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Datasheet for the decision of 19 May 2011

Case Number: T 1620/07 - 3.5.04

Application Number: 01984977.7

Publication Number: 1440567

IPC: H04N 5/44

Language of the proceedings: EN

Title of invention:
Television signal receiving system

Applicant:
Thomson Licensing

Headword:
-

Relevant legal provisions:
RPBA Art. 13(1), 15(6)

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (no)"
"Admission of requests submitted in oral proceedings (no)"

Decisions cited:
-

Catchword:
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Case Number: T 1620/07 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 19 May 2011

Appellant: Thomson Licensing
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 26 March 2007 refusing European patent application No. 01984977.7 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: F. Edlinger
Members: R. Gerdes
C. Vallet

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division refusing European patent application No. 01 984 977.7, published as WO 03/039140 A1.

II. The patent application was refused by the examining division in accordance with Article 97(1) EPC 1973 because the subject-matter of independent claims 1 and 11 according to the applicant's main request was found to lack clarity (Article 84 EPC 1973) and inventive step (Article 56 EPC 1973) in view of the prior art documents

D1: DE 199 29 284 A1 and
D2: EP 0 598 576 A2.

The applicant's auxiliary request was not allowed because it was considered to relate to unsearched subject-matter (Rule 86(4) EPC 1973) and to contravene Article 123(2) EPC 1973.

III. The appellant filed an appeal against this decision. With the statement setting out the grounds of appeal, he submitted a set of claims according to an auxiliary request.

IV. In a communication in accordance with Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to a summons to oral proceedings, the board expressed doubts as to whether the claims according to the appellant's requests fulfilled the requirements of Article 84 EPC 1973. The board also introduced the document below, which had been cited in the procedure

before the Japan Patent Office against a national application originating from the same international application as the present European application:

D3: JP 08 331 468 A together with a machine translation into English.

The appellant was informed that inventive step might be discussed in view of documents D1 and D2 and also starting from document D3 as closest prior art.

V. With a faxed letter dated 19 April 2011 the appellant filed replacement claims of the main request.

VI. Oral proceedings were held on 19 May 2011. The appellant withdrew the previous auxiliary request and submitted new claims according to auxiliary requests 1, 2 and 3.

VII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 26 of the main request filed with letter of 19 April 2011;
alternatively, on the basis of claims 1 to 24 of auxiliary request 1 submitted in the oral proceedings;
alternatively, on the basis of claims 1 to 13 of auxiliary request 2 submitted in the oral proceedings; and
alternatively, on the basis of claims 1 to 12 of auxiliary request 3 submitted in the oral proceedings.

VIII. Claim 12 of the main request reads as follows.

"An apparatus for processing a television signal characterized by:
a plurality of antennas for receiving a plurality of representations of the same television signal (54);
a plurality of analog to digital converters (56) for converting said representations of said same television signal into a plurality of digitized signals (58);
a combiner (60) for summing the plurality of digitized signals into an aggregate signal (62);
a demodulator (64) for demodulating said aggregate signal and generating a demodulated aggregate signal; and
a modulator (68) for modulating said demodulated aggregate signal (66)."

IX. Claim 11 of auxiliary request 1 corresponds to claim 12 of the main request with the following additional feature appended to the claim:

", wherein said aggregate signal and said modulated aggregate signal comprise the same modulation scheme."

Claim 1 of auxiliary request 2 corresponds to claim 12 of the main request and comprises the following additional feature at the end of the claim:

", wherein said aggregate signal and said modulated aggregate signal comprise a same modulation scheme, the apparatus further comprising a selector operative to select said television signal to receive, wherein said selector is operative to allow a user to select said television signal to receive".

Claim 1 of auxiliary request 3 corresponds to claim 1 of auxiliary request 2 and adds the following feature after "to receive" at the end of the claim:

"via a television signal receiver."

X. The examining division in the decision under appeal expressed the opinion that it was clear from the description that the feature relating to the selection of a received television signal was essential to the definition of the invention (Article 84 EPC 1973). Such a selection of one channel represented by said one signal allowed further processing in order to optimise "the television channel signals that are the same" at the output of the corresponding antennas. Furthermore, the subject-matter of independent claims 1 and 11 then on file did not involve an inventive step in view of the prior art disclosed in D1 and D2.

XI. The appellant's arguments may be summarised as follows.

The invention

According to the present invention, prior to demodulation, the several representations of a same television signal received at the antennas are digitised and summed into an aggregate signal. This is similar to averaging and reduces the probability of the received symbol being so seriously corrupted by noise that it is no longer recognised correctly in the demodulation. The demodulated aggregate signal therefore has a better quality than any of the tuned television signals would have if demodulated alone.

