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Datasheet for the decision of 14 November 2019

Case Number: T 0693/16 - 3.5.05

Application Number: 08105067.6

Publication Number: 2157732

IPC: H04L12/24, G05B19/418, H04L12/46

Language of the proceedings: EN

Title of invention:
Configuration of a process control system

Patent Proprietor:
ABB Schweiz AG

Opponent:
Siemens Aktiengesellschaft

Headword:
VLANs configuration in an automation system/ABB

Relevant legal provisions:
EPC Art. 54, 56, 123(2)

Keyword:
Main request- amendments - deletion of features (yes)
Document - implicit obligation to maintain secrecy (no)
Novelty - auxiliary request (yes)
Inventive step - auxiliary request (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0693/16 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 14 November 2019

Appellant: (Patent Proprietor)	ABB Schweiz AG Brown Boveri Strasse 6 5400 Baden (CH)
Representative:	ABB Patent Attorneys c/o ABB Schweiz AG Intellectual Property CH-IP Brown Boveri Strasse 6 5400 Baden (CH)
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 19 January 2016 revoking European patent No. 2157732 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	P. Cretaine
	R. Romandini

Summary of Facts and Submissions

I. This appeal is against the opposition division's decision, dispatched on 19 January 2016, to revoke the European patent No. 2 157 732. The patent was revoked on the ground that the main request did not meet the requirements of Article 123(2) EPC. A first and a third auxiliary request were found not to meet the requirements of Article 54 EPC having regard to the disclosure of

E1: Draft IEC TR 61850-90-1, "Communication networks and systems for power utility automation - part 90-1: Use of IEC 61850 for the communication between substations", DKE, pages 1 to 80, 14 March 2008.

A second auxiliary request was found not to meet the requirements of Article 56 EPC, having regard to the disclosure of E1.

In that respect, the opposition division held that E1 was a document which had been made available to the public, in view of

E1´: Rundschreiben Nr. 952_2008-0051 of DKE dated 18 March 2008.

The skilled person's common general knowledge was illustrated by the disclosure of

E2: B. Kasztenny et al.: "IEC 61850: A Practical Application Primer for Protection Engineers", 60th Annual Georgia Tech Protective Relaying Conference, Atlanta, US, 3-5 May 2006, and

E7: INTERNATIONAL STANDARD IEC 61850-6, "Communication networks and systems in substations - Part 6: Configuration description language for communication in electrical substations related to IEDs", March 2004.

II. The patentee's notice of appeal was received on 17 March 2016 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 18 May 2016. The appellant (patentee) requested that the opposition division's decision be set aside and that the patent be maintained on the basis of the claims as granted (main request) or one of the first to fourth auxiliary requests, submitted with the statement setting out the grounds of appeal. Oral proceedings were requested on an auxiliary basis. In addition, the appellant objected to the opposition division's admission of E7 into the proceedings and requested that one of the recipients of document E1' be heard, pursuant to Rule 117 EPC, to prove that E1 had not been made available to the public.

III. By letter received on 24 August 2016, the respondent (opponent) requested that the appeal be dismissed because the main request did not meet the requirements of Article 123(2) EPC, the main request and the first to third auxiliary requests did not meet the requirements of Article 54 and 56 EPC having regard to the prior art cited in point I above, and the fourth auxiliary request was not admissible under Article 12(4) RPBA and did not meet the requirements of Articles 83, 84, 56 and 123(2) EPC. Oral proceedings were requested on an auxiliary basis. In addition, the respondent requested that one of the recipients of document E1' be heard, pursuant to Article 117 EPC.

IV. By letter received on 23 August 2017, the appellant replied to the respondent's objections.

V. A summons to oral proceedings was issued on 11 June 2019. In a communication pursuant to Article 15(1) RPBA sent on 18 September 2019, the board listed the points to be discussed during the oral proceedings. The board also presented reasons why, in its opinion, E7 should not be disregarded and E1 was available to the public. In respect of E1, the board further explained why the hearing of witnesses requested by both parties should not be allowed. The board further expressed the preliminary opinion that the main request did not meet the requirements of Article 123(2) EPC and that claim 1 of the first auxiliary request appeared to be novel (Article 54 EPC) having regard to E1.

VI. By letter received on 14 October 2019, the appellant provided further arguments in respect of inventive step.

VII. Oral proceedings were held on 14 November 2019. During the proceedings, the respondent submitted an affidavit and requested that it be admitted into the proceedings. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or, on an auxiliary basis, according to the first to fourth 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 board's decision was announced.

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

"A method of configuring a Process Control PC system, and in particular a Substation Automation SA system, with a plurality of Intelligent Electronic Devices IEDs connected to switches of an Ethernet switch-based communication network, and with a sender IED sending different messages including periodic multicast messages to different predetermined receiver IEDs the periodic multicast messages being forwarded by a switch of the communication network, comprising
- retrieving, for each sender IED of the plurality of IEDs and for each message configured to be transmitted by said sender IED, from a configuration representation of the PC system comprising the logical data flow definitions, the receiver IEDs for which the message is destined, as well as a Virtual Local Area Network Identifier VLAN ID, and
- assigning, for each receiver IED, the VLAN IDs of all the messages destined for this receiver IED to an edge port of a switch of the communication network to which this receiver IED is connected."

Claim 1 of the first auxiliary request reads as follows:

"A method of configuring a Process Control PC system, and in particular a Substation Automation SA system, with a plurality of Intelligent Electronic Devices IEDs connected to switches of an Ethernet switch-based communication network, and with a sender IED sending different messages including periodic multicast messages to different predetermined receiver IEDs, the periodic multicast messages being forwarded by a switch of the communication network,
comprising
- retrieving, for each sender IED of the plurality of IEDs and for each message configured to be transmitted

by said sender IED, from a standardized configuration representation of the PC system comprising the logical data flow definitions, the receiver IEDs for which the message is destined, as well as a Virtual Local Area Network Identifier VLAN ID, and
- assigning, for each receiver IED, the VLAN IDs of all the messages destined for this receiver IED to an edge port of a switch of the communication network to which this receiver IED is connected."

The main request and the first auxiliary request each contain a further independent claim (claim 7) directed to a corresponding computer program ("configuration tool").

Due to the outcome of the appeal, there is no need to give details of the claims of the second to fourth auxiliary requests.

Reasons for the Decision

1. The appeal is admissible (see point II).

2. Main request - Article 123(2) EPC

Claim 1 had been amended during the examination proceedings by deleting the term "standardized" in the wording "standardized configuration representation".

With respect to the "three-point test" set out in T 331/87 and relied on by the appellant, the board holds that at least the second point is not fulfilled. In that respect, the board notes that the wording "configuration representation" is always used with the qualifier "standardized" throughout the application (see paragraphs [0001], [0008], [0012], [0015], [0017]

and [0021], and claims 1, 2 and 6 to 8 as originally filed). Moreover all the preferred embodiments disclosed from paragraphs [0019] to [0026] use a standardized configuration representation according to the standard IEC 61850. A standardized configuration representation is thus indispensable for retrieving the receiver IEDs and the associated VLAN IDs, as defined in claim 1.

The appellant further argued that the skilled person would infer from page 4, line 21 of the description that the disclosed techniques were applicable to any formal configuration representation, be it standardized or proprietary. The board, however, notes that this reference to a formal configuration description is related to an SCL file. SCL is the acronym for "Substation Configuration description Language", which is the language used to describe IED configurations and communications systems according to the IEC 61850 standard (see E2, page 1, lines 21 to 26 and 44 to 45). Thus, the formal configuration description quoted by the appellant is actually a standardized configuration representation.

For these reasons, the board holds that claim 1 does not meet the requirement of Article 123(2) EPC. The main request (claims as granted) is thus not allowable.

3. First auxiliary request

3.1 Article 123(2) EPC

Claim 1 differs from claim 1 of the main request only in that the term "standardized" has been reintroduced. The board is thus satisfied that claim 1 meets the requirement of Article 123(2) EPC.

3.2 Article 54 EPC

3.2.1 Public availability of E1

During the oral proceedings the respondent filed an affidavit from Mr H. Dawidczak, a recipient of the letter E1', attesting that he received document E1 without any obligation to maintain its secrecy. The appellant requested that this affidavit not be admitted into the proceedings for being late-filed. However, it was not necessary for the board to decide on the admission of the affidavit into the proceedings. Indeed, the board did not need any further evidence in order to answer, in the affirmative, the question of whether E1 was publicly available. E1 was distributed to a large group of people (more than 100), without any explicit or implicit requirement of confidentiality. This is also confirmed by the accompanying letter E1' sent to all recipients. Thus, according to the case law of the boards of appeal (see Case Law of the Boards of Appeal, 9th edition 2019, I.C.3.3.3), E1 is considered to have been made available to the public and is thus prior art according to Article 54(2) EPC.

Against this conclusion the appellant put forward two counterarguments. Firstly, it argued that the burden of proof that there was no confidentiality agreement in relation to E1 lay with the respondent and not with the patentee. Secondly, and related to this, it maintained that the standard of proof applicable to the question of whether or not the document was subject to a confidentiality agreement was the "up to the hilt" standard and not the normal standard of "more likely than not". In this regard, the board notes that it needs to resort to the principles governing the burden

of proof only where a specific statement of fact - which is relevant to decide on the appeal - is not proven according to the applicable standard of proof. In turn, the normal standard of proof for assessing whether or not a statement of fact is deemed to be proven in proceedings before the board of appeal is the balance of probabilities. The case law does contemplate some exceptions to this principle, requiring an enhanced standard in specific cases. However, these exceptions concern situations where the relevant evidence is entirely concentrated in the sphere of a specific party to the proceedings, for instance situations where all evidence supporting an alleged public prior use "lies within the power and knowledge of the opponent" (see T 0472/92, OJ EPO 1998, 161, point 3.1 of the reasons; Case Law of the Boards of Appeal, 9th edition, 2019, III.G.4.(b) with further references to the case law). This is not the situation in the present case. Document E1 does not lie within the sphere of the respondent only. The document was also distributed to third parties, including persons within the sphere of the appellant. For these reasons, the board is of the view that the normal standard of proof, based on the balance of probabilities, applies to the present case. On the basis of this standard, the board is also of the opinion that it is more likely than not that documents E1 and E1’ were made available to the public within the meaning of Article 54(2) EPC without any restrictions. This conclusion also seems to be in line with the purpose of any standardization process, namely to promote an open discussion among experts, on the broadest possible basis, of proposals for common technical criteria or rules (see in general T 0202/97 of 10.2.1999). As a consequence, the board does not need to decide which party has the burden of proof with respect to whether or not there was a

confidentiality obligation (see on this point T 2037/18 of 16.10.2019).

3.2.2 Novelty

The following feature numbering of claim 1 will be used:

(F1.1) A method of configuring a Process Control PC system,
(F1.2) and in particular a Substation Automation SA system,
(F1.3) with a plurality of Intelligent Electronic Devices IEDs connected to switches of an Ethernet switch-based communication network, and with a sender IED sending different messages including periodic multicast messages to different predetermined receiver IEDs, the periodic multicast messages being forwarded by a switch of the communication network, comprising
(F1.4) retrieving, for each sender IED of the plurality of IEDs and for each message configured to be transmitted by said sender IED, from a standardized configuration representation of the PC system comprising the logical data flow definitions, the receiver IEDs for which the message is destined, as well as a Virtual Local Area Network Identifier VLAN ID, and
(F1.5) assigning, for each receiver IED, the VLAN IDs of all the messages destined for this receiver IED to an edge port of a switch of the communication network to which this receiver IED is connected.

It was common ground during the oral proceedings that E1 was the closest prior art and disclosed features F1.1 to F1.3.

