

**Internal distribution code:**

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

**Datasheet for the decision  
of 12 January 2021**

**Case Number:** T 0699/18 - 3.2.04

**Application Number:** 04795549.7

**Publication Number:** 1678421

**IPC:** F03D7/02

**Language of the proceedings:** EN

**Title of invention:**  
WIND TURBINE SYSTEM CONTROL

**Patent Proprietor:**  
GENERAL ELECTRIC COMPANY

**Opponents:**  
Nordex Energy GmbH  
Vestas Wind Systems A/S

**Headword:**

**Relevant legal provisions:**  
EPC Art. 54  
RPBA 2020 Art. 11

**Keyword:**

Novelty

Remittal - (yes)

**Decisions cited:**

**Catchword:**



**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  
Fax +49 (0)89 2399-4465

Case Number: T 0699/18 - 3.2.04

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.04**  
**of 12 January 2021**

**Appellant:** GENERAL ELECTRIC COMPANY  
(Patent Proprietor) 1 River Road  
Schenectady, NY 12345 (US)

**Representative:** Zimmermann & Partner  
Patentanwälte mbB  
Postfach 330 920  
80069 München (DE)

**Respondent:** Nordex Energy GmbH  
(Opponent 1) Langenhorner Chaussee 600  
22419 Hamburg (DE)

**Representative:** Hauck Patentanwaltspartnerschaft mbB  
Postfach 11 31 53  
20431 Hamburg (DE)

**Respondent:** Vestas Wind Systems A/S  
(Opponent 2) Hedeager 44  
8200 Aarhus N (DK)

**Representative:** Samson & Partner Patentanwälte mbB  
Widenmayerstraße 6  
80538 München (DE)

**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 9 January 2018  
revoking European patent No. 1678421 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman**           A. de Vries  
**Members:**         S. Hillebrand  
                      W. Van der Eijk

## **Summary of Facts and Submissions**

- I. The appeal was filed by the Patent Proprietor against the decision of the Opposition Division to revoke the patent in suit.

In particular, the Opposition Division held that the subject-matter of granted claim 1 was not novel with regard to the disclosure of document D1.

The oppositions were based on Article 100(a) EPC in combination with Articles 54 and 56 for lack of novelty and lack of inventive step.

- II. Oral proceedings were held before the Board on 12 January 2021 in the presence of all parties.

- III. The Appellant-Proprietor requested that the decision under appeal be set aside and the patent be maintained as granted (main request) or, auxiliarily, maintained on the basis of one of auxiliary requests 1 - 9, all filed with a letter dated 11 November 2019.

Respondent-Opponents 1 and 2 requested that the appeal be dismissed.

- IV. The independent claim of the main request relevant to this decision reads as follows:  
"A system for managing a wind farm having a plurality of wind turbines comprising:  
a Supervisory Command and Data Acquisition (SCADA) element (234, 244) at each wind turbine to collect data from the respective wind turbine (230, 240), said wind turbine SCADA element being configured to store a first subset of the data locally and transmit the first

subset of data according to non-real-time intervals and to transmit a second subset of data over a wind farm network to provide approximately real-time data, wherein the second subset of data is stored until successfully transferred;

a SCADA element (214) at each of one or more meteorological sites (210) configured to collect meteorological data;

a SCADA element (226) at each of one or more substations (220) electrically connected with the plurality of wind turbines (230, 240); and

a server (252) coupled to communicate with the wind turbine, meteorological, and substation SCADA elements (226, 234, 244, 214) via the wind farm network, said server being configured to receive and to store data received from the elements at predetermined intervals and to perform database management on the received data, the server being further configured to gather and maintain current and historical data as to the inputs, operating conditions, and outputs of the plurality of wind turbines."

V. In the present decision, reference is made to the following document:

D1: US 2002/0029097 A1

VI. The Appellant's arguments can be summarised as follows: The subject-matter of claim 1 is new with regard to the disclosure of D1.

The Respondents' arguments can be summarised as follows:

The subject-matter of claim 1 is known from D1.

## **Reasons for the Decision**

1. The appeal is admissible.
  
2. The patent in suit deals with a SCADA (supervisory command and data acquisition) architecture for a wind park.  
SCADA is a hierarchic control system with a central monitoring and command computer unit (SCADA master element) and at least one subordinated level of decentralised controllers (SCADA master or slave elements), which are arranged at devices to be monitored and controlled (e.g. manufacturing machines, fluid or traffic circulation managing units).  
In wind farms, SCADA elements are provided at the individual wind turbines, meteorological sites and substations, which interface the wind farm with the power grid.  
According to the invention, communication between the wind turbine SCADA elements, which collect data from the respective wind turbines, and the central server is organised at two levels. A first subset of data is stored locally and transmitted according to non-real-time-intervals. A second subset of data is transmitted approximately in real-time and stored locally until successfully transferred.
  
3. **Main request - Interpretation of the independent claim**
  - 3.1 Claim 1 is silent on the nature and content of the data of the first and second subsets. Thus, the first and second subsets of wind turbine data do not necessarily differ from each other in terms of the quality or character of the wind turbine data contained therein. They rather differ with regard to their respective

transmission rate. Whereas non-real-time transmission of first subsets occurs explicitly at "non-real time *intervals*", real-time transmission of the second subset is not limited to any regular intervals, such as once per second, but includes also continuous transfer of second subsets as soon as available. A person skilled in the art will understand from this different claim wording chosen for the non-real-time and the real-time transmission as well as from the use of the plural in "at non-real-time intervals" that the non-real-time intervals are predetermined, regular intervals or periods of time.

This understanding is confirmed in the last part of the claim, which deals with the "receiving end of the line" at the server: "data [is] received from the [SCADA] elements at *predetermined intervals*".

The patent specification confirms this understanding in paragraph [0041]: "data is transmitted from local SCADA elements at a relatively high degree of time resolution (e.g., approximately real time, each second, each two seconds, or at sub-second resolution) and at a relatively low degree of time resolution (e.g., several seconds, minutes)"; and paragraph [0043]: "Real-time data is received on a *continuous* basis as the data is provided by the wind turbines.....Data is also gathered *periodically* as described above."

- 3.2 Respondent 1 doubts that the last part of claim 1 dealing with *data received by the server* can be used for drawing conclusions on the non-real time intervals in the preceding part of claim 1, which deals with *data transmitted by the wind turbine SCADA elements*. In the Board's view such a non-contextual reading of claim 1 is unreasonable and conflicts with the way a skilled



person normally tries to read a claim, namely with the desire to understand the claimed invention and to make technical sense of it. In such a reading terms are given their normal meaning and the claim wording is read contextually, as a whole, see the general principles of claim interpretation as set out for example in CLBA, 9th edition, II.A.6.1.

3.3 Respondent 2 does recognize parallels between these two claim parts: both define the same communication process, only from two different perspectives, i.e. that of the transmitter and that of the receiver. In their opinion, however, the "historical data" gathered by the server corresponds to the first subset of data transmitted in non-real time intervals, and the data received at predetermined time intervals by the server corresponds to the second subset of data provided in real-time. Consequently, "at predetermined time intervals" in claim 1 would refer only to real-time time intervals and would not restrict the non-real-time intervals of claim 1 to predetermined ones.

3.4 The Board cannot follow this interpretation. The "predetermined time intervals" mentioned in the last part of claim 1 can be considered as generally referring to both, data received in non-real-time and - if applicable - real-time *intervals* from "*the elements*", i.e. the SCADA elements introduced before as being located at a wind turbine, a meteorological site or a substation.

If, however, parallels are to be drawn between the two parts of claim 1 as defined above, it can be assumed that features in the last part of the claim are presented in the same order as corresponding features in its preceding part. This would mean that the

reception of data at *predetermined intervals*, which is mentioned first in the last part of the claim, would rather correspond to the transmission of the first subset of data according to *non-real time intervals* in the preceding part; and that the gathering of "current and historical data", which is mentioned second in the last part of the claim, would rather correspond to the provision of the second subset of data at approximately *real-time* in the preceding part.

In both of the above claim readings, the non-real-time intervals are then the predetermined intervals of the last part of claim 1.

- 3.5 Respondent 2 also puts forward that claim 1 might be understood in a broad sense as defining only one subset of data. A second subset of data, which in case of transmission problems is stored during a non-real-time span until successfully transmitted, would become a first subset of data in the sense of claim 1, which is transmitted according to a non-real-time interval.

The Board does not agree.

In a technical meaningful understanding of claim 1, the data transmission by the wind turbine SCADA elements can only refer to transmission *attempts* undertaken by these elements. Transmission problems might affect both, transmission of the first subset, which might not be possible after expiration of the envisaged predetermined non-real-time interval, as well as transmission of the second subset, which might not be possible in real-time. Nevertheless, the first and second subsets of data remain scheduled for transmission in a different manner, the first one according to predetermined non-real time intervals, the

second one in approximately real-time.