Modulating again the demodulated aggregate signal makes it possible to distribute the signal to a television signal receiver. Selection of a channel has to be understood as isolating one signal from a set of signals received on an antenna and is represented in claim 1 by the feature of "tuning each of said received representations of the same television signal individually".

Inventive step starting from document D3

D3 does not show modulation of the demodulated aggregate signal and distribution of said modulated aggregate signal to a television signal receiver. Remodulation is essential to provide compatibility with legacy devices, which require transmission according to a certain modulation.

D2 shows remodulation and distribution of the remodulated signal to a television receiver. However, the purpose of the broadcasting centre of D2 differs from that of the TV signal processor (TSP) of the present application. The TSP of the present application is intended for domestic use and connected to a small number of television signal receivers (TSRs) which are located close to the TSP. Because only a few TSRs connect to the TSP, operation of the TSP can be optimised in dependence on the number of channels that are simultaneously selected by the users. If only one channel is selected, all receiving paths consisting each of one antenna and tuner will be allocated to the same channel so as to provide a representation of the same signal, which is then summed in the combiner to provide an optimum signal for the selected television

channel. In contrast, in the worst case where as many different channels are selected as receiving paths are present, each receiving path will be allocated to one of the selected channels. In this case each combiner receives only a single representation of a television channel signal.
According to D2 a broadcasting centre is provided at a supplier for cable TV remote from a large number of users. Due to this large number of users there will always be a request for every television channel. As a consequence, there is no possibility of adapting the number of receiving channels to the selected channels.

Instead of remodulating the demodulated aggregate signal of D3 the skilled person would rather have suppressed the demodulation step and transmitted the aggregate signal as output by the combiner directly to a user.

Admissibility of the first to third auxiliary requests

Claim 11 of the first auxiliary request combines the features of claims 12 and 25 of the main request. Dependent claim 25 was included in the main request in response to the board's summons to oral proceedings and should, therefore, be considered as a response to this notification.

Claim 1 of the second auxiliary request consists of a combination of claims 12, 25 and 20 to 21 of the main request. The additional features provide details of the selection procedure according to which the users at the TSRs select television channels. These features are directed to the optimisation of reception for the

selected television channels at the TSP and serve to further illustrate the different operation of the broadcast centre of D2 and the TSP of the present invention. The same argument applies with respect to the third auxiliary request, which additionally incorporates dependent claim 22 of the main request into claim 1.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request: inventive step (Article 56 EPC 1973)*

2.1 The board considers document D3 to constitute the closest prior art. The appellant has not argued against using D3 as a starting point.

D3 relates to an apparatus for processing a television signal (a television signal receiver), which employs a plurality of antennas and receiving paths to improve reception of television programs under the influence of multipath propagation of the same television signal. In its description of the prior art (see figures 3 and 4 as well as paragraphs [0002] to [0010] of the machine translation) D3 presents a system which - in each receiving path - includes an antenna, an antenna front end, an analogue-to-digital converter, a mixer and a low-pass filter. The output of each low-pass filter is forwarded to a combiner for summing the plurality of digitised signals (multiplication and summing means; figure 4: 32, 33), in which the signals from the different reception paths are summed into an aggregate

signal (a weighted summation). The coefficients h1…hk for the weighted summation are adaptively controlled such that the envelope of the combined signal y(n) remains substantially at a constant value y0.

The system described as prior art in D3 is suitable to remove effects due to multipath propagation for a transmission signal with constant envelope such as a QPSK-modulated signal. D3 is concerned with the problem of adapting this prior art system such that it can be employed for reception of an amplitude-modulated NTSC video signal. For this purpose D3 proposes basing the adjustment of coefficients h1…hk exclusively on the frequency-modulated voice signal F(n) (see figures 1 and 2 as well as the machine translation, paragraphs [0011] to [0027]). Because multipath propagation has a similar effect on both the voice signal F(n) and the video signal E(n) of the transmitted NTSC signal, the same coefficients can be applied to the weighted summation of both output signals.

Both in the described prior art system and in the system adapted to an NTSC television signal, the output signals, i.e. the aggregate signal, of the weighted summation are forwarded to a demodulator for generating a demodulated aggregate signal (see figure 1: 6,7 and machine translation, paragraphs [0004], [0017] and [0024]).

As a consequence, D3 discloses all the features of claim 12 except for a modulator for modulating the demodulated aggregate signal.

2.2 Modulating the demodulated aggregate signal provides the technical effect of adapting the signal "to a particular output format (modulation scheme) for the device or devices receiving the distribution" (see description of the application, page 22, lines 12 to 15). The board considers the corresponding technical problem and the use of specific modulators for its solution to be well-known in the art. Document D2 discloses an example in a specific case, i.e. a remodulation to adapt demodulated television signals to transmission in a "format in accordance with the CATV broadcasting system to be transmittable by cable broadcast transmission network 17" (see D2, column 4, lines 13 to 17).

Hence, the board concludes that the skilled person starting from D3 would have arrived at the subject-matter of claim 12 without inventive considerations.

2.3 The appellant's arguments did not convince the board.

The board agrees that the broadcasting centre of D2 differs from the TSP of the present application in that in the broadcasting centre no optimisation of the signal quality of television channels based on the selection of television channels by the users is carried out. Features warranting this effect are, however, not present in claim 12 of the main request. In particular, such an optimisation requires *inter alia* that information about the television channels selected by the users is available at the TSP.

Concerning the appellant's argument that starting from D3 the skilled person would have omitted the

demodulator instead of adding a subsequent remodulator step, the board observes the following:
It is well-known that a modulation scheme for wireless broadcast transmission may not be suitable for transmission over another medium to devices receiving the distributed broadcast signal (see also point 2.2 above). Hence, demodulation of the transmitted signal may be necessary in order to prepare the signal for remodulation using a different modulation scheme. This reason as well as a further motivation, i.e. to mix the television signal with control information, is illustrated by document D2 (see column 4, lines 14 to 22).

3. *Auxiliary requests: admissibility (Article 13(1) RPBA)*

3.1 According to Article 13(1) RPBA, any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the board's discretion.

3.2 According to Article 13(1) RPBA, the board's discretion shall be exercised in view of *inter alia* the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy. If an applicant for a patent desires to submit amendments in the course of appeal proceedings, this should be done at the **earliest possible moment**. It is only in exceptional circumstances, where there is **some clear justification** both for the amendment and for its late submission, that it is likely that an amendment not submitted in good time before oral proceedings will be considered on its merits in the proceedings (see

Case Law of the Boards of Appeal of the European Patent Office, section VII.E.16.3.1).

3.3 Neither criterion is fulfilled in the present case.

In the communication accompanying the summons to oral proceedings the board indicated that document D3 shows summing prior to demodulation, a distinguishing feature of the invention over D1 on which the appellant had based his argumentation with respect to inventive step. The board also indicated that the appellant should be prepared to discuss inventive step starting from D3, and it set a time limit for submitting amendments or observations in view of the comments attached to the summons. In reaction to the summons the appellant provided an amended main request. As explained in the accompanying letter the amendments of the independent claims were intended to clarify the claims so as to overcome objections with respect to Article 84 EPC 1973. However, neither the submissions made nor the amendments addressed the issue of inventive step in view of document D3. The passages providing support for newly introduced claims, in particular claims 10 and 25, were indicated without, however, explaining their relevance or indicating that the appellant might wish to restrict the independent claims by these additional features. It was only in the oral proceedings that the appellant submitted the auxiliary requests which were intended to overcome the objection with respect to inventive step based on D3.
The appellant also did not provide convincing justification for the late submission of the auxiliary requests.

3.4 The fact that features were added to the independent claims of the auxiliary requests which were already present in dependent claims of the main request filed in reply to the summons does not exonerate the appellant from the duty to present his case at the earliest possible moment, for instance by submitting auxiliary requests each relating to more limited subject-matter and containing these additional limitations in correspondingly amended independent claims. For reasons of procedural economy the board should be clearly informed about the requests that will be the subject of the oral proceedings so as to allow it to be prepared for discussion of these issues, to ensure that the case is ready for decision at the conclusion of the oral proceedings (Article 15(6) RPBA).

The incorporation of dependent claims 25 and 20 to 22 into claim 12 and claim 1, respectively, likewise cannot be considered as a limitation which would further elucidate the main difference between the closest prior art and the invention as already discussed in previous submissions by the appellant. In his previous submissions the appellant emphasised the superior suppression of noise due to the specific sequence of demodulation after combination compared to the prior art devices. In contrast, the additional features of dependent claims 25 and 20 to 22 of the main request appear to shift the focus to the argument that reception can be optimised due to the user-controlled operation of the TSP, an aspect of the invention which had already been addressed in the decision under appeal with reference to the lack of an essential feature concerning the selection of one channel. Modification of the independent claims to

incorporate features which relate to this aspect raises new questions, for example, whether the feature of a return path signal (see description of the present application, page 10, line 17, to page 11, line 2) is essential to this aspect. The auxiliary requests, therefore, raise new issues which could not be considered during the oral proceedings.

3.5 In view of the above the board has decided not to admit the auxiliary requests into the appeal proceedings in application of Article 13(1) RPBA.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Meyfarth F. Edlinger