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Datasheet for the decision of 6 April 2017

Case Number: T 0450/14 - 3.5.05

Application Number: 02253953.0

Publication Number: 1336932

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Language of the proceedings: EN

Title of invention:
Reproduction test service apparatus for medical systems, maintenance support information management apparatus, X-ray ct system, and maintenance service centre apparatus

Applicant:
Toshiba Medical Systems Corporation

Headword:
Medical apparatus operation reproducing system/TOSHIBA

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

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Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 0450/14 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 6 April 2017

Appellant: (Applicant)	Toshiba Medical Systems Corporation 1385 Shimoishigami Otawara-shi, Tochigi-ken (JP)
Representative:	Moreland, David Marks & Clerk LLP Aurora 120 Bothwell Street Glasgow G2 7JS (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 4 October 2013 refusing European patent application No. 02253953.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division, posted on 4 October 2013, refusing European patent application No. 02253953.0 on the grounds of lack of inventive step (Article 56 EPC) having regard to the disclosure of

D1: WO 01/70100 A

with respect to the main request, and to the disclosure of

D4: JP H10 320536

with respect to the two auxiliary requests (auxiliary requests 3 and 4).

As examples of the common general knowledge, the examining division cited

D2: US 5 870 607 A and

D3: H. Cleve et al.: "Finding Failure Causes through Automated Testing", pages 1 to 15, August 2000, Proceedings of the International Workshop on Automated Debugging.

In an obiter dictum, objections under Articles 84 and 123(2) EPC were also raised.

II. Notice of appeal was received on 13 December 2013 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on

13 February 2014. The appellant requested that the decision be set aside and that a patent be granted based on a main request or first to fourth auxiliary requests, all requests filed with the statement setting out the grounds of appeal. Oral proceedings were further requested as an auxiliary measure.

III. A summons to oral proceedings was issued on 26 January 2017. In a communication pursuant to Article 15(1) RPBA issued on 1 February 2017, the board gave the preliminary opinion that none of the requests was allowable under Article 56 EPC.

IV. With a letter of reply dated 6 March 2017, the appellant filed amended pages of the description for each of the requests and explicitly specified on which application documents (description and drawings) the requests were based. Further, the appellant provided a partial translation in English of D4.

V. By letter dated 5 April 2017, the appellant submitted arguments in respect of inventive step and announced that it would not attend the oral proceedings.

VI. Oral proceedings were held as scheduled on 6 April 2017 in the absence of the appellant. After due deliberation on the basis of the pending requests and the written submissions, the decision of the board was announced at the end of the oral proceedings.

VII. Claim 1 according to the main request reads as follows:

"A reproduction test service apparatus which reproduces past operations of a medical system, characterized by comprising:

a unit (404) configured to receive a plurality of past log files directly or indirectly from the medical system;
a unit (405) configured to store the plurality of log files;
a pseudo medical system (407); and
a control unit (406) configured to control the pseudo medical system based on the log files so as to allow a plurality of past operations of the medical system to be reproduced on the pseudo medical system, wherein the unit (404) configured to receive the log files is configured to receive pure raw data or raw data together with the log files, the pure raw data being data converted from signals detected by the medical system, the raw data being data processed from the pure raw data, and the control unit (406) is further configured to control the pseudo medical system based on at least one of the pure raw data and raw data".

Claim 1 according to the first auxiliary request reads as follows:

"A reproduction test service apparatus which reproduces past operations of a medical system, said medical system comprising a data acquisition system, a preprocessing unit and an image reconstruction unit, said reproduction test service apparatus comprising:
a unit (404} configured to receive a plurality of past log files directly or indirectly from the medical system;
a unit (405) configured to store the plurality of log files;
a pseudo medical system (407); and
a control unit (406) configured to control the pseudo medical system based on the log files so as to allow a plurality of past operations of the medical system to

be reproduced on the pseudo medical system, wherein the unit (404) configured to receive the log files is configured to receive pure raw data or raw data together with the log files, the pure raw data being data converted from signals detected by the medical system, amplified and digitized in the data acquisition system of the medical system, the raw data being data processed from the pure raw data in the preprocessing unit said raw data being in a state immediately prior to reconstruction processing in the image reconstruction unit, and the control unit (406) is further configured to control the pseudo medical system based on at least one of the pure raw data and raw data".

Claim 1 according to the second auxiliary request adds to claim 1 according to the first auxiliary request, after the wording "a pseudo medical system (407)", the feature "configured to perform data processing facilities from preprocessing to display".

Claim 1 according to the third auxiliary request reads as follows:

"A reproduction test service apparatus which reproduces past operations of an X-ray CT system, said X-ray CT system comprises a gantry having an X-ray detector and a data acquisition system wherein signals detected by the detector are amplified and converted into digital form in the data acquisition system and then subjected to preprocessing and fed to an image reconstruction unit, said reproduction test service apparatus comprising:
a unit (404) configured to receive a plurality of past log files directly or indirectly from the X-ray CT system;

a unit (405) configured to store the plurality of log files;
a pseudo X-ray CT system (407), wherein the pseudo X-ray CT system is configured to perform the data processing facilities from preprocessing to display carried out by the X-ray CT system, but has no gantry; and
a control unit (406) configured to control the pseudo X-ray CT system based on the log files so as to allow a plurality of past operations of the X-ray CT system to be reproduced on the pseudo X-ray CT system, wherein the unit (404) configured to receive the log files is configured to receive pure raw data or raw data together with the log files, the pure raw data being data converted from signals detected by the X-ray CT system, amplified and digitized in the data acquisition system of the X-ray CT system, the raw data being data processed from the pure raw data in the preprocessing unit said raw data being in a state immediately prior to reconstruction processing in the image reconstruction unit, and the control unit (406) is further configured to control the pseudo X-ray CT system based on at least one of the pure raw data and raw data".

Claim 1 according to the fourth auxiliary request adds to claim 1 of the main request, after the words "based on at least one of the pure raw data and raw", the feature "and wherein the pseudo medical system reproduces the past operations of the medical system while retracing back through them one after another according to its operation history".

Reasons for the Decision

1. The appeal is admissible.

2. Main request

D1 discloses (see Figure 2) a system wherein a medical system ("ultrasonic diagnostic imaging system", see Figure 2, 100) can connect to a central diagnostics center (Figure 2, 120) through a laptop computer (Figure 2, 110 and page 4, lines 22 to 24). Diagnostic data such as error logs, system options, configuration and test error logs is downloaded from the medical system to the central diagnostics center (see page 5, lines 11 to 16; page 7, lines 1 to 10; page 11, lines 16 to 17), where the data is used to assess the causes of the problems (page 11, lines 18 to 21).

Further, due to the vague and broad meaning of the terms "pure raw data" and "raw data" used in claim 1, the sending of such data, together with past log files, from the medical system to the central diagnostics center is already disclosed, at least implicitly, in D1. In that respect, it is to be noted that the system of D1 allows any diagnostic data stored or produced by the medical system to be sent to the remote central diagnostics center (see page 7, lines 1 to 10 and page 11, lines 1 to 8). As examples of diagnostic data, D1 mentions, inter alia, error logs (see page 7, line 4) and user event information comprising an event which either precedes or succeeds the time of occurrence of an error event (see claims 8 and 9). As further stated in page 11, lines 16 to 21, the full data set of diagnostic data can be used to assess the causes of the problems. Therefore, contrary to what the appellant argued, the data downloaded in D1 goes beyond the reconstruction image produced by the medical system.

The downloaded data in D1 therefore comprises not only ultrasound image data but also data involved in the construction of the image data and thus falls under the broad definitions of pure raw data or raw data given in the claim.

Therefore, D1 discloses units, within the test service apparatus comprised of the laptop computer and the central diagnostic center, for receiving from the medical system, and storing, past log files together with pure raw data and raw data, the pure raw data being data converted from signals detected by the medical system and the raw data being data processed from the pure raw data.

