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Datasheet for the decision of 15 July 2011

Case Number: T 1751/10 - 3.5.05

Application Number: 01116951.3

Publication Number: 1172979

IPC: H04L 27/00

Language of the proceedings: EN

Title of invention:
Data transmission system which can use various modulation types

Applicant:
YAMAHA CORPORATION

Headword:
Modulation technique discriminating unit/YAMAHA

Relevant legal provisions:
EPC Art. 106, 107, 108, 123(2)

Keyword:
"Extension of subject-matter - no (main request)"
"Remittal to first instance - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 1751/10 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 15 July 2011

Appellant: YAMAHA CORPORATION
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 26 January 2010 refusing European application No. 01116951.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: A. Ritzka
Members: P. Cretaine
D. Prietzel-Funk

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division announced in oral proceedings held on 19 January 2010, with reasons dispatched 26 January 2010, refusing European patent application No. 01116951.3 on the grounds that the amendments to independent claim 1 introduced subject-matter not disclosed in the application as originally filed, contrary to the requirements of Article 123(2) EPC.

II. The notice of appeal was submitted on 4 March 2010 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was submitted on 4 June 2010. It was requested that the decision under appeal be set aside and that the application be remitted to the department of first instance with the order to grant a patent based, as a main request, on claims 1 to 10 as filed with letter of 13 January 2010 and referred to in the impugned decision, or, as an auxiliary request, on claims 1 to 10 filed with the statement setting out the grounds of appeal.

A precautionary request for oral proceedings was also made.

III. In a communication accompanying a summons to oral proceedings to be held on 7 July 2011, the board expressed its preliminary opinion that claim 1 according to the main request complied with Article 123(2) EPC. The board further indicated that it was minded to remit the case to the department of first instance for further prosecution on the basis of the main request, since the issues of clarity, novelty and

inventive step had not been dealt with in the decision under appeal. The appellant was also requested to confirm whether he maintained his request for oral proceedings.

IV. With a letter of reply dated 23 May 2011, the appellant modified his requests as follows:

As a new main request, the appellant requested that the decision under appeal be set aside and the application remitted to the first instance for further prosecution on the basis of claims 1 to 10 of the previous main request.

The main request submitted with letter of 4 June 2010 was maintained as a first auxiliary request.

The auxiliary request submitted with letter of 4 June 2010 was maintained as second auxiliary request.

The request for oral proceedings was maintained as third auxiliary request.

The appellant further requested the refund of the appeal fee, without however providing arguments in support of this request.

V. In a communication dated 10 June 2011, the board expressed its opinion that the request for reimbursement of the appeal fee was not allowable, because no substantial procedural violation had occurred during the examination procedure (Rule 103(1)(a) EPC). The board also informed the appellant of its intention to cancel the oral

proceedings and allow the main request, should the request for reimbursement of the appeal fee be withdrawn in due time.

VI. With a letter of reply dated 20 June 2011, the appellant withdrew its request for reimbursement of the appeal fee and asked the board to inform him whether the oral proceedings were cancelled.

VII. In a short communication sent by fax on 28 June 2011, the board informed the appellant that the oral proceedings scheduled for 7 July 2011 had been cancelled.

VIII. Claim 1 of the appellant's main request reads as follows:

"1. An information transmission system comprising:

a first station (10; 10’) connected to a data source supplying data codes (Ml/M2/M3) thereto at irregular interval, and including

a modulating unit (12) producing a modulated signal (AD1) on the basis of said data codes (M1/M2/M3) through a modulating technique selected from the group consisting of differential phase-shift keying and frequency shift keying, and a data converting unit (13; 13A; 13A/RT) connected to said modulating unit (11/12) for producing an output signal (DA1) from said modulated signal (AD1);

a second station (30; 30/RR) supplied with said output signal (RG1) of said data converting unit, and including

a demodulating unit (31) supplied with said output signal of said data converting unit for reproducing said data codes (M10/Ml1/M12) through a demodulating technique corresponding to said modulating technique;
and
a discriminating unit (100) analyzing said output signal (RG1) so as to determine said modulating technique employed in said modulating unit (12) and supplying a control signal (S1) representative of said modulating technique to said demodulating unit (31) so that said demodulating unit selects said demodulating technique from demodulation techniques respectively corresponding to said modulating techniques; and
an information transmitting medium (20; NW1) provided between said first station and said second station,
characterized in that

said discriminating unit (100) includes
plural detectors (110/120, 130, 140) each assigned to one of said modulating techniques and determining whether or not an edge-to-edge interval of said output signal (RG1) is unique to said one of said modulation techniques for producing a detecting signal representative of a positive answer or a negative answer,
a signal generator (150, 160, 170, 180) connected to said plural detectors (110/120, 130, 140) and determining said demodulating technique on the basis of the answers supplied from said plural detectors (110/120, 130, 140) for supplying said control signal (S1) to said demodulating unit (31)."

Reasons for the Decision

1. *Admissibility*

The appeal complies with Articles 106 to 108 EPC 1973, and is therefore admissible (see Facts and Submissions, point II).

2. *Article 123(2) EPC*

2.1 The impugned decision is based on the grounds that some amendments to claim 1 according to the main request introduce subject-matter not disclosed in the application as originally filed, contrary to Article 123(2) EPC. These amendments consist in the plural detectors within the discriminating unit (100) and their functions. The argumentation of the examining division is substantially the following:

- the disclosure of the detectors within the discriminating unit (100) is to be found only in the description of a single specific embodiment of said discriminating unit disclosed in pages 30-35, in relation with figure 14, of the originally filed application;
- in this specific embodiment, the signal (RG1) received by the discriminating unit is constituted of a right channel and a left channel and each detector (120, 130, 140) is connected either to the right or to the left channel;
- the modulation techniques used are defined on

pages 12 and 13 of the originally filed disclosure as dependent on the channel (right or left) of the output signal to which the modulated signal is assigned;
- there is therefore a working interrelationship between the detectors and the presence of left and right channels and a successful detection of the modulation is possible only with appropriate connections of the detectors to the left or right channel;
- since the wording of claim 1 according to the main request does not define that the output signal consists in a left and a right channel and does not define the connections of the detectors to these channels, its subject-matter represents an unallowable intermediate generalisation of the embodiment disclosed in relation with figure 14.

2.2 The board judges that the amendments do not contravene Article 123(2) EPC. The reasons therefore are the following.

The "Summary of the invention" in columns 2 to 4 of the published application describes several aspects of the invention. In particular, paragraph [0011] describes an information transmission system wherein the modulation technique used at the first station is selected from plural candidate modulation techniques producing different edge-to-edge intervals and wherein the selected modulation technique is detected at the second station on the basis of the measured edge-to-edge intervals of the signal transmitted from the first to the second station.

The description further mentions three embodiments of an information transmission system according to the invention: a "First embodiment" in columns 6 to 35 of the published application, a "Second embodiment" in column 36 and a "Third embodiment" in column 36. Figures 1, 31 and 32 show the system configuration of the communication system according to the first, second, and third embodiment respectively. As can be seen from figures 1, 31 and 32, the differences between the three embodiments are the following:

- the first embodiment (see figure 1) uses an information storage medium (e.g. a CD or a DVD) as information transmission medium between the two stations and the last stage of the first station consists in a recording module which records the modulated signal on a left or a right channel, depending on the modulation used, and records an external audio signal on the other channel;
- the second embodiment (see figure 31) uses a wire communication network as information transmission medium and the last stage of the first station consists of a signal converting module 13A (also denominated signal interface 13A in paragraph [0116]);
- the third embodiment (see figure 32) uses the combination of a radio transmitter, the free space, and a radio receiver as information transmission medium and the last stage of the first station consists of a signal converter 13A.

The second and third embodiments therefore do not consider an output signal of the first station having a left and a right channel but only one channel onto which the modulated signal is transmitted. The signal converting module 11, the signal modulating module 12,

the detector 100, the signal demodulating module 31 and the data converting module 32 are however described as being similar to those of the first embodiment ([0116], [0117]).

The description in [0018], [0019] and [0020] defines three modulation techniques used in the first embodiment:
- 16 DPSK on the right channel, with specific edge-to-edge intervals
- FSK on the left channel, with specific edge-to-edge intervals
- FSK on the right channel, with specific edge-to-edge intervals.

The description further mentions (see paragraph [0121]) that the modulation is not limited to 16 DPSK but may be a multi-value DPSK ([0121].

In the board's judgement, the features of claim 1 according to the main request which are not explicitly disclosed in the description's paragraph [0011] are:
- the definition of the modulation techniques as being either DPSK or FSK, and
- the definition of the discriminating unit as comprising plural detectors and a signal generator connected to said plural detectors, each detector being assigned to one of said modulation techniques and being adapted for detecting if the edge-to-edge interval of the output signal is unique to said one of said modulation techniques.

As to the definition of the modulation, the board judges that the use of a DPSK or FSK modulation technique is supported by the disclosure that n-DPSK

and FSK modulation techniques are used in the first embodiment (paragraphs [0018] to [0020], [0121]) and in the second and third embodiments (paragraphs [0120] and [0121]), the DPSK and FSK modulation used being associated with different edge-to-edge intervals (paragraphs [0011] and [0018] to [0020]).

As to the provision of plural detectors and a signal generator in the discriminating unit, the board judges that these features represent a mere implementation in separate physical entities - the detectors and the signal generator - of the measuring and determining functions performed by the second station disclosed in paragraph [0011], in particular lines 35 to 41. Such an implementation with plural detectors is disclosed in respect of the first embodiment in figure 14 by the mere presence of the three detectors 120, 130 and 140, each being dedicated to recognise specific values of the edge-to-edge intervals present in the output signal, i.e. present either in the left or right channel of the output signal. In the case of the second and third embodiments, since the discriminating unit is similar to the discriminating unit of the first embodiment and the output signal has just one channel, the skilled person would immediately conclude that similar detectors are used to detect the modulations, based on the measured edge-to-edge interval of the single channel of the output signal.

The board thus judges that the introduction of the functional definition of the detectors in claim 1 according to the main request is supported by the application as originally filed, in particular

paragraph [0011], and does not represent an unallowable intermediate generalisation of the first embodiment.

3. Since the issues of clarity, novelty and inventive step have not been dealt with in the decision under appeal, the board decides to remit the case to the first instance for further prosecution on the basis of claims 1 to 10 as filed with letter of 13 January 2010, thereby allowing the appellant's main request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution on the basis of claims 1 to 10 as filed with letter of 13 January 2010.

The Registrar: The Chair:

B. Atienza Vivancos A. Ritzka