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**Datasheet for the decision
of 24 August 2021**

Case Number: T 0958/18 - 3.5.03

Application Number: 13709014.8

Publication Number: 2820491

IPC: G05B23/02, F16K37/00

Language of the proceedings: EN

Title of invention:
Scheduling actions in a field device

Applicant:
Fisher Controls International LLC

Headword:
Scheduling in a field device/FISHER

Relevant legal provisions:
EPC Art. 56, 111(1), 123(2)
RPBA 2020 Art. 11, 13(2)

Keyword:

Inventive step - main request (no)

Added subject-matter - first auxiliary request (yes)

Admittance of auxiliary requests filed at the oral proceedings
before the board - (no): no exceptional circumstances and not
clearly allowable

Remittal - (no): no special reasons

Decisions cited:

G 0002/10



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Case Number: T 0958/18 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 24 August 2021

Appellant: Fisher Controls International LLC
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Representative: Bohnenberger, Johannes
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 13 November
2017 refusing European patent application
No. 13709014.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair K. Bengi-Akyürek
Members: R. Gerdes
C. Almberg

Summary of Facts and Submissions

- I. The examining division refused the patent application on the grounds that the subject-matter of the independent claims of all the applicant's requests did not involve an inventive step (Article 56 EPC) in view of either of the following prior-art documents and the skilled person's common general knowledge:
- D1:** "Elektropneumatischer Stellungsregler SIPART PS2", June 2006
- D2:** "Fisher® FIELDVUE™ DVC6000 SIS Digital Valve Controllers for Safety Instrumented System (SIS) Solutions", December 2010.
- II. The applicant (appellant) appealed against this decision and submitted amended claims of a new main (and sole) request with the statement of grounds of appeal.
- III. In a preliminary opinion under Article 15(1) RPBA 2020, the board stated *inter alia* that the claims of the appellant's main request did not meet the requirements of Article 123(2) EPC.
- IV. By a reply to the summons dated 23 July 2021, the appellant submitted amended claim of a new main request and stated that the former main request should be considered as the first auxiliary request.
- V. Oral proceedings were held before the board on 24 August 2021. During the oral proceedings, the appellant presented website printouts as evidence of general technical knowledge and submitted a second and a third auxiliary request.

At the end of those oral proceedings, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request filed on 23 July 2021 or the first auxiliary request filed with the statement of grounds of appeal, or the second or third auxiliary request submitted during the oral proceedings before the board. The appellant also requested, as an auxiliary measure, that the case be remitted to the examining division for further prosecution.

The board's decision was announced before the closure of the oral proceedings.

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

"A field device (200) for use in a process control system (100), the field device (200) comprising:

a processor (206);

a computer readable memory (202) having computer readable instructions executable on the processor (206); and

a scheduling module (212) stored in the memory (202), the scheduling module (212) characterized in that, when executed on the processor (206), the scheduling module (212) is configured to:

receive a time input from a host device (111) communicatively coupled to the field device (200) via a wireless communication network, wherein the time input specifies a scheduled time for performing a scheduled sequence of actions;

receive an action input from the host device (111) via the wireless communication network, wherein the action input specifies the scheduled sequence of actions;

at the scheduled time and automatically, without further input, causes the processor (206) to initiate the scheduled sequence of actions; and

perform at least one of:

i) cause an initiation status to be sent to the host device (111) and

ii) cause the initiation status to be stored in a local memory (202) of the field device (200);

wherein the initiation status indicates that the sequence of actions has been initiated."

VII. Claim 1 of the **first auxiliary request** differs from claim 1 of the main request in the following additional features that have been inserted in between the words "and perform" and "and at least one of":

"(i) cause the field device (200) to communicate process control data from at least one second field device (156), and

(ii) cause the field device (200) to communicate process control data to at least one third field device (157),".

VIII. Claim 1 of the **second auxiliary request** differs from claim 1 of the main request in its introductory feature (amendments indicated by underlining):

"A field device (200) for use in a process control system (100) to control the process, the field device (200) comprising: ...".

IX. Claim 1 of the **third auxiliary request** is based on claim 1 of the main request and contains the additional feature of claim 8 of the main request, which has been appended to the claim:

"... and wherein the field device is a valve positioner coupled to a valve, and wherein the scheduled sequence of actions corresponds to actuating the valve to a first set point and, after a specified period of time, actuating the valve to a second set point."

Reasons for the Decision

1. The present application

The application relates to scheduling actions in a field device. Typical communication exchanges of such devices involve latency and thus limit how fast actions can be performed by the device, in particular, when a number of actions need to be performed in quick succession. Communication latency issues are particularly important in wireless communication systems because it typically takes longer for a field device to receive and process a signal received via a wireless communication link compared to when a similar command is received via a wired connection. Further, field devices in a wireless process control system are typically powered by battery-based power modules in order to avoid restricting the placement of a device within a plant environment. It is therefore beneficial to limit communication exchanges between the field device and the host in a wireless control network so as to conserve power at the field device and thereby allow the device to be efficiently powered by a battery module for a longer period of time (see application as published, paragraphs [0001] to [0005]).

In order to avoid the latency issue and save battery power, the field device includes a scheduling module

configured to receive a time input specifying a scheduled time for performing a scheduled sequence of actions and to receive an action input, wherein the action input specifies the scheduled sequence of actions. The scheduling module is further configured to, at the scheduled time, automatically initiate the scheduled sequence of actions (see paragraphs [0006] and [0039] to [0041]).

2. *Main request, inventive step*

2.1 It was not disputed that document **D2** may be considered a suitable starting point for the assessment of inventive step with regard to the claimed subject-matter.

2.2 D2 discloses a field device ("valve controller") for use in a process control system, the field device implicitly comprising a processor and a computer-readable memory having computer-readable instructions executable on the processor. The field device contains a scheduling module (see page 2, right-hand column and page 3, left-hand column) which is configured to receive a time input (page 3, left-hand column, second paragraph and figure 3) from a host device via a communication network (page 2, left-hand column, "Note": "HART communication"), wherein the time input specifies a scheduled time for performing the scheduled sequence of actions (page 3, left-hand column, "Auto Test Interval").

It also discloses receiving an action input from the host device via the communication network, wherein the action input specifies a "partial stroke test" and hence, a scheduled sequence of actions. This partial stroke test automatically causes the processor to

initiate the scheduled sequence of actions at the scheduled time without further communication from the host device (see page 2, right-hand column and page 3, left-hand column).

Finally, the field device of D2 also stores the initiation status in its local memory, wherein the initiation status indicates that the sequence of actions has been initiated (see the "System Audit Documentation" on page 2, left-hand column and page 3, last paragraph).

2.3 Hence, D2 discloses all features of claim 1 except for the feature that the communicative coupling of the host to the field device is effected "via a wireless communication network".

2.4 The appellant argued that, in addition to the wireless communication network, D2 failed to disclose that the field device received from a host both a time input that specified a scheduled time for performing a scheduled sequence of actions and an action input specifying the particular sequence of actions. Claim 1 required that the host provided a sequence of actions to the field device. By contrast, a skilled person might reasonably conclude that the partial stroke test of D2 was a procedure for which the field device was preconfigured. It was not disputed that a partial stroke test included a sequence of actions but this sequence related to a *fixed* set of commands. According to the present application, the sequence of actions was transferred in advance of its execution to avoid the time delay involved in the handshake between the field device and the host, when the sequence was executed. In contrast, in D2 there was no transmission of a sequence

of actions. Any time delay due to a handshake was not considered.

Furthermore, the field device of D2 was specifically designed for "safety instrumented systems solutions" and was only actuated in emergency situations, whereas the present application considered sequences of actions for *general* process control applications. Hence, D2 did not disclose a field device "for use in a process control system".

The appellant also submitted printouts of Internet pages to illustrate that the HART standard - which was referred to in D2 - related to *universally applicable* commands instead of a *fixed* sequence of commands.

- 2.5 The board notes that claim 1 solely requires that the scheduling module receives a time input and an action input from the host device, whilst the action input *specifies* the scheduled sequence of actions. However, it does not require receiving the sequence of actions itself. Hence, the claim encompasses embodiments in which the sequence of actions is stored in the field device and is only designated by an action input. In other words, there is no feature in claim 1 which excludes having fixed, pre-stored sequences of actions in the field device. The provision of a time input and an action input is disclosed in D2 (see figure 3 and page 3, left-hand column).

The board agrees with the appellant's argument that D2 essentially concerns "valve controllers" for safety instrumented system (SIS) solutions (see the title of D2 and its first paragraph). However, such applications generally fall under the ambit of "process control systems" as required by claim 1.

Regarding the submitted printouts of Internet pages, the board does not contest that the HART protocol contains universally applicable commands. However, claim 1 is silent on the type of commands or instructions contained in the sequence of actions. Actually, it does not even indicate that the actions correspond to commands or instructions.

Hence, the board was not convinced by the appellant's arguments.

2.6 The examining division held that the objective problem solved by the distinguishing feature might be regarded as "reducing wiring costs".

2.7 The board agrees with this formulation of the objective technical problem as well as with the reasoning in the decision under appeal that the implementation of the communication network of D2 as a wireless network would have been an obvious choice for the skilled person in view of the well-known advantages and disadvantages of such networks in the technical field of process control systems.

The appellant did not provide arguments in this respect.

2.8 In conclusion, the subject-matter of claim 1 does not involve an inventive step in view of D2 and the skilled person's common general knowledge (Article 56 EPC).

3. *First auxiliary request, added subject-matter*

3.1 Claim 1 of the first auxiliary request additionally specifies that the scheduling module is further configured to cause the field device to communicate

process control data from at least one second field device and to at least one third field device.

- 3.2 As a basis for these features, the appellant referred to paragraphs [0027] and [0040] of the application as filed.

Paragraph [0027] specifies that "the field devices 156, 157 are also producers and consumers of wireless communication packets".

- 3.3 Paragraphs [0027] and [0040] do not disclose that the field devices communicate with each other. It is only disclosed that the field devices communicate with a host device.

In view of paragraph [0040] and also because features (h) and (i) are common features of typical field devices, it may be considered obvious that the claimed field device also communicates process control data to second and third field devices.

However, obviousness is not the applicable standard for establishing compliance of amendments to a patent application with Article 123(2) EPC. Instead, such amendments have to be derivable directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of the description, claims and drawings as filed (see e.g. G 2/10, Reasons, point 4.3)

- 3.4 Hence, the cited passages cannot be considered as a valid basis for the additional features of claim 1. The appellant has not indicated any other passage that could serve as a basis for these features, nor is the board aware of any other.

3.5 It follows that claim 1 of the first auxiliary request contravenes Article 123(2) EPC.

4. *Second and third auxiliary requests, admittance*

4.1 According to Article 13(2) RPBA 2020, "[a]ny amendment to a party's appeal case made ... after notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned". In the application of Article 13(2) RPBA 2020, also the criteria of Article 13(1) RPBA 2020, such as *prima facie* allowability of an amended patent, may be used.

4.2 Claim 1 of the **second auxiliary request** additionally specifies that the field device is for use in a process control system "to control the process", while claim 1 of the **third auxiliary request** contains the additional feature of claim 8 of the main request, i.e. that the field device is a "valve positioner" coupled to a valve, and that the scheduled sequence of actions corresponds to actuating the valve to a first set point and, after a specified period of time, to a second set point.

4.3 The appellant argued that the amendments were not complex. They were necessary because claim 1 had not been correctly interpreted by the examining division. In the application, the sequence of actions were transmitted from the host as a variable sequence, whereas in D2 the sequence of actions was fixed and pre-stored in the field device. The essential issue relating to the sequence of actions had already been discussed in the first-instance proceedings in the context of the then second auxiliary request (see

decision under appeal, point 5 of the Reasons). Hence, the amendments did not add complexity to the case.

4.4 However, the decision under appeal clearly indicates that a "sequence of actions" was already disclosed in D2 (see Reasons, point 5.1 and e.g. D2, page 2, right-hand column, second paragraph: "Once initiated, the automated test moves the valve to a predetermined value then returns the valve to its original position..."). Hence, the appellant's amendments submitted *after* notification of the summons were not made in reaction to *new* objections raised by the board. Moreover, the board sees no "exceptional circumstances", let alone any justification with cogent reasons by the appellant within the meaning of Article 13(2) RPBA 2020.

4.5 In addition, it is *prima facie* apparent to the board that the objection under Article 56 EPC regarding claim 1 of the main request (see point 2 above) cannot be considered overcome with regard to the **second and third auxiliary requests**, since the amended claims do not resolve the above considerations with respect to lack of inventive step (Article 56 EPC).

More specifically, the amendment regarding the **second auxiliary request** seems to be redundant since a "process control system" is always supposed "to control the process". Moreover, the field device of D2 is likewise for use in a process control system "to control the process". The amendment as regards the **third auxiliary request** was discussed in the decision under appeal, Reasons, point 5.3. In this respect, the board agrees with the decision under appeal (see point 4.4 above).

4.6 Hence, the board decided not to admit the second and third auxiliary requests into the proceedings (Article 13(2) RPBA 2020).

5. *Remittal*

The appellant also requested as an auxiliary measure that the case be remitted to the examining division for further prosecution (Article 111(1) EPC).

The board does not see any "special reasons" within the meaning of Article 11 RPBA 2020 which would preclude a decision on the merits of this case or otherwise motivate remittal. Hence, the board cannot accede to the appellant's request for remittal.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



B. Brückner

K. Bengi-Akyürek

Decision electronically authenticated