 0332818 in amended form.

Composition of the Board:

Chairman: A. S. Clelland
Members: D. H. Rees
R. Moufang

Summary of Facts and Submissions

- I. The outcome of opposition proceedings relating to European Patent No. 0 332 818 was that the patent in amended form was held to meet the requirements of the EPC. The decision was announced on 25 October 2000 in oral proceedings, and written reasons were despatched on 5 July 2001.
- II. Opponent 1 had requested revocation of the patent on the ground that the claimed invention did not involve an inventive step (Articles 100(a), 52(1) and 56 EPC). Opponents 2 and 3 had requested revocation on the grounds that the claimed invention was neither novel nor involved an inventive step (Articles 100(a), 52(1), 54 and 56 EPC), and that the subject-matter of the patent extended beyond the content of the application as filed (Article 100(c) EPC).
- III. Of the documents relied on by the opponents, the following remain relevant to the present decision:
- D1: WO 86/00775 A
- D10A: L. Loberg et al, "Mobitex - The new Swedish cellular mobile radio service", in: Radio Receivers and Associated Systems, Publication No. 68 of Institution of Electronic and Radio Engineers, London, 1986, pages 77-82.
- D10C: Mobitex System Description, dated 30 September 1996.

D17B: P. Robert et al, "Wideband time division multiple access mobile telephone systems offer improved access capabilities compared to conventional systems. An important step towards ISDN", Proceedings of Nordic Seminar on Digital Land Mobile Radiocommunication, Stockholm, 1986, pages 166 to 171.

IV. The single independent claim 1 of the patent as maintained reads as follows:

"A cellular telephone system for switching telephone calls between cellular telephones (102) and a landline network (160, 161) and switching data between the cellular telephones (102) and a data network (154, 155), each one of the cellular telephones generating a voice radio channel request to request voice service and generating a data radio channel request to request data service, the cellular telephone system comprising: a plurality of base sites (110) each including: transceiver means having at least one signalling radio channel for receiving the voice radio channel requests and the data radio channel requests from the cellular telephones, and having voice radio channels and data radio channels for communication with the cellular telephones; and switching means (140) coupled to each of the plurality of base sites for coupling the voice radio channels to the landline network and the data radio channels to the data network; the cellular telephone system characterized in that each of the plurality of base stations further comprises: control means responsive to each received voice radio channel request for assigning a requesting

one of the cellular telephones to one of the voice radio channels and responsive to each received data channel request for assigning a requesting one of the cellular telephones to one of the data radio channels, such that each of the data radio channels is capable of accommodating multiple data calls from at least two of the cellular telephones."

V. Opponent 1 (Appellant 1) filed a notice of appeal, with the appropriate fee, on 13 September 2001. A statement of grounds of appeal was submitted on 14 November 2001.

Opponent 3 (Appellant 2) also filed a notice of appeal, with fee, on 4 September 2001. A statement of grounds followed on 29 October 2001.

Both appellants requested that the decision under appeal be set aside and the patent revoked, maintaining all the grounds put forward in the opposition proceedings. In addition both made conditional requests for oral proceedings.

VI. The two appeals were consolidated in accordance with Article 9(1) RPBA.

VII. The respondent (proprietor) requested reversal of the opposition division's factual determination that document D10C formed part of the state of the art at the time of the priority date. It was further requested that the decision that the patent in amended form met the requirements of the EPC be upheld, i.e. that the appeals be dismissed. The respondent made a further conditional request for oral proceedings.

VIII. The other party (Opponent 2) did not respond to the appeals, and has not taken any subsequent part in the proceedings.

IX. Oral proceedings were held on 30 November 2004 during which evidence was taken by the hearing of a witness. The decision of the board was announced at the end of these proceedings.

Reasons for the Decision

1. *The status of document D10C as prior art*

1.1 Document D10C is a detailed description of the Mobitex system, a communications radio network for text, data and speech which was developed by Televerket Radio (Swedish Telecom Radio). It consists of 44 pages and contains on its front page in a box headed "date" the indication "86-09-30 G".

