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Datasheet for the decision of 9 May 2023

Case Number: T 1216/20 - 3.5.03

Application Number: 14805781.3

Publication Number: 3072308

IPC: H04Q9/00, G01D4/00, G06Q50/06, H04L1/00

Language of the proceedings: EN

Title of invention:
Consumption meter with error-correction

Patent Proprietor:
Kamstrup A/S

Opponent:
Stößel, Matthias

Headword:
Consumption meter with error correction/KAMSTRUP

Relevant legal provisions:
EPC Art. 56
RPBA 2020 Art. 13(2)

Keyword:
Inventive step - main request (no): opposition division's claim construction not followed
Admittance of request filed during oral proceedings - auxiliary request (no): no exceptional circumstances

Decisions cited:
T 0764/16

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Case Number: T 1216/20 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 9 May 2023

Appellant: (Opponent)	Stößel, Matthias Dornheimer Ring 125 68309 Mannheim (DE)
Representative:	Altmann Stößel Dick Patentanwälte PartG mbB Theodor-Heuss-Anlage 2 68165 Mannheim (DE)
Respondent: (Patent Proprietor)	Kamstrup A/S Industrivej 28 Stilling 8660 Skanderborg (DK)
Representative:	Rupp, Christian Mitscherlich PartmbB Patent- und Rechtsanwälte Sonnenstraße 33 80331 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 28 February 2020 rejecting the opposition filed against European patent No. 3072308 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	J. Eraso Helguera
	C. Heath

Summary of Facts and Submissions

I. This case concerns the appeal filed by the opponent (appellant) against the decision of the opposition division to reject the opposition under Article 101(2) EPC.

II. The appealed decision mentioned *inter alia* the following prior-art document:

PCT1: US 7,626,511 B2.

III. Oral proceedings before the board were held on 9 May 2023.

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

- The proprietor (respondent) requested as a **main request** that the appeal be dismissed, i.e. that the opposition be rejected and the patent be maintained as granted, or that the patent be maintained on the basis of the claims of an **auxiliary request** filed during the oral proceedings before the board.

At the end of the oral proceedings, the board's decision was announced.

IV. Claim 1 as granted (**main request**) reads as follows:

"A device for transmitting data messages relating to consumption data of a supplied utility, the device being arranged as a communication unit of a consumption meter, wherein the device is arranged for encoding and

transmitting a data message (2) which comprises two parts:

- a first part (20) which comprises a payload and being encoded in accordance with a communication protocol, and
- a second part (21) which comprises error-correcting information for enabling a receiver device to correct errors in the data message (2),

characterised in that

the data message (2) is encoded so that the first part (20) forms an independent sub data message which can be received independently of the second part (21) by a receiver device, the sub data message being arranged for being received by a receiver within a first communication range (6), and wherein the data message comprising the first and the second part is arranged for being received by a receiver within a second communication range (7), the second communication range (7) being longer than the first communication range (6)."

Claim 1 of the **auxiliary request** (labelled "5th Auxiliary Request") reads as follows:

"A device for transmitting data messages relating to consumption data of a supplied utility, the device being arranged as a communication unit of a consumption meter, wherein the device is arranged for encoding and transmitting a data message (2) which comprises two parts:

- a first part (20) which comprises a payload and being encoded in accordance with a communication protocol, and
- a second part (21) which comprises error-correcting information for enabling a receiver device to correct errors in the data message (2),
characterised in that
the first part (20) further comprises a first sync word (31) and the second part (21) further comprises a second sync word (33), and in that the data message (2) is encoded so that the first part (20) forms an independent sub data message which can be received independently of the second part (21) by a receiver device, the sub data message being arranged for being received by a receiver within a first communication range (6), and wherein the data message comprising the first and the second part is arranged for being received by a receiver within a second communication range (7), the second communication range (7) being longer than the first communication range (6)."

Reasons for the Decision

1. MAIN REQUEST

Claim 1 as granted (**main request**) comprises the following limiting features:

1.1 A device for transmitting data messages relating to consumption data of a supplied utility,
1.2 the device being arranged as a communication unit of a consumption meter,
1.3.1 wherein the device is arranged for encoding and transmitting a data message
1.3.2 which comprises two parts:

1.4.1 a first part which comprises a payload
1.4.2 being encoded in accordance with a communication protocol,
1.4.3 a second part which comprises error-correcting information for enabling a receiver device to correct errors in the data message,
1.5 the data message is encoded so that the first part forms an independent sub data message
1.6.1 which can be received independently of the second part by a receiver device,
1.6.2 the sub data message being arranged for being received by a receiver within a first communication range,
1.7 wherein the data message comprising the first and the second part is arranged for being received by a receiver within a second communication range, the second communication range being longer than the first communication range.

1.1 Claim 1 - inventive step (Article 56 EPC)

1.1.1 Prior-art document **PCT1** equally relates to automatic meter reading and is used as a starting point for the assessment of inventive step. It discloses a device (column 3, lines 23 to 27: "transmitter assembly 10") for transmitting data messages relating to consumption data of a supplied utility (column 2, lines 63 to 66: "water"). This device is arranged as a communication unit of a consumption meter (column 2, lines 64 to 66: "water meter") for encoding and transmitting a data message (column 3, lines 23 to 27: "electronic message"). This message in turn comprises two parts: a first part which comprises a payload (column 3, line 25: "meter reading data") and a second part which comprises error-*checking* information for enabling a receiver device to at least detect errors in the data

message (column 3, lines 25 and 26: "error code for checking the data at the receiving end").

1.1.2 The respondent identified **features 1.4.2 to 1.7** as distinguishing features over document PCT1, while the appellant considered that **only feature 1.4.3** constituted a distinguishing feature.

1.1.3 As to **feature 1.4.2**, PCT1 discloses at column 3, lines 50 to 52 that the transmitter assembly "transmits metering data in a message protocol, which is converted to radio frequency (RF) signals by an RF modulator section". Further, according to column 3, line 25, the electronic message includes *inter alia* "meter reading data", i.e. a payload. Thus, PCT1 also discloses feature 1.4.2.

1.1.4 As to **features 1.5 and 1.6.1**, the board is persuaded by the appellant's argument that features 1.5 and 1.6.1 have no limiting technical effect other than ensuring that the encoded and transmitted first part of the data message can indeed be "received" (rather than "decoded" or "understood" as the respondent put it at the oral proceedings before the board) at the receiving side, without bothering with the receipt of the second part. This is because a "receiver" simply "receives" data as data comes in at the receiving side of a data communications system - whether or not the received data can subsequently be decoded and properly processed. Hence, also in the system of PCT1, the "meter reading data" is evidently encoded and transmitted such that the receipt of that data may be performed entirely "independently" of the receipt of the "error code" data. In other words, also in the system of PCT1, the receipt of the "meter reading data" does not depend on the receipt of the "error code",

i.e. in full accordance with features 1.5 and 1.6.1.

1.1.5 With respect to **features 1.6.2 and 1.7**, the board notes that those features do not merely recite "being received by a receiver" but rather "being arranged for being received by a receiver". In principle, such formulation can translate into technical constraints on the transmitting device, provided the receiving part is sufficiently specified. In the case at hand, the only derivable limitation is that the sub-data and data messages encoded and transmitted by the transmitting device must be **suitable** to be received by a receiver within a first and a second communication range, respectively, the second communication range being longer than the first. Within the maximum communication range achieved by the given transmission power, an arbitrary (second) communication range can well be set in which a receiver can receive a complete data message (cf. PCT1, column 1, lines 45 and 46: "distances of more than 1,000 feet and up to distances of one-half mile or more"). Then, for any other (first) communication range within the second communication range (cf. PCT1, column 1, lines 37 and 38: "distances of a few hundred feet"), a receiver will also receive the complete data message and any possible sub-part of it. Consequently, these features are also already anticipated by document PCT1.

1.1.6 On the basis of **features 1.4.3, 1.5 and 1.6.1**, the parties identified the following technical effects:

- The appellant submitted that the use of error correction at the transmitter provided an improved transmission reliability, i.e. fewer discarded messages at the receivers, which in turn translated into a lower number of repetitions from the

transmitter or, ideally, no need for repetitions at all for transmitting a specific measurement data.

- The respondent countered that reliability could be mitigated by retransmitting the same signal and was not the problem solved by the invention. In contrast, encoding at the transmitter the data message so that an independent sub data message can be *received* independently of the second part by a receiver provided receivers with the flexibility to use or not error correction involving only one signal rather than the two separate transmission modes of PCT1. This reduced the complexity of the transmitter device, saved energy and enhanced its lifetime.

1.1.7 The board, given that the wording of present claim 1 does not expressly or implicitly exclude possible re-transmissions at all (in any event, re-transmissions would typically depend on the performance or reliability of the respective error-correcting scheme), has severe doubts as to whether the alleged distinguishing features may indeed reduce the number of repetitions in data transmission. In addition, absent any details about the exact encoding and decoding steps and the sensitivity of the "receiver" claimed, it is mere speculation that the energy consumption or the complexity of the transmitter device could somehow be reduced. However, in the respondent's favour, the board relies on the objective technical problem of "how to reduce the physical requirements of the transmitter of PCT1 and still cope with different scenarios relating to receiver locations".

1.1.8 The subject-matter of claim 1 does not involve an inventive step (Article 56 EPC) starting from PCT1 for the following reasons:

Document PCT1 explicitly discloses at column 3, lines 24 to 26, "an electronic message that includes an identification code, meter reading data, and an error code for checking the data at the receiving end". Yet, PCT1 does not explain *how* the error code should be calculated. Just like in the opposed patent, the transmitters of PCT1 are battery-powered (cf. column 4, lines 1 and 2: "The type of system uses a battery for power and this mode of transmission provides long battery life using small batteries"). Hence, there is a noticeable incentive to extend their battery life while still reaching different types of receiver. Starting out from PCT1, the skilled person would have readily realised that, in a wireless transmission system, there are "lost" or "incorrectly received" messages, and that their retransmissions would have a negative impact on the battery life of the transmitter. In reaction to this, and in accordance with the specific circumstances, the skilled person would have naturally considered implementing the "error code for checking the data" by specifically appending "error-correcting information". For instance, the skilled person would have added basic "FEC codes" or even "turbo codes" well known from the prior art at the patent's filing date (see in that regard also paragraph [0011] of the opposed patent) to at least the meter reading data, arriving thereby at the introduction of **feature 1.4.3**. In doing so, the known code generation method would have led to a creation of a code word which would be the concatenation of at least the "meter reading data", i.e. a first part, and e.g. the "FEC code" computed therefrom, i.e. a second part. It is further apparent

that the first part has a known length and *can be received* independently from the second part as per **features 1.5 and 1.6.1**, albeit losing the error resilience provided by the code value.
The skilled person would also have considered other known error-correcting methods, such as "LDPC codes".

1.1.9 The respondent acknowledged that error correction was as such well known in the art (cf. the opposed patent, paragraphs [0041]: "turbo coding or low-density parity-check (LDPC) coding" and [0043]: "cyclic redundancy checksum (CRC)"). Nevertheless, it contended that PCT1 required the complete message to be *received* before the payload could be *decoded*. The reason for this was that the "error code" of PCT1 was not simply transmitted *after* the payload in a time-linear fashion, so that the receiver could stop the reception right after the payload. Rather, the "error code" of PCT1 was interleaved with the payload and the receiver was forced to *receive* and *decode* the entire sequence, as suggested by the use of a frequency-hopping, spread-spectrum type of transmission (see e.g. PCT1, column 2, lines 10 and 11). Even if the skilled person starting from PCT1 had indeed been prompted to include error-correcting information in the "error code", it would not have been obvious to encode the "meter reading data" as an independent sub data message which could be received independently of the error-correcting information (**features 1.5 and 1.6.2**). In addition, the signal according to the claim was sent at a single power level instead of the multiple signals at different power levels of PCT1.

1.1.10 The board is not persuaded by these arguments.

- Firstly, PCT1 discloses not only a transmission mode using frequency-hopping and spread-spectrum, but also a narrow-band mode of operation in the unlicensed band (cf. PCT1, page 3, lines 53 to 60). The respondent has not demonstrated that both modes necessarily require bit-interleaving at the physical and/or logical level.

- Secondly, according to the respondent's claim construction, "receive" is not limited to the mere "analog reception", i.e. the induction of an electrical signal at the antenna terminal. Rather, the respondent's understanding of "reception" encompasses both analog reception and digital decoding. Using the same claim construction, the claimed independent reception would still cover scenarios in which the whole analog signal is *received* but a (non-interleaved) CRC or FEC code in the resulting bit stream is ignored. The very fact that the transmitter encodes the signal in accordance with a specific format, where the bits forming the payload are distinguishable from the bits forming the "error code", already confers the potential for receivers to simply ignore such "error code".

- Thirdly, the claim gives no indication with respect to the power level to be used for the transmission of the data message or its sub-parts. In fact, the opposed patent foresees both the transmission of different data messages with different signal strengths (cf. granted claim 12) as well as the use of different signal strengths for different parts of the same message (cf. paragraph [0057]: "second stronger sync word").

1.2 Thus, the main request is not allowable under Article 56 EPC.

2. AUXILIARY REQUEST

Claim 1 of the **auxiliary request** comprises all the limiting features of claim 1 of the main request and the following additional feature:

1.4.4 the first and the second part further comprises a first and a second sync word respectively.

2.1 Admittance into the appeal proceedings (Article 13(2) RPBA 2020)

2.1.1 The claims of the auxiliary request were filed for the very first time during the oral proceedings before the board, i.e. after notification of the summons to those oral proceedings.

2.1.2 The admittance of these claim requests is governed by Article 13(2) RPBA 2020, according to which any amendment to a party's appeal case is not taken into account unless there are "exceptional circumstances", which have been justified with "cogent reasons" by the party concerned.

2.1.3 The respondent submitted the following arguments:

(a) the present auxiliary request, filed during oral proceedings before the board, was based on the "fourth auxiliary request" formerly on file. The amendment carried out (deletion of "in accordance with the communication protocol" after "which can be received") clearly overcame the objection under Article 123(2) EPC raised in the board's

preliminary opinion against all the auxiliary requests on file;

(b) the amendment did not introduce any additional issues; and

(c) it was neither surprising nor contrary to procedural efficiency, given that, in its preliminary opinion, the board had already considered not only added subject-matter (Article 123(2) EPC) but also inventive step (Article 56 EPC).

2.1.4 The appellant indicated that the objection under Article 123(2) EPC appearing in the board's preliminary opinion had been discussed already during the opposition proceedings.

2.1.5 The respondent's arguments do not constitute "cogent reasons" justifying "exceptional circumstances" within the meaning of Article 13(2) RPBA 2020. To the contrary, it is apparent that such an auxiliary request could and should have been filed earlier, at any rate well before the oral proceedings before the board. The board also concurs with the appellant that it is irrelevant for the purposes of Article 13(2) RPBA 2020 whether the board's preliminary opinion differed from the contested decision of the opposition division. Parties to proceedings before the Boards of Appeal always have to reckon with an unfavourable preliminary opinion at any time up to announcement of the decision (see e.g. T 764/16, Reasons 3.3.2).

Only as an aside, the auxiliary request has not been demonstrated to be *prima facie* allowable either. In particular, the respondent did not demonstrate how the

amendments according to the auxiliary request should indeed overcome the outstanding inventive-step objections starting out from PCT1. The board and the appellant were seemingly expected to find convincing arguments already submitted in respect of the former "fourth auxiliary request" in writing, unless the respondent intended to provide additional arguments in support of the presence of an inventive step for the new request once admitted.

2.2 Accordingly, the auxiliary request was not admitted into the appeal proceedings (Article 13(2) RPBA 2020).

3. Since there is no allowable claim request on file, the patent must be revoked.

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:

G. Magouliotis K. Bengi-Akyürek

Decision electronically authenticated