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D E C I S I O N
of 16 May 2002

Case Number: T 0273/00 - 3.5.2

Application Number: 91119633.5

Publication Number: 0486988

IPC: H03J 1/00

Language of the proceedings: EN

Title of invention:

Method for the selection and memorising of tuning information relating to radioelectric signals

Patentee:

EDICO S.r.l

Opponent:

01: Koninklijke Philips Electronics N.V.

02: Interessengemeinschaft für Rundfunkschutzrechte GmbH
Schutzrechtsverwertung & Co. KG

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56, 84, 123(2), 123(3)

Keyword:

"Claims - functional features, clear if the skilled person knows how to implement them"

"Inventive step - (yes), combination of antithetical possibilities not obvious in the absence of a suggestion in the state of the art"

Decisions cited:

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Catchword:

-



Case Number: T 0273/00 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 16 May 2002

Appellant: Interessengemeinschaft
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 17 January
2000 concerning maintenance of European patent
No. 0 486 988 in amended form.

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: M. Ruggiu
B. J. Schachenmann

Summary of Facts and Submissions

I. The proprietor of the patent and the two opponents appealed the interlocutory decision of the opposition division concerning maintenance of European patent No. 0 486 988 in amended form.

II. The following prior art documents were considered during the appeal:

D1: EP-A-0 125 453;

D2: EP-A-0 437 731;

D3: DE-A-3 034 155;

D4: DE-A-3 039 640;

D5: DE-C2-3 145 407;

D6: DE-A-3 208 760;

D7: IT-A-1 107 168;

D8: DE-A-3 208 360;

D9: "Mikroprozessor steuert UKW-Empfänger" by W. Henze, published in FUNKSCHAU, 1978, pages 886 to 888; and

D10: EP-A-0 438 694.

D2 and D10 are European patent applications published after the priority date claimed for the patent in suit.

III. Opponent 01 withdrew its opposition to the patent by a fax received on 13 May 2002.

IV. Opponent 02 and the proprietor of the patent took part to oral proceedings before the board on 16 May 2002.

The appellant opponent 02 requested that the decision under appeal be set aside and that the European patent No. 0 486 988 be revoked.

The appellant proprietor requested that the appeal of opponent 02 be dismissed and that the patent be maintained in amended form on the basis of:

main request:

claim 1 filed at the oral proceedings with the following claims and the description to be adapted, or

first auxiliary request:

claims 1 to 6 and description, columns 1 to 5, filed at the oral proceedings;
drawings as in the patent.

V. Claim 1 of the main request reads as follows:

"Television signal receiver characterised by control means performing a method for selection and memorisation of tuning information relating to broadcast television channels in said television signal receiver, comprising the steps of:

- searching, with the receiving and tuning means of said receiver, for a broadcast television channel,
- when a channel has been found, identifying the

broadcasting station on the basis of a code present in the channel signal,

- looking for the corresponding programme number of said broadcasting station in a table stored in a non-volatile memory of said receiver, said table containing a numbered list of broadcast channels in a pre-established order, whereby the list numbers correspond to programme numbers,
- memorising the tuning information content of said identified broadcast channel signal in said non-volatile memory under the corresponding programme number,
- whereby said pre-established order is a logic order and has been determined in the site of manufacturer of the receiver and memorised in said non-volatile memory, said logic order facilitating the selection of the memorized tuning information on behalf of the user,
- whereby said steps are executed automatically with a system of logic programming using a microprocessor.