The respondent argued that features F1.4 and F1.5 were also disclosed by the following passages of E1:
- Section 7.1 on page 50 and section A.2(a) on page 77 taught that VLANs must be configured for intra-substation communication and that the ports of the switches should be configured accordingly.
- Section A.7(c) on page 79 disclosed that the drop ports of the switches connected to the IEDs, i.e. the edge ports defined in claim 1, should be configured for memberships in the VLANs supported by the connected IEDs, i.e. should be assigned corresponding VLAN IDs.
- Section 7.7 on page 52 disclosed that the devices, namely the Ethernet switches, could be configured by whatever configures the IEDs.
- Section 10.1 on page 66 taught that the configuration of the whole network of IEDs, including the data flow, was present in an SCL file, as also acknowledged in paragraph [0005] of the patent specification.
- Section A.4 taught that the configuration of the network's switch ports' VLAN memberships should be part of the SCL file.
- Figure 22 on page 67 showed the use of the SCD file for configuring the IEDs.
The respondent concluded that the skilled person being aware of the standard IEC 61850, in particular part 6 defining the structured representation of the network in an SCL file with the VLAN IDs, the SCL file belongs to the tools that he/she can use to configure the switches by retrieving, as defined in feature F1.4, all the necessary information stored in the available SCL file, and assigning, as defined in feature F1.5, the retrieved VLAN IDs to the edge ports of each switch.

The board, however, agrees with the appellant that E1 does not disclose any assignment of VLAN IDs to the edge ports of the Ethernet switches on the basis of

information retrieved from the SCL file. In that respect, the second sentence of section 7.7 of E1 clearly states that the technology for assigning the VLAN IDs to the switches is beyond the scope of document E1. Section 7.7 further vaguely hints at the possibilities of using either IEEE standards GVRP and GMRP for automatic VLAN assignments, or a manual assignment, which in both cases would imply a configuration of the switches without any need for the information stored in the SCL file. The possibility mentioned in section 7.7 of configuring the devices, i.e. the switches, by whatever configures the IEDs does not imply the use of the SCL file. Furthermore Figure 22 is obscure due to the presence of black boxes and thus does not teach how the SCD file is used in the configuration of the IEDs. Moreover, section 10.1 on page 66, which states that "switches are currently not modelled in SCL", together with section A.4 on page 78, which mentions that "the correct configuration of the network's switch ports' VLAN memberships ... should be part of the SCL", clearly shows that the configuration of the switches is not actually part of the SCL file in the draft standard E1 but should be considered for further developments of the standard.

For these reasons the board holds that features F1.4 and F1.5 are not disclosed in E1. Therefore, claim 1 and the corresponding computer program claim (claim 7) meet the requirements of Article 54 EPC.

3.2.3 Inventive step

It was common ground in the oral proceedings that the objective technical problem could be formulated on the basis of distinguishing features F1.4 and F1.5 as how to configure the switches for the VLANs. The respondent

correctly stated that this problem was posed in E1, for instance in sections 7.7 and A.4 (see point 3.2.2 above). The respondent contended that E1 disclosed on page 67 that an IED was configured using the SCL file and that the skilled person was well aware of the content of the SCL file according to standard IEC 61850, part 6 (see E7). In particular, the skilled person knew that the SCL file contained the logical data flows between the IEDs of the network and the VLAN IDs associated with each receiver IED. The respondent then argued that the skilled person would obviously use this knowledge to retrieve the VLAN IDs and configure the switch ports accordingly, thereby arriving at the subject-matter of claim 1.

However, the board agrees with the appellant that the skilled person, starting from E1, would consider either an automatic or a manual configuration of the switches, as suggested by E1 in section 7.7. An automatic configuration at the priority date of the application in 2008 would have been based on Ethernet configuration tolls, such as GVRP and GMRP, but these are only capable of assigning a single VLAN ID to an access port of a switch. The skilled person would thus have resorted to the manual configuration as described in paragraph [0005] of the patent specification, without relying on the content of the SCL file. Therefore, the skilled person would have first configured the switches and only then provided the configuration to the SCL file, as suggested by E1 in section A.4. The appellant also plausibly argued that if the configuration of the switches was already present in the SCL file, the skilled person would have been able to simply read the information from the SCL file without the need to derive the switch ports' assignment from the messages and data flow definitions in the SCL file.

For these reasons the board holds that the subject-matter of claim 1 and of the corresponding computer program claim (claim 7) involves an inventive step (Article 56 EPC).

4. Conclusion

The main request is not allowable under Article 100(c) EPC in conjunction with Article 123(2) EPC.
The first auxiliary request overcomes all the grounds for opposition.

Order

For these reasons it is decided that:

1. The appealed decision is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the first auxiliary request filed by the appellant with the statement setting out the grounds of appeal and a description and drawings to be adapted accordingly, if necessary.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated