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Datasheet for the decision of 20 July 2023

Case Number: T 0005/21 - 3.5.02

Application Number: 16166748.0

Publication Number: 3093827

IPC: G08B25/14, G08B29/04

Language of the proceedings: EN

Title of invention:
Automatic reporting of prognosis data from wireless mesh sensors to cloud

Patent Proprietor:
Honeywell International Inc.

Opponent:
Hekatron Vertriebs GmbH

Relevant legal provisions:
EPC Art. 100(b), 83

Keyword:
Sufficiency of disclosure - main request and auxiliary requests 1 to 12 (no)

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Case Number: T 0005/21 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 20 July 2023

Appellant: (Opponent)	Hekatron Vertriebs GmbH Brühlmatten 9 79295 Sulzburg (DE)
Respondent: (Patent Proprietor)	Honeywell International Inc. 115 Tabor Road M/S 4D3 P.O. Box 377 Morris Plains, NJ 07950 (US)
Representative:	Houghton, Mark Phillip Patent Outsourcing Limited 1 King Street Bakewell, Derbyshire DE45 1DZ (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 4 November 2020 rejecting the opposition filed against European patent No. 3093827 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	R. Lord
Members:	C.D. Vassoille
	R. Cramer

Summary of Facts and Submissions

I. The appeal of the opponent lies against the decision of the opposition division rejecting the opposition against European patent no. 3 093 827.

II. In the decision under appeal, the opposition division came to the conclusion that the grounds for opposition under Articles 100(a) and (b) EPC did not prejudice the maintenance of the patent as granted.

III. The parties were summoned to oral proceedings. In a communication under Article 15(1) RPBA 2020 annexed to the summons to oral proceedings, the board informed the parties *inter alia* of their preliminary opinion that the ground for opposition division under Article 100(b) EPC prejudiced the maintenance of the patent as granted and that this would appear to apply correspondingly under Article 83 EPC to each of the auxiliary requests.

IV. Oral proceedings before the board took place on 20 July 2023 as a videoconference with the consent of the parties.

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

The respondent (patent proprietor) requested that the appeal be dismissed (main request), or if that was not possible that the patent be maintained in amended form on the basis of one of auxiliary requests 1 to 12, all filed with the reply to the statement of grounds of appeal.

V. Claim 1 of the patent as granted (main request) has the following wording:

"An apparatus comprising:
a first wireless sensor (12, 14), wherein the first wireless sensor (12, 14) detects threats within a secured geographic area (16);
a second wireless sensor, wherein the second wireless sensor (12, 14) detects the threats within the secured geographic area (16);
a processor (30, 32) of each of the first and second wireless sensors (12, 14) that detects internal operational conditions of the sensor (12, 14) and reports the internal operational conditions;
a control panel processor (30, 32) that receives and correlates the internal operational conditions of a sensor among the first wireless sensor and the second wireless sensor (12, 14) to a potential failure mode and reports the potential failure mode to a cloud application (44); and
a cloud processor (46) of the cloud application (44) that determines a location of the sensor (12, 14) and reports the potential failure mode and the location to a person responsible for the sensor (12, 14),
wherein the first wireless sensor (12, 14) and the second wireless sensor (12, 14) are arranged into a mesh network."

VI. Claim 1 of each of the auxiliary requests at least comprises the following feature of claim 1 of the main request:

> "... a cloud processor (46) of the cloud application (44) that determines a location of the sensor (12, 14) ..."

VII. The appellant's arguments, as far as they are relevant for the present decision, can be summarised as follows:

The patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The invention according to claim 1 of the main request referred to an apparatus comprising a cloud processor of the cloud application that determines a location of the sensor. The patent did not describe how the cloud processor could determine the location of the sensor solely on the basis of the information described in the patent to be sent to the cloud processor. Even if the cloud processor would be considered to receive an identifier of a specific sensor, the identifier as such did not enable the cloud processor to determine the location of the sensor. Furthermore, a position of the control panel or of the secured geographic area did not correspond to a location of the sensor, because several sensors were assigned to the control panel and to the secured geographic area and the distance between these elements could be such that the potentially faulty sensor could not be easily located by a responsible person.

VIII. The respondent's arguments, as far as they are relevant for the present decision, can be summarised as follows:

The patent was not prejudiced by the ground for opposition under Article 100(b) EPC. The term "determine" in the sense of claim 1 meant "ascertain or establish exactly by research or calculation". Thus, the cloud processor in this sense ascertained or established where the wireless sensor was. Since the cloud processor was located remotely to the sensors, it could not perform any physical ranging or measurement

in order to determine the location. The skilled person would be aware of that and exclude a corresponding interpretation of claim 1. The only reasonable interpretation for the person skilled in the art was thus that the cloud processor determined the sensor location in the sense that it "ascertained" the sensor location, which included retrieving a location of the sensor from a database. Since the type of security system which was the subject of the invention would normally be thoroughly documented, such information would have been available to the cloud processor.

In order for the cloud processor to determine a location of the (potentially faulty) sensor, it could receive a GPS signal from the control panel or from individual sensors, if they were equipped with GPS modules. Furthermore, paragraph [0040] of the patent specifically disclosed that the location of the panel was provided to the cloud.

It was further noted that the degree of accuracy of a location of the sensor to be determined was not defined in claim 1, and thus the GPS location of the control panel would be considered by the skilled person as a proxy for the location of the sensor. Furthermore, "a location of the sensor" as recited in claim 1 referred to a location within the secured geographic area, and no higher accuracy of a sensor location to be determined by the cloud processor was required. Consequently, the location of the secured geographic area could be considered to correspond to a location of the sensor to be determined by the cloud processor within the meaning of claim 1. Since geographic locations were static, there was also no difference between the current location of the sensor and a previously stored location of the sensor.

With respect to reporting the potential failure mode to the cloud application as defined in claim 1, it was further noted that the skilled person would at least consider including location information about a location of the respective sensor in the corresponding report.

Reasons for the Decision

1. Main request - Ground for opposition under Article 100(b) EPC

1.1 The patent does not describe the invention according to claim 1 of the main request in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Technical field

1.2 The patent is generally concerned with detecting a potential failure mode of a sensor that detects threats in a secured geographic area, and with reporting the potential failure mode and location of that sensor to a person responsible for it.

Claim interpretation

1.3 According to claim 1, the apparatus comprises a first and a second wireless sensor to detect threats within a secured geographic area. The parties agreed that the type of sensor, the type of threat and the type and extent of the secured geographic area are not defined by claim 1.

1.4 On the other hand, the parties did not agree on the interpretation of the following feature of claim 1:

> "a cloud processor (46) of the cloud application (44) that determines a location of the sensor (12, 14) ..."

1.5 The board agrees with the respondent to the extent that it is not justified to interpret the above feature in an unjustifiably narrow manner. In particular, the board accepts the respondent's argument that claim 1 cannot be understood as being limited to the cloud processor determining a current (i.e. an actual) location of the sensor, which would amount to determining a location of the sensor in "real time". The term "a location" is not further defined in claim 1 and there is no indication in the context of claim 1 that a location of the sensor is necessarily the actual and thus current location. The appellant's objection that the sensor can be movable and that the location must then necessarily be able to be determined in "real time" concerns a hypothetical case using a very special type of sensor. The board is convinced that the skilled person would not immediately consider this special case when reading claim 1.

1.6 The board also agrees with the respondent that the required accuracy of a location of the sensor to be determined by the cloud processor is not defined in claim 1. A person skilled in the art would understand that it is not necessarily the exact location of the sensor that needs to be determined in order for a person to find the respective sensor without undue burden. Rather, an approximate or relative position of the sensor, depending on the specific application and configuration of the claimed apparatus, may well be considered to be within the scope of a functionally reasonable interpretation of claim 1.

However, this consideration on the part of the person skilled in the art is not entirely without limits and, in particular, is not entirely unrelated to the result envisaged by the claimed invention. The objective of

the present invention is not only to identify the potentially faulty sensor, but an important aspect is to locate it in such a way that a responsible person can take the necessary measures to remedy the potential fault. The last sentence of paragraph [0040] of the patent in this context states that "[i]f the responsible person is a dealer, the dealer can call-up the end-users and advise the end-user as to the maintenance activity needed to avoid false alarm penalties that would otherwise be incurred due to a faulty sensor".

It is therefore clear from the patent as a whole that the claimed function of the cloud processor is to be interpreted in such a way as to fulfil the objective of the invention. Consequently, the cloud processor must determine the location of the sensor at least accurately enough to allow a person to find the sensor without undue burden. It follows that the person skilled in the art would place the functionally defined cloud processor, which determines a location of the sensor, in the technical context that the result of the determination is such that the sensor can be found without considerable effort on the basis of the location information transmitted by the cloud processor to the responsible person. Any wider technical understanding of the claim in relation to determining a location of the potentially faulty sensor would not be in the interest of the intended purpose and would therefore not be considered by a person skilled in the art to be part of the claimed subject-matter.

1.7 As regards "a location of the sensor" within the meaning of claim 1, another central point of the respondent's argument was that the sensors necessarily had to be in the vicinity of the control panel in order

to communicate with it. Based on this interpretation of claim 1, they considered that the location of the control panel processor sufficiently reflected a location of the sensors within the meaning of claim 1.

The board cannot agree with this argument. In particular, it is not apparent why claim 1 should be interpreted more narrowly with respect to assessing the positional relationship between the control panel processor and the sensors. Claim 1 says nothing about the spatial relationship of the control panel processor and the sensors. Merely functionally, claim 1 defines that the control panel processor receives and correlates the internal operational conditions of a sensor among the first wireless sensor and the second wireless sensor to a potential failure mode. However, claim 1 does not define where the control panel processor gets this information from. Furthermore, claim 1 states that a processor of each of the first and second wireless sensors detects internal operational conditions of the sensor and reports the internal operational conditions. Again, claim 1 does not specify to whom the report is sent.

It is thus clear that claim 1 does not require a direct communication link between the sensors and the control panel processor. This also makes sense from a technical point of view, because according to claim 1 the sensors are arranged into a mesh network, so that there are (child) sensors which are not directly communicatively connected to the control panel processor, but only indirectly via a centrally arranged sensor (see for example the patent specification in paragraph [0035]).

The primary advantage of mesh networks is that the infrastructure of the network is decentralised and

simplified, as each node only needs to communicate with the next node. In the present case this is especially beneficial when a sensor is too far away to connect directly to a central location such as the control panel processor. Therefore, it cannot be said that the apparatus of claim 1 implies a physical proximity between the control panel processor and each of the sensors.

Furthermore, the device according to claim 1 is not limited to the use of any type of network protocol. However, even if communication via a standard protocol as defined in the description (IEEE 802.15.4, see paragraphs [0023] and [0025]) were to be assumed, the distances between the control panel processor and the sensors could increase considerably in a mesh network, as the appellant has rightly pointed out. At least with the remote sensors, there can be no doubt that the skilled person would not consider the control panel processor to be located near a respective sensor.

1.8 Finally, the meaning of the term "determines" of the above feature (see point 1.4) was the subject of dispute between the parties. The meaning of the term is undoubtedly unclear in the context of claim 1. The respondent has further conceded that the term implies at least some kind of activity or operation of the cloud processor that is performed to determine a location of the potentially faulty sensor. Furthermore, the board agrees with the respondent to the extent that this understanding at least includes retrieving appropriate information or data by the cloud processor that enables it to determine a location of the sensor.

It should also be noted that the respondent further argued that the skilled person would not understand the

cloud processor to determine a location of the sensor on its own, because the cloud processor was located remotely from the sensors and it was therefore technically impossible for it to perform any measurements or calculations to determine a location of the potentially faulty sensor. Rather, in order to determine a location of the sensor within the meaning of claim 1, the cloud processor was dependent on receiving information on the basis of which it could then determine a location of the sensor.

