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Datasheet for the decision of 14 November 2024

Case Number: T 1826/21 - 3.2.03

Application Number: 17163315.9

Publication Number: 3236167

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Language of the proceedings: EN

Title of invention:
CONFIGURATION OF A VENTILATION SYSTEM BY COMPONENT SELECTION

Patent Proprietor:
Swegon Operations AB

Opponents:
Siemens Schweiz AG
TROX GmbH

Relevant legal provisions:
EPC Art. 100(b), 83, 100(a), 52(1), 54, 56, 69(1)
EPC R. 115(2)
RPBA 2020 Art. 15(3)

Keyword:

Sufficiency of disclosure - (yes) - relationship between Article 83 and Article 84
Novelty - (yes)
Inventive step - (yes) - common general knowledge as closest prior art

Decisions cited:

G 0003/14, T 0410/96

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Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 1826/21 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 14 November 2024

Appellant: (Opponent 2)	TROX GmbH Heinrich-Trox-Platz 1 47506 Neukirchen-Vluyn (DE)
Representative:	Dr. Stark & Partner Patentanwälte mbB Moerser Straße 140 47803 Krefeld (DE)
Respondent: (Patent Proprietor)	Swegon Operations AB Box 300 535 23 Kvänum (SE)
Representative:	Westpatent AB Almekärrsvägen 11 443 39 Lerum (SE)
Party as of right: (Opponent 1)	Siemens Schweiz AG Freilagerstrasse 40 8047 Zürich (CH)
Representative:	Siemens Patent Attorneys Postfach 22 16 34 80506 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 11 August 2021 concerning maintenance of the European Patent No. 3236167 in amended form.**

Composition of the Board:

Chairman	C. Herberhold
Members:	M. Olapinski
	N. Obrovski

Summary of Facts and Submissions

I. The appeal was filed by opponent 2 (appellant) against the interlocutory decision of the opposition division finding that, on the basis of auxiliary request 4, the patent in suit (the patent) met the requirements of the EPC.

II. Oral proceedings were held before the Board.

Opponent 1 had been duly summoned and announced that it would not attend the oral proceedings in the letter dated 26 August 2024. The oral proceedings were continued without that party (Rule 115(2) EPC and Article 15(3) RPBA).

III. The parties' requests were as follows.

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed and the patent be maintained on the basis of auxiliary request 4 (main request) or, in the alternative, on the basis of one of auxiliary requests 5 to 7, re-filed with the reply to the statement of grounds of appeal.

The party as of right, opponent 1, did not submit any request.

IV. Reference is made to the following documents:

D1: US 2011/0046801 A1
D8: HomeMatic WebUI Handbuch

D9: HomeMatic Montage- und Inbetriebnahmeanleitung Zentrale CCU2 HMCen-O-TW-x-x-2
D10: HomeMatic Installations-und Bedienungsanleitung Funk-Heizkörperthermostat HM-CC-RT-DN
D11: HomeMatic Installations-und Bedienungsanleitung Funk-Wandthermostat HM-TC-IT-WM-W-EU
D12: "LON-Technologie", ed. D. Dietrich et al., Hüthig, Heidelberg, 1997, ISBN 3-7785-2581-6

V. Claim 1 of auxiliary request 4 (main request) reads (with feature denominations in square brackets):

"[M1] A method for configuring components (1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h) in an air treatment system (100), e.g. a Heating and Ventilating Air-Conditioning (HVAC) system,

[M2] said air treatment system (100) comprising one or several components (1a-1h) being selected to be from the groups of flow control components (1a, 1b, 1c, 1d), sensor components (1e, 1f, 1g) or input control components (1h),

[M3] said components (1a-h) being connected to a central control system (101) when the components (1a-h) are configured and the air treatment system (1) is in use,

[M4] each of said components (1a-h) being provided with an Electronic Control Unit (4) and a transmitter and/or receiver (2) for sending an input signal to the central control unit (105) to be used for computing a control output command by the central control unit (105) and/or receiving an output signal from the central control system (105) in order to control the component (1)

associated with the respective transmitter and/or receiver (2),

[M5] each of said components (1a-h) further being provided with an indicator (3) connected to the associated Electronic Control Unit (4)

[M6] wherein said configuration comprises the steps of:

I. PREPARATION

[M6a] a. Locating at least one component (1a-h) at its intended physical position in the air ventilation system (100), said component (1a-h) being assigned a unique component ID (cID) before or after it has been located at its intended position, the unique component ID (cID) being marked on the product to be selectively read for each component by an identifier.

[M6b] b. Providing an identifier with a system description of the air ventilation system (100) including a configuration list with system location IDs (sl-ID) for components (1a-h) to be connected to the central control system (101)

II. SELECTION PROCEDURE

[M6c] c. Identifying the physical location in the air ventilation system (100) of the desired component (1a-h) to be configured and locate the identifier to be in reach for wireless communication with the desired component (1a-h)

[M6d] d. Using the identifier for sending an identifying signal in order to identify the

desired component (1a-h), the identifying signal being an automatic reading of the marking on the component (1a-h) comprising information concerning the component ID (cID) and the Electronic Control Unit (4) is programmed to activate the indicator (3) so as to indicate the component has been selected by the identifier.

III. CONFIGURATION

[M6e] e. Initiating a pairing event in which the desired component (1a-h) having its unique component ID (cID) [is] paired with the system location ID such that the desired component (1a-h) may be recognized by the central control unit (105) by the system location ID."

VI. The appellant's arguments can be summarised as follows.

Sufficiency of disclosure

The invention as defined in claim 1 of auxiliary request 4 (main request) contained several gaps and open questions. The subject-matter of claim 1 was thus broader than justified by the disclosure in the patent, and not even the patent disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Novelty

The subject-matter of claim 1 of auxiliary request 4 was not novel over the HomeMatic smart home system as disclosed in documents D8 to D11.