- 3.6 According to Respondent 1, paragraph [0040] of the patent specification gives the following examples for non-real-time data transmission: "at the end of predetermined periods of time, in response to requests from the server or in response to predetermined conditions". Consequently, "at non-real time intervals" in claim 1 includes all arbitrary time spans between two respective data subset transmissions, which are longer than real-time.

In the Board's view, this citation on the contrary confirms that data transmission in non-real-time intervals occurs "at the end of *predetermined periods of time*". The remaining examples represent further possibilities of data transmission, which are optional, but not required by claim 1, such as on request or triggered by events.

#### 4. **Main request - Novelty in the light of D1**

- 4.1 It is common ground that D1 discloses a system for managing a wind farm comprising a SCADA element TPU 63, 210 at each wind turbine 62, 200 of the wind farm for collecting data from the respective wind turbine (see paragraphs [0021], [0022], [0049], [0050], Figs. 1, 2). Each wind turbine SCADA element (TPU) stores locally what can be considered a first subset of data from the turbine and turbine site (D1, claim 1). Furthermore, a second subset of data containing "operating conditions and outputs of all turbines" or "data (controller state, wind speed, energy levels, alarms, and so on)" is transmitted "at a high degree of time resolution" or "at a high frequency, such as once a second", which can be considered as "approximately real-time" in the sense

of the patent, cf. specification paragraph [0041], to a server APU via a wind farm network 20, 240 (D1, paragraphs [0006], [0034], [0063]).

- 4.2 The Board agrees with the Appellant that the raw wind turbine sensor data, which is stored in the wind turbine SCADA elements of D1 (first subset), serves as a safety back-up for preventing loss of data during periods of unavailability or failure of the server and/or the communication network. This can be taken from paragraphs [0031] and [0095], final sentence, of D1.

Since the occurrence of such events is incidental because mostly unpredictable and irregular, the subsequent (re)transmission of stored back-up data cannot be regarded as a transmission of a first, locally stored subset of data *according to (predetermined) non-real-time intervals* in the sense of claim 1.

- 4.3 Respondents 1 and 2 submit that according to D1 a datafile 2 requested by the server (paragraphs [0057], [0059]) contains wind turbine data (paragraphs [0068] - [0074], tables 1 to 5) and has therefore to be considered as a second subset of data, which is provided approximately in real-time. This appears to be plausible to the Board, since the data in tables 1 to 5 within datafile 2 include "controller state, wind speed, energy levels, alarms... from the wind turbine controller" as mentioned in paragraph [0033] in connection with approximately real-time transmission of these data ("high frequency, such as once a second"). Furthermore, a datafile 4, which contains data not available in datafile 2, is read from the memory of a SCADA slave element at a wind turbine. It represents thus a different, first subset of wind turbine data,

which had been locally stored in the memory of the SCADA element, see paragraphs ([0061], 0078)).

The Board is, however, unable to derive directly and unambiguously from this difference in content of data files 4 and 2 and from the fact that data file 2 originates in a SCADA element's memory, that datafile 2 is regularly transmitted at predetermined non-real-time intervals.

- 4.4 Respondent 2 puts forward that a person skilled in the art can only conclude from the entire disclosure relating to turbine control and transmission protocols in paragraphs [0049] - [0078] in combination with the last sentence of paragraph [0095] of D1, that a first subset of wind turbine data is transmitted according to non-real-time intervals as claimed.

The Board has dealt with the respective disclosure of these passages in sections 4.2 and 4.3, above, and found that predetermined non-real-time intervals for wind turbine data transmission could not be derived from either passage in a direct and unambiguous manner. The Board sees no cogent reason to conclude differently from the combined reading of either passage.

- 4.5 Respondent 1 furthermore infers that a first set of wind turbine data must be transmitted in non-real-time intervals from paragraph [0176] of D1, which states that a new 10 minute summary of wind turbine data is inserted every 10 minutes in the data base table WTG10MIN, if at least one sample record is found for this turbine.

The Board does not doubt that the WTG10MIN is a database table within the repository database of the

server's TACS database 530, see paragraphs [0155], [0158], Fig. 5; it is also listed under the heading "repository database" immediately preceding paragraph [0159] and before the next heading "configuration database" immediately preceding paragraph [0210]. However, the Board is not convinced, that some of the data for up-dating WTG10MIN is transmitted from the SCADA element at the corresponding wind turbine every 10 minutes.

In this context, Respondent 1 refers to the statement in paragraph [0160] that "the source of the data is always the TPU [wind turbine SCADA element], except as noted". This applies, however, only to the *turbine\_latest database* of paragraph [0161], which is updated "each second", i.e. in real-time. The source of data entry is mentioned separately for each of the other databases in the following paragraphs [0162], [164], [0166], [0168], [0170], [0172] etc.. An exception from TPU as a source for data in the *turbine\_latest database*, to which paragraph [0160] might refer, is for example the communication status in *operational\_status*, which is set by the DPA (Data Processing Agent 630, see paragraphs [0160], [0116], [0171] - [0174]).

Paragraph [0176] itself refers to "*sample records*" for up-dating the database table WTG10MIN. The Board infers that these must mainly stem from the wind turbine data contained in the database *turbine\_history* defined in paragraphs [0160] - [0162] and included in the repository. It is for this data that, according to the first sentence of paragraph [0176], the 10 minute summaries are drawn up. The drawing up of such summaries is seen to be part of the post processing and data analysis mentioned in paragraph [0158]. In the

Board's understanding this refers to data processing and transmission that is entirely internal to the central APU.

This applies also to the entry *status\_communication\_error* cited by Respondent 1. The table itself indicates that this entry originates from the field *turbine\_history.operational\_status*, which corresponds to the above mentioned field *operational\_status* in the *turbine\_latest database* in the repository, see paragraphs [0160] - [0162]. This illustrates the process of data sampling and summarizing referred to in paragraph [0176], with the *turbine\_history database* providing the relevant samples.

Therefore, WTG10MIN seems rather to be up-dated every 10 minutes by the server APU, e.g. by the DPA, based on records in its own repository database, not by wind turbine SCADA elements TPU, which only deliver raw data for post processing and data analysis by the APU (paragraph [0158]), such as establishing "10 minutes summaries" in WTG10MIN.

- 4.6 In their written submissions, the Respondents based their argumentation against novelty of claim 1 also on paragraphs [0033], [0034] of D1, with regard to which the Board provided the following observations in its communication according to Rule 15(1) RPBA:  
*"Furthermore, the 30 second (non-real-time) interval mentioned in paragraph [0034] of D1 seems to be clearly linked to "meteorological data ... from all [meteorological] towers", not "from all [wind turbine and meteorological] towers". The entire paragraph [0034] is dedicated to meteorological data, whereas wind turbine data is separately treated in the previous*

*paragraph [0033] and substation data in the following paragraph [0035], both of the latter as being collected by the server APU "once a second", i.e. in real-time intervals."*

Since the Respondents did not add anything to their written submissions relating to paragraphs [0033], [0034] during the oral proceedings, the Boards sees no reason to deviate from its preliminary opinion that these passages of D1 do not disclose a transmission of wind turbine data according to non-real-time intervals.

- 4.7 As D1 therefore does not directly and unambiguously disclose that the wind turbine SCADA element is configured to transmit the first subset of data according to (predetermined) non-real-time intervals, the subject-matter of claim 1 is new in the sense of Article 54(1), (2) EPC with regard to the disclosure of D1.

## 5. **Remittal**

In the above mentioned communication, the Board considered remittal of the case under Article 11 RPBA for the following special reasons:

*"The primary objective of the appeal proceedings is to review the decision under appeal in a judicial manner, Article 12(2) RPBA 2020.*

*In the present case, the decision under appeal only considered D1 for novelty of granted claim 1. However, in opposition and again in appeal Respondent-Opponent 2 has also challenged novelty over D2, the public availability of which is in turn contested by the Appellant-Proprietor. The Opposition Division considered neither these issues, nor the question of*



*inventive step for the main request in the impugned decision, so that if the Board were to do so, it would be going beyond its primary objective as stated above. Taking into account that these remaining issues lie outside the factual and evidentiary framework of the decision under appeal and, moreover, are relatively complex, the Board is inclined to remit the case to the Opposition Division in order to first consider them."*

During oral proceedings, the parties agreed to this course of proceeding proposed by the Board.

6. Since the sole ground for opposition according to Article 100a) - "lack of novelty with regard to the disclosure of D1" - on which the impugned decision on granted claim 1 is based, does not prejudice the maintenance of the patent as granted, the decision must be set aside and the case remitted to the Opposition Division for examination of the remaining grounds for opposition relied upon by the Opponents.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Opposition Division for further prosecution.

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated