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Datasheet for the decision of 4 July 2017

Case Number: T 1503/13 - 3.4.02

Application Number: 08770011.8

Publication Number: 2150782

IPC: G01F23/00

Language of the proceedings: EN

Title of invention:
DISTRIBUTED MONITORING AND CONTROL FLUID HANDLING SYSTEM

Applicant:
Graco Minnesota Inc.

Relevant legal provisions:
EPC Art. 54(1), 56
EPC R. 137(5)

Keyword:
Admissibility of amended claims under Rule 137(5) EPC - yes
Novelty and inventive step - yes

Decisions cited:
T 2334/11

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Case Number: T 1503/13 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 4 July 2017

Appellant: (Applicant)	Graco Minnesota Inc. 88 11th Avenue N.E. Minneapolis, MN 55413 (US)
Representative:	Miller Sturt Kenyon 9 John Street London WC1N 2ES (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 7 May 2013 refusing European patent application No. 08770011.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	R. Bekkering
Members:	F. J. Narganes-Quijano
	B. Müller

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the examining division refusing European patent application No. 08770011.8.

II. During the first-instance proceedings the examining division referred to the following documents:

D1: US 2003/0088338 A1
D2: US 2006/0031030 A1
D3: US 6475180 B2.

In its decision the examining division held with respect to the main and the first to fifth auxiliary requests then on file that

- claim 1 of the main request contravened the requirements of Rule 137(5) EPC and, in addition, the claim did not define new subject-matter over the disclosure of document D1;

- claim 1 of both the first and second auxiliary requests contravened the requirements of Rule 137(5) EPC;

- the sets of claims of both the third and fourth auxiliary requests were not admitted into the proceedings because they were late filed and they did not *prima facie* overcome the novelty objection vis-à-vis document D1 (Rule 116(1) EPC); and

- the set of claims of the fifth auxiliary request was not admitted into the proceedings (Rule 116(1) EPC) because it was late filed and *prima facie* overcame neither the novelty objection vis-à-vis document D1 nor the objection under Rule 137(5) EPC.

III. With the statement setting out the grounds of appeal the appellant filed four sets of claims constituting a main request and auxiliary requests 1 to 3.

The appellant requested that the decision under appeal be set aside and a patent be granted on the basis of these sets of claims.

IV. In reply to the observations of the board in a communication annexed to a summons to oral proceedings to be held on 27 June 2017, the appellant, with its letter dated 19 May 2017, filed a new set of claims 1 to 11 as a main request and a new set of claims as a new auxiliary request 1, and maintained the previous auxiliary requests 1 to 3 as new auxiliary requests 2 to 4. In the same letter the appellant confirmed that all these requests were furthermore based on the following version of the description and of the drawings on file:

- description: pages 1 and 11 filed during the first-instance oral proceedings held on 16 April 2013, and pages 2 to 10 of the application as published, and
- drawings: sheets 1/4 to 4/4 of the application as published.

V. In reply to the observations sent by the board in a subsequent communication dated 7 June 2017, sent in advance by facsimile on 1 June 2017, the appellant, with its letter dated 6 June 2017, filed amended pages 1, 2 and 6 of the description replacing the corresponding pages of the description on file.

Accordingly, the main request of the appellant was based on the following application documents:

- claims: No. 1 to 11 of the main request filed with the letter dated 19 May 2017,

- description: pages 1, 2 and 6 filed with the letter dated 6 June 2017, pages 3 to 5 and pages 7 to 10 of the application as published, and page 11 filed during the first-instance oral proceedings held on 16 April 2013, and

- drawings: sheets 1/4 to 4/4 of the application as published.

VI. In view of the application documents of the new main request of the appellant, the oral proceedings were cancelled.

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

"A fluid monitoring and control system (10) comprising a network of a plurality of modular components (12-16) respectively having different functions and a system-wide distributed memory storing distributed variables, wherein each modular component is adapted to perform its respective function without external guidance and wherein the plurality of modular components (12-16) include at least one fluid control module (14) comprising:

means for measuring a distributed variable to be controlled, the distributed variable relating to the fluid control module (14) and being one of the distributed variables that the distributed memory stores;

means for controlling the distributed variable; and

means for broadcasting the value of said controlled distributed variable over the network;

wherein the fluid monitoring and control system (10) is adapted to use a broadcast message to inform all said modular components (12-16) within the system of the current value of the distributed variable, said

broadcast message comprising an address for the distributed variable within the system-wide distributed memory and a value for the distributed variable; and

wherein the fluid monitoring and control system (10) is adapted to use a set-point request message to request a change in the value of the distributed variable, said set point request message comprising an address for the distributed variable within the system-wide distributed memory and a value for the distributed variable."

The set of claims of the main request also includes dependent claims 2 to 11 all referring back to the system defined in claim 1.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request - Amendments and formal requirements*

The board is satisfied that the application documents amended according to the main request of the appellant satisfy the requirements of Article 123(2) EPC and also the formal requirements of the EPC. In particular, claim 1 is based on claim 1 as originally filed, together with the passages on page 4, line 12 to page 5, line 4, and on page 6, lines 8 to 13, of the description of the application as originally filed; and dependent claims 2 to 11 are based on the following passages of the description and the claims as originally filed, respectively: page 6, lines 13 to 19; page 7, lines 6 to 8; dependent claim 2; dependent

claim 3 together with page 6, lines 21 and 22, and page 7, lines 8 to 10; page 7, line 18 to page 8, line 2; page 7, line 20 to page 8, line 5; dependent claim 4; dependent claim 5; page 9, lines 16 and 17; and page 10, lines 3 to 6.

In addition, the description has been brought into conformity with the claimed invention as defined in the present claims (Article 84 and Rule 42(1) (c) EPC), and the pertinent state of the art (in particular, document D1) has been acknowledged in the introductory part of the description (Rule 42(1) (b) EPC).

3. *Main request - Rule 137(5) EPC, first sentence*

3.1 Claim 1 as originally filed was directed to a fluid and control system comprising at least one modular component having means for measuring a variable, for controlling the variable, and "for broadcasting the value of said controlled variable over a network". Independent claim 2 as originally filed was also directed to a fluid and control system comprising the same features as those defined in claim 1 and specifying, in addition, an interface component with means for displaying the controlled variable; for these reasons, the examining division considered independent claim 2 to constitute a dependent claim. The remaining claims as originally filed (claims 3 to 5) were dependent claims defining means for inputting a set-point for a variable to be controlled, and a configuration ID for the components of the system.

3.2 In reaction to an objection of lack of novelty raised by the examining division, the appellant replaced the original claim 1 by a new claim 1 amended according to a main request, and in its decision the examining

division held that this amended claim 1 contravened the requirements of Rule 137(5) EPC, first sentence. A similar finding was made in respect of claim 1 of some of the auxiliary requests then on file (*cf*. point II above). The amended claim 1 of the main request then on file included, in addition to the features of claim 1 as originally filed, a series of additional features requiring

- a plurality of modular components having different functions, each of the modular components being adapted to perform its respective function without external guidance, and one of the modular components having the features already defined in claim 1 as originally filed, and
- a system-wide distributed memory storing distributed variables, the variable being measured and controlled constituting one of the distributed variables of the distributed memory,
- the system being adapted to use a broadcast message and a set-point request message essentially as defined in claim 1 of the present main request (see the last two paragraphs of claim 1 in point VII above).

The reasons given by the examining division in support of its finding under Rule 137(5) EPC are essentially the following: Even though claim 1 as originally filed lacked novelty in view of document D1, the general inventive concept underlying the set of claims of the application as originally filed (cf. point 3.1 above) related to the remote communication/display of a process variable. The general inventive concept underlying the amended claim 1, however, related to the use of a fluid monitoring and control system comprising a distributed architecture, i.e. an architecture in which each module of the system has its own private memory and performs its own tasks locally. This

inventive concept improved the autonomy of the system and was not related to features that would further define the inventive concept of claim 1 as originally filed. Consequently, the subject-matter of the amended claim 1 did not combine with the originally claimed invention to form a single general inventive concept within the meaning of Rule 137(5) in conjunction with Article 82 EPC.

