

Internal distribution code:

- (A) [-] Publication in OJ
- (B) [-] To Chairmen and Members
- (C) [-] To Chairmen
- (D) [X] No distribution

**Datasheet for the decision
of 17 December 2024**

Case Number: T 1309/23 - 3.5.07

Application Number: 21152691.8

Publication Number: 3885927

IPC: G06F16/11, G06N20/00

Language of the proceedings: EN

Title of invention:

Data management system, data management method, and data management program

Applicant:

YOKOGAWA ELECTRIC CORPORATION

Relevant legal provisions:

EPC Art. 56
RPBA 2020 Art. 12(6), 13(2)

Keyword:

Inventive step - main request and first auxiliary request (no)
Amendment after summons - exceptional circumstances - first
auxiliary request (yes) - third auxiliary request (no)
Amended claims filed with the statement of grounds of appeal -
second auxiliary request - not admitted

Decisions cited:

G 0001/19, T 0154/04, T 1800/21



Beschwerdekammern
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 1309/23 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 17 December 2024

Appellant: YOKOGAWA ELECTRIC CORPORATION
(Applicant) 9-32, Nakacho 2-chome
Musashino-shi
Tokyo 180-8750 (JP)

Representative: Winter, Brandl - Partnerschaft mbB
Alois-Steinecker-Straße 22
85354 Freising (DE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 2 March 2023
refusing European patent application
No. 21152691.8 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair J. Geschwind
Members: M. Jaedicke
C. Barel-Faucheux

Summary of Facts and Submissions

- I. The appellant (applicant) appealed against the examining division's decision refusing European patent application No. 21152691.8 (published as EP 3 885 927).
- II. The documents cited in the contested decision included:
D2 US 2018/0108355 A1, published on 19 April 2018
- III. The examining division decided that the subject-matter of claims 1 to 4, 7 and 9 to 16 of the main request lacked novelty over D2. It also decided that the subject-matter of claims 5, 6 and 8 of the main request and of all the claims of the first to fourth auxiliary requests lacked inventive step in view of document D2.
- IV. In its statement of grounds of appeal, the appellant requested that the contested decision be set aside and that a patent be granted on the basis of the claims of a main request or an auxiliary request, both requests having been filed with the statement of grounds of appeal. The appellant submitted that the main request corresponded to the fourth auxiliary request considered in the decision under appeal and the auxiliary request was obtained by maintaining only one of three alternatives specified in its current main request.
- V. In a communication under Article 15(1) RPBA, the board also referred to the following documents:
D3 JP 2011-175540, cited as prior art in paragraph [0002] of the application as filed; and
D3a the English machine translation of D3.

The board expressed among other things its provisional opinion that claim 1 of the main request was unclear,

that the subject-matter of claim 1 of the main request lacked inventive step in view of document D3 and that the auxiliary request was inadmissible.

- VI. By letter dated 15 November 2024, the appellant submitted new first and third auxiliary requests and maintained the main request as well as the auxiliary request, the latter as its new second auxiliary request.
- VII. Oral proceedings were held as scheduled and the appellant was heard on relevant issues. At the end of the oral proceedings, the Chair announced the board's decision.
- VIII. The appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of the main request filed with the statement of grounds of appeal, the first auxiliary request filed by letter dated 15 November 2024, the second auxiliary request corresponding to the auxiliary request filed with the statement of grounds of appeal, and the third auxiliary request filed by letter dated 15 November 2024.
- IX. Claim 1 of the main request reads as follows (itemisation of features added by the board):
- "A data management system (100) comprising:
 - A a data acquisition unit (110) for acquiring measurement data on a measurement target from a plurality of sensors provided in a plant; wherein the measurement data is temperature, pressure, flow rate, acceleration, magnetic field, camera image, or switch on/off data;
 - B a data storage unit (120) for storing the measurement data;

- C a data selection unit (130) for selecting training data, used for training a model, from the measurement data stored in the data storage unit (120);
- D a data transmission unit (140) for transmitting the training data selected by the data selection unit (130), to a learning unit (150) for training the model; and
- E a data deletion unit (160) for deleting the training data transmitted by the data transmission unit (140), selectively from the stored measurement data, wherein the data deletion unit (160) is configured to delete the training data in response to receiving a response indicating that the training of the training data has ended from the learning unit (150), said response including an indication that the training data do not need to be re-trained, and a deletion of the training data is permitted in order to only delete the trained data that have actually been confirmed to be trained, thereby reducing a volume of the measurement data stored by the data storage unit (120);
- F wherein the data deletion unit (160) has a prohibition list (500) for specifying measurement data prohibited to be deleted, and when training data to be deleted are specified by the prohibition list (500), is configured to prohibit the deletion of the training data, wherein the prohibition list (500) has at least any of the item that specifies the period in which deletion is prohibited, the item that specifies the sensors for which deletion is prohibited, and, the item that specifies the period and sensors for which deletion is prohibited, or

G wherein the data deletion unit (160) has a permission list (600) for specifying measurement data permitted to be deleted, and when training data to be deleted are specified by the permission list (600), is configured to permit the deletion of the training data, wherein the permission list (600) has at least any of the item that specifies the period in which deletion is permitted, the item that specifies the sensors for which deletion is permitted, and, the item that specifies the period and sensors for which deletion is permitted."

X. Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the following text (from claim 2 of the main request) has been added at the end of the claim:

"; wherein the data deletion unit (160) has the permission list for specifying measurement data permitted to be deleted, and when training data to be deleted are specified by both of the prohibition list and the permission list, is configured to prohibit the deletion of the training data."

XI. Claim 1 of the second auxiliary request differs from claim 1 of the main request in that the text "wherein the prohibition list (500) has at least any of the item that specifies the period in which deletion is prohibited, the item that specifies the sensors for which deletion is prohibited, and, the item that specifies the period and sensors for which deletion is prohibited" has been replaced with "wherein the prohibition list (500) has the item that specifies the period and sensors for which deletion is prohibited". Furthermore, the text "wherein the permission list (600) has at least any of the item that specifies the

period in which deletion is permitted, the item that specifies the sensors for which deletion is permitted, and, the item that specifies the period and sensors for which deletion is permitted" has been replaced with "wherein the permission list (600) has the item that specifies the period and sensors for which deletion is permitted".

XII. Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary request by the amendment made in the first auxiliary request.

XIII. The appellant's arguments relevant to the present decision are discussed in detail below.

Reasons for the Decision

1. The application relates among other things to a data management system including a data acquisition unit for acquiring measurement data on a measurement target, a data storage unit for storing the measurement data, a data transmission unit for transmitting training data in the measurement data, used for training a model, to a learning unit for training the model and a data deletion unit for deleting the training data from the stored measurement data (see paragraph [0003] of the description as originally filed). The invention addresses in particular the issue of reducing the amount of measurement data stored while maintaining the data needed for training purposes, for example.

Main request and first auxiliary request

2. *Admission of the first auxiliary request under Article 13(2) RPBA*

Claim 1 of the first auxiliary request adds the features of dependent claim 2 to claim 1 of the main request in order to overcome a clarity objection raised by the board for the first time in its communication. Since the first auxiliary request was filed at the first opportunity in response to a fresh objection raised by the board against the admissible main request (corresponding to the fourth auxiliary request considered in the decision under appeal), the board considers that there are exceptional circumstances within the meaning of Article 13(2) RPBA and admits the first auxiliary request into the appeal proceedings.

3. *Inventive step for the main request starting from document D2*
4. The appellant maintained the fourth auxiliary request considered in the decision under appeal as its main request in the appeal proceedings. The examining division decided that the subject-matter of claim 1 of the fourth auxiliary request lacked inventive step (Article 56 EPC) in view of document D2.
 - 4.1 Regarding document D2, the appellant argued that it did not disclose feature A of claim 1 since the measurement data in document D2 were speech data used for training a model of an automatic speech recogniser. Hence, in document D2 the kinds of data and the overall purpose were totally different compared to the system of claim 1. It also argued that features B to G of claim 1 were not disclosed in document D2.
 - 4.2 The board agrees with the appellant that document D2 does not disclose feature A of claim 1. Since document D2 concerns the training of a speech recogniser with speech data and not the training of a model with

measurement data from sensors provided in a plant, document D2 is not a realistic starting point for assessing inventive step of the invention defined in claim 1 of the main request.

5. *Inventive step over document D3 for the main request and the first auxiliary request*

5.1 Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the following feature H has been added to claim 1 of the main request: "wherein the data deletion unit (160) has the permission list for specifying measurement data permitted to be deleted, and when training data to be deleted are specified by both of the prohibition list and the permission list, is configured to prohibit the deletion of the training data" (see point X. above).

5.2 Since claim 1 of the main request is broader than claim 1 of the first auxiliary request, the board's negative preliminary opinion on the first auxiliary request also applies to the main request. In the oral proceedings, for efficiency reasons the board heard the appellant directly on inventive step for the first auxiliary request. The proceedings having taken this course and in light of the outcome of the case, in the following the board first assesses inventive step for claim 1 of the first auxiliary request.

5.3 Document D3, which is cited as prior art in paragraph [0002] of the application as filed, discloses monitoring production lines and various plants, for example by monitoring the normal/abnormal functioning of an apparatus with the aim of restoring a normal production state in case of an abnormality. Prediction and diagnosis are performed using measurement data such

as gas volumes, temperature and pressure (see D3a, paragraphs [0002] and [0015] to [0017]; claim 1).

Document D3 also discloses that temperature and pressure are both input data in an embodiment, i.e. that measurement data from two different sensors is obtained (see D3a, paragraph [0015]). This is one of the possibilities covered by feature A of claim 1 which the appellant identified on page 4, third paragraph of its statement of grounds of appeal. Consequently, the board is not convinced by the appellant's argument that document D3 did not disclose measuring by means of a plurality of sensors as specified in feature A.

Document D3 discloses that the measurement data are stored in a database in a computer system (see feature B of claim 1) and used as training data for constructing a model (see D3a, paragraphs [0002] and [0015] to [0017]; claim 1). Claim 1 of document D3 also discloses that a learning data creation means deletes certain measurement data representing abnormal values, for example, from the data set to be used as learning data for model construction. This deletion of certain measurement data can be regarded as implementing the data selection unit according to feature C of claim 1 (i.e. the measurement data which are not deleted are selected as training data). In the oral proceedings, the appellant accepted that feature C was disclosed but not in the context of the further features D to H.

In view of the above, the board concludes that document D3 discloses features A to C of claim 1 and that features D to H of claim 1 are the distinguishing features over document D3.

- 5.4 According to decision G 1/19, points 79 to 84, to assess inventive step the prior art has to be considered and the features of the claimed invention contributing to an inventive step have to solve a technical problem over the prior art. Solving a technical problem requires that a technical effect is achieved over the whole scope claimed.
- 5.5 In view of the above, it has to be assessed whether distinguishing features D to H contribute to the technical character of the invention, i.e. to any technical effect achieved over the whole scope of the claim when compared to the prior art disclosed in document D3.
- 5.6 The appellant argued as follows on inventive step for the first auxiliary request.
- (a) The interaction of the features in claim 1 supported the technical character of the claimed subject-matter. The reduction of the volume of the data as specified in the last part of feature E was not the only technical effect of the distinguishing features.
 - (b) Feature H emphasised that training data could be retransmitted (see feature D) if the data did not need to be retrained but was not deleted (because it was specified on the prohibition list). Consequently, the distinguishing features contributed to maintaining "operational security" by avoiding the inadvertent deletion of data (see paragraph [0053] of the description). In particular, data availability for future uses (such as retraining the model) was improved.

- (c) A further effect of the distinguishing features was that, by avoiding the inadvertent deletion of data, "data security" was also improved for further users (see paragraphs [0061] and [0071]). Paragraph [0071] explained that the permission and prohibition lists could be set up by different users. This allowed different users to have an influence on data deletion while maintaining "data security". "Data security" was a combination of security and availability, since the improved security of the measurement target also improved "operational security".
- (d) The prioritisation of the prohibition list over the permission list according to paragraph [0071] could take place in contexts other than the training of the model.
- (e) The model information together with the reduced volume of the measurement data selected by the selection unit were capable of sufficiently judging the state of the measurement target (as disclosed in paragraph [0030]) and for this reason all claim features were technical.
- (f) The appellant also argued that document D3 disclosed that unsuitable data were deleted before any training took place. Unsuitable data were determined using upper and lower limit values (see D3, paragraphs [0020] and [0021]; claim 1). Moreover, document D3 was silent on any retransmission of data. Consequently, document D3 did not provide any hint to the claimed solution, which was inventive.

- 5.7 The board is not convinced by these arguments for the following reasons.
- 5.7.1 Regarding the appellant's argument (a) that the data volume is reduced by deleting certain data, the board observes that whether or not the system of claim 1 deletes any data depends on (1) whether any data is no longer needed for (re)training the model and a corresponding indication is received (see feature E) and (2) the content of the prohibition list which may prohibit the deletion of data even if it is indeed no longer needed for training (see features F and H). Claim 1 does not, for example, exclude the prohibition list specifying that no data can be deleted (by specifying all sensors on the prohibition list, for example). Consequently, the board considers that the system of claim 1 does not reduce the volume of stored measurement data over the whole scope of the claim. For this reason alone, the alleged effect of reducing the volume of data is not recognised by the board.
- 5.7.2 Regarding the argument that the permission and the prohibition list could be provided by different users, the board considers that claim 1 is not limited to lists obtained from different users. Therefore, the claim wording does not support the appellant's argument (c). Nor is there any limitation in claim 1 relating to use of the measurement data for purposes other than training. Consequently, the board is not convinced by the appellant's argument (d).
- 5.7.3 Furthermore, neither the measurement target nor the specific use of the measurement data for training the model, nor the model itself or its use are specified in sufficient detail in claim 1 to credibly derive a technical effect external to the computer system to

which the distinguishing features contribute. For example, claim 1 does not specify that the model is used to control an apparatus external to the computer (e.g. in the plant - see feature A) in a manner that solves a technical problem relating to this apparatus. In this context, the board would emphasise that the measurement and data acquisition are already disclosed in document D3 and thus not part of the distinguishing features.

Since claim 1 does not specify the model and its use in detail, the board is not convinced that any technical effect is derivable from the distinguishing features which relate to this model or the use of the measurement data for training the model. In particular, it cannot be derived either that a reduced volume of measurement data is sufficient for judging the state of the measurement target (see the appellant's argument (e)) or that any related technical effect such as increasing "operational security" (see the appellant's argument (b)) is achieved. Rather, in the present case, claim 1 covers the automated processing of measurement data for a non-technical purpose (for example to check whether regulatory non-technical constraints for the operation of a plant are met such as a room temperature appropriate for workers in the plant).

- 5.8 Regarding the alleged increased availability of data (see the appellant's argument (b)), the board observes that the method does not protect against the loss of data by technical malfunctions of storage devices, for example, so that the technical character of the increased availability of data is questionable. The claimed system allegedly conserves data by prohibiting the deletion of data by some non-technical policy which is specified in the prohibition list, but the

prohibition list according to claim 1 might even permit all training data to be deleted since the specified sensors or periods in the prohibition list (see feature F) might not concern the training data that does not need to be retrained (see feature E), for example. Consequently, the board does not recognise the alleged effect of increased availability of training data.

- 5.9 In view of the above, the board is not convinced that distinguishing features D to H of claim 1 contribute to achieving a technical effect over document D3. Therefore the distinguishing features do not enter into the assessment of inventive step (see decision T 154/04, Reasons 5) and cannot provide a basis for acknowledging an inventive step.
- 5.10 In any event, deleting data was itself well-known at the relevant date (and is already disclosed in document D3; see point 5.3 above). The implementation of means implementing a non-technical method of making selected training data available to a learning unit and selecting data to be deleted (according to the criteria of features E to H) and then deleting this selected data, if any, in the computer system disclosed in document D3 was straightforward and thus obvious.
- 5.11 It follows that the subject-matter of claim 1 of the first auxiliary request lacks inventive step (Article 56 EPC) in view of document D3.
- 5.12 Since claim 1 of the main request is broader than claim 1 of the first auxiliary request, the main request also lacks inventive step (Article 56 EPC).

Second auxiliary request

6. *Admissibility*

- 6.1 According to Article 12(6) RPBA, second paragraph the board shall not admit requests, facts, objections or evidence which should have been submitted, or which were no longer maintained, in the proceedings leading to the decision under appeal, unless the circumstances of the appeal case justify their admittance.
- 6.2 The second auxiliary request was filed for the first time with the statement of grounds of appeal (see point IV. above). Claim 1 of this auxiliary request limits the subject-matter of claim 1 of the main request by restricting the claim to one of the three alternatives for both the prohibition and the permission list, namely to using the period and sensors (see point XI. above).
- 6.3 The appellant argued that it was justified to introduce the new auxiliary request into the appeal proceedings when filing the statement of grounds of appeal since it was unclear whether the decision under appeal had specifically considered the maintained alternative for the implementation of the claimed invention (see statement of grounds of appeal, page 20).
- 6.4 This argument is not convincing since the examining division was not obliged to deal expressly with all alternatives claimed when assessing inventive step since it was sufficient to object to any of the alternatives claimed. Therefore, from an objective point of view, the appellant could not have been surprised that the decision under appeal did not explicitly deal with all of the alternatives claimed.

6.5 The appellant argued referring to decision T 1800/21 that "a positive exercise of the discretion [to admit a claim request] is allowable if the amendment does not change the factual or legal framework of the proceedings, does not require a re-weighting of the subject matter of the proceedings and does not run counter to the principle of procedural economy or the legitimate interests of a party to the proceedings".

6.5.1 The board considers that cited decision T 1800/21 is about recognising exceptional circumstances within the meaning of Article 13(2) RPBA in a situation in *inter-partes* proceedings where an uncomplicated amendment (e.g. deleting a claim in a category) makes it possible to maintain the patent (see the headword of the decision, for example). Consequently, the cited decision concerns a different procedural situation and is not applicable to the second auxiliary request.

Rather, the second auxiliary request, which limits claim 1 to one of three alternatives already explicitly specified in a prior pending request, could and should have been filed earlier in the first-instance proceedings (Article 12(6) RPBA).

6.6 In view of the above, the board does not admit the second auxiliary request under Article 12(6) RPBA.

Third auxiliary request

7. *Admissibility*

7.1 According to Article 13(2) RPBA, any amendment to a party's appeal case made after notification of a communication under Article 15(1) RPBA shall, in principle, not be taken into account unless there are

exceptional circumstances, which have been justified with cogent reasons by the party concerned.

The third auxiliary request was filed in reply to the board's communication under Article 15(1) RPBA (see points V. and VI. above).

- 7.2 Claim 1 of the third auxiliary request adds the features of claim 2 of the main request to claim 1 of the second auxiliary request in order to overcome a fresh clarity objection raised in the board's communication. However, since the second auxiliary request is inadmissible under Article 12(6) RPBA, the board does not recognise any exceptional circumstances within the meaning of Article 13(2) RPBA which could justify admitting the third auxiliary request, i.e. an amended version of the inadmissible second auxiliary request. Consequently, the board does not admit the third auxiliary request into the appeal proceedings under Article 13(2) RPBA.

Conclusion

8. Since none of the requests admitted into the appeal proceedings is allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



S. Lichtenvort

J. Geschwind

Decision electronically authenticated