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**Datasheet for the decision
of 29 May 2020**

Case Number: T 1504/15 - 3.5.04

Application Number: 11162898.8

Publication Number: 2343884

IPC: H04N5/445, H04N5/781

Language of the proceedings: EN

Title of invention:

A receiving device and method for presenting information about available programming

Applicant:

DISH Technologies L.L.C.

Headword:

Relevant legal provisions:

EPC Art. 123(2), 56

Keyword:

Main request - extension beyond the content of the application as filed (yes)

First and second auxiliary requests - mixture of technical and non-technical features (yes), inventive step (no)

Decisions cited:

T 1670/07

Catchword:



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Case Number: T 1504/15 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 29 May 2020

Appellant: DISH Technologies L.L.C.
(Applicant) 9601 S. Meridian Boulevard
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Representative: Beck Greener LLP
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 11 February
2015 refusing European patent application
No. 11162898.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman C. Kunzelmann
Members: B. Le Guen
B. Müller

Summary of Facts and Submissions

- I. The appeal is against the decision to refuse European patent application No. 11 162 898.8, published with publication number EP 2 343 884 A1. It is a divisional application of earlier European patent application No. 08 171 993.2, published with publication number EP 2 073 534 A1.
- II. The decision under appeal cited the following document:
- D1: JP 2000 293539 A (SONY CORP) 20 October 2000.
- III. It was based on the grounds that:
- (a) claim 1 of the main request and each of the second, third and fourth auxiliary requests then on file was unclear (Article 84 EPC);
 - (b) claim 1 of the main request and each of the third and fourth auxiliary requests contained subject-matter which extended beyond the content of the application as filed (Article 123(2) EPC);
 - (c) the subject-matter of claim 1 of the first auxiliary request was not new (Article 54(1) EPC) in view of the disclosure of document D1.
- IV. The examining division further decided not to admit the second auxiliary request into the proceedings (Rule 137(3) EPC), because it was late filed (Rule 116 EPC) and *prima facie* contained deficiencies under Article 84 EPC.
- V. The applicant (hereinafter "appellant") filed notice of appeal.

VI. With the statement of grounds of appeal, the appellant filed a main request comprising claims 1 to 8 and an auxiliary request comprising claims 1 to 10. The claims of the main and auxiliary requests were, respectively, based on the claims of the second and third auxiliary requests underlying the impugned decision, with additional amendments.

The appellant requested that the decision under appeal be set aside in its entirety and that a European patent be granted on the basis of the claims of the main request, or, in the alternative, on the basis of the claims of the auxiliary request.

The appellant indicated a basis in the application as filed for the claimed subject-matter and provided arguments as to why the claims met the requirements of Articles 123(2) and 84 EPC.

VII. The board issued a summons to oral proceedings dated 23 January 2020. In a communication under Article 15(1) RPBA 2020 (Rules of Procedure of the Boards of Appeal in the version of 2020, OJ EPO 2019, A63), annexed to the summons, the board introduced the following document into the appeal proceedings:

D4: WO 99/01984 A1 (NDS LIMITED) 14 January 1999.

Document D4 had been cited by the USPTO in parallel US proceedings.

The board gave its provisional opinion that:

(a) the subject-matter of claims 1 and 5 of the main request and the subject-matter of claim 1 of the auxiliary request lacked inventive step (Article 56 EPC) in view of the disclosure of document D4 and

the common general knowledge of a person skilled in the art;

- (b) claim 1 of the auxiliary request contained subject-matter which extended beyond the content of the application as filed (Article 123(2) EPC).

In its analysis of inventive step in respect of both requests, the board expressed its doubts as to whether a selection of future programs for presentation to a user was motivated by technical considerations.

- VIII. With its reply dated 24 April 2020, the appellant replaced the main request and the auxiliary request then on file with a new main request comprising claims 1 to 8, a new first auxiliary request comprising claims 1 to 10, and a new second auxiliary request comprising claims 1 to 8. The appellant provided a basis for the amendments in the application as filed, as well as arguments as to why the subject-matter of the claims involved an inventive step within the meaning of Article 56 EPC.
- IX. In view of the COVID-19 pandemic, the appellant was asked to confirm its presence at the oral proceedings in a communication of the Registry dated 8 May 2020. It was also informed of the possibility of requesting that oral proceedings be held by video conference.
- X. The appellant made such a request in a letter dated 13 May 2020 and was then informed, in a fax dated 25 May 2020, that the oral proceedings would be held on 26 May 2020 by video conference.
- XI. On 26 May 2020 technical issues prevented the video conference from taking place. During a telephone

consultation, the appellant agreed to the oral proceedings being postponed to 29 May 2020.

XII. With a fax dated 26 May 2020, the appellant was informed that the oral proceedings were rescheduled for 29 May 2020 and that they would be held by video conference.

XIII. On 29 May 2020 the oral proceedings before the board took place by video conference.

During these proceedings, the appellant withdrew the second auxiliary request and filed claims 1 to 8 of a new second auxiliary request.

The appellant's final requests were that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of:

- the main request or, in the alternative, the first auxiliary request, both requests filed with the letter dated 24 April 2020, or
- the second auxiliary request filed during the oral proceedings of 29 May 2020.

At the end of the oral proceedings, the chairman announced the board's decision.

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

"A receiving device (118) for presenting information about available programming, comprising:

a memory (208);

an electronic program guide generator (100) stored on the memory that is configured, when executed, to

store attributes of a plurality of broadcast video programs that have been viewed (1304) on a presentation device (120), wherein said attributes are of plural attribute types and reside in electronic program guide data; and

identify one or more of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period (1306);

identify plural future programs to be broadcast that are related to previously viewed programs, wherein each program of the related future programs is scheduled for broadcast during the time of day corresponding to said designated time period and has plural attributes that match the stored attributes of at least one of the identified broadcast video programs (1308), and select a subset of the related future programs by finding a similarity measure for each related future program based on the number of matching attributes wherein those programs with a higher similarity measure are selected and wherein different attribute types are differently weighted in finding the similarity measure such that matching attributes of some attribute types have a greater effect on the selection of programs; and

in response to a request received from a user, present on the presentation device (120) an electronic program guide for the time of day corresponding to said designated time period, the electronic program guide presenting scheduling information for the selected subset of related future programs to be broadcast at the time of day corresponding to said designated time period (1310); and

a video processing system (206) operable to execute the electronic program guide generator."

XV. Claim 1 of the first auxiliary request reads as follows:

"A receiving device (118) for presenting information about available programming, comprising:

a memory (208);

an electronic program guide generator (100) stored on the memory that is configured, when executed, to

store information relating to a plurality of broadcast video programs that have been viewed (1304) on a presentation device (120), the information including a program identifier used to identify a program in the stored information, a viewing period time, a viewing time of day, and one or more attributes of each program, wherein said one or more attributes reside in electronic program guide data; and

identify programs of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period (1306);

select future programs to be broadcast, each program of the selected programs being scheduled for broadcast during the time of day corresponding to said designated time period and either having the same program identifier as one of the identified broadcast video programs (1308) or being related to the identified broadcast video programs (1308) by having at least one attribute that matches one of the one or more stored

attributes of the identified broadcast video programs (1308); and

in response to a request received from a user, present on the presentation device (120) an electronic program guide for the time of day corresponding to said designated time period, the electronic program guide presenting scheduling information for the selected future programs to be broadcast at the time of day corresponding to said designated time period (1310); and

a video processing system (206) operable to execute the electronic program guide generator,

wherein the electronic program guide generator (100) is arranged to calculate for each of the identified broadcast programs based on the stored information a total viewing period time, and then order the programs in the electronic program guide according to decreasing total viewing period time such that those programs with the highest total viewing period time and their related programs appear first."

XVI. Claim 1 of the second auxiliary request reads as follows:

"A receiving device (118) for presenting information about available programming, comprising:

a memory (208);

an electronic program guide generator (100) stored on the memory that is configured, when executed, to

store attributes of a plurality of broadcast video programs that have been viewed (1304) on a presentation device (120), wherein said attributes are of plural attribute types and reside in electronic program guide data; and

identify one or more of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period (1306);

identify plural future programs to be broadcast that are related to previously viewed programs, wherein each program of the related future programs is scheduled for broadcast during the time of day corresponding to said designated time period and has plural attributes that match the stored attributes of one of the identified broadcast video programs (1308), and select a subset of the related future programs by finding a similarity measure for each related future program based on various factors wherein those programs with a higher similarity based on the measure are selected, and wherein the factors include counting the number of times each attribute of a related future program matches the attribute of an identified broadcast video program, wherein, in a further factor, different attribute types are differently weighted such that matching attributes of some attribute types have a greater effect on the selection of programs and wherein, in a further factor, an identified broadcast video program watched more recently than another identified broadcast video program has a greater effect on the selection of programs; and

in response to a request received from a user, present on the presentation device (120) an electronic program guide for the time of day corresponding to said

designated time period, the electronic program guide presenting scheduling information for the selected subset of related future programs to be broadcast at the time of day corresponding to said designated time period (1310); and
a video processing system (206) operable to execute the electronic program guide generator."

XVII. The arguments submitted by the appellant, as far as relevant for the present decision, may be summarised as follows.

- (a) The features of claim 1 of the main request, lines 14 to 25, are derivable from the paragraph bridging pages 26 and 27 of the application as filed.

- (b) The subject-matter of claim 1 of the first auxiliary request differs from the disclosure of document D4 in that the electronic program guide generator is configured to:
 - identify programs of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period, and select future programs being related to the identified broadcast video programs ("Features (a)");
 - calculate for each of the identified broadcast programs based on the stored information a total viewing period time, and then order the programs in the electronic program guide according to decreasing total viewing period time such that those programs with the highest total viewing period time and their related programs appear first ("Features (b)").

Features (a) address the problem of managing an ever growing database of already viewed programs. It results in a reduction of the set of broadcast video programs to which future programs are compared. This pre-filtering, in turn, leads to a reduction in the number of selected future programs to be presented. This ensures that the selection of future programs can be presented on a screen of limited size or, at least, using a reduced number of resources, for example a reduced number of screens.

Features (a) and Features (b) considered together represent a simple manner of using the stored information about the identified broadcast video programs to make recommendations. The implementation of a simple algorithm requires little resources, for example little memory. Moreover, the obtained electronic program guide is a "superior EPG" tailored to the user's interests.

The total viewing period time in Features (b) is a technical quantity which conveys an additional technical character to the algorithm.

- (c) The subject-matter of claim 1 of the second auxiliary request differs from the disclosure of document D4 in that it is configured to:
- identify programs of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period, and identify plural future programs being related to the identified broadcast video programs ("Features (a)");
 - select a subset of the related future programs by finding a similarity measure for each related

future program based on various factors wherein those programs with a higher similarity based on the measure are selected, and wherein the factors include counting the number of times each attribute of a related future program matches the attribute of an identified broadcast video program, wherein, in a further factor, different attribute types are differently weighted such that matching attributes of some attribute types have a greater effect on the selection of programs and wherein, in a further factor, an identified broadcast video program watched more recently than another identified broadcast video program has a greater effect on the selection of programs ("Features (b)").

Features (a) and Features (b) represent a simple manner of narrowing down the set of future programs that has to be presented to the user. The identification of broadcast video programs already viewed during a designated time period, the identification of future programs related to these already viewed broadcast video programs, and the selection of a subset of these future programs represent iterative "narrowing down" steps which are based on simple heuristics.

The different weights associated to the different attributes, and the time at which already viewed broadcast video programs were watched, used as factors in the similarity measure specified in claim 1, are technical quantities. In particular, the weights enable the discrepancies between the distribution of values of the different attributes to be taken into account. If a first attribute (for example "actor") can take one of 1000 values and a

second attribute (for example "genre") can take one of 10 values, there is a higher probability of obtaining fewer hits based on the first attribute than based on the second attribute. By weighting the first attribute more than the second attribute, the "narrowing down" effect of the claim is improved.

Reasons for the Decision

1. The appeal is admissible.
2. *The invention*

The present application concerns an electronic program guide for displaying information about future broadcast video programs scheduled at a time of day corresponding to a designated time period. In particular, the claims of the present requests are directed to the embodiment described in the paragraph bridging pages 15 and 16 and from page 23, line 36, to page 31, line 2, of the application as filed.

In that embodiment, the electronic program guide is customised based on the viewing habits of the user during the designated time period.

Information about scheduled broadcast video programs is received as part of electronic program guide data and is stored in the "*program information table*" as illustrated in Figure 11. This information includes different attributes, such as Program ID, Title and Director's name.

Information about programs which are viewed by different users is stored in the "*usage information*"

table" as illustrated in Figure 10. It comprises different parameters, such as the user's name, a viewing start time and a viewing duration.

When a user requests an electronic program guide for a designated time period, future programs having attributes matching those of programs already viewed by that user at the designated time period are selected and presented to the user as part of an electronic program guide.

In one mode (paragraph bridging pages 26 and 27), a subset of future programs matching the already viewed programs is selected based on a similarity measure that takes into account three factors: a count of the number of times each attribute of a future broadcast video program matches an already viewed program, the time/date when an already viewed program was viewed, and different weights associated to different attributes.

In another mode (paragraph bridging pages 27 and 28), a total viewing time for each already viewed program is calculated. Before being presented to the user, future programs are arranged in decreasing order of the respective total viewing times of the already viewed programs they match.

The claims of the main request and of the second auxiliary request are directed to the first mode. The claims of the first auxiliary request are directed to the second mode.

3. *Main request: extension of subject-matter
(Article 123(2) EPC)*

3.1 According to Article 123(2) EPC, "[t]he ... European patent application may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed".

This means that any amendment can only be made within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole disclosure of the invention in the description, claims and drawings of the application as filed (see "Case Law of the Boards of Appeal of the European Patent Office", 9th edition 2019 (hereinafter "Case Law"), II.E.1.1).

3.2 The receiving device defined in claim 1 of the main request comprises an electronic program guide generator "*configured to identify plural future programs to be broadcast that are related to previously viewed programs, wherein each program of the related future programs is scheduled for broadcast during the time of day corresponding to said designated time period and has plural attributes that match the stored attributes of at least one of the identified broadcast video programs*".

3.2.1 The requirement that each identified future program matches "*at least one*" of the identified broadcast video programs by a plurality of attributes represents an amendment compared with claim 1 of the main request filed with the statement of grounds of appeal.

- 3.2.2 The expression "at least one" encompasses two options: "one", or "more than one". In the second option, the requirement specified by the claim means that, in the context of the present application, each identified future program must match "more than one" of the identified broadcast video programs by a plurality of attributes.
- 3.2.3 At the oral proceedings, the appellant quoted the passage on description page 26, lines 23 to 25, as the basis for this expression. It reads: "*A similarity measure may take into account various factors, **such a [sic] count of the number of times each attribute of a scheduled program matched a previously viewed program***" (emphasis by the board). The appellant interpreted this passage as meaning that a count was made of the number of attributes of an identified future program that matched the attributes of an already viewed program. This implied that "more than one" matching attribute existed for at least some of the identified future programs.
- 3.2.4 The board has not been convinced by this argument. The count described in the above passage is not a count of the number of attributes of one scheduled program that matches the attributes of one already viewed program; it is a count of the number of times each attribute of a scheduled program matches a previously viewed program. Such a count does not imply that each scheduled program matches "more than one" previously viewed program by a plurality of attributes.
- 3.2.5 The board could not find a proper basis for the feature "*at least one*" identified in point 3.2.1 above in the application as filed. The board notes, in particular, that the passage on description page 30, lines 18 to

21, specifies that future programs are selected, each of which has at least one attribute that matches one of the stored attributes of "one" of the identified broadcast video programs. This passage therefore discloses that for a future program to be identified, it suffices that it matches one of the identified broadcast video programs.

3.2.6 The board has therefore come to the conclusion that the expression "*at least one*" leads to an extension of subject-matter in contravention of Article 123(2) EPC.

3.3 The electronic program guide generator of the receiving device claimed in claim 1 is further configured to select a subset of the related future programs by finding a similarity measure for each related future program based on the number of matching attributes.

