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**Datasheet for the decision  
of 18 May 2022**

**Case Number:** T 0576/17 - 3.5.03

**Application Number:** 03701194.7

**Publication Number:** 1466075

**IPC:** E21B44/00, H04Q9/00

**Language of the proceedings:** EN

**Title of invention:**  
Remote control of drilling rigs

**Patent Proprietor:**  
Epiroc Rock Drills Aktiebolag

**Opponent:**  
Sandvik Mining and Construction Oy

**Headword:**  
Drilling-rig remote control/EPIROC

**Relevant legal provisions:**  
EPC Art. 116(1), 56  
RPBA 2020 Art. 12(8), 13(2)

**Keyword:**

Decision in written proceedings - (yes): indication of non-attendance by proprietor - oral proceedings neither necessary nor expedient

Inventive step - main request (no): choice of starting point for assessing inventive step

Admittance - auxiliary request (no): no cogent reasons

**Decisions cited:**

T 0894/19, T 1112/19



**Beschwerdekammern**

**Boards of Appeal**

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**Case Number: T 0576/17 - 3.5.03**

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.03**  
**of 18 May 2022**

**Appellant:** Sandvik Mining and Construction Oy  
(Opponent) Kelloportinkatu 1 B  
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**Representative:** WSL Patentanwälte Partnerschaft mbB  
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**Respondent:** Epiroc Rock Drills Aktiebolag  
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**Representative:** Ehrner & Delmar Patentbyrå AB  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
21 December 2016 concerning maintenance of the  
European Patent No. 1466075 in amended form.**

**Composition of the Board:**

**Chair** K. Bengi-Akyürek  
**Members:** K. Peirs  
R. Romandini

## Summary of Facts and Submissions

- I. The appeal lies from the interlocutory decision of the opposition division to maintain the opposed patent (hereinafter: the patent) in amended form on the basis of the proprietor's main request.
- II. The appellant (opponent) requested with the statement of grounds of appeal that the decision under appeal be set aside and that the patent be revoked.
- III. The respondent (proprietor) requested with the written reply to the statement of grounds of appeal to dismiss the opponent's appeal.
- IV. The parties were summoned to oral proceedings before the board. A communication was issued under Article 15(1) RPBA 2020 including the board's negative preliminary opinion concerning inventive step (Article 56 EPC), having regard to the following prior-art document:  
  

**D6:** Close, D.A. and Stelly, O.V.: "New Information Systems Promise the Benefits of the Information Age to the Drilling Industry", IADC/SPE drilling conference No. 39331, 3 March 1998, pp. 337-349.
- V. In a written reply to the board's communication, the respondent provided counter-arguments and filed an **auxiliary request** on the basis of which the patent should be maintained in amended form. The request to dismiss the opponent's appeal was upheld as a **main request**. With the same written reply, the respondent indicated that it would not be attending the arranged

oral proceedings.

VI. Subsequently, the oral proceedings were cancelled.

VII. Claim 1 of the **main request**, i.e. claim 1 as maintained by the opposition division, reads as follows (board's feature labelling):

- (a) "A system for remote control of drilling rigs (1),
- (b) said remote control being performed in a from the drilling rig (1) remotely located control centre (2),
- (c) said system includes a control unit (11) arranged to control the data communication between the remotely located control centre (2) and said drilling rig (1) as well as other traffic occurring within the system,
- (d) wherein said other traffic occurring within the system is directed to the remotely located control centre and to the drilling rig from an office or support centre,
- (e) wherein said control unit (11) is arranged to give priority to traffic between the remotely located control centre (2) and the drilling rig (1), characterised in that
- (f) said control unit (11) further gives priority to control commands over other traffic between the remotely located control centre (2) and the drilling rig (1)".

VIII. Claim 1 of the **auxiliary request** includes all the features of claim 1 of the main request and further includes, at the end, the following feature:

- (g) "to ensure that critical information is prioritized when the traffic between the remotely located

control centre (2) and the drilling rig (1) comprises additional traffic besides control commands".

## **Reasons for the Decision**

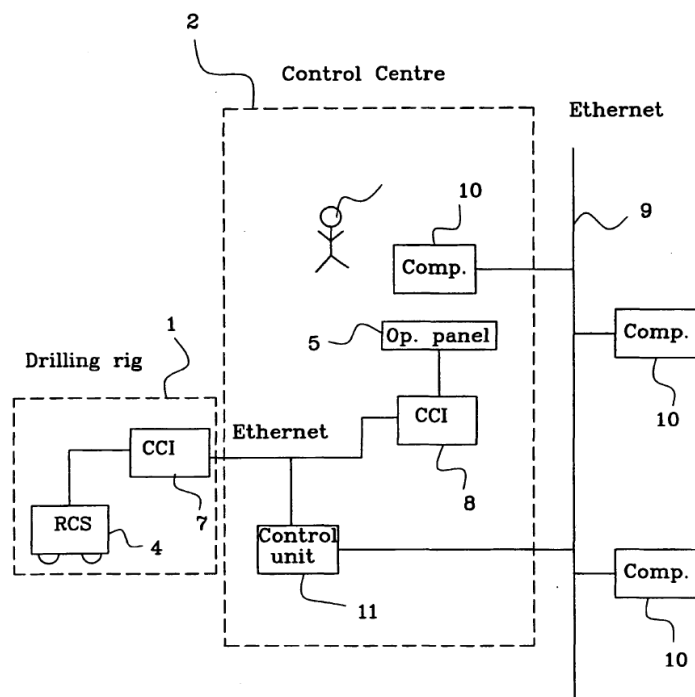
### 1. *Decision in written proceedings*

1.1 After the parties were summoned to oral proceedings, the respondent indicated that it would not attend the oral proceedings (see points IV and V above). Such a declaration is normally treated as equivalent to a withdrawal of the request for oral proceedings, thereby obviating the need for oral proceedings.

1.2 Given that the board does not consider the conduct of oral proceedings to be expedient either (cf. Article 116(1) EPC), the decision is handed down in written proceedings (Article 12(8) RPBA 2020).

### 2. *Technical background*

The patent relates to the remote control of drilling rigs. As is illustrated in its Figure 1 (reproduced below) an operator of control centre 2 controls drilling rig 1 remotely via network 9. This network can be part of an office environment or a support centre. It includes computers 10 and communicates data between control centre 2 and drilling rig 1. This data is not limited to control commands for remotely controlling drilling rig 1 but can, for instance, comprise also operating information such as failure reports.



**Fig. 1**

The invention relies on communicating the respective data using a prioritisation scheme where control commands concerning drilling operations are given priority over other traffic between control centre 2 and drilling rig 1. This prioritisation scheme is executed by control unit 11 of the control centre. As such, it can be implemented in systems that have an already existing infrastructure for network 9.

3. *Main request: claim 1 - construction*

3.1 In Reasons 8.1.1.1 of the appealed decision, the opposition division interpreted the three locations of the units mentioned in claim 1 of the main request, namely "drilling rig", "[remotely located] control centre" and "office or support centre" to be defined "by the data transfer function" and not by their "mere

physical location".

- 3.2 The parties did not dispute this interpretation, and the board sees no reason to depart from it either. The board notes in particular that the term "drilling rig" in claim 1 of the main request refers to a device or a piece of equipment designed for drilling, rather than to the platform or geographical site where this drilling rig is located. Such a device or piece of equipment includes, for instance, the drill itself, any necessary sensors and possibly a database for keeping track of the sensor data, similar to "computer 4" implementing a "Rig Control System" according to page 6, line 28 to page 7, line 10 of the underlying description as filed. Hence, the skilled reader would understand that the term "remote control" recited in **features (a) and (b)** could relate to control operations from a location that is separated by some distance, e.g. for safety reasons, from the drilling equipment, but that this location could also be on the drilling site itself.

Consequently, the skilled reader would readily understand that the "drilling rig", the "control centre" and the "office environment" or "support centre" mentioned in features (a) to (f) and lines 14 to 32 of page 8 of the description as filed relate to locations that are physically separate but that their precise geographical locations are not important. In other words, the above units may be located at the same drilling site or could, in view of the use of "fast Ethernet" and "gigabit Ethernet", as referred to in lines 9 to 11 of page 6 of the description as filed, partly be on quite remote locations.



3.3 **Feature (e)** does not specify which actual data the traffic between the remotely located control centre and the drilling rig is prioritised over. In particular, this may or may not be over the "other traffic" originating from the "office" or "support centre" according to feature (d).

3.4 On the relationship between **features (e) and (f)**, the board notes the following:

3.4.1 The opposition division must have interpreted the term "traffic [between the remotely located control centre and the drilling rig]" of **feature (e)** to refer to some of the overall traffic, given that it considered this feature to be disclosed by the prioritisation of "real-time information" over "historical information" as mentioned in the left-hand column of page 342 of D6 (see Reasons 8.1.3 of the appealed decision), regarding the opposition division's "feature (vi)". This real-time and historical information is necessarily communicated over the same channel(s) between the remotely located control centre and the drilling rig, otherwise no prioritisation would be required.

3.4.2 According to this interpretation, which the board holds to be plausible for a skilled reader, the term "other traffic between the remotely located control centre and the drilling rig" of **feature (f)** may simply refer to (some of) the non-prioritised data transferred between the remotely located control centre and the drilling rig. The "control commands" of feature (f) are, accordingly, given priority over this "other traffic" and can, in particular, be included in the prioritised traffic of feature (e). Given that feature (e) fails to state which data its traffic is actually prioritised over, feature (f) may specify, according to this

interpretation, that the control commands being part of the prioritised traffic of feature (e) are given priority over the "other traffic" mentioned in feature (f), in addition to the priority which it already has over some (undefined) data by virtue of feature (e). Alternatively, the *control commands* of feature (f) can be a further example of traffic between the remotely located control centre and the drilling rig that is, besides the "traffic" of feature (e), also prioritised. According to both interpretations, the (further) prioritisation as to feature (f) can simply amount to a juxtaposed, i.e. same-level, prioritisation that coexists with the prioritisation according to feature (e).

3.4.3 There is nothing in features (e) and (f) to support the respondent's view that feature (f) would encompass a "further level of prioritization". This is because such a further prioritisation level would require at least some indication of a hierarchy between the priorities of features (e) and (f). Such an indication, however, is not even implicitly present, given that the "traffic" of feature (e) does not necessarily have an overlap with the "control commands" or the "other traffic" of feature (f). A "two-level prioritisation scheme" made up of a prioritisation according to feature (e) as a *first* level and the prioritisation of the control commands as required by feature (f) as a *second* level - or, for that matter, an even higher-level prioritisation as considered in the third paragraph of Reasons 8.1.4 of the impugned decision ("more than two levels of priorities") - is not necessarily apparent from claim 1 of the main request.

3.5 In line with lines 24 to 26 of page 9 of the description as filed, the board construes **feature (f)**

such that the "control commands" are "sent from an operator" and are "always prioritised over all other kinds of traffic" between the drilling rig and the remotely located control centre. In this respect, the board is of the opinion that the skilled reader would immediately understand that the term "control commands" cannot simply relate to any kind of *real-time information* for monitoring a drilling site. In the context of a "control unit" as recited in claim 1 of the main request, it must at least relate to instructions (e.g. by an operator) to perform a particular function or to signalling messages.

4. *Main request: claim 1 - inventive step*

4.1 The board endorses the choice of document **D6** as a suitable starting point to assess inventive step in the present case (cf. Reasons 8.1.4 of the appealed decision).

4.2 The respondent's allegations that D6 would

- not be "relevant to the assessment of patentability of the present patent"

and would

- concern "a different thing than the prioritizing between different types of data as in the invention"

seem to suggest that D6 would not necessarily be directed to the same object or purpose as the patent itself and its underlying invention.

4.3 The board recalls that, if inventive step is to be denied, the choice of the starting point for the assessment of inventive step requires no specific justification since the claimed subject-matter must be inventive over any state of the art according to Article 56 EPC (see e.g. T 1112/19, Reasons 2.1.3).

At any rate, in the present case, the respondent did not present any argument that would convincingly disqualify D6 as a valid starting point. Given that the reasoning set out in points 4.4 to 4.11 below shows that, having regard to "the state of the art", the claimed invention was obvious for the skilled person, the board cannot see how the relevance of this state of the art to "the assessment of patentability of the present patent" could be refuted.

4.4 More specifically, document D6 provides the following disclosure as regards features (a) to (e):

4.4.1 In view of the interpretation set out in point 3.1 above, the board holds that the "drillers console" mentioned on page 343 and disclosed in Figure 6 of D6 includes a form of "remote control" as required by **features (a) and (b)**.

4.4.2 As to **features (c) to (e)**, the board agrees with the analysis with respect to features (ii) to (vi) of Reasons 8.1.3 of the impugned decision and merely adds the following comments.

First, the board holds that the office-site database which updates the "office site intranet server" according to the second full paragraph of the left-hand column of page 342 of D6 must necessarily retrieve its data from another, rig-site based database. However,

this does not mean that there is no control of the data communication between the rig site and the office site as required by features (c) to (e) in D6. Rather, a transfer of data from the *rig-site based database* to the *office-site database* must evidently take place to perform the update. Conversely, there must be access to the drilling rig from the office-site location to allow for this update procedure, even if this access takes place fully automatically, i.e. without any human intervention.

Moreover, regarding **feature (e)**, the respondent considered that this *rig-site based database* resided in an on-site computer in D6. It argued that this on-site computer was merely an entity to which and from which traffic was directed but which did not perform any kind of control on the traffic actually occurring in the network. While the board sees no reason to disagree with this point of view, this, again, does not mean that there is no "control unit" as required by features (c) to (e) in D6. In Reasons 8.1.3 of the appealed decision, regarding its "feature (vi)", the opposition division correctly referred to the third paragraph of the left-hand column of page 342 of D6 as evidence for such a "control unit". The board holds that this paragraph implies that the control unit is arranged as required by feature (e) because it discloses that "[r]eal-time information is passed in priority to historical information". The skilled reader would in this respect immediately recognise that the prioritisation of real-time data over historical data could, for instance, consist of ordering the data such that more recent data (or security-sensitive data) is transmitted prior to older data (common data). Moreover, the skilled reader would also readily understand that this prioritisation is performed on the

rig site because it evidently needs to occur before transmission to the office site.

Therefore, the board concludes that D6 discloses features (a) to (e).

4.5 As regards **feature (f)**, the section "IT Controlled Drilling" of the left-hand column of page 343 of D6 discloses that in March 1998, which is the point in time when the content of D6 was presented at a conference, it was an ongoing process to install "control networks" to manage part of the drilling equipment via a "drillers console". While these control networks must necessarily involve "control commands", D6 does not disclose that these control commands are prioritised and, *a fortiori*, not that they are prioritised according to feature (f). In fact, no details on the "control networks" of the left-hand column of page 343 of D6 are provided. The board notes in this respect that the skilled reader would have readily understood that computer networks in March 1998 were often of a rudimentary form, which is already hinted at in the section entitled "Mechanics of Integrating New Information Technology into the Workflow" in the right-hand column of page 340 of D6. Such a rudimentary form is moreover illustrated in Figure 3 of D6. From this Figure, despite being schematic, it seems that the components of D6's distributed drilling information systems, in particular the tool performing a "Measurement While Drilling" (MWD, see the section "Introduction" on page 337 of D6), were connected to a "Company Rep." PC that was able to contact the office network via a modem.

However, the skilled reader would not necessarily

recognise from this that control commands issued by an operator on the drillers console would be routed over a network involving the PC of Figure 3 of D6: it may well be that the "control networks" which are reportedly being installed at the time of D6 relate to dedicated networks directly connecting the drillers console with the drilling equipment. Such a dedicated network would not require any prioritisation of control commands, regardless of any prioritisation of real-time information over historic information between the rig site and the remotely located control centre. In view of the interpretation set out in point 3.5 above, the "real-time information" disclosed in the second full paragraph of the left-hand column of page 342 of D6 cannot constitute a set of "control commands" because it does not necessarily involve one or more instructions from an operator or signalling messages.

As a result, D6 does not disclose **feature (f)**.

- 4.6 Concerning the technical effect of this distinguishing feature, the board agrees, when adopting the interpretation set out in point 3.5 above, that feature (f) guarantees, at least as much as possible, the operation of the drilling rig, i.e. a proper control of drilling activities, as hinted at in lines 24 to 27 of page 9 of the present description as filed. Stated differently, this feature is considered to contribute to improving the reliability of the communication of the control commands performed from the remotely located control centre to the drilling rig (cf. also page 1, lines 18 and 19 of the description as filed).
- 4.7 Given that the drilling activities are managed in D6 via the "control networks" of page 343, the objective

problem can be framed as "how to provide for a practical way to implement the control networks of page 343 of D6 such that a proper control of drilling activities can be guaranteed".

- 4.8 The respondent stated that this objective problem "clearly teaches in the direction of the invention", but the board does not see how that would be the case. The same applies to the respondent's allegation that this objective problem would include "an interconnection of on-site networks in D6 which is not at all present".
- 4.9 The board can also not agree to the objective problem as formulated by the respondent, namely to provide for "a different, very alternative solution to the solution of D6", because D6, by being silent about how to practically implement the control networks according to its page 343 (see point 4.5 above), does not offer a solution to which an alternative can be found.
- 4.10 The notional skilled person to whom this objective problem is addressed is an engineer in the field of computer networks. Based on their common general knowledge, this skilled person would have been aware of several, equally likely options to solve that problem posed at the patent's priority date, for instance
- a hardware solution with dedicated equipment directly connecting the drilling equipment with the drillers console
- or
- a software solution which uses (much of) the existing network architecture and puts in place a



proper prioritisation scheme to ensure that crucial control commands are always communicated.

Correspondingly, the invention merely results in an obvious and, consequently, a non-inventive selection among a number of known possibilities with their known benefits and drawbacks. Therefore, it cannot lead to the acknowledgement of an inventive step (see e.g. T 894/19, Reasons 3.6).

4.11 Hence, the subject-matter of claim 1 of the main request does not involve an inventive step (Article 56 EPC).

5. *Auxiliary request: admittance into the proceedings*

5.1 Claim 1 of the **auxiliary request** differs from claim 1 of the main request by additional feature (g) (see point VIII above).

5.2 No cogent reasons were brought forward by the respondent as to why there would be "exceptional circumstances" in the present appeal case within the meaning of Article 13(2) RPBA 2020 justifying admittance of the auxiliary request into the proceedings. The respondent's statement that this auxiliary request is meant to "clarify the intended meaning of the claim" merely reflects the respondent's motivation to amend its appeal case and not why the current case would be "exceptional".

5.3 Hence, the auxiliary request is not admitted into the proceedings (Article 13(2) RPBA 2020).

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



B. Brückner

K. Bengi-Akyürek

Decision electronically authenticated