The difference between the subject-matter of claim 1 and the disclosure of D1 is thus in substance that the test device comprises a pseudo medical system for reproducing past operations of the medical system, based on the received log files, raw data and pure raw data.

The technical effect of this distinguishing feature is that the test service apparatus can simulate any sequence of operations which have been performed in the past by the medical system in order. This enables the test service apparatus, when a fault has been detected during operation of the medical system, to simulate the combination of past operations of the medical device which have led to the fault.

The objective technical problem can thus be formulated as being how to improve the fault tracing capabilities of the test service apparatus of D1.

The skilled person, as stated in the impugned decision,

can be considered in the present case as a team of experts in medical systems and also experts in computer programs, since the test service apparatus relies on the computer-implemented processing of data received from the medical system.

By trying to solve the problem, the skilled person, i.e. the above-mentioned team, would thus consider implementing known software fault identification techniques. They would find in D2 for instance (see column 1, lines 18 to 41) that replaying a portion of a previously executed computer program can be used for isolating and tracing a cause of error. The skilled person would thus be incited to use the data and log files provided by the medical system of D1 to replay, i.e. to reconstruct, in the central diagnostics center, the operations of the medical device based on this data and log files.

For these reasons, the board judges that the subject-matter of claim 1 does not involve an inventive step, having regard to the combination of D1 and D2 (Article 56 EPC).

3. First auxiliary request

With respect to claim 1 of the main request, claim 1 comprises additional features which, according to the appellant, define more precisely the pure raw data and the raw data as well as the medical system itself

The ultrasound system of D1 obviously comprises a data acquisition system, a preprocessing unit and an image reconstruction unit (see page 2, lines 22 to 30).

The definition of pure raw data and raw data now given in the claim is such that they both represent data generated by the medical system immediately before an image is reconstructed by the image reconstruction unit of the medical system. However, some of the data downloaded to the remote central diagnostic center in D1 correspond to this definition of raw data and pure raw data since they are not merely ultrasound sound image data (see section 2 above).

Therefore claim 1 does not meet the requirements of Article 56 EPC having regard to the combination of D1 and D2.

4. Second auxiliary request

Claim 1 adds to claim 1 of the first auxiliary request the feature that the pseudo medical system is configured to perform data processing facilities from preprocessing to display. However, as evident from Figure 2d, reference sign 120, the central diagnostics center of D1, which receives all diagnostic data from the medical system, is equipped with a computer and a display.

Therefore claim 1 does not meet the requirements of Article 56 EPC, having regard to the combination of D1 and D2.

5. Third auxiliary request

Claim 1 adds to claim 1 according to the second auxiliary request features defining the medical system as an X-ray CT system and reciting that the pseudo medical system performs the data processing previously

carried out by the X-ray CT system but without having a gantry.

These additional features merely amount, in the board's judgement, to a definition of the test service apparatus of the second auxiliary request as an X-ray CT medical system. This use does not provide any surprising technical effect and, moreover, a test service apparatus for an X-ray CT medical system is already known from D4 (see Figure 2 and paragraph [0013]).

The board therefore judges that the subject-matter of claim 1 does not involve an inventive step, having regard to the combination of D1, D2 and D4 (Article 56 EPC).

6. Fourth auxiliary request

Claim 1 adds to claim 1 according to the main request the feature that the reproduction of the past operations of the medical system by the pseudo medical system is performed while retracing back through them one after another according to the operation history of the medical system.

D2 discloses the replay of portions of the execution of an original computer program, based on data stored during the first execution, to support testing and debugging (see column 3, lines 30 to 34 and column 9, lines 33 to 37). This amounts to a disclosure of the reproduction of the past operations of a computer program according to its operation history.

Claim 1 therefore does not add anything of inventive significance to the subject-matter of claim 1

according to the main request (Article 56 EPC).

7. In conclusion, none of the five requests is allowable under Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated