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Datasheet for the decision of 15 May 2019

Case Number: T 2181/14 - 3.5.03

Application Number: 08159005.1

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Title of invention:
Flexible intelligent electronic device

Patent Proprietor:
ABB Research Ltd.

Opponent:
Siemens Aktiengesellschaft

Headword:
Flexible intelligent electronic device/ABB

Relevant legal provisions:
EPC Art. 52(1), 56
RPBA Art. 12(2), 12(4)

Keyword:

Inventive step - (no) - first and second auxiliary requests
Late-filed requests - requests could have been filed in first instance proceedings (yes) - main request and third auxiliary request

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Case Number: T 2181/14 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 15 May 2019

Appellant: (Patent Proprietor)	ABB Research Ltd. Affolternstrasse 52 8050 Zürich (CH)
Representative:	Zimmermann & Partner Patentanwälte mbB Postfach 330 920 80069 München (DE)
Respondent: (Opponent)	Siemens Aktiengesellschaft Werner-von-Siemens-Straße 1 80333 München (DE)
Representative:	Siemens AG Postfach 22 16 34 80506 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 23 September 2014 revoking European patent No. 2138913 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	F. van der Voort
Members:	J. Eraso Helguera
	J. Geschwind

Summary of Facts and Submissions

I. This appeal was lodged by the proprietor (henceforth, "appellant") against the decision of the opposition division revoking European patent No. 2 138 913 on the grounds that claims 1, 5 and 7 of a main request and claims 1, 4 and 6 of a second auxiliary request contain subject-matter extending beyond the content of the application as filed (Article 123(2) EPC), and that the subject-matter of claims 1, 4 and 6 of a first and a third auxiliary request does not involve an inventive step (Articles 52(1) and 56 EPC). A fourth auxiliary request was not admitted in view of Rule 80 EPC.

II. The opposition was based on the ground for opposition pursuant to Article 100(a) EPC.

III. In its decision, the opposition division referred *inter alia* to the following prior art documents:

D5: WO 2005/096660 A2 (13 October 2005);

D8: Handbook from Siemens AG: "Ethernet & IEC 61850 - Start Up" E50417-F1100-C324-A1 (12 April 2005);

D9: Handbook from Siemens AG: "SIPROTEC - Multi-Functional Protective Relay with Local Control 7SJ62/64" C53000-G1140-C207-2 (January 2008).

IV. In the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or, in the alternative, in amended form on the basis of the claims of one of first to third auxiliary requests filed with the statement of grounds of appeal.

V. In its reply to the appeal, the opponent (henceforth "respondent") requested that the appeal be dismissed.

VI. Both parties conditionally requested oral proceedings.

VII. In a communication accompanying a summons to attend oral proceedings, the board indicated that the main request and the third auxiliary request raised issues as to their admissibility and that novelty and inventive step would be discussed with respect to the subject-matter of claim 1 of the first and second auxiliary requests.

VIII. In its response to the board's communication, the appellant presented arguments in support of the admissibility of the main request and the third auxiliary request.

IX. Oral proceedings were held on 15 May 2019.

The appellant requested that the decision under appeal be set aside and that the opposition be rejected (main request) or, in the alternative, that the patent be maintained in amended form on the basis of the claims of one the first to third auxiliary requests filed with the statement of grounds of appeal.

The respondent requested that the appeal be dismissed.

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

X. Claim 1 of the patent as granted (**main request**), using the feature numbering introduced by the appellant, reads as follows:

1.1 "An intelligent electronic device (14) for provision in Substation Automation or Distribution Automation systems (10)

1.2 and having a structuring of its own functionality according to a communication standard,

1.3 which standard provides a series of elements (LD, LN1, LN2, LN3, LN4, LN5, LN6, DO1, DO2, DO3, DO4, DO5, DO6, DA1, DA2, DA3, DA4, DA5, DA6) hierarchically linked to each other and including a device related element (LD), a number of function elements (LN1, LN2, LN3, LN4, LN5, LN6) linked to the device related element (LN *[sic]*) and a number of data provision elements (DO1, DO2, DO3, DO4, DO5, DO6, DA1, DA2, DA3, DA4, DA5, DA6) linked to the function elements,

characterized in that the device comprises:

1.4 - mechanically separable, replaceable hardware modules (26, 28, 30, 32, 34, 36, 38) interconnected via an inter-module bus (40),

1.5 said modules implementing functionality related to the function related elements (LN1, LN2, LN3, LN4, LN5, LN6) of the standard

1.6 and including a communication module (28) for communicating with other devices (16, 18, 20) of the system (10) via a computer communication network (12) and

1.7 at least one I/O module (32, 34, 36, 38) for direct communication with local system equipment (22, 24),

1.8 where said intelligent electronic device (14) includes elements of the communication standard comprising one device related element (LD) and replaceable function related elements (LN1, LN2, LN3, LN4, LN5, LN6) of all the functions provided by said modules, and

1.9 where said communication module (28) includes a control unit (42) providing the device related element (LN *[sic]*) of the communication standard,

1.10 function elements (LN1) associated with the function of the communication module and

1.11 at least one function element (LN3, LN4, LN5, LN6) associated with functions provided by all the I/O modules (32, 34, 36, 38),

1.12 all I/O modules (32, 34, 36, 38) providing data related functions include data provision elements (DA3, DA4, DA5, DA6) according to the standard and being associated with a corresponding function element (LN3, LN4, LN5, LN6) in the communication module (28),

1.13 the I/O modules provide the data related elements at the lowest hierarchical level of the linked elements providing attributes of data defined by a corresponding higher level data provision element (DO3, DO4, DO5, DO6),

1.14 said higher level data provision element and corresponding function related element (LN3, LN4, LN5, LN6) are provided by the communication module (28) and

1.15 the control unit (42) of the communication module (28) is arranged to associate, at powering up of the device, the data provision elements (DA3, DA4, DA5, DA6) of the I/O modules (32, 34, 36, 38) with corresponding elements (LN3, LN4, LN5, LN6) associated with the function of the I/O modules in the communication module (28).".

XI. Claim 1 of the **first auxiliary request** is the same as claim 1 as granted except that feature 1.2 reads as follows (board's underlining and strikethrough):

"and having a structuring of its own functionality according to ~~a~~ the communication standard IEC 61850,".

XII. Claim 1 of the **second auxiliary request** is the same as claim 1 of the first auxiliary request except that feature 1.6 reads as follows (board's underlining):

"and including a communication module (28) for communicating with other devices (16, 18, 20) of the system (10) via a computer communication network (12), a process control module (30) and".

XIII. Claim 1 of the **third auxiliary request** is the same as claim 1 of the second auxiliary request except that feature 1.13 reads as follows (board's underlining):

"the I/O modules provide the data related elements at the lowest hierarchical level of the linked elements providing as software attributes of data defined by a corresponding higher level data provision element (DO3, DO4, DO5, DO6),".

Reasons for the Decision

1. Main request - admissibility into the appeal proceedings

1.1 In accordance with Article 12(4) of the Rules of Procedure of the Boards of Appeal (RPBA), the board has the power to hold inadmissible requests which could have been presented or were not admitted in the first instance proceedings. Furthermore, Article 12(2) RPBA states that the statement of grounds of appeal and the reply shall contain a party's complete case and that they should contain all the facts, arguments and evidence relied on.

1.2 In the first instance proceedings, the proprietor consistently requested by way of its main request that the patent be maintained in amended form. Rejection of the opposition was never requested before the department of first instance and the statement of grounds of appeal does not give any reasons for the introduction of this request in the present appeal proceedings. Instead, reasons to this effect were provided by the appellant for the first time in the appeal proceedings with its response to the board's communication, the appellant submitting that *"a set of claims having the same technical content as the claims of the current main request were already requested in the first instance procedure. Furthermore, the admission of the main request into the Appeal proceedings does not lead to any delay of the Appeal proceedings because any novelty and inventive step issues with respect to the first auxiliary request equally apply to the main request."*.

1.3 The board considers that subsequently submitting these reasons confirms that the statement of grounds of appeal did not contain a complete case and that these reasons could and should have been provided with the statement of grounds of appeal. Furthermore, the board notes that the novelty and inventive step issues with respect to the main request and the first auxiliary request do not equally apply, it being noted that only in claim 1 of the first auxiliary request the communication standard is specifically defined as the IEC 61850 standard. Hence, if the board were to admit the main request, it would have to interpret claim 1 for the first time in the context of any communication standard, which would constitute a fresh case.

1.4 In view of the above, the board, exercising its discretion pursuant to Article 12(4) RPBA, did not admit the main request into the appeal proceedings.

2. First auxiliary request - claim 1 - inventive step

2.1 The subject-matter of claim 1 of the first auxiliary request does not involve an inventive step for the following reasons:

2.2 D8 discloses an intelligent electronic device (IED) (see page 13, third paragraph: *"SIPROTEC 4 Gerät ... 7SJ62 ... 7SJ64 ..."*) for provision in Substation Automation or Distribution Automation systems

and having a structuring of its own functionality according to the communication standard IEC 61850 (see pages 13 and 14: *"IEC 61850"*),

which standard provides a series of elements hierarchically linked to each other and including a

device related element, a number of function elements linked to the device related element and a number of data provision elements linked to the function elements (see page 11: *"Logisches Gerät (LD) / Logischer Knoten (LN) / Datenobjekt (DO)" and "Jedes Datenobjekt besitzt in der Regel noch so genannte Datenattribute"*),

the device including

a communication module (see page 14: *"Das Modul besteht aus einer einzigen Baugruppe, die auf Port B des Gerätes, also der Systemschnittstelle montiert wird."*) for communicating with other devices of the system via a computer communication network and

at least one I/O module (see page 8: *"Informationen vom und an den Prozess laufen heute in der Regel noch über konventionelle E/A-Karten, die in die Feldgeräte integriert sind"*) for direct communication with local system equipment,

wherein the intelligent electronic device includes elements of the communication standard comprising one device related element and replaceable function related elements of all the functions provided by I/O modules (see pages 9-11), and

wherein the communication module includes a control unit providing the device related element of the communication standard, function elements associated with the function of the communication module and at least one function element associated with functions provided by all the I/O modules, all I/O modules providing data related functions include data provision elements according to the standard and being associated with a corresponding function element in the

communication module, the I/O modules provide the data related elements at the lowest hierarchical level of the linked elements providing attributes of data defined by a corresponding higher level data provision element, and wherein the higher level data provision element and corresponding function related element are provided by the communication module (see pages 9-11, e.g. page 11: *"CTRL / XCBR / POS besitzt also Datenattribute die sich alle auf die Stellung des Leistungsschalters beziehen."*).

2.3 The subject-matter of claim 1 of the first auxiliary request differs from the device disclosed in D8 in that

- it further comprises mechanically separable, replaceable hardware modules interconnected via an inter-module bus, said modules implementing functionality related to the function related elements of the standard, and in that

- the control unit of the communication module is arranged to associate, at powering up of the device, the data provision elements of the I/O modules with corresponding elements associated with the function of the I/O modules in the communication module.

2.4 With respect to the first difference, the board notes that although D8 explicitly mentions the existence of I/O modules ("konventionelle E/A-Karten") in the IED and the fact that, in order to use protocols according to IEC61850, an EN100 module is to be connected to a so-called "Port B" or "System interface" ("Systemschnittstelle"), it lacks further details explaining how the different elements of an IED are connected to each other. The skilled person starting out from D8 and desirous to fill this gap using the

specifically mentioned product types 7SJ62 and 7SJ64 in D8 would consider D9, which specifically relates to these product types.

D9 discloses an IED comprising replaceable I/O PCB modules interconnected via ribbon cables (see pages 400-402 and Figs. 3-3 to 3-7) with a communication module consisting of a processor board CPU (see Fig. 3-19) which includes a system interface/Port B to which the EN100/IEC 61850 exchange module is to be attached (see page 25: "*The EN-100-module allows the devices to be integrated in 100-Mbit-Ethernet communication networks in control and automation systems using protocols according to IEC61850.*"; see Table 3-29: "*IEC 61850 Ethernet electrical*", "*IEC 61850 Ethernet optical*").

Thus, the skilled person completing the disclosure of D8 with the structural details of D9 would provide the IED of D8 with mechanically separable, replaceable hardware modules interconnected via an inter-module bus, the modules implementing functionality related to the function related elements of the standard, without exercising any inventive skill.

2.5 With respect to the second difference, the board notes that according to D8 an association must be made between the data provision elements of the I/O modules, providing information such as the status value (see e.g. page 11: *"stVal"*) of a circuit breaker, and the data object to which it relates (see e.g. page 11: *"CTRL / XCBR / POS"*). Performing such association at powering up of the device is fully in accordance with the common procedure of starting up a computer-program-based device and, hence, does not contribute to inventive step either.

2.6 The appellant argued that the modular design of the claimed device was characterised by the functional partitioning of the system into discrete, scalable, reusable modules and by the use of well-defined modular interfaces. This would imply that each module of a system takes care of a specific functionality and, accordingly, a person skilled in the art would understand the term "communication module" in the context of the patent such that a communication module is dedicated to providing the communication functionality. In contrast thereto, the microcomputer system provided with the main processor of D9 takes care of a large variety of different functions. Thus, the combination of the processor board and the EN100 module disclosed in D9 could not be identified as the communication module of claim 1 and it was the EN100 module alone that corresponded to the "communication module".

2.7 The board considers that the term "communication module" is defined by the features in the claim, without any further limitations as concerns its constructional details or its functionalities being implied. In particular, the claimed "communication module" may be embodied using a plurality of sub-elements, e.g. more than one board. With respect to its functionality, the fact that the "communication module" is "for communicating with other devices of the system via a computer communication network" cannot be interpreted to mean that the "communication module" performs this function only, as the appellant suggested when referring to the embodiment of Fig. 2 of the patent specification. Therefore, the board concludes that the combination of a processor board and the EN100 module in D9 corresponds to the claimed "communication

module", which is connected to the I/O PCBs via an inter-module bus (the ribbon cables between the CPU unit and the I/O PCBs).

2.8 The appellant further argued that the modular IED proposed by the patent provided a greater flexibility and could have a varying amount and types of I/O connections depending on the environment in which it was provided.

2.9 Paragraph [0024] of the patent reads "in the case of an IED that needs to communicate with other general protection devices, there is normally always a power supply module, a communication module and a process control module. Then there are as many I/O modules as are necessary for handling various I/O connections to pieces of local equipment in the system that the IED is connected to.". The flexibility may thus be concerned with the type and number of I/O modules and, in that regard, the IED of D9 also allows configurations with different types and number of I/O PCBs (see Figs. 3-3 to 3-7).

2.10 The board concludes that the subject-matter of claim 1 of the first auxiliary request does not involve an inventive step (Articles 52(1) and 56 EPC). The first auxiliary request is therefore not allowable.

3. Second auxiliary request - claim 1 - inventive step

3.1 Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that it further includes "a process control module".

3.2 The appellant submitted that the addition of this feature made it even clearer that the communication

functionality and the process control functionality were handled by different modules and that, consequently, the combination of the main PCB and the EN100 module of D9 could not be considered as the claimed "communication module".

3.3 The board considers that the claim does not require that the "process control module" and the "communication module" have mutually exclusive functionalities. In fact, the claim does not give any indication about the functionalities of such modules beyond "process control" and, hence, does not exclude implementations in which the claimed "process control module" (e.g. the CPU unit of D9) is part of the "communication module" (e.g. the combination of CPU unit and the EN100 module).

3.4 The board thus concludes that the reasons set out above in respect of claim 1 of the first auxiliary request apply mutatis mutandis to claim 1 of the second auxiliary request. The subject-matter of claim 1 of the second auxiliary request thus does not involve an inventive step (Articles 52(1) and 56 EPC). The second auxiliary request is therefore not allowable either.

4. Third auxiliary request - admissibility into the appeal proceedings

4.1 The third auxiliary request was filed for the first time with the statement of grounds of appeal, in which the appellant merely indicated the amendments with regard to the first and second auxiliary requests and the basis of the amendments in the application as originally filed, without giving any reasons for the introduction of this request in the appeal proceedings. With its response to the board's communication, the

appellant submitted that this request was included as a response to the arguments used by the opposition division in its decision. The opposition division relied on the disclosure of document D5, which constituted a major change in the preliminary opinion of the opposition division, since it had previously held that the skilled person would not look for a solution in document D5.

4.2 The board notes the following:

4.2.1 As already mentioned in respect of the main request (see point 1.3. above), only subsequently submitting the reasons confirms that the statement of grounds of appeal did not contain a complete case and that these reasons could and should have been provided with the statement of grounds of appeal instead (Article 12(2) and (4) RPBA).

4.2.2 Further, the minutes of the oral proceedings before the opposition division make it clear that the combination of D8/D9 and D5 had been brought up by the opponent and found convincing by the opposition division in the course of the discussions concerning the first and third auxiliary requests (see points 5.2, 5.3, 7.2 and 7.3 of the minutes of the oral proceedings before the opposition division). Hence, the patent proprietor could and should have reacted to the alleged change of opinion already during the first instance proceedings.

4.2.3 Further, the third auxiliary request contains features ("as software") which were already present in the second auxiliary request of the impugned decision. The opposition division found that the introduction of such features contravened Article 123(2) EPC. However, the appellant did not provide any arguments as to why the

opposition division erred in its decision or why the third auxiliary request would overcome this objection.

4.3 In view of the above, the board, exercising its discretion pursuant to Article 12(4) RPBA, did not admit the third auxiliary request into the appeal proceedings.

5. As there is no allowable request on the basis of which the patent can be maintained, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

C. Moser F. van der Voort

Decision electronically authenticated