Claim 1 of the first auxiliary request reads as follows:

"Television signal receiver characterised by control means performing a method for selection and memorisation of tuning information relating to broadcast television channels in said television signal receiver, comprising the steps of:

- searching, with the receiving and tuning means of said receiver, for a broadcast television channel,
- when a channel has been found, identifying the broadcasting station on the basis of a code present in the channel signal,
- looking for the corresponding programme number of said broadcasting station in a table stored in a non-volatile memory of said receiver, said table containing a numbered list of broadcast channels in a pre-established order, whereby the list numbers correspond to programme numbers,
- memorising the tuning information content of said identified broadcast channel signal in said non-volatile memory under the corresponding programme number in an established order in accordance with said pre-established order,
- whereby said pre-established order is a logic order and has been determined in the site of manufacturer of the receiver and memorised in said non-volatile memory, said logic order facilitating the selection of the memorized tuning information on behalf of the user,
- whereby said steps are executed automatically with a system of logic programming using a microprocessor,
- whereby said established order can be redetermined by the user.

VI. The appellant opponent 02 essentially argued as

follows:

Claim 1 of each request specified that a table of broadcasting stations and the tuning information content of an identified broadcast channel were stored in the same non-volatile memory. However, claims 2 and 5 as originally filed and the passage starting at column 4, line 26 of EP-A1-0 486 988 (the printed publication of the application as originally filed) referred to two distinct memories, a memory R storing the table and a memory 19 storing the tuning information of an identified broadcast channel. Thus, claim 1 of each request was inconsistent with the content of the application as filed and thereby contravened Article 123(2) EPC.

Claim 1 of each request also contravened Article 84 EPC because it defined an apparatus without any apparatus feature.

The indication of programme numbers in claim 1 of each request did not mean that programme numbers were physically stored in memory. Rather, the claim had to be understood as specifying a correspondence between a memory area, in which an identification is stored, and another memory area, in which the corresponding tuning information is stored. The same correspondence existed in documents D1, D2, D5 and D10. Furthermore, claim 1 did not define a plug and play television receiver. In particular, claim 1 did not exclude the possibility that intermediate steps, not mentioned in the claim, be carried out manually for controlling the receiver.

Document D5 disclosed a television receiver having all the features of claim 1 of the main request. In

particular, the receiver of D5 included a microprocessor controlled by software that had been stored at the site of manufacture of the receiver. In a first step, a search was performed to store the tuning information, identification and field strength for each of the received channels in a Table I. In a second step, the software produced a Table II containing a list of broadcast stations and, in a third step, the software assigned each broadcast station of Table II to a key position of the receiver, i.e. to a programme number, which resulted in a table III. Thus, to produce table III, the software necessarily contained information describing the association between the broadcast stations and the key positions or programme numbers. This information had of course been stored in the receiver with the software, at the factory. This was confirmed by the passages of D5 at column 4, lines 51 to 55, which stated that it was not necessary to enter by hand the correspondence between programmes and key positions, and at column 7, lines 39 to 42, which indicated that the receiver was tuned automatically, so as to be ready for use.

Document D1 disclosed a television signal receiver differing from the one specified in claim 1 of the main request only in that the receiver of D1 used logic circuits to perform the steps. At the priority date of the patent in suit, it was obvious to replace the logic circuits by a programmed microprocessor, in particular in view of document D5 which disclosed a microprocessor to perform selection and memorisation of tuning information in a television signal receiver.

Furthermore, it was apparent that the correspondence between broadcast stations and programme numbers had been determined and stored in the receiver at the site

of manufacture because the abstract of D1 indicated that the receiver only stored the frequencies of those broadcast stations whose identifications had been entered previously. In any case, for the usual testing of the receiver at the factory, it was necessary to store station identifications in it. Furthermore, entering the station identifications in the receiver after it had left the factory (e.g. by a retailer) would have required that the receiver be unpacked, which was unusual and inconvenient.

Documents D2 and D10 also disclosed television receivers having all the features of claim 1, main request. Although neither D2 nor D10 explicitly mentioned that the identifications of the broadcast stations were stored at the site of the manufacturer, this feature was implicit because the skilled person would immediately consider storing the address data representing the identifications of the broadcast stations at the factory when reading in D2 or D10 that these address data can be pre-stored in a memory.

It was well known and had been usual for more than twenty years to allow the user to determine the association of the received channels with the selection keys of the receiver, i.e. with the programme numbers. The additional feature of the first auxiliary request that the established order could be redetermined by the user was therefore obvious to the skilled person. There was no reason not to allow the user to reorganise the order pre-established in the factory, i.e. to allow re-programming by the user.

VII. The arguments of the appellant proprietor can be summarised as follows:

The term "memory" as used in claim 1 of each request had an abstract character. In the particular embodiment described in the patent in suit, the table of broadcast channels was stored in a ROM R in the factory and the tuning information was written in a non-volatile memory 19. The memories R and 19 were both addressed from the same controller and were both non-volatile and thus could be regarded as a single non-volatile memory space.

Claim 1 of each request defined a device. This had to be accepted because the original claims concerned devices. Furthermore, it was not required to set out all constructional details of the device in the claim.

Document D5 disclosed a television signal receiver with a microprocessor. The receiver of D5 searched for broadcast television channels and information for all received channels was stored in a Table I in the order the channels were found. The microprocessor then rearranged Table I into an intermediate Table II from which a Table III showing a numbered list of broadcast television channels was generated by assigning the tuning information for each channel to a position of Table III. Table III formed a programme key memory containing the television channels that were actually received, it did not constitute a reference list of all broadcast television channels as in the invention. Thus, D5 did not disclose looking in a table for the programme number corresponding to a broadcasting station. On the contrary, Table III of D5 was generated by an algorithm from the information obtained during the search. Furthermore, the order of the broadcast stations stored in Table III was not a pre-established logic order, but corresponded to the field strengths of

the respective stations.

The television signal receiver of document D1 did not include a microprocessor. Furthermore, the receiver of D1 included a plurality of separate memories, each of which only stored the identification of a single broadcasting station. Thus, D1 did not have a memory storing a table associating programme numbers with broadcasting stations. In particular, there was no mention in D1 that a programme number was stored or that a programme number could be selected. The various memories of D1 corresponded to programme labels, but not to programme numbers, and the programme selection keys of D1 did not carry numbers but the names or labels of the programmes. The identifications of the broadcasting stations could be stored in the various memories of D1 at different stages and by different persons, for example during the manufacturing process, by a retailer, by a service person or even by the user himself. It was more obvious that the identifications be stored by a retailer or a service person, because storage at the site of the manufacturer required that the manufacturer knew exactly in which country each individual receiver would be sold, which channels could be received there and in which subjective order the majority of the customers wanted to find these channels on their television sets. Although the television receivers had to be tested in the factory, this did not necessarily require that identifications be stored in the memories of D1. In any case, no evidence of storage of the identifications in the factory had been provided. Furthermore, the receiver of D1 required depression of a key by the user to memorise the tuning information of a channel. This contrasted with the invention of the patent in suit which provided a plug

and play receiver, in which memorisation of the tuning information for each channel under the corresponding programme number was fully automatic.

According to document D8, information was stored in a memory of a television signal receiver by reading bar codes on a programming sheet and thus not at the site of manufacturer. D8 also mentioned that, alternatively, the memory storing the information could be an exchangeable or a non-exchangeable fixed memory. However, this did not mean that the information was stored in the memory at the site of the manufacturer.

Document D9 related to a radio receiver, not a television signal receiver. The frequencies, postal codes and names of the broadcasters of whole Germany were stored in a ROM of the receiver of D9. However, the actual selection was made by the user himself.

None of documents D3, D5, D6 and D7 disclosed a table containing a numbered list of broadcast channels in which a corresponding programme number of a given broadcast station identifier could be looked for.

Documents D2 and D10 had been published after the priority date of the patent in suit and thus could only be used to attack novelty. Neither D2 nor D10 disclosed storing a numbered list of broadcast channels in a pre-established order at the site of the manufacturer.

The problem solved by the invention of the patent in suit was not to keep the broadcast stations associated with the same selection keys when the television receiver was moved from one place to another. Rather the invention solved a problem that had not been

considered in the state of the art, namely to assist the user by providing him with a quick recollection of which selection keys were associated with which broadcast stations.

The invention defined in claim 1 of the first auxiliary request combined the pre-established, immutable order proposed by the manufacturer of the receiver with the order desired and determined by the user. These two possibilities were antithetical and thus it was not obvious to combine them. Furthermore, the codes stored in D1 were fixed and could not be changed, and there was no possibility of reorganising the Table III of D5.

Reasons for the Decision

1. The appeals are admissible.

Main request of the appellant patentee

2. *Clarity - Article 84 EPC*

Claim 1 of the main request specifies a television signal receiver having control means, including receiving and tuning means, a non-volatile memory and a logically programmed microprocessor, to perform a method, i.e. functions, specified in the claim. The functions themselves are specified in a clear manner in the claim and are such that a skilled person would know how to implement them using the "physical" means specified in the claim, i.e. the tuning and receiving means, the non-volatile memory and the logically programmed microprocessor. In such an instance, the board considers that the claim meets the clarity

requirement of Article 84 EPC.

3. *Amendments - Article 123 EPC*

3.1 According to claim 1, the table containing the numbered list of broadcast channels in a pre-established order is stored in a non-volatile memory and the tuning information content of an identified broadcast channel signal is memorised in said non-volatile memory. In the particular embodiment described in the patent in suit, and in the application as originally filed, the table is stored in a ROM memory R while the tuning information content is stored in a non-volatile memory 19. The board does not see any inconsistency between the claim, which specifies a non-volatile memory, and the particular embodiment described which implements the non-volatile memory using two different parts R and 19, it being apparent that the term "non-volatile memory" as used in the claim must be understood as designating a non-volatile memory space. This being so, the board considers that in this respect claim 1 of the main request does not extend beyond the content of the originally filed application.

3.2 Claim 1 of the main request includes the following additional features with respect to granted claim 9:

- the pre-established order is a logic order facilitating the selection of the memorised tuning information on behalf of the user; this feature results from the passages at column 1, lines 38 to 41 and column 4, lines 38 to 41 of the printed patent specification of the patent in suit, which were already contained in the application as originally filed;

- the pre-established order has been determined at the site of manufacturer of the receiver and memorised in the non-volatile memory of the receiver; this feature results from claim 2 as originally filed;
- the steps are executed automatically with a system of logic programming using a microprocessor; this feature derives from the passage at column 3, lines 14 to 23 of the printed specification of the patent in suit, which was already contained in the application as originally filed.

3.3 Thus, claim 1 of the main request does not contain subject-matter which extends beyond the content of the application as filed and satisfies Article 123(2) EPC.

3.4 Claim 1 of the main request contains all the features of claim 9 as granted, so that the scope of protection has not been extended and Article 123(3) EPC is satisfied.

4. *Inventive step - Article 56 EPC*

4.1 Document D1 discloses a television signal receiver with receiving and tuning means and memories, but without a microprocessor. The receiver of D1 selects and memorises tuning information according to the following procedure:

the receiving and tuning means searches for a broadcast television channel;

when a channel has been found, the broadcasting station is identified on the basis of a code (label) present in

the channel signal by means of a decoder 8;

when the user actuates a switch 23, a plurality of so-called filters 17, 117, 217 are sequentially addressed by operation of a commutator 22, each filter comprising a memory 19 which fixedly stores the identification of a broadcasting station;

the identification stored in memory 19 is compared with the identification present in the channel signal;

in case of positive comparison, the tuning information content of the identified broadcast channel signal is memorised in a non-volatile memory 16, 116, 216.

Each non-volatile memory 16, 116, 216 storing tuning information for a broadcast channel is associated with a specific corresponding selection key. The board regards a selection key as a programme number, independently of the label of the key. Thus, in the receiver of D1, there is a one-to-one correspondence between each memory storing an identification of a broadcast station and a programme number. In the view of the board, this one-to-one correspondence constitutes a table containing a numbered list of broadcast channels' identifications associated in a pre-established order with respective programme numbers. The television receiver of D1 thus looks in this table to find the programme number corresponding to a broadcasting station identified.

Document D1 also indicates (see the second paragraph of the description) that the pre-established order is fixed and satisfies the need of many television users to keep a particular broadcasting station always

associated with the same key, independently of the place at which the receiver is used. The pre-established order can therefore be regarded as a logic order facilitating the selection of the memorised tuning information. However, D1 does not explicitly disclose that the filters 17, 117, 217 are fitted at the site of the manufacturer.

D1 also states (see the last paragraph of page 1, the first paragraph of page 2, and the last two lines of page 4) that selection and memorisation of tuning information are effected automatically.

4.2 The user of the receiver of D1 has to actuate a switch 23 to start the step of memorising the tuning information. Thus, D1 discloses a manual step (actuation of switch 23) preliminary to the step of memorising the tuning information content of the identified broadcast channel signal, this last step being then carried out automatically, without further intervention of the user. This appears to be covered by claim 1 of the main request, because the wording of the claim does not exclude the possibility that other steps than those specified be necessary to effect selection and memorisation of the tuning information in the receiver.

4.3 Thus, the television signal receiver defined in claim 1 of the main request differs from the one disclosed in D1 in that:

- (a) the pre-established order (which in the receiver of D1 is defined by the information contained in the memories of the filters) is determined in the site of manufacturer of the receiver and memorised

in the non-volatile memory; and

-(b) the steps of the procedure are executed with a system of logic programming using a microprocessor.

4.4 Feature (a) concerns the problem of making the receiver of D1 operational, which clearly is an obvious problem.

It is notorious that television signal receivers are usually already operational when they leave the factory. Therefore, the board takes the view that it would be obvious to a skilled person to make the receiver of D1 operational before it leaves the factory. Furthermore, making the receiver operational in the factory might be required to test the receiver effectively before shipment. It is also obvious that the internal circuitry of the receiver can be easily accessed at the site of manufacture, before the receiver is packed, so that it is not difficult to memorise the identifications of the broadcasting stations at the factory. Therefore, the board considers that feature (a) is obvious to the skilled person.

4.5 Feature (b) concerns the implementation of the control means by a microprocessor, which is an obvious alternative to the control means disclosed in D1 once suitable microprocessors have become available. That such a microprocessor was available at the priority date of the patent in suit can be seen from document D5 which discloses a television signal receiver in which selection and memorisation of tuning information is performed in a sequence of steps under control of a programmed microprocessor.

In the view of the board, it was therefore obvious to the skilled person at the priority date to perform the procedure disclosed in D1 for selecting and memorising tuning information under control of a system of logic programming using a microprocessor. Thus, feature (b) is also obvious to the skilled person.

- 4.6 For these reasons, the subject-matter of claim 1 of the main request is obvious to a skilled person and cannot be considered as involving an inventive step in the sense of Article 56 EPC. The main request of the appellant proprietor can therefore not be accepted.

First auxiliary request of the appellant patentee

5. *Clarity - Article 84 EPC*

The wording of claim 1, first auxiliary request is considered to be clear in the sense of Article 84 EPC for the reasons indicated at point 2 above in connection with the main request.

6. *Amendments - Article 123 EPC*

- 6.1 Claim 1 of the first auxiliary request contains all the features of claim 1 of the main request and, in addition thereto, specifies that:

- the tuning information content of an identified broadcast channel signal is memorised in the non-volatile memory under the corresponding programme number in an established order in accordance with the pre-established order defined by the table; this feature results from claim 1 as originally filed and from the passage at column 4,

lines 14 to 41 of the printed specification of the patent in suit, which was present in the application as filed;

- said established order can be redetermined by the user; which feature directly derives from original claim 3 and the passage at column 4, lines 49 to 54 of the printed specification of the patent in suit, which was present in the application as filed.

6.2 Dependent claims 2 to 6 have been amended to include the features of claims 4 to 8 as granted and the description has been amended to be consistent with the claims and acknowledge the prior art known from documents D1 and D5.

6.3 Thus, for the reasons indicated at points 3.1, 3.2, 6.1 and 6.2 above, the first auxiliary request does not contain subject-matter which extends beyond the content of the application as filed and satisfies Article 123(2) EPC.

6.4 Claim 1 of the first auxiliary request contains all the features of claim 9 as granted so that the scope of protection has not been extended and Article 123(3) EPC is satisfied.

7. *Novelty - Article 54 EPC*

7.1 As explained above, document D1 does not disclose a television receiver comprising a microprocessor.

7.2 Document D5 discloses a television signal receiver comprising a programmed microprocessor and shows in

Figure 4 a table III which associates programme numbers and identifications of broadcasting stations. However, D5 indicates that table III is generated in the receiver after searching has been performed and all broadcast television channels received have been identified on the basis of a code present in the channel signal. D5 does not contain any description of the algorithm used to generate table III. Thus, the board takes the view that there is no disclosure in D5 of looking in a table for the programme number corresponding to a broadcasting station.

- 7.3 Document D2 discloses a television signal receiver in which the tuning information content f'x of an identified broadcast channels is memorised in an established order in a memory MEM. However D2 does not disclose any possibility to subsequently redetermine the order in which the tuning information is memorised.
- 7.4 Document D10 discloses a television signal receiver similar to the one disclosed in D2 and which also lacks the possibility to redetermine the order of the tuning information memorised.
- 7.5 None of the remaining documents D3, D4 and D6 to D9 discloses a television receiver in which the tuning information of received broadcast channels is memorised according to a pre-established order in the receiver and which offers the possibility to redetermine the order in which said tuning information is memorised.
- 7.6 Thus, the invention defined in claim 1 of the first auxiliary request does not form part of the state of the art disclosed in documents D1 to D10 and can be regarded as being new. The same applies to the subject-

matter of claims 2 to 6 which are dependent on claim 1.

8. *Inventive step - Article 56 EPC*

8.1 The board regards document D1 as disclosing the closest prior art.

In addition to features (a) and (b) identified at point 4.3 above, which have been found to be obvious to the skilled person, the television signal receiver defined in claim 1 of the first auxiliary request differs from the one disclosed in D1 in that:

- (c) the order in which the tuning information content of identified broadcast channels is memorised in the non-volatile memory can be redetermined by the user.

8.2 Feature (c) solves the problem of allowing the user to diverge from the order pre-established in the receiver.

This problem is not discussed or solved in any of the documents D1 and D3 to D9, that can be taken into account for the assessment of inventive step.

Furthermore, the board observes that television signal receivers storing the tuning information of the received channels in a pre-established order were developed to avoid burdening the user of the receiver with the task of determining and indicating how he wishes the broadcasting stations to be associated with the programme numbers, i.e. in which order the channels should be memorised. Memorising the broadcasting stations in an order determined by the receiver appears therefore to be antithetical to memorising them in an

order determined by the user. Therefore, the board considers that, in the absence of any suggestion in the state of the art, the skilled person would not have combined these two opposed possibilities for determining the order in which the stations are memorised. Thus, the board concludes that feature (c) is not obvious to a skilled person.

8.3 The television signal receiver defined by claim 1 of the first auxiliary request is therefore considered as involving an inventive step in the sense of Article 56 EPC.

8.4 The subject-matter of claims 2 to 6 of the first auxiliary request also involves an inventive step, as these claims are dependent on claim 1.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent as amended in the following version (first auxiliary request):
 - claims 1 to 6 and description, columns 1 to 5, filed at the oral proceedings;
 - drawings as in the patent.

The Registrar:

The Chairman:

M. Hörnell

W. J. L. Wheeler