3.3 Claim 1 of the present main request constitutes, in substance, a clarified version of claim 1 of the main request underlying the decision under appeal. Therefore, the objection raised under Rule 137(5) EPC by the examining division also concerns claim 1 of the present main request. The board, however, cannot endorse the examining division's finding under Rule 137(5), first sentence, for the following reasons:

3.3.1 The opinion of the examining division that the original set of claims was directed to the "remote" communication/display of a process variable (see point 3.2 above, second paragraph) may have been based on an interpretation of the feature "broadcasting the value of said controller variable over a network" of original claim 1 according to which the network was used for broadcasting the value to a remote location. However, a proper interpretation of the claimed subject-matter in its context, in particular in the context of the further feature defined in claim 2 as originally filed requiring that the system further comprised an "interface component comprising means for displaying at least one said controlled variable" and also in the context of the description (see for instance page 2, lines 9 to 17, and page 4, line 12 to page 5, line 12), indicates that in claim 1 as originally filed the value of the variable is not broadcast by the network to a

remote location, but within the claimed system itself (as subsequently clarified in the amended claim 1) and in particular to the interface component of the system. Already for this reason, the board cannot follow the examining division's formulation of the general inventive concept underlying the set of claims as originally filed.

In addition, the examining division did not dispute that the amended claim 1 contained all the features of original claim 1, and in this respect the board does not see how a general inventive concept identified by the examining division as being present in original claim 1 might no longer be present in the general inventive concept of the same claim after amendment by way of incorporation of features that only have the effect of restricting its subject-matter. In the board's opinion, the original claim 1 was directed to a fluid monitoring and control system comprising a modular component for measuring and controlling a variable and for broadcasting the value of the variable within the system and, as submitted by the appellant, this same concept is present in the more detailed definition of the system formulated in claim 1 as amended in the main request underlying the decision under appeal and also in claim 1 of the present main request. Consequently, although the general inventive concept underlying the amended claim 1 might be formulated in more specific terms, it cannot be denied that - as submitted by the appellant - the general inventive concept of original claim 1 is still present in the general inventive concept of the amended claim 1 and is therefore common to the latter because the amendments to the claim only resulted in a more limited definition of the same invention defined in the original claim 1.

Therefore, the board cannot follow the examining division's view that the subject-matter of the amended claim 1 did not combine with the originally claimed invention to form a single general inventive concept within the meaning of Rule 137(5) EPC, first sentence. It is also noted in this respect that according to the established case law an amendment of an original independent claim by mere addition of new features from the description, in particular to overcome - as it was the case in the present circumstances, see point 3.2 above - an objection of lack of novelty, is generally not open to objection under Rule 137(5) EPC, first sentence (see "Case Law of the Boards of Appeal", 8th edition 2016, EPO, sections IV-B-5.3 and IV-B-5.4 and decisions cited therein, in particular decision T 2334/11 (point 2.2.2 of the reasons)).

3.3.2 It is also noted that in its decision the examining division assumed that the amended claim 1 constituted "unsearched subject-matter" within the meaning of Rule 137(5) EPC, first sentence, without however giving the reasons why in its opinion the amendments introduced into the original claim 1 resulted in amended subject-matter that was not searched or was deemed not to have been searched. In the board's view, the additional features incorporated in claim 1 of both the main request then on file and the present main request constitute a more detailed definition of the feature "means for broadcasting the value of said controlled variable over a network" already defined in the original claim 1 and disclosed in detail in the description. Consequently, the features introduced in the amended claim are - contrary to the examining division's view - deemed to have been covered by the search because according to Article 92 EPC the search

report is to be drawn up "on the basis of the claims, with due regard to the description and any drawings" (see in this respect the Guidelines for Examination in the EPO, Part B-III, 3.5, and also "Case Law of the Boards of Appeal", *supra*, section IV.B.5.3.2 and the decisions cited therein, in particular T 2334/11 (point 2.2.1 of the reasons)). This is especially the case in the present circumstances in view of the fact that the description is relatively short (pages 1 to 11, with the whole text on page 1, line 13 to page 5, line 12 being identical to the text on page 6, line 4 to page 10, line 22, except for the additional passages on page 2, lines 18 to 22, page 7, line 6 to page 8, line 5, and page 9, lines 8 and 9) and its content is mostly directed to a description of the modules of the claimed system and of the broadcasting of data between the modules.