3.3.1 The determination of a similarity measure for each related future program based on the number of matching attributes represents an amendment compared to claim 1 of the main request filed with the statement of grounds of appeal.

3.3.2 The basis provided by the appellant for this feature is the same as mentioned in point 3.2.3.

3.3.3 The board has not been convinced by this argument, because, as explained above, the relevant passage does not disclose a calculation of a number of matching attributes between one already viewed program and one future program, but a count of the number of times each attribute of a future program matches an attribute of an already viewed program.

- 3.3.4 The board has therefore come to the conclusion that the expression "*finding of a similarity measure for each related future program based on the number of matching attributes*" extends beyond the content of the application as filed.
- 3.4 Claim 1 of the main request further stipulates that "*those programs with a higher similarity measure are selected*".
- 3.4.1 The paragraph bridging pages 26 and 27 of the description as filed, cited by the appellant as the basis for this feature (see letter of reply dated 24 April 2020, page 2, third full paragraph), does not disclose that programs with a higher similarity measure are selected. This passage does not disclose how the different factors it mentioned are mathematically combined, and thus does not exclude that a higher similarity translates into a lower value.
- 3.4.2 The appellant submitted that the expression "*higher similarity measure*" is not to be understood as a higher value but as a value corresponding to a higher similarity as measured by the method specified in claim 1.
- 3.4.3 The board, however, is not convinced that a person skilled in the art would give this meaning to the expression "*higher similarity measure*". In the context of the application, the measuring of similarity must result in a value somehow deduced from, *inter alia*, numbers of matching attributes. This value can be higher or lower and thus lends itself to making a selection.

3.4.4 The board has therefore come to the conclusion that the expression "*those programs with a higher similarity measure are selected*" also extends beyond the content of the application as filed.

4. *First and second auxiliary requests: claim interpretation*

4.1 Claim 1 of each of the first and second auxiliary requests specifies that programs of the plurality of broadcast video programs which have been viewed "*at a time of day corresponding to a designated time period*" are identified.

4.2 In its letter of reply dated 24 April 2020 (page 4, second and third full paragraphs) and at the oral proceedings, the appellant submitted that the identification of broadcast video programs according to a designated time period resulted in a reduction of the number of broadcast video programs to which future programs were compared.

4.3 At the oral proceedings, the board pointed out that a literal interpretation of the expression "*time of day corresponding to a designated time period*" encompassed twenty-four hours, i.e. the full time period within which a program may be viewed. Yet, in a twenty-four hour period, no reduction of the number of broadcast video programs occurs.

4.4 The appellant argued that the expression "*designated time period*" had to be interpreted in such a manner that the desired reduction effect was achieved, i.e. in such a manner that the twenty-four hour period was narrowed down, at least to some degree.

4.5 There is no need to further consider this question, because, even if the board adopts the appellant's narrow interpretation of this feature, this question has no influence on the outcome of the decision. Hence, for the assessment of inventive step and in favour of the appellant, the board will, in the following, base its reasons on an interpretation of the expression "*time of day corresponding to a designated time period*" which excludes twenty-four hours.

5. *First auxiliary request: inventive step (Article 56 EPC)*

5.1 According to Article 56 EPC, "*[a]n invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art*".

5.2 *Closest state of the art*

Document D4 can be considered as the closest state of the art within the context of the established "problem and solution approach" (Case Law, I.D.2).

This was not disputed by the appellant.

5.3 *Document D4's disclosure*

5.3.1 Document D4 discloses a receiving device for presenting information about available programming (see Figure 1, reference numbers 105 and 120; page 15, lines 29 to 30; or page 24, lines 17 to 18), comprising an electronic program guide generator called "*intelligent agent*" (see Figure 1 and page 15, line 30). This intelligent agent is necessarily stored in a memory.

- 5.3.2 A video processing system operable to execute the intelligent agent is necessarily present within the receiving device of document D4.
- 5.3.3 Moreover, the electronic program guide generator disclosed in document D4 is configured, when executed, to store information relating to a plurality of broadcast video programs that have been viewed on a presentation device, the information including a program identifier used to identify a program in the stored information, a viewing period time, a viewing time of day, and one or more attributes of each program, wherein those one or more attributes reside in electronic program guide data.

Indeed, according to page 18, lines 23 to 27, of document D4, "*information, obtained over a period of time, on the various current program characteristics of programs viewed by a viewer at various times*" is stored by the intelligent agent in a profile storage unit. According to lines 19 to 21 on the same page, the characteristics typically comprise "*components similar to those described above with respect to program schedule information, which characterize the television program currently being viewed by the viewer*". The characteristics of the "*program schedule information*" are shown in the paragraph bridging pages 16 and 17 and correspond to "*attributes*" within the meaning of the current application, i.e. "*electronic program guide data*". These attributes comprise, among other things, a program identifier used to identify a program in the stored information (page 17, line 4, "*name of program*"), a viewing period time (page 26, lines 17 to 18) and a viewing time of day (page 17, lines 1 and 3).

5.3.4 The electronic program guide generator disclosed in document D4 is further configured to select future programs to be broadcast, each program of the selected programs being scheduled for broadcast during the time of day corresponding to a designated time period and being related to the already viewed broadcast video programs by having at least one attribute that matches one of the one or more stored attributes of the already viewed broadcast video programs.

Indeed, the paragraph bridging pages 27 and 28 of document D4 discloses that scheduled programs whose characteristics resemble information stored in the data structure are preferred. In an embodiment (page 28, lines 4 to 9, page 31, lines 1 to 3 and 22 to 24, Figures 9B-9C), programs starting during a same time period ("*at 8:00PM or later*") and having the same genre as already viewed programs ("*news*") are identified and highlighted in the electronic program guide. The identification of preferred scheduled programs amounts to a selection of these programs.

5.3.5 The electronic program guide generator disclosed in document D4 is also configured to present on the presentation device an electronic program guide for the time of day corresponding to the designated time period in response to a request received from a user, the electronic program guide presenting scheduling information for the selected future programs to be broadcast at the time of day corresponding to that designated time period (see Figures 9A-9C).

5.3.6 Finally, the electronic program guide generator disclosed in document D4 is arranged to order the programs in the electronic program guide according to the user's preference profile (see the passage from

page 20, line 28, to page 21, line 1, or the embodiment of Figure 9C and page 31, lines 22 to 25).

5.4 *Distinguishing features*

It is common ground that the electronic program guide generator specified in claim 1 differs from the intelligent agent disclosed in document D4 in that it is configured to:

- (a) identify programs of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period, and select future programs related to the identified broadcast video programs ("Features (a)");
- (b) calculate for each of the identified broadcast programs based on the stored information a total viewing period time, and then order the programs in the electronic program guide according to decreasing total viewing period time such that those programs with the highest total viewing period time and their related programs appear first ("Features (b)").

5.5 *Effects and objective technical problem*

5.5.1 It is established case law that:

- only features of a claim contributing to the technical character of the claimed invention may be taken into account when assessing inventive step (Case Law, I.D.9.1);
- a mathematical algorithm that does not serve a technical purpose does not contribute to the technical character of a claimed invention (Case Law, I.D.9.1.8);
- in order to assess the real technical contribution of an invention, an aim to be achieved in a non-

technical field may legitimately appear in the formulation of the objective technical problem as a constraint that has to be met (Case Law, I.D.9.1).

- 5.5.2 The board agrees with the appellant that a viewing period time can be considered as a technical quantity, since it normally requires the use of a receiver's clock to keep track of the amount of time a broadcast video program was viewed.
- 5.5.3 The remaining effect of Features (a) and Features (b) - the viewing time period set aside - is a presentation, as part of an electronic program guide, for the time of day corresponding to a designated time period, of a certain content which consists in future programs related to broadcast video programs that have been viewed during the designated time period and which are ordered according to what the user has most viewed during the designated time period.
- 5.5.4 Presentations of information are outside of the realm of technicality (Article 52(2)(d) EPC).
- 5.5.5 Moreover, for the following reasons, the board was not convinced that the particular selection of future programs to be presented, specified in claim 1, served a technical purpose.
- 5.5.6 Firstly, the board was not convinced by the argument of the appellant based on the superiority of the electronic program guide.

The board endorses the view expressed in decision T 1670/07 (Reasons, point 13; Case Law, I.D.9.1.8) that a technical effect may arise from either the provision of data about a technical process, regardless of the

presence of the user or its subsequent use, or from the provision of data (including data that on its own is excluded, e.g. produced by means of an algorithm) that is applied directly in a technical process.

The recommendations made to the user as part of an electronic program guide do not have a technical function. They are made to guide the user in the cognitive process of choosing a program to watch. The user can act on the information, but does not need to. The assumption is that the recommendations will save the user some time. A user's interests, however, are individual and fluctuating over time, even for a time of day corresponding to a given designated time period. There is no insurance that, on a certain day and time, the user will find a program more quickly with the electronic program guide of claim 1 than with a different electronic program guide. The "superiority" of one electronic program guide over another, in terms of time saved, is a matter of personal taste (on a certain day and time).

- 5.5.7 The board has not been convinced either that a receiver falling within the ambit of claim 1 necessarily required a smaller screen size or fewer screens to present the electronic program guide. In claim 1, the number of future programs presented to the user and the manner in which these programs are presented are not limited by any parameter reflecting a technical limitation of the presentation device. Claim 1 does not exclude that additional, less preferred programs are presented for the designated time period, or that programs are presented for multiple designated time periods. Claim 1 also encompasses any possible presentation layout of the selected future programs. The required space needed for presenting the electronic

program guide is therefore not limited by the features of the claim.

5.5.8 Further, the board has not been convinced by the argument of the appellant based on the simplicity of the algorithm. Since claim 1 does not exclude that future programs related to other already viewed programs or scheduled for other designated times are selected (see for example the embodiment on page 30, first full paragraph), the pre-filtering effect of Features (a) does not ensure that computational complexity is saved overall. An effect cannot be retained if it is not credible that the promised result is attainable throughout the entire range covered by a claim (Case Law, I.D.4.3).

5.5.9 Hence, the remaining effect expressed in point 5.5.3 is not linked to any technical considerations and, accordingly, must be considered as an aim to be achieved in a non-technical field.

5.5.10 In accordance with the established case law, the board therefore formulates the objective technical problem as how to present, as part of an electronic program guide, for the time of day corresponding to a designated time period, a certain content which consists in future programs related to broadcast video programs that have been viewed during the designated time period and which are ordered according to what the user has most viewed during the designated time period.

5.6 *Assessment of inventive step*

5.6.1 Document D4 discloses storing information on the amount of time that each program was viewed by the viewer (see page 18, last sentence).

- 5.6.2 The board considers that accumulating the amount of time a program was viewed is an obvious manner of determining what a user has viewed more during the designated time period.
- 5.6.3 The only distinguishing feature identified as technical in the previous analysis (see point 5.5.2) is therefore considered obvious in view of the common general knowledge of a person skilled in the art.
- 5.6.4 It follows that the subject-matter of claim 1 lacks inventive step within the meaning of Article 56 EPC in view of the disclosure of document D4 combined with the common general knowledge of a person skilled in the art.

6. *Second auxiliary request: inventive step (Article 56 EPC)*

6.1 *Closest state of the art*

It is common ground that document D4 can be considered as the closest state of the art within the context of the established "problem and solution approach".

6.2 *Document D4's disclosure*

- 6.2.1 As can be derived from the analysis made in point 5.3, document D4 discloses a receiving device for presenting information about available programming, comprising a memory, an electronic program guide generator, and a video processing system operable to execute the electronic program guide generator, the electronic program guide generator being configured, when executed to:

- (a) store attributes of a plurality of broadcast video programs that have been viewed on a presentation device, wherein those attributes are of plural attribute types and reside in electronic program guide data;
- (b) identify plural future programs to be broadcast that are related to previously viewed programs, wherein each program of the related future programs is scheduled for broadcast during the time of day corresponding to a designated time period and has plural attributes that match the stored attributes of one of the previously viewed programs;
- (c) present on the presentation device an electronic program guide for the time of day corresponding to the designated time period in response to a request received from a user, the electronic program guide presenting scheduling information for the identified plural future programs to be broadcast at the time of day corresponding to that designated time period.

6.3 *Distinguishing features*

It is common ground that the electronic program guide generator specified in claim 1 differs from the intelligent agent disclosed in document D4 in that it is configured to:

- (a) identify programs of the plurality of broadcast video programs that have been viewed at a time of day corresponding to a designated time period, and identify plural future programs being related to the identified broadcast video programs ("Features (a)");
- (b) select a subset of the related future programs by finding a similarity measure for each related future program based on various factors wherein

those programs with a higher similarity based on the measure are selected, and wherein the factors include counting the number of times each attribute of a related future program matches the attribute of an identified broadcast video program, wherein, in a further factor, different attribute types are differently weighted such that matching attributes of some attribute types have a greater effect on the selection of programs and wherein, in a further factor, an identified broadcast video program watched more recently than another identified broadcast video program has a greater effect on the selection of programs ("Features (b)").

6.4 *Assessment of inventive step*

- 6.4.1 The board has not been convinced that any of the factors used in determining the similarity measure specified in claim 1 have a technical character.

The first factor used in determining the similarity measure is the count of the number of times each attribute of a related future program matches the attribute of an identified broadcast video program. The appellant has not argued that this factor represented a technical quantity. Indeed, the attribute types mentioned in claim 1 are not associated to any technical aspect. According to Figure 11, the attributes are descriptive of the broadcast content and, thus, concern cognitive data. The board takes the view that a count of a number of times each attribute of a related future program matches the attribute of an identified broadcast video program is merely an element of an abstract mathematical model of the interests - or personal tastes - of a user. Accordingly, this factor does not have any technical character.

The second factor used in determining the similarity measure is the different weights associated with different attribute types. These different weights merely reflect different levels of preferences. Preference is not a technical quantity but a matter of personal taste. The appellant has argued that the weights enabled fewer hits to be returned by leveraging the discrepancies between the distributions of the values of the attributes. The board has not been convinced that such an effect is necessarily achieved, since the claim does not contain any feature related to the distributions of the values of the attributes. In any case, even if fewer hits were returned, the claim does not exclude that other programs are presented and does not set out any limitations on how the programs are presented. Hence, even if this effect was achieved by the features of the claim, it could not be linked to any technical considerations, such as a saving of (presentation, computational or memory) resources.

The third factor used for determining the similarity measure is the time at which already viewed programs were viewed. The scheduling time of a broadcast video program is usually chosen by a broadcasting station in the hope that it will improve its audience share. The improvement of audience share is not a technical aim. The time at which a broadcast video program can be, or was already, viewed does not therefore reflect a technical aspect. It is only one of several attributes that describe a broadcast content. Whether a user prefers to be presented with future programs related to already viewed programs that were viewed more (or less) recently, or with future programs related to already viewed programs whose attributes fulfil other non-technical criteria, is only a matter of personal taste.

6.4.2 For the same reasons as given in points 5.5.6 to 5.5.8, the board has not been convinced that the mathematical algorithm represented by Features (a) and Features (b) serves any technical purpose either.

In addition to the reasons given with respect to the first auxiliary request, the board points out that claim 1 does not specify how the factors used in the determination of the similarity measure are combined with one another to arrive at a value, nor does it exclude that other factors are taken into account. There is, therefore, no theoretical bound to the computational complexity required for determining the similarity measure. The technical effect of "simplicity" put forward by the appellant is thus even less credible within the context of claim 1 of the second auxiliary request.

6.4.3 In view of the above, the board has come to the conclusion that Features (a) and Features (b) only result in the presentation of certain content selected based on non-technical considerations. Therefore, they do not contribute to the technical character of the invention and, in accordance with the established case law, cannot be taken into consideration in the assessment of inventive step.

6.4.4 It follows that the subject-matter of claim 1 lacks inventive step within the meaning of Article 56 EPC in view of the disclosure of document D4.

7. Since none of the appellant's requests is allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



K. Boelicke

B. Müller
on behalf of
C. Kunzelmann
(unable to act)

Decision electronically authenticated