Inventive step, starting from D8 to D11 in combination with D12

Starting from the HomeMatic smart home system as disclosed in documents D8 to D11, the skilled person would have implemented the well-known configuration scheme of the LON (local operation network) technology described in D12, which disclosed Features M6a to M6e and allowed configuration of larger projects without mistakes, thus arriving at the subject-matter of claim 1 of auxiliary request 4 without involvement of an inventive step.

Inventive step, starting from D8 to D11 in combination with D1

The subject-matter of claim 1 did also not involve an inventive step when starting from the HomeMatic smart home system as disclosed in documents D8 to D11 in combination with D1, which disclosed the distinguishing Features M6b and M6d.

Inventive step, starting from common general knowledge in combination with D12

Starting from the common general knowledge of a generic HVAC (heating, ventilation and air conditioning) system with Features M1 to M5 as exemplified in D1, the skilled person would have adopted the configuration scheme of D12 to put the generic system into practice, thus arriving at the subject-matter of claim 1 in an obvious manner. Hence, the subject-matter of claim 1 of auxiliary request 4 does not involve an inventive step.

VII. The respondent essentially argued as follows.

Sufficiency of disclosure

The patent disclosed the invention as defined in claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. Filling potential gaps in the specification was within the skilled person's common general knowledge, and the alleged gaps in the definition of claim 1 were not an issue under Article 83 EPC. If anything, they were related to clarity.

Novelty

The subject-matter of claim 1 of auxiliary request 4 was novel over the HomeMatic smart home system as disclosed in documents D8 to D11, which did not disclose Features M6b and M6d.

Inventive step, starting from D8 to D11 in combination with D12

Starting from the HomeMatic smart home system as disclosed in documents D8 to D11, it would not have been obvious to adopt the configuration scheme from D12. Nor would D12, which did not disclose at least Feature M6d, have led the skilled person to the subject-matter of claim 1 of auxiliary request 4.

Inventive step, starting from D8 to D11 in combination with D1

The subject-matter of claim 1 involved an inventive step when starting from the HomeMatic smart home system as disclosed in documents D8 to D11 in combination with D1 because D1 did not disclose Features M6b and M6d, either.

Inventive step, starting from common general knowledge in combination with D12

The alleged abstract common general knowledge of an HVAC system with Features M1 to M5 was too broad, vague and remote to qualify as a suitable starting point for inventive step. Moreover, D12 did not disclose all distinguishing features, either. Hence, the subject-matter of claim 1 of auxiliary request 4 involved an inventive step.

Reasons for the Decision

1. Sufficiency of disclosure

1.1 The invention of claim 1 of auxiliary request 4 found allowable by the opposition division (main request) concerns a method for configuring (pairing, Feature M6e) components in an "air treatment system" (Features M1 to M3), respectively an "air ventilation system" (Features M6a to M6c), the components - when the air treatment system is in use - being connected to a "central control system" (Features M3, M4 and M6b), respectively a "central control unit" (CCU) (Features M4 and M6e). Each component comprises an electronic control unit (ECU), a receiver and/or transmitter for communicating with the CCU, and an indicator connected to the ECU (Features M3 to M5).

The method further involves the use of an "identifier", a tool that is provided with a "system description" including "system location IDs" (sl-IDs) of components and which can read the unique component ID (cID) "marked on" and "associated" with each of the components ("Preparation", Features M6a, M6b).

After mounting (or at least placing) one or more components at their intended destination (Feature M6a), the physical location of a "desired" component to be configured (i.e. its system location in the system description) is identified, and the identifier is brought within reach for wireless communication with the desired component (Feature M6c). The identifier is then used "for sending an identifying signal in order to identify the desired component". This process

involves an automatic reading of the cID from the marking on the component (Feature M6d). Feature M6d also refers to a component being "selected by the identifier" whereupon the ECU "activates the indicator".

The process is concluded by "initiating a pairing event" between the cID of the desired component and its sl-ID (Feature M6e).

1.2 The appellant submitted that the disclosure of the invention in claim 1 and in the patent specification contained several gaps and open questions, so that the invention was not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. It was not disclosed how the ECU knew the cID, how the identifier identified the desired component, how the ECU knew when to activate the indicator, and how the pairing was to be carried out.

These issues are dealt with in detail in the following subsections 1.3 to 1.6.

1.3 How does the ECU know the cID?

1.3.1 The appellant submitted that for the invention to work, it was essential that the component's ECU knew the cID to be able to communicate with the CCU. However, this was not specified in claim 1.

Furthermore, how could the ECU know the cID externally marked on the component, in particular in the case where the cID was only assigned "after" the component had been "located at its intended position" (Feature M6a; paragraph [0041])? The appellant pointed to paragraph [0026], which disclosed only optionally that

the cID "could be programmed into the ECU" or "comprised in a RFID". Hence, according to claim 1 and the teaching of the patent, the invention also had to be workable without the cID being programmed into the ECU. Moreover, the patent was silent as to how the cID could be programmed into the ECU. Hence, the invention could not be carried out.

The Board does not agree with this line of argument.

1.3.2 According to Feature M4, and expressed more clearly in paragraph [0025], the component's ECU is responsible for communicating with the CCU over a transmitter and/or receiver and for controlling the component.

Communication with the CCU requires that, after pairing, the component can be addressed and recognised by the CCU by the sl-ID (Feature M6e). Hence, for this purpose it would, in principle, be sufficient that the ECU knows the sl-ID. Assigning the component the sl-ID is disclosed in paragraph [0020] (column 8, lines 2 to 6) of the patent as one option of how the pairing event can be carried out. However, this passage discloses that the component can be "recognised by the system location ID as well as by its original component ID". Likewise, the other alternatives for the pairing process disclosed in paragraph [0020] involve translation of the sl-ID into the cID and addressing the component by its cID.

