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**Title of invention:**  
RADIO COMMUNICATION SYSTEM

**Patent Proprietor:**  
Koninklijke Philips N.V.

**Opponent:**  
Molnia, David

**Headword:**  
ACK scheme/PHILIPS

**Relevant legal provisions:**  
EPC Art. 123(2)

**Keyword:**



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**Boards of Appeal**

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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 1107/20 - 3.5.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.05**  
**of 20 April 2022**

**Appellant:** Koninklijke Philips N.V.  
(Patent Proprietor) High Tech Campus 52  
5656 AG Eindhoven (NL)

**Representative:** Philips Intellectual Property & Standards  
High Tech Campus 52  
5656 AG Eindhoven (NL)

**Respondent:** Molnia, David  
(Opponent) Theatinerstrasse 16  
80333 Munich (DE)

**Representative:** Molnia, David  
df-mp Dörries Frank-Molnia & Pohlman  
Patentanwälte Rechtsanwälte PartG mbB  
Fünf Höfe  
Theatinerstraße 16  
80333 München (DE)

**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 6 March 2020  
revoking European patent No. 1449311 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chair** A. Ritzka  
**Members:** P. Cretaine  
E. Mille

## **Summary of Facts and Submissions**

I. This appeal is against the decision of the opposition division, dispatched on 6 March 2020, to revoke European patent No. 1 449 311. The patent was revoked on the grounds that the subject-matter of claim 1 of the patent as granted (main request) did not meet the requirements of Article 123(2) EPC. Auxiliary requests 1, 1a, 1b and 1c, filed during the oral proceedings, were not allowed for non-compliance with Article 123(2) EPC. Additionally, auxiliary request 1 was found to contravene the requirements of Article 123(3) EPC. The issues of novelty and inventive step, which relate to the ground for opposition under Article 100(a) EPC, were not discussed during the oral proceedings and were not the subject of the decision.

II. The patentee's notice of appeal was received on 4 May 2020 and the appeal fee was paid on the same date.

The statement setting out the grounds of appeal was received on 15 July 2020. The appellant (patentee) re-filed the claims according to auxiliary requests 1, 1a, 1b and 1c and filed claims according to a new auxiliary request, i.e. auxiliary request 2. The appellant requested that the decision be set aside and that the patent be maintained on the basis of the claims as granted (main request), or on the basis of the claims of auxiliary request 1, 1a, 1b or 1c, or on the basis of the claims of auxiliary request 2. Oral proceedings were requested as an auxiliary measure.

III. By letter received on 20 November 2020, the opponent (respondent) commented on the statement setting out the

grounds of appeal and requested that the appeal be dismissed and thus that the decision to revoke the patent be confirmed. Further, should the board decide that the decision regarding the ground for opposition under Article 100(c)/Article 123(2) EPC was incorrect, the respondent requested that the case be remitted to the opposition division for discussion of the issues regarding the ground for opposition under Article 100(a) EPC.

- IV. A summons to oral proceedings was issued on 8 July 2021. In a communication sent on 14 March 2022, the board expressed its preliminary opinion on the case. In particular, the board detailed why, in its view, the main request and auxiliary requests 1, 1a, 1b, 1c and 2 did not appear to meet the requirements of Article 123(2) EPC and also why auxiliary request 2 should not be admitted into the appeal proceedings under Article 12(4) RPBA 2020.
- V. By letter received on 5 April 2022, the appellant submitted a new auxiliary request, i.e. auxiliary request 3, and provided arguments in favour of the compliance of all of the requests with the requirements of Article 123(2) EPC. Further, should the board decide that the decision regarding the ground for opposition under Article 100(c)/Article 123(2) EPC was incorrect, the appellant requested that the case not be remitted to the opposition division for discussion of the issues regarding the ground for opposition under Article 100(a) EPC.
- VI. Oral proceedings were held on 20 April 2022. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request), or alternatively on the basis

of the set of claims of any of auxiliary requests 1, 1a, 1b or 1c, which were filed during the oral proceedings before the opposition division, or of auxiliary request 2, which was filed with the statement setting out the grounds of appeal, or of auxiliary request 3, which was filed with the appellant's letter dated 5 April 2022. The respondent requested that the appeal be dismissed or alternatively, should the board decide that the decision regarding the ground for opposition under Article 100(c) EPC was incorrect, that the case be remitted to the opposition division for discussion of the issues regarding the ground for opposition under Article 100(a) EPC. At the end of the oral proceedings, the decision of the board was announced.

VII. Claim 1 of the **main request** reads as follows:

"A secondary station (110) for use in a radio communication system having a communication channel (122) for the transmission of data packets from a primary station (100) to the secondary station, the secondary station comprising receiving means (114) for receiving a data packet (202) from the primary station on a first downlink channel, acknowledgement means for transmitting acknowledgement signals, including positive acknowledgements (206) or negative-acknowledgements (204) which indicate the status of the received data packet, to the primary station via a first ACK/NACK field, the secondary station being characterized by further comprising means for receiving from said primary station on a second downlink channel distinct from the first downlink channel a packet indicator indicating that the

data packet is transmitted to said secondary station, and timer means adapted to start a timer, if said timer is not already running, or restarting said timer if said timer is already running, on detection of said packet indicator, and in that said secondary station is adapted to transmit acknowledgement signals in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot until the timer expires."

Claim 1 of **auxiliary request 1** differs from claim 1 of the main request in that the wording of the last feature, i.e. "in that said secondary station is adapted ... until the timer expires", has been replaced with the wording "in that said secondary station is adapted to transmit acknowledgement signals, including positive acknowledgements (206) or negative acknowledgements (204), in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot until the timer expires, wherein, upon expiry of the timer, transmission of the positive acknowledgements (206) is stopped while transmission of the negative acknowledgements (204) is not stopped, and in that said secondary station is further adapted to limit the maximum number of negative acknowledgements, the limit being determined by a second timer set according to a higher layer parameter signaled by the primary station."

Claim 1 of **auxiliary request 1a** differs from claim 1 of the main request in that the wording of the last feature, i.e. "in that said secondary station is adapted ... until the timer expires", has been replaced with the wording "in that said secondary station is adapted to transmit acknowledgement signals in the ACK/

NACK fields subsequent to the first ACK/NACK field in every time slot, wherein the secondary station (110) stops transmitting in the ACK/NACK field when the timer expires until a data packet (202) is next detected."

Claim 1 of **auxiliary request 1b** differs from claim 1 of the main request in that the characterising part has been replaced with the wording "means for receiving from said primary station on a second downlink channel distinct from the first downlink channel a packet indicator indicating that the data packet is transmitted to said secondary station, and timer means adapted to start a timer, if said timer is not already running or restarting said timer if said timer is already running, on detection of said packet indicator, indicating that the data packet is transmitted to the secondary station, and in that said secondary station is adapted to transmit acknowledgement signals, including positive acknowledgements (206) and negative acknowledgements (204), in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot wherein, if a packet is detected in a time slot when such a packet could be transmitted, a positive acknowledgement (206) is transmitted in a corresponding ACK/NACK field, wherein, upon transmitting of the positive acknowledgement (206), the secondary station checks a further time slot for a further data packet (202), wherein, if no packet is detected, the secondary station is configured to determine whether the timer is running and to, if the timer is still running, to transmit a negative acknowledgement (204) in the corresponding ACK/NACK field, wherein, upon transmitting of the negative acknowledgement (204), the secondary station checks an even further time slot for

a further data packet (202), and wherein the secondary station (110) stops transmitting acknowledgement signals in the ACK/NACK field when the timer expires until a data packet (202) is next detected."

Claim 1 of **auxiliary request 1c** differs from claim 1 of the main request in that the characterising part has been replaced with the wording "means for receiving from said primary station on a second downlink channel distinct from the first downlink channel a packet indicator indicating that the data packet is transmitted to said secondary station, and timer means adapted to start a timer, if said timer is not already running or restarting said timer if said timer is already running, on detection of said packet indicator, indicating that the data packet is transmitted to the secondary station, and in that said secondary station is adapted to transmit acknowledgement signals, including positive acknowledgements (206) and negative acknowledgements (204), in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot wherein, if a packet is detected in a time slot when a packet could be transmitted, a positive acknowledgement (206) is transmitted in a corresponding ACK/NACK field, wherein, upon transmitting of the positive acknowledgement (206), the secondary station checks a further time slot for a further data packet (202), wherein, if no packet is detected, the secondary station is configured to determine whether the timer is running and, if the timer is still running, to transmit a negative acknowledgement (204) in the corresponding ACK/NACK field, wherein the secondary station (110) stops transmitting acknowledgement signals in the ACK/NACK field when the



timer expires until a packet indicator is next detected."

Claim 1 of **auxiliary request 2** differs from claim 1 of the main request in that the wording of the last feature, i.e. "in that said secondary station is adapted ... until the timer expires", has been replaced with the wording "in that said secondary station is adapted to transmit acknowledgement signals in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot and to modify a characteristic of uplink transmissions until the timer expires."

Claim 1 of **auxiliary request 3** differs from claim 1 of the main request in that the characterising part has been replaced with the wording "means for receiving from said primary station on a second downlink channel, being a control channel, distinct from and associated with the first downlink channel a packet indicator indicating that the data packet is transmitted to said secondary station, and  
timer means adapted to start a timer, if said timer is not already running or restarting said timer if said timer is already running, on detection of said packet indicator and upon correct decoding of the second downlink control channel, said correct decoding including using Cyclic Redundancy Check information, and  
in that said secondary station is adapted to transmit acknowledgement signals in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot until the timer expires."

Each request further contains independent claims directed to a corresponding radio communication system and a corresponding method.

## Reasons for the Decision

1. Main request

1.1 The following feature numbering of claim 1 is used:

(1.1) A secondary station for use in a radio communication system having a communication channel for the transmission of data packets from a primary station to the secondary station, the secondary station comprising

(1.2) receiving means for receiving a data packet from the primary station on a first downlink channel,

(1.3) acknowledgement means for transmitting acknowledgement signals, including positive acknowledgements or negative acknowledgements which indicate the status of the received data packet, to the primary station via a first ACK/NACK field, the secondary station being characterized by further comprising

(1.4) means for receiving from said primary station on a second downlink channel distinct from the first downlink channel a packet indicator indicating that the data packet is transmitted to said secondary station, and

(1.5) timer means adapted to start a timer, if said timer is not already running, or restarting said timer if said timer is already running, on detection of said packet indicator, and

(1.6) in that said secondary station is adapted to transmit acknowledgement signals in the ACK/NACK fields subsequent to the first ACK/NACK field in every time slot until the timer expires.

- 1.2 It was common ground in the proceedings that features (1.1) to (1.4) find support in the application documents as originally filed.
- 1.3 Features (1.5) and (1.6), however, are not directly and unambiguously supported by the application documents as originally filed.
- 1.4 In this respect, Figure 4 and the corresponding passage on page 7, lines 8 to 22, which according to the appellant provide support for features (1.5) and (1.6), do not mention or show a packet indicator; rather, they relate only to the detection of a packet which triggers or resets the timer. The test 404 in Figure 4 is not described in the single corresponding passage on page 7, lines 8 to 22, as a test for whether a packet indicator is detected, but rather as a test for whether a packet is detected. Feature 1.5 requires that a timer means is started on detection of a packet indicator and not on detection of a data packet as described on page 7, lines 12 to 14. The process shown in Figure 4 and described on page 7, lines 8 to 22, makes technical sense as an acknowledgement scheme whereby an ACK is sent when a packet is detected (step 408) and a NACK may be sent when a packet is not detected (step 412).

The description on page 10, line 25, to page 11, line 2, which is the only disclosure of a packet indicator in the description, clearly mentions that any packet indicator is transmitted on a channel distinct from the packet transmitting channel. Therefore, packet indicator detection is clearly distinguished from packet detection. This passage cannot therefore be used to interpret Figure 4.

Moreover, the board notes that claim 1 specifies that the acknowledgement means are means for transmitting positive acknowledgements and negative acknowledgements indicating the status of a received data packet. If it is assumed that the test 404 in Figure 4 is a test for a packet indicator, as argued by the appellant, an ACK in step 408 would be transmitted regardless of whether the packet itself has been received and correctly decoded, which would make no technical sense.

- 1.5 Originally-filed claim 6, which according to the appellant also provides support for features (1.5) and (1.6), specifies that upon detection of an indication that a packet has been transmitted, a timer is reset and that a characteristic of uplink transmissions is modified until the timer expires.

It could be assumed that the indication defined in originally-filed claim 6, or on page 3, lines 15 to 17, corresponds to a packet indicator as described on page 10, line 25, to page 11, line 2.

However, the feature of "modifying a characteristic of uplink transmissions until the timer expires" in originally-filed claim 6 cannot constitute support for feature (1.6). In this respect, the passage on page 3, lines 19 to 25, describes two different embodiments of the modification. The modification dealing with the transmission of acknowledgement signals is limited to defining when a negative acknowledgement should be transmitted and is silent with regard to positive acknowledgements. This passage is also silent on ACK/NACK fields and time slots as defined in feature (1.6).

- 1.6 The appellant further argued that the skilled person would understand, based on several passages of the

description (pages 1 and 2; page 3, lines 6 to 25; page 7, lines 1 to 7; page 7, line 30, to page 8, line 8), that the invention is directed to the use of a timer set upon detection of a packet indicator against the background of an underlying ACK/NACK scheme that is known per se. In this respect, the skilled person would understand that Figure 4, which is described on page 5, lines 7 and 8, as showing a method in accordance with the invention, shows in step 404 a test for a packet indicator and in steps 408 and 412 the transmission of ACK and NACK for a packet. The board is not convinced by this argument since Figure 4 and the corresponding passage on page 7 define an operation of a packet transmission system using an ACK/NACK scheme which makes technical sense and which does not rely at all on the detection of a packet indicator. The board also agrees with the respondent that the passage on page 10 dealing with the detection of a packet indicator should not be used to re-interpret the description of Figure 4, based on page 7, which in itself makes perfect technical sense.

1.7 For these reasons, the board holds that claim 1 as granted does not meet the requirements of Article 123(2) EPC.

2. Auxiliary requests

During the oral proceedings before the board, the appellant relied only on its written submissions.

With respect to auxiliary requests 1, 1a, 1b and 1c, on which the decision is based, the appellant referred in writing to its arguments presented in respect of the main request. Since claim 1 of each of these requests includes in substance the same features (1.5) and (1.6)

as the main request, the board holds, for the reasons set out in point 1 above, that auxiliary requests 1, 1a, 1b and 1c do not meet the requirements of Article 123(2) EPC.

Auxiliary request 2 was filed with the statement setting out the grounds of appeal. Claim 1 of auxiliary request 2 includes the same features (1.5) and (1.6) as claim 1 of the main request. Therefore, irrespective of the question of whether auxiliary request 2 should be admitted into the appeal proceedings under Article 12(4) RPBA, the board holds that auxiliary request 2 does not meet the requirements of Article 123(2) EPC.

Auxiliary request 3 was filed in response to the board's communication under Article 15(1) RPBA. Claim 1 of auxiliary request 3 includes the same features (1.5) and (1.6) as claim 1 of the main request. Therefore, irrespective of the question of whether auxiliary request 3 should be admitted into the appeal proceedings under Article 13(2) RPBA, the board holds that auxiliary request 3 does not meet the requirements of Article 123(2) EPC.

### 3. Conclusion

The ground for opposition under Article 100(c) EPC prejudices the maintenance of the contested patent, even taking into account the amendments made during the opposition proceedings.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated