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**Datasheet for the decision
of 13 February 2017**

Case Number: T 2346/13 - 3.5.03

Application Number: 07838659.6

Publication Number: 2082300

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Language of the proceedings: EN

Title of invention:

Automatic field device service adviser

Applicant:

Rosemount, Inc.

Headword:

Automatic field device service adviser/ROSEMOUNT

Relevant legal provisions:

EPC Art. 54(1), 56, 84

RPBA Art. 13(1)

Keyword:

Novelty - main request (no)

Inventive step - auxiliary request I (no) - auxiliary request
III (no)

Clarity - auxiliary request II (no)

Admissibility - auxiliary request IIa (no)



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Case Number: T 2346/13 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 13 February 2017

Appellant: Rosemount, Inc.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted on 3 July 2013 refusing European patent application No. 07838659.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman F. van der Voort
Members: A. Madenach
S. Fernández de Córdoba

Summary of Facts and Submissions

I. The present appeal is against the decision of the examining division refusing European patent application No. 07838659.6, published as WO 2008/039379 A2, on the grounds that the subject-matter of claim 1 of a main request lacked novelty (Articles 52(1) and 54(1), (2) EPC) and that the subject-matter of claim 1 of an auxiliary request did not involve an inventive step (Articles 52(1) and 56 EPC).

Reference was made *inter alia* to:

D2: WO 2004/048898 A.

II. In the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of a main request as filed on 2 May 2013 or, in the alternative, on the basis of one of the sets of claims of auxiliary requests I to III, all auxiliary requests as filed with the statement of grounds of appeal. Oral proceedings were requested as an auxiliary measure.

III. In a communication pursuant to Article 15(1) RPBA accompanying a summons to oral proceedings, the board gave its preliminary opinion.

IV. With a letter dated 13 January 2017, the appellant submitted a new auxiliary request I, replacing the previous auxiliary request I, and an additional auxiliary request IIa. The remaining requests were maintained.

V. Oral proceedings were held on 13 February 2017.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of a main request as filed on 2 May 2013 or, in the alternative and in this order, on the basis of the claims of auxiliary request I filed with the letter dated 13 January 2017, auxiliary request II filed with the statement of grounds of appeal, auxiliary request IIa filed with the letter dated 13 January 2017, or auxiliary request III filed with the statement of grounds of appeal.

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

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

"A field device (40) comprising:
a microprocessor (46);
a memory (48) operably coupled to the microprocessor (46);
at least one diagnostic input device operably coupled to the microprocessor (46) and providing at least one diagnostic input;
wherein the microprocessor (46) is adapted to execute instructions stored in the memory (48) to determine a corrective service action and to provide a singular message recommending a particular service to be performed based on the at least one diagnostic input;
and
a prediction engine (160), wherein the microprocessor (46) employs the prediction engine (160) to generate a service interval within which the service action should be performed."

Claim 1 of auxiliary request I differs from claim 1 of the main request in that the last two paragraphs read as follows:

"wherein the microprocessor (46) is adapted to execute instructions stored in the memory (48) to make a number of decisions about what types, quantity and timing of corrective service actions should be taken and to provide a singular message recommending a particular service action to be performed relative to the field device based on the at least one diagnostic input; and a prediction engine (160), wherein the microprocessor (46) employs the prediction engine (160) to generate a service interval within which the particular service action should be performed."

Claim 1 of auxiliary request II differs from claim 1 of auxiliary request I in that, in the penultimate paragraph, the wording "relative to the field device" has been deleted and in that, at the end of the claim, the following feature has been added:

", and
wherein a successful runtime is contemplated in that the service-related recommendation can be automatically modified such that the successful runtime is taken into account".

Claim 1 of auxiliary request IIa differs from claim 1 of auxiliary request II in that the added feature has been replaced by the following feature:

", the service interval based upon a health indicating curve over time used to predict when a health indication will reach a threshold level, wherein said

threshold is established using High Accelerated Life Testing (HALT) and stored in the field device".

Claim 1 of auxiliary request III differs from claim 1 of auxiliary request II essentially in that the added feature has been replaced by the following feature:

"; and wherein the field device is adapted to transmit the singular message over a process control loop".

Reasons for the Decision

1. *Claim 1 of the main request: novelty (Articles 52(1) and 54(1), (2) EPC)*
- 1.1 D2 discloses a field device (cf. D2, claim 30, "Feldmessgerät") including a microprocessor (Figure 3, reference numeral 23), a memory operably coupled to the microprocessor (page 19, lines 22-26), and at least one diagnostic input device operably coupled to the microprocessor and providing at least one diagnostic input (page 11, lines 9-21). The microprocessor is adapted to determine a remaining lifetime on the basis of the diagnostic input (page 11, line 23, to page 12, line 7). Further, in the embodiment shown in Figure 5, the remaining lifetime is compared to a predetermined critical lifetime ("kritischer Lebensdauerwert 71") of the field device or, as the case may be, of individual components, modules or parts of the field device, wherein the predetermined critical lifetime is stored in a memory (page 21, lines 1-4 and 12-18). It is implicit that for this comparison, instructions stored in a memory connected to the microprocessor are executed. As a result of this comparison, an information signal indicating the expected remaining

lifetime is generated and displayed. It is also possible to indicate the remaining time which is left before the item in question is due to be replaced (see Figure 5 and page 21, line 28, to page 22, line 14). Hence, the microprocessor executes instructions stored in a memory, determines a corrective service action, i.e. the replacement, and provides a singular message recommending a particular service, i.e. the replacement of a specific part, to be performed based on at least one diagnostic input. The comparison of the remaining lifetime to a predetermined critical lifetime, which results in an indication of the remaining time which is left before the item in question is due to be replaced, corresponds to the generation by the microprocessor of a service interval within which the service action, i.e. the replacement, should be performed.

The board further considers that a "prediction engine" is merely an arbitrary term for a software entity which generates the service interval within the microprocessor. D2 thus discloses a prediction engine with the properties as defined in the last paragraph of claim 1.

- 1.2 For the above reasons, the field device of claim 1 is known from D2.
- 1.3 The appellant essentially argued that, contrary to the claimed invention, D2 did not provide any service action at the device itself, since the indication of the remaining lifetime of the device was only an indication that a replacement should be carried out, which was neither an action which was to be performed at the field device itself nor a **corrective** action within the meaning of the present application.

The board is not convinced by this argument. According to claim 1, a corrective service action is determined and a singular message recommending a particular service is provided. This is also the case in D2, in which the corrective service action is the replacement ("Austausch") and a singular message recommending a particular service ("Angaben zur Dauer bis zum nächsten voraussichtlichen Austausch") is provided (see D2, the paragraph bridging pages 21 and 22). Further, according to D2, a service interval in the form of a predicted lifetime ("voraussichtliche Lebensdauer") within which the service action, i.e. the replacement, should be performed, is generated (page 19, lines 15-26). The board further notes that the description of the present application suggests that a replacement of a pressure sensor is a possible corrective service action (page 19, lines 1-15, "... then indicate that the pressure sensor must be replaced within X days"). There is nothing in the present application which would suggest that this replacement is not to be considered a "corrective service action" within the meaning of claim 1. In this respect, it is further noted that page 16, lines 16-22, which specifically lists a number of service actions, concludes by indicating that "any other suitable user-defined action" may be provided, which again suggests that a replacement of a pressure sensor is an example of a corrective service action within the meaning of claim 1.

1.4 For the above reasons, the subject-matter of claim 1 of the main request lacks novelty (Articles 52(1) and 54(1), (2) EPC). The main request is therefore not allowable.

2. *Claim 1 of auxiliary request I: inventive step (Articles 52(1) and 56 EPC)*

- 2.1 Claim 1 of auxiliary request I (cf. point VI above) differs from claim 1 of the main request essentially in that it specifies that the service action is to be performed "relative to the field device" and in that the microprocessor is adapted to execute instructions stored in the memory "to make a number of decisions about what types, quantity and timing of corrective service actions should be taken".
- 2.2 That the service action is to be performed relative to the field device is known from D2, since the replacement of a field device, or of one of its components, is a service action relative to the field device (cf. point 1.3 above).
- 2.3 Further, as pointed out in point 1.1 above, in the procedure shown in Figure 5 of D2, which runs on the microprocessor within a field device, the critical lifetime may be that of components, modules or parts of a field device (page 21, lines 12-16). The comparison 70 between the remaining lifetime 63 and the predetermined critical lifetime 71 results in the generation of an information signal 72 indicating the expected remaining lifetime of the parts, components or modules of the field device in view of a possible replacement of one or more of those items (page 21, line 28, to page 22, line 3). This comparison step implies decisions about the types of corrective service action, since the replacement of different parts of a field device corresponds to different types of service action. Further, it implies decisions about the quantity of service actions, since the outcome of the comparison determines for which parts and, hence, for how many parts an information signal indicating the remaining lifetime is generated. Further, this

information signal indicating the remaining lifetime in view of a possible replacement of, e.g., one or more parts corresponds to a decision about the timing of the service action for the respective parts.

2.4 Consequently, it remains to be considered whether or not the skilled person, starting out from D2 and implementing the procedure shown in Figure 5 in the case of various components, modules and parts of a field device, would, in an obvious manner, consider providing a singular message recommending a particular service to be performed relative to the field device. In this context, it is noted that in the present application the "singular message" may comprise several corrective actions (see the present application, page 11, lines 5-10). According to D2, **an** information signal ("ein Benachrichtigungssignal") is generated, which indicates the remaining lifetime of the field device or of some of its parts, components or modules (page 21, lines 28-31). This passage therefore at least suggests that a singular information signal may be generated about the remaining lifetime of the parts, components or modules of the field device. Since this singular information signal may also indicate the remaining time before the expected replacement of the part in question (page 22, lines 2-3), it corresponds to a singular message recommending a particular service action to be performed relative to the field device.