Accordingly, the Board agrees that the skilled person understands, and the patent discloses, that the ECU must know the cID to be able to communicate with the CCU.

1.3.3 Feature M6a requires that the component be "assigned" a unique cID before or after it has been located at its intended position, the unique cID being marked on the product. While the claimed assignment comprises a situation where the ECU knows the cID, the claimed subject-matter is not necessarily limited to this embodiment. However, as set out above, the skilled person inevitably derives from the patent as a whole that the ECU must know the cID before the pairing event. In fact, the cID must be assigned to the ECU as part of the "Preparation" phase I of Feature M6 before the "Selection procedure" (phase II of Feature M6) so as to be able to recognise that it has been selected by the identifier and to activate the indicator (see point 1.5 below). Hence, the alleged missing essential feature is at least implicitly present in the "component being assigned a unique component ID" in Feature M6a.

Moreover, regardless of whether an explicit specification of an allegedly essential feature is missing from present claim 1, which corresponds to claim 1 as granted, may be an issue under Article 84 EPC which cannot be considered in opposition (appeal) proceedings pursuant to G 3/14, it does not represent an insufficiency of disclosure as the skilled person is aware that this feature must be present and of how it can be reduced to practice (see point 1.3.5 below).

1.3.4 The Board agrees that the description does not seem to be limited to the ECU's knowledge of the cID. Paragraph [0011] discloses that the cID could be "comprised in the components" as an optional alternative to it being "marked onto" them. According to paragraph [0026], the cID "could [...] be programmed into the ECU" as an optional feature and "[i]n addition, the product

identity could be marked on the product by code intended to be read by an identifier". However, as the skilled person understands that it is a requirement that the ECU know the cID, and thus the cID must be programmed into the ECU, a lack of adaptation of the patent's description in this regard does not amount to an insufficiency of disclosure, either.

1.3.5 Accordingly, the subject-matter of claim 1 requires that the cID be both marked on the component (for example, in the form of a visible label but not excluding an RFID label) (paragraph [0008] and [0026]), and programmed into the ECU.

The Board considers that programming the cID into the ECU, either during manufacturing at the factory (paragraphs [0015], [0041]) or after it has been located (mounted) at its intended position, is within the common general knowledge of the skilled person. Likewise, the application of a marking or label on the product, at the factory or after mounting, does not represent a challenge for the skilled person.

In the Board's view, there is also no issue with the uniqueness of a cID assigned after mounting. It is no undue burden for the manufacturer to keep track of the issued cIDs and to safeguard that each component is assigned with or at least accompanied by a unique cID (to be marked on and programmed into the component after mounting).

Hence, in spite of gaps in claim 1 and in the patent, the submitted issues of the assignment of the cID do not prejudice the skilled person's ability to carry out the invention.

1.4 How does the identifier "identify the desired component"?

1.4.1 The appellant submitted that the patent did not disclose how the identifier knew how to identify the correct component matching the desired sl-ID. According to the wording of claim 1 in Feature M6d, the identification was a function of the identifier and did not involve user interaction. Furthermore, the task of identifying the component matching the correct sl-ID, possibly from hundreds of components in a room all looking the same, was beyond a user's skills. It was thus not apparent how the invention's objective of a correct and error-free configuration could be achieved.

1.4.2 Feature M6d specifies a step of "using the identifier for sending an identifying signal in order to identify the desired component, the identifying signal being an automatic reading of the marking on the component comprising information concerning the component ID (cID)". However, the Board disagrees with the appellant's understanding that this implied that the "identifier" alone was able to automatically identify and select the component corresponding to the correct sl-ID (or that the component's ECU or the marking had to provide information about the component's sl-ID).

The term "using" in Feature M6d already means that an operator is involved in the method. Furthermore, the identifier's automatic reading of the cID from the marking is made "in order to identify the desired component". This does not imply that the component whose marking is read is automatically identified as being the desired component. In the Board's understanding, the selection of the correct component

is performed by a user (a technician) with the help of the identifier as follows.

1.4.3 The "Selection procedure" in claim 1 (phase II of Feature M6) begins with Feature M6c comprising the steps of identifying the physical location of "the desired component to be configured" and "locat[ing] the identifier to be in reach for wireless communication with the desired component". These steps require involvement of a user bringing the identifier to the right location. This is confirmed in paragraph [0018] according to which the "person who is configuring the system will walk to be in the vicinity of the desired component to be configured".

1.4.4 Also, the reference to the "desired component to be configured" in Feature M6c is understood to imply user selection of the sl-ID of the component according to the system description (Feature M6b). As disclosed in paragraph [0016], the system description comprises, *inter alia*, information "where in the air ventilation system they [the components] are located". According to paragraph [0037], an "operator" selects a defined sl-ID, e.g. from a list of components in the identifier, and thus selects a "component to be identified". The operator subsequently "position[s] himself where the component is mounted, at a location where the component ID may be identified by using the identifier". Hence, the desired component is selected by the operator before the identifier is used to send the identifying signal, by which the cID contained in the marking of the component is automatically read (paragraph [0037]).

1.4.5 Moreover, the indicator activated by the component's ECU "so as to indicate the component has been selected by the identifier" (Feature M6d) also addresses the

operator and serves as confirmation for the operator of the selection before the pairing event is initiated (Feature M6e).

1.4.6 Accordingly, claim 1 and the patent specification disclose that the actual selection of the correct component corresponding to the desired sl-ID is carried out by an operator. Hence, neither does the identifier itself need to be able to identify the correct component, nor does the component need to be provided with its sl-ID before the pairing.

1.4.7 In the Board's view, the selection of the correct component is not beyond a technically qualified operator's skills, either. According to paragraph [0020], column 8, lines 19 to 23, the invention addresses a "technician" performing the configuration. Just as technicians are able to mount specific components correctly at a given position according to a plan ("system description", paragraphs [0016] and [0042]), they are also able to relocate components already mounted or located at their intended position in the plan. The patent emphasises in paragraph [0018] that the "person who is at the location should also be aware of which of the components in the system he is selecting as the desired product".

The Board also does not agree with the appellant's objection that the invention was not workable because mistakes in the configuration process could not be entirely excluded when proceeding as set out above. First, the objective of the patent is not to rule out but only to "reduce the probability for mistakes made in the configuration" (paragraph [0006]) as compared to the manual approach in the prior art set out in paragraph [0004]. Second, and more importantly, this

objective is not specified in the claims and thus does not form part of what the skilled person must be able to achieve when carrying out the invention (see Case Law of the Board of Appeal of the EPO, 10th edn., 2022 (Case Law), II.C.3.2).

1.4.8 Hence, the appellant's objections according to point 1.4.1 are without merit.

1.5 How does the ECU know when to activate the indicator?

1.5.1 The appellant submitted that neither claim 1 nor the patent disclosed how the ECU knew that the component had been "selected by the identifier" so as to "activate the indicator" (Feature M6d). If the selection was made by the automatic reading of the marking on the component with the identifying signal, how could the ECU know that the external marking had been read? Claim 1 and the patent were silent as to the link between the automatic reading, the selection and the activation of the indicator.

1.5.2 Feature M6d specifies a further function of the component's ECU, namely to "activate the indicator" so as to indicate that the component has been "selected by the identifier". It is common ground (see, e.g. grounds of appeal, page 10, second last paragraph) that this function of the indicator serves as confirmation on the desired component itself that the right component has been selected, which concludes the "Selection procedure" (phase II of Feature M6) and is a prerequisite before initiating the pairing event (subsequent Feature M6e, phase III of Feature M6) in claim 1. This is also in line with the patent's description (paragraphs [0011], [0020], [0045] and [0046]).

1.5.3 Claim 1 does not specify what exactly "selected by the identifier" refers to and how the ECU knows that the component has been selected, but it is clear that the ECU must be able to recognise its selected state.

The Board agrees that an automatic reading of the marking on the component, for example an "optical reading of the label" (paragraph [0037]) or "an IR-signal for reading a coded label" (paragraph [0045]), is not automatically recognised by the ECU.

As Feature M6d refers to a selection "by the identifier", it inevitably follows that the identifier must inform the ECU of the selection by a corresponding 'selecting signal', as also submitted by the appellant (grounds of appeal, page 11, second and third paragraphs) and agreed by the respondent at the oral proceedings. According to paragraph [0010], this can be done by "identifying the component with its component ID" after reading the marking. This is also confirmed in paragraph [0012], according to which the indicator is activated when "the component has been selected by an identifier sending an identification signal selecting the component".

Hence, as agreed by the respondent, it can be considered that "sending an identifying signal" in Feature M6d "is" not only an "automatic reading of the marking" but includes the notification of the ECU of its selected state by sending the identifying signal (i.e. the 'selecting signal' mentioned above), this identifying signal including, and thus "being" in the meaning of Feature M6d, the unique cID (which is marked on the product, see Feature M6a) obtained by the automatic reading of the marking on the component.

But even if the expression "identifying signal" were understood so broadly as "being" just the light used for reading a bar code marked on the component (as advocated by the appellant), the skilled person understands from common general knowledge and from the teaching in the patent that an additional "identification signal selecting the component" (i.e. the 'selecting signal' mentioned above) would be implicitly required.

It was thus common ground that claim 1 requires that the identifier address and inform the ECU by a 'selecting signal' in the above meaning about the "selected state", thus establishing the link between the user selection of the component, the automatic reading of the cID marked on the component and the activation of the indicator.

In the Board's view, in combination with the information provided in the patent specification, the transmission of such a 'selecting signal' including the cID from the identifier to address the ECU and the corresponding adaptation of the ECU to receive this signal (which implies a receiver), comes within the routine and common general knowledge of a person skilled in the art of network control, communication and configuration and can be implemented without further detailed teaching in the patent.

1.5.4 The Board notes that the selection of the component by the identifier and the activation of the indicator also presupposes that the ECU knows the cID, the implementation of which does not, however, pose an undue burden on the person skilled in the art (see point 1.3, in particular 1.3.5).

1.5.5 The appellant also submitted that if the ECU had to be able to receive a signal from the identifier, this presupposed that each component had to have at least a receiver controlled by the ECU. In contrast, claim 1 merely required a "transmitter and/or receiver" in Feature M4, and it was not apparent how the invention could be carried out without a receiver.

The Board, first, notes that Feature M4 only concerns a transmitter/receiver for communication with the CCU (which could be by wire, paragraph [0009]). Hence, claim 1 does not even specify a wireless receiver or transmitter for communication with the identifier at all. Paragraph [0019] only broadly discloses that the signal sent from the identifier may reach a desired component "via wireless communication or signaling".

In any case, the mere fact that a feature is not explicitly claimed or described does not prevent the skilled person from carrying out an invention if they understand that this feature must be present and know how to implement it.

1.5.6 Hence, the objections of insufficiency of disclosure discussed in point 1.5 are not convincing.

1.6 How is the pairing event carried out?

1.6.1 The appellant submitted that Feature M6e specified "initiating a pairing event" between the cID and the sl-ID by which "the desired component may be recognized by the central control unit by the sl-ID". However, claim 1 did not disclose any details on how the pairing event could be carried out. Claim 1 did not define whether or how the identifier was connected to the CCU

for exchanging information. Paragraphs [0020] and [0048] did also not specify exactly which information was transmitted and how. In the appellant's understanding, it was necessary that both IDs be transmitted to the CCU to fulfil the requirements of Feature M6e.

1.6.2 Indeed, Feature M6e does not define the technical details of how the pairing event is carried out. However, the requirement of sufficiency of disclosure applies to the disclosure in the patent as a whole.

1.6.3 The patent teaches different workable approaches for implementing the pairing event of Feature M6e such that the component is recognised by the CCU by the sl-ID, e.g. in paragraphs [0020] and [0048].

Contrary to the view of the appellant, not all these approaches require that the identifier transmit the result of the pairing to the CCU. For example, instead of notifying the CCU of the cID paired with a sl-ID, the sl-ID could be assigned "to the component such that it may be recognized by the system location ID as well as by its original component ID" (column 8, lines 2 to 6). Furthermore, the "paired system location ID and component ID" could alternatively be "stored in a separate memory and be used as a look up table or translator" (column 8, lines 12 to 16).

But paragraph [0020] also discloses that "information [...] to recognize the component ID" for communicating with the component corresponding to "the selected system location ID used in this pairing event" could be sent to the CCU (column 8, lines 6 to 12). This information could, for example, first be "stored in a local memory connected to the identifier" and "later on

be transferred to the CCU" (column 8, lines 28 to 33). According to paragraph [0048], the identifier "could be designed to either directly transfer the information to the central control unit or storing a number of paired components to be transferred as batch".

In the Board's view, it is clear both from the passages in the patent and from the skilled person's technical understanding that the information to be transmitted to the CCU according to the alternative of column 8, lines 6 to 12 includes the "paired system location ID and component ID" (column 8, lines 12 to 16). The Board also has no doubt that all options disclosed in the patent including a configuration of the identifier for direct transfer to the CCU (paragraph [0048]) come within the customary practice of the skilled person and do not represent obstacles for carrying out the invention.

1.7 Insufficiency of disclosure vs missing essential features

1.7.1 The appellant asserted that in line with the established case law, an independent claim had to contain all features essential for the invention to be workable. It argued that a lack of essential features in claim 1 resulted in a broader scope of protection than justified by the disclosure of the patent and, hence, led to a violation of the requirements of Article 83 EPC.

The Board disagrees.

1.7.2 Contrary to the uncited alleged case law referred to by the appellant, it is generally not sufficient to establish a lack of clarity of the claims to establish

lack of compliance with Article 83 EPC. Rather, it is necessary to show that the patent as a whole (i.e. not only the claims) does not enable the skilled person – who can avail themselves of the description and their common general knowledge – to carry out the invention (Case Law, II.C.8.2, first paragraph). In the current case, it has been set out above how the skilled person's common general knowledge and the patent as a whole provide information missing from claim 1 and enable the skilled person to carry out the invention.

1.7.3 The Board also does not share the appellant's concern that due to missing essential features the scope of protection of claim 1 was broadened to an extent that violated the "general principle that the protection obtained with the patent had to be commensurate with the disclosed teaching" (Case Law, II.C.5.4, fifth paragraph). Features which are not explicitly defined in claim 1 but, as understood by a skilled person, must inevitably be present, are implicit features of claim 1 which limit its subject-matter. Moreover, features which are disclosed as essential or explained in more detail in the description will be taken into account when determining the scope of protection under Article 69(1) EPC and the Protocol on the Interpretation of Article 69 EPC. Hence, in the Board's view, the disclosure gaps submitted by the appellant - if present at all - do not bring the above-mentioned legal principle out of balance.

1.8 In summary, none of the objections submitted regarding insufficiency of disclosure are convincing. Taking into account implicit features and the skilled person's common general knowledge, the patent discloses the invention as defined in claim 1 in a manner sufficiently clear and complete for it to be carried

out by a person skilled in the art. Hence, the ground for opposition under Article 100(b) EPC does not prejudice the maintenance of the patent according to auxiliary request 4 maintained by the opposition division, which consists of claims 1 to 6 as granted.

2. Novelty

2.1 It is common ground that documents D8 to D11 were published in 2013 and relate to the same HomeMatic smart home system.

2.2 D8 ("WebUI Handbuch") is a manual for the web user interface (WebUI) of the HomeMatic CCU. As explained on page 6 in D8, the CCU runs a web server providing the WebUI, which is accessible via a web browser on a processing device such as a PC over an Ethernet or USB connection (Figure 4.1 on page 7; chapter 5 on page 9). D8 explains, *inter alia*, how smart home components can be configured and connected (paired) with the CCU with the help of the WebUI.

D11 is a manual for the HomeMatic Wireless Room Thermostat HM-TC-IT-WM-W-EU, which is a wireless sensor component of the HomeMatic smart home system. It shows a component with a display (page 21).

There was agreement that the device on which the WebUI is executed can be considered the "identifier" of claim 1 and that the HomeMatic system according to D8 to D11 thus at least discloses Features M1 to M5 and steps M6a, M6c and M6e.

2.3 The appellant submitted that claim 1 (of auxiliary request 4 considered allowable in the decision under

appeal) lacked novelty over the HomeMatic smart home system according to D8 to D11.

It submitted that Figure 76 and pages 124 to 127 of D8 disclosed a configuration list with sl-IDs defined by a functional group (No. 8 "Gewerk") and a room (No. 9 "Raum") taken together. The sl-IDs, which necessarily had to be defined before allocating a component to them, represented, broadly, a "system description" which was, via the WebUI, provided to the identifier (Feature M6b).

Furthermore, in the skilled person's view, it was understood that the WebUI could be executed on a smartphone (with its light source and camera) as the identifier, via which reading the serial number printed on the component (D8, section "Homematic Funk-Komponenten [...] über die Seriennummer anlernen", page 121) could be automatically performed, thus implicitly disclosing the first part of Feature M6d.

The second part of Feature M6d did not specify a method step but a programming of the ECU, this merely requiring that the ECU be suitable for activating the indicator. This was known from the display of the wall thermostat and the antenna symbol shown on it in D11, pages 21 to 22, the display thus acting as an indicator as in claim 1. Moreover, the display was also configured to indicate a selected state in the configuration process (antenna symbol and countdown, first bullet point on page 22; error codes "Antennensymbol blinkt" and "nAC" on pages 38 and 39).

2.4 Feature M6b

Figure 76 on page 126 in D8 depicts an entry in the device inbox ("Geräte Posteingang") where newly recognised components are shown and can be configured. The entry for a new component includes its serial number (column 4) corresponding to a unique cID, and the components can be allocated (manually, by a user) to a functional group ("Gewerk", column 8) and a room ("Raum", column 9), as disclosed on pages 126 ff.

The Board agrees with the appellant that the information on new components in the device inbox could be considered to represent a configuration list and that a functional group and a room *in combination* could be considered to fall, broadly, within the term "system location ID". However, D8 does not disclose a system description and sl-IDs within the meaning of the claim 1 as a whole as explained in the following.

Claim 1 specifies that the identifier is provided with a system description as part of the "Preparation" phase I of Feature M6, i.e. before the "Selection procedure" and before "initiating a pairing event" (phases II and III of Feature M6). The knowledge of the system description including the system description IDs allows identifying the physical location of "the desired component to be configured" (Feature M6c). That is, the system description must contain sufficient information for a technician to "position himself where the component is mounted, at a location where the component ID may be identified by using the identifier" (see points 1.4.4 and 1.4.7).

By contrast, D8 does not disclose that the functional group ("Gewerk") and the room ("Raum") include sufficient information (such as details of physical locations or interconnections with other components)

for locating and identifying a desired component among a multitude of similar components in the same room.

Moreover, D8 does not disclose that the functional group and the room, respectively a "system description", are defined and provided to the identifier before the component is located and selected (see point 2.5). It is true that the functional groups and rooms must have been defined *before* a component can be allocated to them. However, according to D8, new rooms and functional groups can be defined at any time, also *after* a new component has been detected. Hence, while it is *possible* to define a plan or system description before implementing and configuring the system, D8 does not directly and unambiguously *disclose* that the CCU or the identifier is provided with such a system description before configuring components. Indeed, typically, the system description in a small smart home project instead only develops step by step in the course of the configuration process with every new component added.

Accordingly, D8 does not disclose Feature M6b.

2.5 Feature M6d (automatic reading of the marking)

In chapter 23 ("Geräte anlernen", pages 120 to 123), D8 discloses how a connection between the CCU and a new component can be established. For a wireless component ("Funk-Komponente"), two options are available: either a direct learning method ("direktes Anlernen", top of page 121), which requires activation of a learning mode both on the CCU (over the WebUI) and on the component (by manual activation); or "Anlernen mit Seriennummer" (pages 121 to 122) based on the serial number printed on the component, which is manually

entered into the WebUI ("Tragen Sie die Seriennummer des anzulernenden Geräts in das Feld "Seriennummer eingeben:" ein").

In both cases, the wireless communication of the identifier displaying the WebUI with the components takes place via the CCU. In contrast to the respondent's view, Feature M6d is not limited to a direct communication between the identifier and the components, so sending the 'selecting signal' selecting the component (see point 1.5.3 above) could, in principle, take place via the CCU.

However, neither option involves an "automatic reading of the marking on the component" (Feature M6d).
D8 discloses neither a smartphone with a camera as an identifier, nor that the serial number printed on the component is automatically read. Even if the skilled person had contemplated this, it is not inevitable and thus not implicitly disclosed in D8. Hence, D8 does not disclose the first part of Feature M6d of the automatic reading of the marking on the component comprising the cID.

2.6 Feature M6d (activation of the indicator)

It is true that the second part of Feature M6b does not specify a method step but only a programming of the ECU. However, it is established case law (see T 410/96, Reasons 4 to 6) that data processing features relating to "means for" carrying out a specific function are to be interpreted as means specifically adapted to carry out the given function as opposed to means merely suitable for carrying it out. Hence, Feature M6d requires that the ECU be not only suitable for activating the indicator but adapted to determine

whether "the component has been selected by the identifier" and to activate the indicator correspondingly "so as to indicate" that the condition is met. This feature is not fulfilled by the mere presence of the display of the wall thermostat controlled by its ECU in D11 (pages 21 to 22).

The method for connecting the wall thermostat with the CCU described on pages 20 to 22 in D11 corresponds to the direct learning method referred to above. The antenna symbol and the countdown (first bullet point on page 22) is shown on the display when this mode is activated on the wall thermostat by pressing and holding the Boost key (last bullet point on page 21), i.e. independent of any interaction with an identifier.

The appellant argued that the antenna symbol was also present if the connection with the CCU was established by the other method based on the serial number ("Anlernen mit Seriennummer"). As the ECU does not recognise the reading of the serial number, the antenna symbol can only be activated when the ECU receives a confirmation message that its cID has been retrieved. However, D8 or D11 does not explicitly disclose such a message or details about the communication. It is thus not derivable that the identifier is involved in sending such a message and that the antenna symbol indicates that "the component has been selected by the identifier" (Feature M6d).

The error codes ("nAC" or in the form of a blinking antenna symbol) on page 39 relate to communication/ connection failures and do also not indicate a selected state after a successful identification. The indication that the learning process has failed only applies to the direct learning method, which does not involve the

identifier (otherwise the component would not know that a learning process has been initiated and failed).

The appellant's written submissions are also understood such that the indicator could be seen in the pop-up window requiring to enter a security key for accessing the component (D8, page 122, second bullet point). However, this window appears in the WebUI displayed on the identifier, and thus does not represent an indicator of the component (Feature M5) controlled by the ECU.

Hence, the HomeMatic system according to D8 to D11 does not disclose the part of Feature M6d relating to the activation of the indicator "to indicate the component has been selected by the identifier", either.

2.7 Accordingly, the subject-matter of claim 1 of auxiliary request 4 (main request) is novel over the HomeMatic smart home system according to D8 to D11 and differs from it by Features M6b and M6d.

3. Inventive step starting from the HomeMatic smart home system according to D8 to D11 in combination with D12

3.1 The appellant submitted that starting from D8, which was primarily suitable for home automation, the skilled person would have sought to solve the problem of how to provide a system and method for configuring larger projects without mistakes. The skilled person in building automation knew suitable models such as LON (local operating network) technology, a well-established standard for control networking, e.g. of HVAC (heating, ventilation and air conditioning) systems, covered in textbook D12.

D12 disclosed a configuration method for complex building automation systems (pages 311 to 312), including Features M6a to M6e as follows.

A PC provided with a plan including sl-IDs of components and their connections and a barcode reader were brought to the real network mounted according to the plan ("das inzwischen montierte reale Netzwerk auf der Baustelle", Feature M6a) and connected to the network (page 313, section 13.2.4, first paragraph) to pair ("zuordnen") the component's IDs ("Neuron IDs") with corresponding sl-ID ("den logischen Knoten seines Projekts", page 313, section 13.2.4, second paragraph; Feature M6e).

The pairing required user interaction, for example according to the manual entry method ("Manuelle Eingabe", D21, page 314) disclosing that the cID could be read from a barcode label on the component by a barcode reader. The PC together with the barcode reader represented an "identifier" provided with the plan, the "system description" (Feature M6b). Reading the barcode represented the step of "sending an identifying signal" being "an automatic reading of the marking on the component" (first part of Feature M6d) and presupposed identifying the physical location of the component and bringing the identifier within reach (Feature M6c).

The manual entry method could be refined by the "Find and Wink" method (page 314), according to which the component activated an indicator for indicating that it had been selected by the identifier by a corresponding message addressed to its cID ("spezielle Nachricht", page 65, second paragraph). Find and Wink was not an alternative identification method but could be used to complement the manual entry method. Moreover, D12

disclosed that the manual entry method was concluded by sending a first management message to the component addressed to the cID and including its network address information ("Das allererste Management-Telegramm an einen Knoten [...] darf nur mit dessen Neuron ID addressiert sein", page 314, section "Manuelle Eingabe", second last sentence). Upon receipt of this message, which could be considered a selection by the identifier via the CCU, the component controlled its indicator to indicate its status, e.g. as completely configured ("vollständig konfiguriert", page 65, Table 3-4). Hence, D12 also disclosed the indicator signal according to the second part of Feature M6d.

The skilled person was aware that the configuration scheme disclosed in D12 was suitable for large systems ("Dies erleichtert die Übersicht in der Montagepraxis großer Systeme", page 65, second paragraph, last sentence, in D12). As the skilled person was also aware of other suitable technologies, they would not necessarily have adopted the complete LON technology including the neuron chip. However, they would have incorporated the general configuration scheme from D12 in the HomeMatic smart home system according to D8 to D11 and would thus have arrived at the subject-matter of claim 1 in an obvious manner.

3.2 The Board is not convinced by this line of argument.

3.2.1 The provision of a system description (plan) before the configuration (according to Feature M6b) and the use of an indicator as confirmation of the selection before initiating the pairing event (according to Feature M6d, see point 1.5.2) can be considered to facilitate the setup and configuration of large systems with many components without mistakes.

However, starting from the HomeMatic smart home system of D8 to D11, which addresses and works well for small home automation projects, the skilled person would not have been confronted with the submitted problem concerning complex systems with many components. Hence, D8 is not a suitable starting point, or the skilled person starting from the HomeMatic system would not have sought to solve the problem - and "would" thus not have arrived at the subject-matter of claim 1 in an obvious manner.

3.2.2 Moreover, even if the skilled person had considered D12 for solving the problem submitted by the appellant, they would have tried to adopt the LON technology completely. The idea of borrowing only some selected concepts or method steps and integrating them with the technology of the HomeMatic smart home system alone suggests an inventive step - or an approach based on hindsight.

Adopting the LON technology in the system of D8 to D11 would have required a complete redesign of the control system of D8 including replacement of the ECU of the components of the HomeMatic system with the neuron chip required by the LON technology (mentioned throughout D12). This would by far exceed what a skilled person "would" have done.

3.2.3 Furthermore, D12 does not disclose the manual entry method and "Find and Wink" in combination, in particular not in the submitted sequence: the manual entry method requires that the user has found the component so that they can read the cID (with the barcode reader). Find and Wink, by contrast, is disclosed to help if the component cannot be located

("Ist der Knoten auf der Baustelle zunächst nicht auffindbar [...]", page 314, section "Find and Wink", first line), not as confirmation of the selection. Hence, D12 does not disclose the submitted "refinement" of the manual input method by using Find and Wink additionally after having read the cID from the barcode.

It is true that according to the manual entry method, the configuration is completed with a first management message with configuration data (network addresses). According to Table 3-4 on page 65, the completion of configuration ("vollständig konfiguriert") is indicated by the LED indicator switching off. Irrespective of whether this can be considered an "activation" of the indicator, the first management message is only sent after the pairing is completed ("Nach der Identifizierung der Knoten und der entsprechenden Vervollständigung der Projektdatenbank und aller Pläne" and after allocating logical addresses, page 314, section "Manuelle Eingabe", at the beginning of the second paragraph).