1.2 The appellants allege that document D10C was publicly available in 1986 since any person interested in the document would have received a copy from Televerket Radio. The respondent contests the public availability of document D10C before the priority date of the patent in suit.

1.3 According to the established case law of the boards of appeal, when lack of novelty or inventive step is alleged, the burden of proof lies with the party claiming that the information in question was made available to the public. Unlike scientific or technical journals, company papers such as prospectuses or

product descriptions cannot automatically be assumed to have made their way to the public (T 77/94 of 28 April 1998, point 2.3; T 37/96 of 7 February 2000, point 2.1.2). Whether they form state of the art rather depends on the particular circumstances and the available evidence.

1.4 The appellants argued that the public availability of document D10C follows from an explicit statement on page 78 of document D10A which was published in 1986. The passage referred to reads as follows: "The following technical description is a condensed version of the 40 page Mobitex System description, available in English upon request. Full specifications of the mobitex terminals in English can be ordered from the Swedish Telecom Radio against a copying charge." The appellants furthermore pointed to a letter from Mr Tomas Martinsson of 7 September 2000, which was submitted as evidence by Opponent 2 in the proceedings before the opposition division, according to which a person making a request for the 40 page Mobitex System Description 1986 in English would have received the 44 page document since there were no other documents, at the time, with the same name.

1.5 According to the oral testimony given by the witness Martinsson before the Board, there were different versions of the Mobitex System Description before the priority date of the patent. The witness explained that letter "G" on the front page of document D10C meant that it was the seventh approved version of the description. Thus, versions carrying the letters A, B, C, D, E and F had been approved before. Moreover, according to the testimony, it was likely that even

further versions with the letters H or I existed. The witness also acknowledged that there were differences in content between the several versions since making a new version served the purpose of updating. This testimony provides a plausible explanation for the fact that the reference in document D10A is to a "40 page Mobitex System description" whereas document D10C consists of 44 pages: it can be assumed that the author of document D10A did not specifically refer to the "G version", i.e. to document D10C, but either to another version of it or, more generally, to the Mobitex System Description as a type of document.

- 1.6 The witness further stated that the Mobitex System Description was openly made available to anyone interested in the new Mobitex system, including in particular journalists. A person asking for a copy of the description would have received its latest version. Only if the person had asked for the history of the document, might he have received previous versions. The board notes however that the witness was responsible neither for document distribution policy nor for the contents of the various versions of the Mobitex System Description. Further, he was neither involved in the distribution of the Mobitex System Description nor did he remember a specific case of an outsider receiving a copy of the document. Thus the statements above are in the nature of an observation of the general policy of his employers, and his evidence amounts to the statement that document D10C has, from its appearance, the form of a document that in his experience his employers would have distributed on request.

1.7 The testimony of the witness Martinsson as well as document D10A nonetheless support the conclusion that Televerket Radio made versions of the Mobitex System Description publicly available before the priority date of the patent. However, they do not demonstrate that the particular version G, i.e. document D10C, was accessible to the public. No evidence has been put forward for a specific period of time during which version G was available to the public. Since in this respect the testimony of the witness remained rather general in nature, doubts remain as to whether all the different versions of the Mobitex System Description were indeed released to the public or otherwise available to it. It cannot be excluded that, in view of the on-going updating process, one particular version was immediately superseded by a successive version and thus in fact never distributed to the public. In this point the board holds that the appellants have failed to discharge the burden of proof which they bear.

1.8 Hence document D10C has not been established as belonging to the state of the art for the contested patent according to Article 54(2) EPC and will not be further considered in this decision.

2. *Interpretation of the final feature of claim 1*

2.1 Since the interpretation of the final feature of claim 1 ("such that each of the data radio channels is capable of accommodating multiple data calls from at least two of the cellular telephones") is relevant to all the issues of added subject-matter, novelty and inventive step, this question will be dealt with, to the extent necessary for the decision, as a preliminary.

2.2 Firstly, the board considers that the expression "data call" implies a connection maintained over an extended period of time, in network terms either a real or "virtual" circuit; this is in contrast to the "datagrams" associated with connectionless network protocols, such as IP (Internet Protocol). Moreover the reference to radio channels accommodating data calls implies that the connection uses a specific channel over such an extended period. This excludes the possibility that a connectionless network-layer (OSI layer 3) protocol is used and the "data calls" are part of a higher-level, for example application-layer, protocol. If this were the case, the routing, including the choice of radio channel, of different datagrams associated with a single data call would be independent, so that a single channel could not be said to accommodate the call as opposed to accommodating individual datagrams.

2.3 The feature as a whole

2.3.1 The appellants offered two interpretations of this last claim feature as a whole. In the first, since there was no temporal limitation in the feature, it was satisfied if a single radio channel could be used for data calls from different telephones sequentially, i.e. after a data call from telephone X was terminated, the same channel could be used for a call from telephone Y. In the second interpretation each channel was capable of accommodating multiple data calls simultaneously from each of at least two telephones. This in turn required that the channel must be capable of accommodating multiple data calls simultaneously from a single

telephone. The respondent, on the other hand, argued that the feature required, but did not require more than, that one channel should be capable of accommodating simultaneously a data call from each of at least two telephones. That this feature is capable of being given at least three plausible interpretations is witness to its inherent lack of clarity. In such circumstances, the skilled person must look to the description and drawings for enlightenment (Article 69(1) EPC).

2.3.2 It is apparent from the description (e.g. Fig. 5 and the accompanying text at column 10, line 43, to column 11, line 39) that the embodiment of the invention given in detail corresponds to the interpretation given by the respondent, namely that one channel can accommodate simultaneously a data call from each of at least two telephones. Equally, nothing in the description and drawings would lead the skilled person to conclude that what was intended to be claimed was one of the other interpretations.

2.3.3 Moreover, the other two interpretations are finally unconvincing. The first interpretation, that the channel merely accommodates different calls sequentially, distorts the natural meaning of the phrase: if a coffee machine were described as being able to accommodate multiple coffee cups, the normal reading would be that it could accommodate multiple cups at the same time, not that it could accommodate different cups one after another.

2.3.4 As to the second interpretation, although the feature claimed, literally interpreted, includes the possibility of e.g. five calls simultaneously from two telephones, it does not in fact require multiple simultaneous data calls from the same telephone. The feature would equally be literally satisfied by three simultaneous data calls, each of which is from a different telephone.

2.4 "Channels" "accommodating" multiple data calls

2.4.1 With regard to the term "channel", it was accepted by all parties that the meaning of this term depended on the context, and could refer to radio frequency bands or time slots. The respondent argued however that a radio channel "capable of accommodating multiple data calls" did not include the possibility of sharing a time slot between two calls (in the sense that, for example, every even-numbered occurrence of the time slot belongs to call A and every odd-numbered instance belongs to call B) or dividing up a time slot into a fixed number of smaller slots ("mini-slots"). This would rather be the creation of "sub-channels". A channel as in the contested patent should be seen as a system resource of sufficient capacity to carry a connection, by implication a capacity varying with circumstance, whereby a "sub-channel" would in fact be a "channel" in its own right within the terms of the claimed subject-matter. However, no evidence that such a distinction had been intended by the applicant was offered.

2.4.2 The patent does not give any definition of the term "channel", nor does the embodiment discuss what kind of channels are being used, beyond a reference to time slots in the context of the T1 protocol used in the connection between a base site and a switch, suggesting that a data channel is intended to have a fixed capacity equal to that of a voice channel (column 5, lines 37 to 47, of the published patent). This impression is reinforced at column 6, line 58 to column 7, line 4: "all radio channels can be used for voice, dedicated data or packet-switched data. If the channel is used for data, either dedicated or packet switched, the speech processing elements are removed from the data path." With respect to the contention that channel capacity is in some way tied to the requirement of the call, the board also notes the passages at column 11, lines 3 to 5, ("to determine if a packet-mode radio channel with spare capacity ... is available,") and column 12, lines 24 to 26, ("CDT [Cellular Data Telephone] 102 acknowledges arrival on the assigned packet-mode radio channel and indicates the required level of packet service.") These passages show that the term "channel" is not used in the description in such a way that the channel's capacity is dependent on the service level required. Rather, the capacity of a channel is regarded as fixed, and only part of this capacity may be required for a particular level of data service.

2.4.3 There is also no definition of "accommodating" given in the description. In fact, this term is only used in the introductory sections (columns 1 to 3 of the published patent) and the closing summary (column 16). In the detailed embodiment, there are only references to radio

channels being "assigned" (e.g. column 5, line 30) and "multiplexing" CDTs onto a channel (e.g. column 6, lines 52 to 55). Moreover, claim 1 of the original application merely specified "assigning a cellular telephone to a shared data radio channel."

2.4.4 Thus, in the light of the internal evidence of the patent, the board judges that the skilled person would indeed understand that a "radio channel" would be "capable of accommodating multiple data calls" in the sense of the claim if there were a mechanism for subdividing a channel into sub-channels, with each sub-channel serving a call.

3. *Added subject-matter (Article 100(c) EPC)*

3.1 The appellants argued that the feature discussed at Point 2 above embraces the situation where e.g. five data calls from two telephones, in other words more than one call from the same telephone, are accommodated. Such a possibility was said not to have been disclosed in the originally filed application. As discussed at Point 2.3.4 above however, this feature does not require more than one call from the same telephone, nor, in the judgement of the board, does it disclose this possibility, any more than the originally claimed "shared data radio channels" did. The person skilled in the art would rather recognise that the claimed feature is unclear and refer to the description for clarification, as also discussed above at Point 2.3.1.

3.2 The appellants further argued that the failure to restrict claim 1 to a packet-switched system constituted added subject-matter. In the context of the

whole disclosure, which consistently referred to packet-switched systems (e.g. column 1, lines 5 to 8), the shared data radio channels of claim 1 of the originally filed application must be interpreted as "packet-mode radio channels" (e.g. column 7, lines 17 and 18). That this was no longer specified in the claimed subject-matter constituted an extension of the subject-matter beyond the content of the application as filed. The respondent counter-argued that the original disclosure was not restricted to packet-switched systems, pointing to e.g. column 6, lines 5 to 8 of the originally filed application, which refers to "dedicated" data channels in addition to packet-switched data channels.

The board is not convinced by the latter argument; although the contested patent clearly does envisage channels having a dedicated data transfer mode, it does not give any indication that channels in this mode could be shared - indeed, that would appear to be a contradiction in terms. The only mechanism specified in detail for sharing data channels is indeed the use of packet-mode data. However, neither is the board convinced that the original claim 1 was implicitly limited to packet-switched systems. It considers that the assignment of a telephone to a shared data channel does not imply a restriction to packet-switched systems. Rather the wording of claim 1 of the application as originally filed embraces any implementation of shared data channels. Hence a similarly broad formulation in the present claimed subject-matter has not added anything to the original disclosure of the patent application.

4. *Novelty and inventive step with respect to the disclosure of document D1*

The appellants raised various objections with respect to the novelty and/or inventive step of the claimed invention. Of these, the only one it is necessary to consider in this decision is that based on D1 as the closest prior art.

4.1 D1 discloses the following features of the subject-matter of claim 1:

A cellular telephone system for switching telephone calls between cellular telephones (Fig. 2, 208-210) and a landline network (Fig. 2, "Public Switched Telephone Network"), each one of the cellular telephones generating a voice radio channel request to request voice service and generating a data radio channel request to request data service (page 19, lines 29 to 33, voice request implicit), the cellular telephone system comprising:

a plurality of base sites (Fig. 2, 202 and 206, 203 and 205, 204 and 207) each including: transceiver means (Fig.2, 202-204) having at least one signalling radio channel (page 8, lines 13 and 14) for receiving the voice radio channel requests and the data radio channel requests from the cellular telephones, and having voice radio channels and data radio channels (page 18, lines 14 to 27) for communication with the cellular telephones; and
switching means (Fig. 2, 201) coupled to each of the plurality of base sites for coupling the voice radio channels and the data radio channels to the landline network;

each of the plurality of base stations of the cellular telephone system further comprising:

control means (Fig. 2, 205-207) responsive to each received voice radio channel request for assigning a requesting one of the cellular telephones to one of the voice radio channels and responsive to each received data channel request for assigning a requesting one of the cellular telephones to one of the data radio channels (page 17, line 31 to page 19, line 3, and page 19, lines 29 to 33).

4.2 Hence the only claimed features not disclosed by D1 are:

a data network connected to the switching means, to which the data calls are coupled; and

the data radio channels being capable of accommodating data calls from at least two telephones (see Point 2 above).

4.3 The appellants argued that D1 does in fact disclose the data network; since the PSTN is being used to transfer data, it, or at least that part of it connecting devices communicating data over the PSTN, is by definition also a data network. However, the board is not convinced by this argument; the claim specifies two networks and, taken with the description and drawings, this must be interpreted as requiring two separate networks, one for voice connections and one for data transfer.

The appellants also argued that D1 discloses that the radio channels are capable of accommodating data calls from at least two telephones. However, this was based

on the sequential interpretation of this feature rejected by the board, see Point 2.3.3 above.

4.4 Hence the claimed subject-matter is novel with respect to the disclosure of document D1.

4.5 The skilled person, starting from D1, would naturally consider the question of how data services might be efficiently implemented. At page 15, lines 9 to 28, D1 discusses transmission of data input at different rates. There it suggests that slower data rates may be made more secure by repetition.

4.6 Document D17B also relates to the general question of data transmission over a cellular radio telephone system. In a section on page 170, "Interactive oriented type of traffic", alternative schemes for relatively slow data transfer rates are proposed, using the particular example of videotex, which has a 75/1200 bps transfer rate. (Videotex is an interactive data system exemplified by Prestel in the UK and Minitel in France.) The four schemes proposed are all ways of "sharing" a single "Basic Channel" between multiple videotex communications, i.e. data calls. Since these schemes offer more efficient use of capacity than the simple repetition put forward in D1, the skilled person would certainly be motivated to apply this teaching to D1.

The board notes that D17B relates to a time-division multiple access (TDMA) system rather than the frequency division multiple access (FDMA) system used in D1. However, it is clear from the totality of the prior art considered in the examination and opposition proceedings that at the priority date of the patent in

- suit the person skilled in the art would have been familiar with both such systems, as well as with various variants and hybrids. It would have been well within his or her capabilities to adapt the TDMA teaching of D17B to an FDMA system.
- 4.7 The respondent argued that sharing the channel in the manner put forward in D17B was not "accommodating multiple data calls", but rather dividing the channel up into smaller channels. However, two of the methods proposed in D17B are contention schemes (D17B, page 170, column 1, line 38 to column 2, line 7), as is one of the implementations of the patent (column 8, lines 2 to 34). Moreover, this argument is based on an interpretation of the claim which is not accepted by the board, see Point 2.4 above.
- 4.8 The respondent further argued that D17B does not disclose that the multiple videotex communications come from different telephones. It is true that D17B does not disclose this feature explicitly, but the board judges that it would have been immediately apparent to the skilled person that this would be the normal way to profit from multiple simultaneous videotex communications.
- 4.9 The original application attached no significance to the existence of a separate data network; nor have any arguments been put forward as to any inventive significance of this feature. However for completeness, the board notes that D17B further indicates that videotex may be transmitted on a dedicated packet data network (page 167, column 2, lines 5 to 7). Thus it

would also have been obvious to provide an interface to this network at the claimed switching means.

4.10 Hence the subject-matter of claim 1 does not involve an inventive step.

5. The respondent's only request is therefore not allowable. It follows that the patent must be revoked.

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:

D. Magliano

A. S. Clelland