3.4 In view of all these considerations, the board concludes that claim 1 of the main request underlying the decision under appeal did not contravene Rule 137(5) EPC, first sentence, and that the same conclusion applies to claim 1 of the present main request.

4. *Main request - Novelty and inventive step*

4.1 In its decision the examining division held that the system defined in claim 1 of the main request then on file was not novel in view of the disclosure of document D1.

4.2 Document D1 discloses a fluid dispensing arrangement comprising faucets, shower heads and the like (paragraphs [0004], [0072] and [0228]), and a system for monitoring and controlling fluid variables in the

dispensing arrangement such as the flow rate and the temperature of the fluid (abstract and paragraphs [0003] and [0090], together with Fig. 1, 10, 12, 35, 36, 38 and 40 and the corresponding description). The system comprises a network of modular components each having a different function; in particular, the network includes a fluid control module (controller 24, see paragraphs [0071], [0081] and [0086]) and an interface module (the user interface 20 or the portable communication device 21, see Fig. 1, 10, 35 and 36, and paragraphs [0069], [0070], [0086] and [0229]) each having its own memory (see for instance memory 112 represented in Fig. 12, and paragraphs [0069], [0086], [0231] and [0232]). The fluid control module comprises means for measuring a fluid variable to be controlled, namely the amount of dispensed fluid, means for controlling this fluid variable, and means for broadcasting the value of the controlled fluid variable (Fig. 10, 35, 36 and 37 together with the corresponding description, see in particular paragraphs [0081], [0086], [0115], [0229] and [0233]). In addition, the system is adapted to use a set-point request message set by means of the interface module to request a change in the value of this fluid variable (paragraph [0090]), the set-point request message comprising an address and a value for the fluid variable (see the "Connected Mode" disclosed in paragraphs [0187] to [0199], in particular paragraphs [0191] to [0194], and the data structure of the message represented in Fig. 25 and described in paragraphs [0196] and [0198]).

4.2.1 Claim 1 further requires the following features which, in the board's opinion, are not disclosed in document D1:

i) the memories of the modular components of the network constitute a system-wide distributed memory

storing distributed variables, the distributed variables corresponding to the fluid variables under consideration;

ii) the means for broadcasting the value of the controlled fluid variable is suitable for broadcasting the value over the network of modular components; and

iii) the system is adapted to use a broadcast message to inform all the modular components of the network of the current value of the distributed variable, the broadcast message comprising an address for the distributed variable within the system-wide distributed memory and a value for the distributed variable.

4.2.2 In its decision the examining division held that the memories of the components of the system disclosed in document D1 constituted a system-wide distributed memory as claimed. The examining division referred in this respect to Fig. 36 of document D1 showing a portable communication device 970 exchanging information with each of the plurality of fluid dispensing apparatuses 914_1 to 914_N represented in Fig. 36, and held with respect to claim 1 of the main request then on file that the memories of these components formed a system-wide distributed memory as claimed because the concept of "distributed memory" related to modules each having its own private memory but this concept did not require that all these memories had to communicate directly with each other. However, contrary to the examining division's view, a system-wide distributed memory requires, as submitted by the appellant, a memory network architecture in which the stored data can be exchanged between the memories of all the components. This requirement is emphasized in clam 1 of the main request then on file and also in claim 1 of the present main request by the

term "system-wide", and also by the further feature defined in the claim according to which the system is adapted "to use a broadcast message to inform all said modular components within the system" of the current value of a distributed variable. Therefore, even assuming that the fluid dispensing apparatuses 914_1 to 914_N represented in Fig. 36 constitute, as held by the examining division, modular components having different functions within the meaning of the claimed invention, each of these fluid dispensing apparatuses communicate only with the portable communication device 970 as indicated schematically in Fig. 36, and not with each other, either directly or indirectly. Consequently, the memories of the fluid dispensing apparatuses and of the portable communication device of document D1 do not constitute a system-wide distributed memory as claimed. In addition, there is no disclosure in document D1 that the different fluid controlling means (flow rate, fluid temperature, etc.) would exchange information with each other either directly or indirectly. For these reasons, document D1 does not disclose a system-wide distributed memory as claimed.

The additional distinguishing features ii) and iii) mentioned above further support this conclusion as they require broadcasting the value of the fluid variable in the form of a distributed variable over the whole network of modular components using messages comprising an address and a value for the corresponding distributed variable. Indeed, while in document D1 a desired value of the amount of fluid to be dispensed is set in the interface module and this value is sent to the corresponding fluid control module (see point 4.2 above, last sentence), document D1 does not disclose broadcasting this value or any other value relating to

the fluid to all the components of the network as required by features ii) and iii) mentioned above.

In its decision the examining division held in this respect that document D1 disclosed a "Broadcast Mode" (see paragraphs [0178] to [0186]) in which a message signal including an address and a value was broadcast to all the components of the system.

However, this message signal is disclosed in document D1 as a shutdown or emergency signal generated upon detection of an error in the system (see last sentence of paragraph [0132], together with paragraphs [0178] to [0180] and paragraphs [0213] and [0214]), and in the board's opinion this signal does not constitute a signal informing of a variable of the fluid itself as required by the claimed invention.

4.3 The remaining documents on file, i.e. documents D2 and D3, do not anticipate the claimed system either. In particular,

- document D2 discloses a fluid monitoring system (abstract and paragraphs [0001], [0004] and [0007]) comprising portable sensors arranged to be interfaced with one or more fluidic systems (Fig. 1 to 5 and 11, together with paragraphs [0035] to [0039], [0061], [0108] and [0161]), the sensors comprising their own memories (see for instance paragraphs [0077], [0109] and [0110]) and the fluidic systems being linked to one or more databases or to a remote data repository (Fig. 11 and paragraph [0031]), and
- document D3 discloses a drug pump system (abstract, column 1, lines 25 to 31, and column 1, line 64 to column 2, line 24) comprising a reprogrammable drug pump (Fig. 1 and 4) arranged to transfer data (see for instance column 12, lines 37 to 39 and lines 55 to

60, and column 15, line 62 to column 16, line 14) to and from another pump (Fig. 5 and 9) and/or to and from a computer (Fig. 6, 17 and 18), the computer being optionally linked to another computer (Fig. 10 and column 22, lines 1 to 36) or being optionally linked, together with the pump, to a pump tester (Fig. 7), and the pump(s) and the computer(s) each having its own memory.

However, none of documents D2 and D3 disclose providing the respective system of components with a system-wide distributed-memory architecture as claimed.

4.4 Claim 1 of the main request is therefore new over the documents on file.

4.5 In view of the disclosure of documents D1 to D3 (see points 4.2 and 4.3 above), the board is of the opinion that the closest state of the art is represented by document D1. According to the description of the application (see page 6, lines 4 to 7, and page 8, line 6, to page 9, line 2), the claimed features i) to iii) mentioned in point 4.2.1 above and distinguishing the claimed system from that of document D1 improve the flexibility and the reliability of the system of document D1 in that the system can easily be expanded with new features and in that the system can continue operating at a reduced capacity even if a portion of the system fails.

None of the documents on file disclose or suggest modifying a system as that disclosed in document D1 by means of features i) to iii). In particular, neither document D1 nor document D2 or document D3 (see point 4.3 above) disclose or suggest the use of a system-wide distributed memory as claimed, nor the technical

advantages achieved therewith and mentioned in the former paragraph.

Therefore, the system defined in claim 1 is not rendered obvious by the available state of the art.

4.6 The board concludes that the subject-matter of claim 1 of the present main request is new and involves an inventive step (Article 54(1) and 56 EPC). The same conclusion applies to dependent claims 2 to 11 by virtue of their dependence on claim 1.

5. In view of the above considerations, the board concludes that the present main request of the appellant is allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following application documents:

- claims: No. 1 to 11 of the main request filed with the letter dated 19 May 2017;
- description: pages 1, 2 and 6 filed with the letter dated 6 June 2017, pages 3 to 5 and pages 7 to 10 of the application as published, and page 11 filed during the first-instance oral proceedings held on 16 April 2013; and
- drawings: sheets 1/4 to 4/4 of the application as published.

The Registrar: The Chairman:

S. Sánchez Chiquero R. Bekkering

Decision electronically authenticated