Hence, D12 does not disclose that the indicator is activated to "indicate the component has been selected by the identifier" as confirmation of the "Selection procedure" (phase II of Feature M6) before a pairing event is initiated in the subsequent configuration step (phase III of Feature M6; see point 1.5.2 above). Accordingly, D12 does not disclose at least the second part of Feature M6d relating to the activation of the indicator.

3.3 Accordingly, starting from D8 in combination with D12, the subject-matter of claim 1 of auxiliary request 4 (main request) involves an inventive step.

4. Inventive step starting from the HomeMatic smart home system according to D8 to D11 in combination with D1

4.1 According to the appellant, the skilled person would have incorporated Features M6b and M6d from D1 into the method of D8, so that the subject-matter of claim 1 of auxiliary request 4 (main request) did not involve an inventive step.

D1 related to energy management systems, including HVAC systems (paragraph [0027]), and disclosed an installation and configuration method (paragraph [00285]) in which a barcode label affixed to the housing of a component (e.g. a controller 626, a thermostat 628 or other components of a HVAC 630, Figure 6) was scanned by a user with a mobile device 632 to authenticate the system (paragraph [0288]). According to paragraphs [0234] and [0238], the thermostat could be provided with indicators for indicating different modes of the component. Taken together, D1 disclosed Feature M6d.

Furthermore, a system description was implicitly required for configuration, installation and authentication, and the mobile device of paragraph [0288] was thus implicitly provided with such a plan, disclosing Feature M6b.

4.2 In the Board's view, the same reservations as to the obviousness of implementing a completely different configuration process in the system of D8 as set out for the combination with D12 apply (see points 3.2.1 and 3.2.2).

4.3 Furthermore, D1 does not disclose details of the installation process and the authentication which takes place "upon a user scanning a bar code label" (line 16 of paragraph [0288]). It is not disclosed that this process involves an indicator on the component.

Paragraph [0234] does relate to indicators 1116 on a thermostat component 1100 configured to identify a mode, e.g. (paragraph [0238]) "off", "A/C", "Heat", "Fan", "a smart energy mode" or "various other features or combination of features". However, these features and modes are not disclosed in the context of an identification, installation or authentication process as in paragraph [0288].

Hence, D1 does not disclose the features from paragraphs [0288] and [0238] in combination as required in the second part of Feature M6d.

4.4 The Board does also not agree that Feature M6b was implicitly disclosed. The term "installation" in paragraph [0288] in D1 does not refer to the mechanical assembly of the system at the residence site 604 but to the process of establishing a connection with the server 602. Such a process does not necessarily require a plan or system description (see D8). Likewise, the "authentication" of the system involving activating a user account on a server and/or software on a mobile device does not require a detailed system description, either. D1 does not disclose sl-IDs within the meaning of claim 1 (see point 2.4 above; the GPS location of the mobile device 632 at the "site" 604 does not correspond to a specific sl-ID for each component provided before the selection procedure). Hence, D1 also does not disclose Feature M6b.

4.5 Accordingly, the subject-matter of claim 1 of auxiliary request 4 (main request) also involves an inventive step when starting from the HomeMatic smart home system of D8 to D11 in combination with D1.

5. Inventive step starting from common general knowledge in combination with D12

5.1 The appellant submitted, that a generic HVAC system with Features M1 to M5 was known from the common general knowledge, as exemplified by document D1. Starting from such a system as the closest prior art, the problem was how to implement a specific configuration method, in particular a method that avoided mistakes made in the configuration of large projects (paragraph [0006] of the patent). In view of this problem, the skilled person would have consulted D12 disclosing Features M6a to M6e and would thus have arrived at the subject-matter of claim 1 of auxiliary request 4 (main request) in an obvious manner for similar reasons as submitted for lack of inventive step starting from D8 (see point 3.1 above).

The Board does not agree with this line of argument.

5.2 Regardless of whether the patent document D1 can be considered proof of the alleged common general knowledge, if an HVAC system including network-controlled components with ECUs, receivers and/or transmitters and an indicator (Features M3 to M5) is part of the skilled person's common general knowledge, at least a basic communication and configuration scheme implemented on the components and the CCU is also part of that common general knowledge (as can also be seen in D1).

However, the specifics of the alleged common general knowledge relevant to the current case, that is the details of the communication and configuration scheme, have not been established by the appellant. The vague common general knowledge of an HVAC system submitted by the appellant is thus merely an abstract concept, isolated from its technical context, not a technically well-defined starting point.

In the absence of the relevant technical details in the alleged common general knowledge, it is not possible to establish the concrete distinguishing features of claim 1 to consider their technical effects vis-à-vis the disclosure of the closest prior art and define an objective technical problem tailored to the distinguishing features and their effects. Basing the analysis on a thus abstracted torso of common general knowledge would result in a technical problem defined depending on what features the appellant has decided to omit, i.e. it would not be based on objectively determined differentiating technical features, thus resulting in an artificial, possibly hindsight-based analysis. Moreover, without being able to assess the extent of modifications and potential incompatibilities with the technical details of the closes prior art, it is not possible to conclude on whether the skilled person "would" (and not only "could") have implemented the features of D12 in the HVAC system according to the alleged common general knowledge in an obvious manner.

Hence, the abstract common general knowledge submitted by the appellant in the case at hand does not allow properly assessing inventive step. The Board thus concludes that the submitted common general knowledge in the current case is too vague and does not represent

a valid starting point for the assessment of inventive step.

5.3 Moreover, D12 does not disclose at least Feature M6d, either, as set out under point 3.2.3 above.

5.4 Accordingly, the subject-matter of claim 1 of auxiliary request 4 (main request) also involves an inventive step when starting from common general knowledge in combination with D12.

6. Summary

As none of the appellant's objections against auxiliary request 4 considered allowable by the opposition division (main request) succeeds, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Grundner C. Herberhold

Decision electronically authenticated