One way to carry out the invention

1.9 The respondent referred to the case law of the Boards of Appeal on sufficiency of disclosure and in particular to the general principle that an invention is in principle sufficiently disclosed if at least one way is clearly indicated which enables the skilled person to carry out the invention. It was further argued that the cloud processor was functionally defined and that, consequently, the required criterion was that "there are suitable variants known to the skilled person through the disclosure or common general knowledge", as found by the Board of Appeal in T 0292/85, OJ EPO 1989, 275, Headnote 1.

Based on these principles, the respondent further argued that one such way to carry out the invention was disclosed in paragraphs [0031] to [0040] of the patent.

1.10 The board does not share the respondent's view that the patent clearly discloses one way of carrying out the invention, and in particular a specific way for the cloud processor to determine a location of the sensor.

1.11 In particular, it is not directly and unambiguously derivable from paragraph [0031] of the patent that the cloud processor receives information enabling it to determine a location of the sensor. The appellant correctly argued that, from a technical point of view, it is not possible that a physical (geographic) address or location can be transmitted via the TCP/IP protocol or simply be derived from an IP address. Thus, the notification mentioned in paragraph [0031] was not capable of providing any information about a geographic location of the sensor. The respondent has not provided any explanation as to how a physical address could possibly be included in or derived from an IP address or otherwise transmitted via the TCP/IP protocol. Therefore, the board agrees with the appellant that paragraph [0031] does not directly and unambiguously disclose the transmission of any information that could enable the cloud processor to determine a location of the (potentially faulty) sensor.

1.12 Paragraph [0032] merely discloses that the cloud application may include one or more computer programs running on a processor. While it is clear that a computer program may somehow contribute to determining a location of the sensor, it does not provide any explicit or implicit technical teaching as to what activity or operation the processor performs in order to determine a location of the sensor and what data or information is processed for that purpose. The board is therefore not convinced by the respondent's arguments in this respect.

1.13 Paragraph [0033] discloses, among other things, a notification sent to the responsible person that includes an identification of the sensor by location and time. As further explained in that paragraph, the

identification of the sensor may be based on a geographic location of the sensor and/or the security system, such as an address of the security system or a GPS location. Consequently, this passage is concerned with the notification sent by the cloud processor to a responsible person and does not include any information about how the processor actually determines a location of the sensor.

In particular, the board does not share the respondent's view that paragraph [0033] of the patent in any way implies that a location of the (potentially faulty) sensor within the meaning of claim 1 corresponds to a location of the secured geographic area. In this respect, the board refers to the reasoning set out under point 1.15 below.

1.14 Paragraph [0034] of the patent is concerned with the content of the notification to be sent to the responsible person with regard to a potential failure, such as a battery failure or a low battery level. It is not apparent to the board what the skilled person could infer from this disclosure about how the processor determines a location of the sensor.

1.15 From paragraph [0040] the person skilled in the art can derive that "the cloud" receives a notification of the potential failure along with the GPS location of the panel. As noted above, the board can accept the respondent's argument that an absolute position of the sensor is not necessarily required by the wording of claim 1 and that it might, in principle, be plausible that a location of the sensor is determined indirectly or relatively by determining a location of another element positioned in the vicinity of the sensor.

On the other hand, as stated above in relation to the interpretation of claim 1, the board considers that the skilled person would understand claim 1 to mean that the cloud processor determines a location of the (potentially faulty) sensor at least sufficiently accurately so that it can be found among the multiple sensors without the responsible person having to make considerable additional effort. The board in this context additionally refers to what was stated under point 1.7 above with regard to a location of the control panel processor relative to the sensors. Similar considerations apply in principle to the location of the secured geographic area.

However, according to claim 1, the control panel processor receives and correlates the internal operating conditions of a sensor among a first and a second wireless sensor. Accordingly, a secured geographic area is associated with not only one sensor, but at least two sensors. It follows that the control panel is functionally (at least indirectly) connected not only to one but to at least two sensors, which may suitably be located in the vicinity of the control panel or, in the case of a child sensor (see paragraph [0035] of the patent), in the vicinity of a centrally arranged sensor. In view of this, the appellant has rightly questioned whether the location of a control panel can serve to determine the location of a potentially faulty sensor with sufficient accuracy and certainty.

In particular, it is not apparent, and the respondent has not provided any convincing arguments, how it should be possible, without further investigation or additional information, to distinguish the location of the sensor in question among the multiple sensors that

are functionally connected to the control panel. In any event, the provision of any additional information that may be used for this purpose, relating to the sensor to be located, is not apparent from the patent.

Consequently, in the absence of any further description in the patent of how a location of the (potentially faulty) sensor can be determined among the multiple sensors from the position of the control panel, paragraph [0040] cannot be regarded as disclosing a way of carrying out the invention according to claim 1. Similar considerations apply to a location of the secured geographic area.

1.16 It should also be noted that paragraphs [0023] and [0025] of the patent generally disclose communication between the sensor and the control panel using the IEEE 802.15.4 protocol. However, the board agrees with the appellant that this wireless communication protocol is used at most for parts of the Zigbee standard. The IEEE 802.15.4 protocol and the Zigbee standard are therefore not identical and the person skilled in the art would not understand these passages as implying the use of Zigbee.

Irrespective of the above, the use of any type of wireless communication standard between the control panel and the sensors does not necessarily mean that a location of the sensor in relation to a location of the control panel is known or is at least such that the cloud processor can determine a location of the sensor that is sufficiently accurate for the person in charge to find the sensor among other sensors without undue burden, based on the known geographic location of the control panel. In this context, the appellant convincingly argued that a communication radius of 30 m

within a building, including a number of wireless sensors within that range, would make it very difficult in practice to find the relevant sensor.

More specifically, the appellant has rightly argued that finding the specific sensor among several, in particular if for example located in a multi-storey building, would be a difficult task, if the responsible person would only receive, as "a location of the [potentially failed] sensor", a GPS location of the control panel processor or a location of the secured geographic area, i.e. the multi-storey building, be it a GPS location or a physical address. In this case, the information about the sensor's location would be so inadequate for the intended purpose, namely finding the potentially faulty sensor, that this could not be done without undue burden or at least without the help of some sort of additional identifier. The skilled person would therefore not consider a corresponding technical implementation as an adequate way to implement the claimed invention with regard to determining a location of a (potentially faulty) sensor.

1.17 Finally, the board is not convinced that the feature of claim 1, according to which the control panel processor reports the potential failure mode to a cloud application, implies that the report provides location information to the receiver of the report, i.e. to the cloud application. In any event, even if the corresponding feature of claim 1 would imply transmitting location information of the control panel to the cloud application, this would not go beyond what the skilled person can derive from paragraph [0040] of the patent.

Furthermore, the transmission of any kind of identifier or location of the potentially faulty sensor along with the report to the cloud application cannot be derived from the patent, either explicitly or implicitly. It is also not apparent, and the respondent has not provided sufficient detail, how such an identifier would be configured and how the cloud processor would use such an identifier to determine a location of the sensor within the meaning of claim 1.

1.18 Even taking into account the respondent's argument that "determining a location" could simply mean looking up a location in a database, the board does not reach a different conclusion. In any case, the patent does not disclose a database or a corresponding data source that could enable the cloud processor to determine a location of the sensor. It is also entirely unclear where a corresponding database would be provided and how the corresponding data for creating the database would be collected and provided. Neither claim 1 nor the patent as a whole is restricted to the type of thoroughly documented security system to which the respondent referred in this context.

1.19 In conclusion, contrary to the respondent's argument, the patent does not disclose a way of implementing the invention according to claim 1, in particular, how a cloud processor can determine a location of the sensor within the meaning of claim 1.

Common general knowledge

1.20 The question to be answered in the present case is therefore whether the person skilled in the art is able to identify, on the basis of common general knowledge, how the apparatus is to be implemented in such a way

that the cloud processor determines a location of the sensor in order to achieve the desired effect, i.e. to find the potentially faulty sensor without undue burden, in order to avoid false alarm penalties that may arise due to a faulty sensor.

1.21 The board is not convinced that this is the case. A relevant consideration in the board's assessment is that the respondent has consistently argued that the cloud processor itself cannot calculate or measure a location of the sensor, but is dependent on receiving or retrieving information from other parts of the apparatus from which it can then "determine" a location of the sensor. The board considers this argument to be plausible.

1.22 It follows that, in order to carry out the invention of claim 1, the person skilled in the art must, for a specific configuration of the claimed apparatus, not only consider how the cloud processor could possibly determine a location of a sensor, but also what information would be required for this and how the other elements of the apparatus must be configured and interrelated for this purpose.

In the present case, therefore, the question of whether the person skilled in the art can implement the invention on the basis of common general knowledge does not only concern the specific implementation of the cloud processor which determines a location of the sensor. Rather, the question requires consideration of the implementation of the claimed apparatus as a whole, since the information required by the cloud processor to determine a sensor location depends on the other conditions and configuration of the apparatus. In the absence of such information in the patent, the person

skilled in the art would have to derive all these details, at least for the considerable number of technically meaningful embodiments falling within the ambit of claim 1, from common general knowledge, which the board does not consider possible.

1.23 In particular, as the board has already explained above, it is not apparent how a person skilled in the art could determine a location of the sensor with a sufficient degree of accuracy on the basis of the position of the control panel or of the secured geographical area, without the responsible person or any other person being confronted with an unreasonably high additional burden, which would ultimately lead this person to determine a location of the sensor instead of the cloud processor.

The respondent's general assertion that the control panel necessarily has the relevant information of the sensor to be located is in any case not a convincing argument. As the appellant has correctly pointed out in this context, the sensors according to claim 1 are organised in a mesh network, which may exclude direct communication between a sensor and the control panel, depending on whether it is a centrally located sensor or a child sensor (see for example paragraph [0035] of the patent). In particular, in the case of indirect communication between a child sensor and the control panel, it is neither apparent nor has the respondent explained what specific information the control panel could use to distinguish a location of the sensor, at least to a certain degree, from locations of other sensors and how it could obtain the relevant information from these sensors.

1.24 Another way to implement the claimed invention, as presented by the respondent, concerned the reception of GPS positions of the sensors by the control panel, which could then be forwarded to the cloud processor to determine a location of the (potentially faulty) sensor. It was not in dispute that this would require each sensor to have its own GPS module. GPS modules, in particular GPS receivers and corresponding transmitters, may have been generally known at the effective filing date of the patent. However, the implementation of such elements in mesh sensor networks for detecting threats in a secured geographic area is not a trivial task from a technical point of view. In particular, the board agrees with the appellant that a corresponding technically complex solution would clearly go beyond the skilled person's common general knowledge, which is applicable in the present case, to find suitable ways of implementing the invention without unreasonable effort.

Furthermore, even the respondent has argued that a location determination based on GPS within a building would be difficult. The board therefore understands the respondent's arguments concerning the sensors transmitting their GPS position to the control panel processor as referring, at most, to very specific embodiments of the claimed apparatus where the "secured geographic area" is not or at least does not include a building.

1.25 The board is also not convinced by the respondent's argument that the skilled person could carry out the invention according to claim 1 on the basis of a "logical location" of the sensor. This may not be excluded in principle by the wording of claim 1. However, it is not apparent to the board how

information about a corresponding "logical location" could be generated and obtained by the control processor in order to determine a location of the sensor, and the respondent did not provide any further details in this respect. This argument therefore does not convince the board.

1.26 The respondent has further argued that a (last known) location of the sensor could be pre-recorded and retrievable by the cloud processor from a database of the cloud processor. However, it is not apparent, and the respondent has not convincingly argued, how the last known location of the sensor would be determined and recorded and how pre-recorded data possibly generated on that basis could be made available to the cloud processor. It is therefore not apparent to the board that such a solution would be considered by the skilled person based on common general knowledge.

1.27 It is also not apparent to the board that a person skilled in the art would consider including location information or other means of identifying the location of the sensor in connection with the potential failure mode report sent from the control panel processor to the cloud application. In particular, it is not clear how and where corresponding location information would be generated in the apparatus, and what activity or operation the cloud processor would perform to determine a sensor location on that basis.

Concluding remarks

1.28 Finally, the board notes in general that the scope of claim 1 encompasses a large number of technically meaningful embodiments of the apparatus, not all of which the respondent may have had in mind when drafting

the patent. In particular, the apparatus of claim 1 covers a large number of different combinations of any kind of different sensors, threats and secured geographical areas, not only in terms of the quantity of these individual elements, but also in terms of their functional and relative positional relationship to each other.

1.29 It is an established principle that the mere fact that the scope of a claim is broad does not in itself lead to a lack of sufficiency of disclosure. The board further agrees with the respondent that the onus is normally on the opponent to substantiate, by means of verifiable facts, serious doubts that the patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the skilled person. In the present case, however, the patent does not contain any description of how the cloud processor determines the location of the (potentially faulty) sensor, which casts serious doubts on whether the invention can actually be carried out by an average person skilled in the art without undue experimentation or inventive skill by following the instructions of the patent.

1.30 Furthermore, as already noted above, in the current case the undisputedly broad scope of claim 1 affects the patent as a whole, since the specific conditions of the apparatus in a particular configuration would have to be taken into account when implementing the functional feature of the cloud processor of determining a location of the sensor. The reason for this is that the cloud processor, in order to perform the claimed function, is dependent on external information received from other parts of the claimed apparatus. For the skilled person to carry out the

invention, it would therefore be necessary to find a way of implementing the apparatus as a whole, depending on its specific configuration, in particular in terms of type and number of sensors, threats to be detected as well as the type and extent of the secured geographic area. In particular, the skilled person would need to suitably identify, based on common general knowledge, a sufficiently precise location of a potentially faulty sensor so that a person responsible for locating the potentially faulty sensor can do so without undue burden. They would also need to determine how the information about this location can be obtained within the apparatus, how it can be transmitted (in particular also from remote child sensors) to the cloud processor, and how the cloud processor processes this information to finally determine the location of the (potentially faulty) sensor.

For none of these extensive tasks does the patent or the common general knowledge provide the skilled person with general guidance on how to construct the apparatus so that the cloud processor can satisfactorily perform its claimed function of determining a location of the (possibly faulty) sensor.

1.31 The appellant's entire argument made it clear that the skilled person is confronted with a high degree of uncertainty in the implementation of the invention, since the patent and the common general knowledge do not contain any indications for determining a location of the sensor by means of the cloud processor. As mentioned above, this concerns not only the implementation of the feature in question itself, but also the other elements of the apparatus that may be functionally and constructively affected by the

determination of a location of the sensor by the cloud processor.

1.32 The board therefore concluded that the patent does not describe the invention according to claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art and thus that the ground for opposition under Article 100(b) EPC prejudices the maintenance of the patent.

2. Auxiliary requests 1 to 12 - Insufficiency of disclosure (Article 83 EPC)

2.1 Claim 1 of each of the auxiliary requests at least comprises the following feature of claim 1 of the main request:

> "... a cloud processor (46) of the cloud application (44) that determines a location of the sensor (12, 14) ..."

2.2 The additional amendments made to claim 1 of each of auxiliary requests 1 to 12 have no bearing on the relevant considerations as to whether the patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. This was not disputed by the respondent.

The above considerations in relation to the main request therefore also apply to each of auxiliary requests 1 to 12.

2.3 In view of the above, the board concluded that none of auxiliary requests 1 to 12 meets the requirement of Article 83 EPC.

3. Result

Since the maintenance of the patent is prejudiced by the ground for opposition under Article 100(b) EPC, and since none of auxiliary requests 1 to 12 meets the requirement of Article 83 EPC for reasons similar to those given for the main request, the board had to accede to the appellant's main request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

U. Bultmann R. Lord

Decision electronically authenticated