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Datasheet for the decision of 26 March 2013

Case Number: T 2304/09 - 3.5.05

Application Number: 99923903.1

Publication Number: 1018831

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Language of the proceedings: EN

Title of invention:
Communication device and method

Applicant:
MITSUBISHI DENKI KABUSHIKI KAISHA

Headword:
Discrete multi-tone transmissions/MITSUBISHI

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

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Case Number: T 2304/09 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 26 March 2013

Appellant: (Applicant)	MITSUBISHI DENKI KABUSHIKI KAISHA 7-3, Marunouchi 2-chome Chiyoda-ku Tokyo 100-8310 (JP)
Representative:	Pfenning, Meinig & Partner GbR Patent- und Rechtsanwälte Theresienhöhe 13 80339 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 3 June 2009 refusing European patent application No. 99923903.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair: A. Ritzka
Members: K. Bengi-Akyuerek
D. Prietzel-Funk

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division, posted on 3 June 2009, refusing European patent application No. 99923903.1 on the grounds of added subject-matter (Article 123(2) EPC) with respect to a main request and lack of inventive step (Article 56 EPC) with respect to an auxiliary request, having regard to the disclosure of

D1: H. Okado et al.: "A study on ADSL system for TCM-ISDN crosstalk", Institute of Electronics, Information and Communication Engineers, p. 403, 1998.

In an *obiter dictum* under the heading "Additional Comments" of the decision under appeal, it was further held that the main request lacked clarity (Article 84 EPC in connection with Rule 43(1) and (3) EPC) and an inventive step (Article 56 EPC) in view of D1 and that both requests lacked an inventive step (Article 56 EPC) in view of the disclosure of

D2: T. Sasaki: "G.lite: Proposal for draft of Annex of G.lite", ITU-T SG-15, pp. 1-25, 29 June 1998.

II. Notice of appeal was received on 31 July 2009. The appeal fee was paid on the same day. With the statement setting out the grounds of appeal, received on 12 October 2009, the appellant requested that the decision of the examining division be set aside and that a patent be granted on the basis of the claims of the auxiliary request (claims 1 and 2), filed in the first-instance proceedings on 5 May 2009 and underlying the appealed decision, as a sole request. In addition, oral proceedings were requested as an auxiliary

measure.

III. A summons to oral proceedings scheduled for 26 March 2013 was issued on 20 November 2012. In an annex to this summons, the board gave its preliminary opinion on the appeal pursuant to Article 15(1) RPBA. In particular, objections were raised under Articles 52(1) and 56 EPC, mainly having regard to D2.

IV. By letter of reply dated 5 March 2013, the appellant informed the board that it would not be attending the scheduled oral proceedings and did not submit any comments on the substance of the board's communication under Article 15(1) RPBA.

V. Oral proceedings were held as scheduled on 26 March 2013 in the absence of the appellant. After due deliberation on the basis of the pending sole request and the written submissions, the decision of the board was announced at the end of the oral proceedings.

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

"A communication method of performing data communication of data by a discrete multi-tone scheme, comprising the steps of:
setting a FEXT duration suitable for data transmission relative to interfering noise generated in a half-duplex ISDN period, where the number of symbols in the FEXT sections varies;
characterized by
bit-assigning the data for one period of the half-duplex ISDN period to symbols within the FEXT duration, the number of bits assigned per FEXT duration

being the same regardless of the numbers of symbols in the FEXT duration; and
bit-assigning dummy bit to a portion of the symbol within the FEXT duration to which portion the data is not bit-assigned."

The further independent claim 2 of the sole request is directed to a corresponding system.

Reasons for the Decision

1. Admissibility of the appeal

The appeal complies with the provisions of Articles 106 to 108 EPC (cf. point II above) and is therefore admissible.

2. Non-attendance at oral proceedings

The appellant decided not to attend the scheduled oral proceedings. Pursuant to Article 15(3) RPBA, the board is not obliged to delay any step in the appeal proceedings, including its decision, by reason only of the absence at the oral proceedings of any party duly summoned who may then be treated as relying only on its written case.

In the present case, the appellant did not submit any comments on the objections raised in the board's communication under Article 15(1) RPBA. The board reconsidered and maintained those objections regarding the pending sole request (cf. point III above), and was in a position to take a decision at the end of the oral proceedings in the exercise of its discretion according

to Article 15(3) RPBA.

3. SOLE REQUEST

This request corresponds to the auxiliary request underlying the appealed decision.

3.1 Article 52(1) EPC: Novelty and inventive step

In the board's judgment, claims 1 and 2 of this request do not meet the requirements of Article 52(1) EPC in conjunction with Article 56 EPC, for the following reasons:

3.1.1 The board concurs with the appellant in considering D2 (rather than D1) as the closest prior art, since D2 is more related to the concrete steps of the actual bit assignment process in a combined ADSL and TCM-ISDN system.

3.1.2 Like the present invention, D2 is directed towards rate conversions for ADSL systems in the event of TCM-ISDN crosstalk and discloses, with regard to the terminology of claim 1, communication of data ("DMT symbols") by a discrete multi-tone, DMT, modem scheme (see e.g. page 7/25, line 5: "The hyperframe is composed of 345 DMT symbols ..." in conjunction with Fig. C5.4). Regarding downstream communications between a first ADSL device (i.e. "ATU-C") and a second ADSL device (i.e. "ATU-R"), a FEXT duration ("$FEXT_R$") is set for the first half of the TCM-ISDN period while a NEXT duration ("$NEXT_R$") is set for the second half of a half-duplex ISDN period ("TCM-ISDN period") in D2 (see e.g. section C5.3.1). The number of DMT symbols accommodated during the FEXT duration evidently depends on the DMT symbols to be transmitted between the ADSL devices and thus varies.

DMT symbols using a first bit map ("bit map A") are transmitted during the FEXT duration whilst DMT symbols using a second bit map ("bit map B") are sent during the NEXT duration (see e.g. section C5.3.2). The data stream of an input hyperframe (consisting of five superframes) is bit-rate converted to the data stream of an output hyperframe including synchronisation symbols (see Fig. C7.2). Furthermore, 128 DMT symbols out of 345 DMT symbols using the first bit map are normally allocated in the FEXT duration whereas the remaining symbols are allocated to the NEXT duration (see page 7/25, lines 12-13). However, if bit map B is disabled (see page 7/25, line 21), i.e. corresponding to the single-bit-map case, all the 345 DMT symbols are supposed to be allocated in the respective FEXT duration in D2.

More specifically, the DMT symbols of any TCM-ISDN period (e.g. "TC#0", "TC#27"; Fig. C7.2), corresponding to a duration of 2.5 ms, are successively assigned to symbols (i.e. "A" symbols) within a FEXT duration (see e.g. Fig. C7.2), so that data for one period of the half-duplex ISDN period is bit-assigned to symbols within the FEXT duration as claimed. Also, given that one symbol within the FEXT duration has a fixed duration (i.e. "246 µs" in Fig. C7.2), the number of bits assigned to each FEXT duration depends solely on the bit rate used and is therefore fixed, regardless of the number of symbols in the FEXT duration. Furthermore, dummy bits are inserted at the end of a hyperframe to be transmitted according to D2.

3.1.3 Hence, in the board's view, the only difference between the subject-matter of claim 1 and the disclosure of D2 is that dummy bits are bit-assigned to a portion of the symbol (rather than to a hyperframe) within the FEXT

duration.

Therefore, the subject-matter of claim 1 is found to be novel over the cited prior art (Article 54 EPC).

3.1.4 The board agrees with the finding in the *obiter dictum* of the decision under appeal (cf. page 13, item c) that the above distinguishing feature, i.e. the allocation of dummy bits to data units at a certain granularity, constitutes a common measure to the skilled person in the field of data communications dictated merely by practical needs, in particular, in order to solve the problem of ensuring conformance with standardised or predetermined data frame sizes at different data stream levels.

3.1.5 The above reasoning also applies to the corresponding apparatus claim 2.

3.1.6 Concerning the discussion of D2, the appellant referred solely to its first-instance letter dated 11 December 2007, according to which D2 is regarded as evidence of the conventional technique for "preventing the occurrence of delay hyperframe-by-hyperframe" (cf. statement setting out the grounds of appeal, page 5, penultimate paragraph).

In this regard, the board notes however that the mere assignment of dummy bits to symbols rather than to hyperframes, i.e. to different data unit granularities, does not credibly lead to reductions in transmission delays, since the latter is commonly used in the context of bit stuffing for bit-rate synchronisation purposes in terms of different data frame sizes, without having any direct bearing on the overall

transmission delays in a communication system.

3.1.7 In view of the above, the subject-matter of claims 1 and 2 of this request does not involve an inventive step, having regard to D2 and the skilled person's common general knowledge.

3.2 In conclusion, the sole request is not allowable under Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz A. Ritzka

Decision electronically authenticated