2.5 The appellant essentially argued that it was the gist of the present application to provide a singular message recommending a particular service action on the basis of a multitude of diagnostic inputs, thereby avoiding the transmission of a large quantity of information from a field device over a process control loop (page 10, line 18, to page 11, line 10, of the

present application). In contrast, the procedure disclosed in D2 resulted in a large quantity of information being transmitted from the field device over a process control loop, since D2 was concerned only with the determination of the remaining lifetime and did not address any service action other than a replacement. Other service actions therefore needed to be initiated at the control room on the basis of the information transmitted from the field device over the process control loop.

The board does not accept this argument, since the claim language is not limited to service actions different from a replacement. As set out in point 2.3 above, the board considers the replacement of different parts of a field device as corresponding to different types of service action.

The appellant further argued that D2 did not provide an enabling disclosure for the "Wartungsarbeiten", i.e. service actions in plural, as referred to in claim 30 of D2, since the only service action disclosed in D2 was a replacement action.

In the board's view, however, the replacement of parts or modules of a field device corresponds to different service actions and, hence, D2 provides an enabling disclosure for the plurality of service actions referred to in claim 30.

2.6 For the above reasons, the subject-matter of claim 1 of auxiliary request I does not involve an inventive step (Articles 52(1) and 56 EPC). Auxiliary request I is therefore not allowable.

3. *Claim 1 of auxiliary request II: clarity (Article 84 EPC)*

3.1 Claim 1 of auxiliary request II (cf. point VI above) differs from claim 1 of auxiliary request I *inter alia* in that it additionally includes the feature "wherein a successful runtime is contemplated in that the service-related recommendation can be automatically modified such that the successful runtime is taken into account".

3.2 The term "successful" in "successful runtime" is not clear, since it is a relative term which does not have a well-recognised meaning in the art. For example, it is unclear whether or not a runtime is still to be considered successful if within the period considered the field device had required one major repair or various smaller repairs. Given this lack of clarity, it is not possible to determine the matter for which protection is sought.

3.3 The appellant argued that a "successful runtime" is to be understood as the runtime from manufacturing to the first singular message service action or the runtime starting from the latest service action.

This is, however, not what is stated on page 20, lines 10-19, of the application, which is the only passage in the application as filed which relates to "successful runtime", since according to this passage the expression "successful runtime" is merely associated with the number of years the field device had been running "successfully".

3.4 For the above reasons, claim 1 of auxiliary request II is not clear (Article 84 EPC). Auxiliary request II is therefore not allowable.

4. *Claim 1 of auxiliary request IIa: admissibility (Article 13(1) RPBA)*

4.1 Auxiliary request IIa was filed one month before the oral proceedings. This request therefore constitutes an amendment to a party's case within the meaning of Article 13(1) RPBA.

4.2 In accordance with Article 13(1) RPBA, any amendment to a party's case after it has filed its grounds of appeal may be admitted and considered at the board's discretion, which is to be exercised in view of *inter alia* the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy. In line with the established case law of the boards of appeal, in connection with the need for procedural economy the question of whether or not the claim is clearly allowable may be taken into account.

4.3 Claim 1 (cf. point VI above) is *prima facie* not clear (Article 84 EPC), since the feature "wherein said threshold is established using High Accelerated Life Testing (HALT) and stored in the field device" defines a method step outside of the field device and performed before proper operation of the field device starts, rather than a constructional feature of the claimed field device. After all, once the threshold value has been established, it is merely stored in the memory of the field device and, hence, whether or not it has been established by the HALT procedure cannot be determined at the field device itself. Further, the term "health

indicating curve" does not appear to have a well-recognised meaning in the art.

4.4 Exercising its discretion, the board therefore did not admit auxiliary request IIa into the appeal proceedings.

5. *Claim 1 of auxiliary request III: inventive step (Articles 52(1) and 56 EPC)*

5.1 Claim 1 of auxiliary request III (cf. point VI above) differs from claim 1 of auxiliary request I essentially in that it includes the additional feature "wherein the field device is adapted to transmit the singular message over a process control loop".

5.2 The board notes that D2, page 22, lines 3-7, states that the message may be transmitted from the field device to a control room ("Messwarte") via a bus 53, which, in the board's view, corresponds to a control loop.

5.3 In view of the conclusion in point 2.6 above and the above considerations, the subject-matter of claim 1 of auxiliary request III does not involve an inventive step (Articles 52(1) and 56 EPC). Auxiliary request III is therefore not allowable.

6. Since none of the 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:



G. Rauh

F. van der Voort

Decision electronically authenticated