Internal distribution code:

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

Datasheet for the decision of 29 June 2021

Case Number: T 0729/19 - 3.5.03

Application Number: 13150071.2

Publication Number: 2582158

IPC: H04R25/00

Language of the proceedings: EN

Title of invention:
Communication system for wireless audio devices

Patent Proprietor:
Starkey Laboratories, Inc.

Opponent:
Widex A/S / Oticon A/S / GN Hearing A/S

Headword:
Header-embedded volume control data/STARKEY

Relevant legal provisions:
EPC Art. 123(2)
EPC R. 103(4)(a)
RPBA 2020 Art. 12(8)

Keyword:

Added subject-matter - all claim requests (yes)
Decision in written proceedings - (yes): withdrawal of the proprietor's appeal
Reimbursement of proprietor's appeal fee at 25% - (yes)

Europäisches Patentamt
European Patent Office
Office européen des brevets

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 0729/19 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 29 June 2021

Appellant I: (Opponents)	Widex A/S / Oticon A/S / GN Hearing A/S Nymøllevej 6 Kongebakken 9 Lautrupbjerg 7 3540 Lynge/2765 Smørum/2750 Ballerup (DK)
Representative:	Betten & Resch Patent- und Rechtsanwälte PartGmbB Maximiliansplatz 14 80333 München (DE)
Appellant II: (Patent Proprietor)	Starkey Laboratories, Inc. 6600 Washington Avenue South Eden Prairie, MN 55344 (US)
Representative:	Vossius & Partner Patentanwälte Rechtsanwälte mbB Siebertstrasse 3 81675 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 16 January 2019 concerning maintenance of the European Patent No. 2582158 in amended form.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	K. Peirs
	C. Almberg

Summary of Facts and Submissions

I. The appeals are against the interlocutory decision of the opposition division to maintain the present European patent according to the proprietor's auxiliary request 1'. The proprietor's main request and auxiliary request 1 were deemed to be not allowable for non-compliance with Article 123(2) or 123(3) EPC. The opponent had invoked all available grounds for opposition (Article 100(a) to (c) EPC).

II. Appellant I (opponents) requests that the decision under appeal be set aside and that the patent be revoked.

III. Appellant II (proprietor) requests that

- the decision under appeal be set aside;
- the patent be maintained in amended form according to a **main request**, or, in the alternative, one of thirteen auxiliary requests **(auxiliary requests 1, 1a, 1b and 2 to 11)**.

The **main request** is the same as the main request underlying the decision under appeal. **Auxiliary request 3** corresponds to auxiliary request 1' underlying the decision under appeal. **Auxiliary requests 10 and 11** respectively correspond to auxiliary requests 5 and 6 underlying the decision under appeal. All other claim requests were filed for the first time in the appeal proceedings.

In the event that the main request is not allowable, appellant II requested oral proceedings.

IV. A communication was issued pursuant to Article 15(1) RPBA 2020 including the board's preliminary opinion that claim 1 of all claim requests did not comply with Article 123(2) EPC.

V. In response to the board's communication, appellant II withdrew not only their appeal but also announced that they did not intend to attend the oral proceedings. They did not submit any comments on the substance of the board's communication.

VI. Oral proceedings before the board were then cancelled.

VII. Claim 1 of the **main request** reads as follows (board's underlining of a phrase which is common for claim 1 of all claim requests):

"A wireless interface (110, 210, 310, 410, 510, 610, 710) comprising:
a volume control (720);
and a digital signal processor (230, 330, 430, 530) configured to receive settings of the volume control;
the wireless interface comprising a first port (112) configured to receive audio information from a remote source (120), and a second port (114) configured to do at least:
establish one or more wireless communications with one or more hearing aids using a wireless protocol having a packet including a header and a payload;
send a volume change command to at least one of the one or more hearing aids using the wireless protocol to change the audio volume of the at least one of the one or more hearing aids;
transmit streaming audio in the packet payload to the at least one of the one or more hearing aids;
and send a mute change command to the at least one of

the one or more hearing aids, the mute change command specifying a mute state to configure the at least one of the one or more hearing aids to play the streaming audio blended with audio from a hearing instrument microphone on the respective at least one of the one or more hearing aids;
wherein the volume change command and the mute change command are embedded in the packet header."

VIII. Claim 1 of **auxiliary request 1** reads as follows (board's underlining of the same phrase as in the main request):

"A wireless interface (110, 210, 310, 410, 510, 610, 710), comprising:
a digital signal processor (230, 330, 430, 530); and
a first port (112) configured to receive audio information from a remote source (120),
and a second port (114); the digital signal processor configured to use the second port (114) to:
establish one or more wireless communications with one or more hearing aids using a wireless protocol having a packet including a header and a payload, and transmit streaming audio in the packet payload to the at least one of the one or more hearing aids, the wireless protocol being for the control of one or more hearing aids by conveying remote command and control information between the one or more hearing aids as well as between the wireless interface and the one or more hearing aids, the wireless protocol exchanging information about and controlling settings of a volume level, a mute state, battery life information, acoustic environment information, and a microphone status,

wherein the mute state is to configure at least one of the one or more hearing aids to play streaming audio blended with audio from a hearing instrument microphone on the respective at least one of the one or more hearing aids; wherein the remote change command and the control information is embedded in the packet header."

IX. Claim 1 of **auxiliary request 1a** reads as follows (board's underlining of the same phrase as in the main request and strike-through to highlight amendments vis-à-vis claim 1 of auxiliary request 1):

"A wireless interface (110, 210, 310, 410, 510, 610, 710), comprising:
a digital signal processor (230, 330, 430, 530); and
a first port (112) configured to receive audio information from a remote source (120),
and a second port (114); the digital signal processor configured to use the second port (114) to:
establish one or more wireless communications with one or more hearing aids using a wireless protocol having a packet including a header and a payload, and transmit streaming audio in the packet payload to the at least one of the one or more hearing aids, the wireless protocol being for the control of one or more hearing aids by conveying remote command and control information between ~~the one or more hearing aids as well as between~~ the wireless interface and the one or more hearing aids, the wireless protocol exchanging information about and controlling settings of a volume level, a mute state, battery life information, acoustic environment information, and a microphone status, wherein the mute state is to configure at least one of the one or more hearing aids to play streaming audio blended with audio from a hearing instrument microphone

on the respective at least one of the one or more hearing aids; wherein the remote change command and the control information is embedded in the packet header."

X. Claim 1 of **auxiliary request 1b** reads as follows (board's underlining of the same phrase as in the main request, bold-face and strike-through to highlight amendments vis-à-vis claim 1 of auxiliary request 1a):

"A wireless interface (110, 210, 310, 410, 510, 610, 710), comprising:
a digital signal processor (230, 330, 430, 530); and
a first port (112) configured to receive audio information from a remote source (120),
and a second port (114); the digital signal processor configured to use the second port (114) to:
establish one or more wireless communications with one or more hearing aids using a wireless protocol having a packet including a header and a payload, and transmit streaming audio in the packet payload to the at least one of the one or more hearing aids, the wireless protocol being for the control of one or more hearing aids by conveying remote command and control information between the wireless interface and the one or more hearing aids, the wireless protocol exchanging information about and controlling settings of a volume level **and**~~,~~ a mute state~~, battery life information, acoustic environment information, and a microphone status~~, wherein the mute state is to configure at least one of the one or more hearing aids to play streaming audio blended with audio from a hearing instrument microphone on the respective at least one of the one or more hearing aids; wherein the remote change command and the control information is embedded in the packet header."

XI. Claim 1 of **auxiliary request 2** reads as follows (board's underlining of the same phrase as in the main request):

"A wireless interface (110, 210, 310, 410, 510, 610, 710), comprising:
a digital signal processor (230, 330, 430, 530); and
a first port (112) configured to receive audio information from a remote source (120),
and a second port (114);
the digital signal processor configured to use the second port (114) to:
establish one or more wireless communications with one or more hearing aids using a wireless protocol having a packet including a header and a payload, and transmit streaming audio in the packet payload to the at least one of the one or more hearing aids, the wireless protocol being for the control of one or more hearing aids by conveying remote command and control information of battery life information, acoustic environment information, and a microphone status between the one or more hearing aids as well as remote command and control information of a volume level and a mute state between the wireless interface and the one or more hearing aids, wherein the mute state is to configure at least one of the one or more hearing aids to play streaming audio blended with audio from a hearing instrument microphone on the respective at least one of the one or more hearing aids; wherein the remote change command and the control information is embedded in the packet header."

XII. Claim 1 of **auxiliary request 3** reads as follows (board's underlining of the same phrase as in the main request):

"A wireless communication system, comprising:
at least one hearing aid including a memory configured to store a unique address for the hearing aid;
a wireless interface (110, 210, 310, 410, 510, 610, 710), comprising:
a first port (112) configured to receive audio information from a remote source (120);
a digital signal processor (230), a second port (114), a transceiver (240, 340, 420, 540), and an antenna (250, 350, 450, 550) configured to:
establish a wireless connection with the at least one hearing aid using a packetized wireless protocol having a packet including a header and a payload;
communicate streaming audio with the at least one hearing aid in the packet payload;
transmit a volume change command from the wireless interface using the packetized communication protocol over the wireless connection; and
send a mute change command to the at least one hearing aid over the wireless connection, the at least one hearing aid configured to play the streaming audio blended with audio from a microphone of the at least one hearing aid; wherein the volume change command and the mute change command are embedded in the packet header."

XIII. Claim 1 of **auxiliary request 4** includes all the features of claim 1 of auxiliary request 3 and further comprises the following clause at the end:

"in place of information which is not of relevance during streaming audio".

XIV. Claim 1 of **auxiliary request 5** includes all the features of claim 1 of auxiliary request 3 and further comprises the following clause at the end:

"in place of a source address".

XV. Claim 1 of **auxiliary request 6** includes all the features of claim 1 of auxiliary request 3, where the clause

"send a mute change command to the at least one hearing aid over the wireless connection, the at least one hearing aid configured to play the streaming audio blended with audio from a microphone of the at least one hearing aid;"

has been replaced by (with the amendments being highlighted by the board):

"send a mute change command to the at least one hearing aid over the wireless connection to change between three mute states, the at least one hearing aid configured to play the streaming audio blended with audio from a microphone of the at least one hearing aid according to a first mute state, to play the streaming audio with the microphone muted according to a second mute state and to mute the streaming audio according to a third mute state;"

XVI. Claim 1 of **auxiliary request 7** includes all the features of claim 1 of auxiliary request 3 and further comprises the following clause at the end:

", wherein the system is further configured to use the wireless protocol to convey remote command and control information such as battery life remaining, acoustic environment and microphone status, in addition to the volume change command and mute change command, between the wireless interface and the at least one

hearing aid, for controlling or synchronizing the at least one hearing aid, or providing user feedback".

XVII. Claim 1 of **auxiliary request 8** includes all the features of claim 1 of auxiliary request 3 and further comprises the following clause at the end:

", and wherein the wireless interface is further configured to transmit a wakeup sequence to the at least one of the one or more hearing aids prior to sending the volume change command".

XVIII. Claim 1 of **auxiliary request 9** includes all the features of claim 1 of auxiliary request 3 and further comprises the following clause at the end:

", wherein the wireless interface is further configured to transmit a wakeup sequence to the at least one of the one or more hearing aids prior to sending the volume change command, and wherein the wakeup sequence comprises transmitting a preamble for a predetermined period of time".

XIX. Claim 1 of **auxiliary request 10** includes all the features of claim 1 of auxiliary request 1 and further comprises the following clause at the end:

", wherein the wireless interface is further configured to transmit a wakeup sequence to the at least one of the one or more hearing aids prior to sending the volume change command".

XX. Claim 1 of **auxiliary request 11** includes all the features of claim 1 of auxiliary request 10 and further comprises the following clause at the end:

", wherein the wakeup sequence comprises transmitting a preamble for a predetermined period of time".

Reasons for the Decision

1. *Decision in written proceedings*

As the board does not consider holding oral proceedings to be expedient, or necessary in view of the auxiliary nature of the only remaining request for oral proceedings (cf. Article 116(1) EPC), oral proceedings were cancelled and a decision handed down in written proceedings (Article 12(8) RPBA 2020).

Moreover, since appellant II withdrew their appeal before any decision could be announced at oral proceedings before the board, the respective appeal fee is to be reimbursed at 25% under Rule 103(4)(a) EPC.

2. *The opposed patent*

The invention underlying the opposed patent concerns wireless communications, in particular audio streaming, between e.g. hearing aids and a remote control as in the drawing below. It relates to the technical problem of how to allow for new forms of content and communication within the context of wireless packet transmission involving a packet protocol comprising a header and a payload. This technical problem is addressed by embedding a "remote change command" and "control information" or a "volume change command" and a "mute change command" in the header.

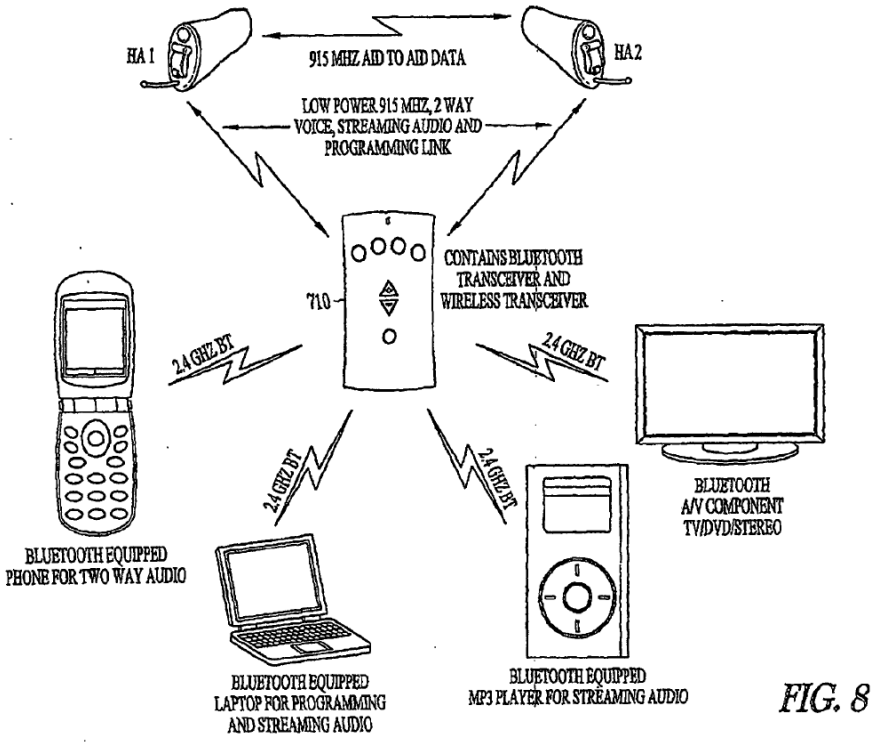

FIG. 8

3. *Main request: claim 1 - feature labelling*

Claim 1 of the **main request** comprises the following limiting features (as labelled by the board):

(a) A wireless interface comprising:
(b) a volume control;
(c) a digital signal processor configured to receive settings of the volume control;
(d) the wireless interface comprising a first port configured to receive audio information from a remote source, and a second port configured to do at least:
(e) establish one or more wireless communications with one or more hearing aids using a wireless protocol having a packet including a header and a payload;
(f) send a volume change command to at least one of the one or more hearing aids using the wireless

protocol to change the audio volume of the at least one of the one or more hearing aids;

(g) transmit streaming audio in the packet payload to the at least one of the one or more hearing aids;

(h) send a mute change command to the at least one of the one or more hearing aids, the mute change command specifying a mute state to configure the at least one of the one or more hearing aids to play the streaming audio blended with audio from a hearing instrument microphone on the respective at least one of the one or more hearing aids;

(i) wherein the volume change command and the mute change command are embedded in the packet header.

4. *Main request: claim 1 - added subject-matter*

Claim 1 of the **main request** is based on original claims 1, 16 and 17 together with Figure 1A and page 3, lines 16 to 26, page 6, lines 17 to 19 and page 11, lines 2 and 3 of the present application as filed.

However, for the following reasons, the amendments to claim 1 introduce subject-matter which extends beyond the content of the application as filed.

4.1 **Feature (d)** has no direct and unambiguous basis in the application as filed in view of the expressions "audio information" and "remote source".

The description of the original application states that the interface "provides communications from a communication device 120" to the first port (cf. page 3, lines 17 to 19). However, the "communication device 120" is not necessarily a "remote source" within the meaning of feature (d). On the contrary, Figure 1A suggests that it is connected via a wire to

interface 100 and therefore could be a part of the same device as interface 100.

Moreover, the "communications" according to line 18 of page 3 of the application as filed do not necessarily concern "audio information" as required by feature (d). Rather, such *communications* could, for instance, relate to a software update, a "ping" to keep a connection awake, a synchronisation of internal clocks, etc.

4.2 **Feature (i)** in its entirety has no direct and unambiguous basis in the application as filed. The passage closest to that feature in the original description is page 70, line 15 to page 71, line 28 together with Tables 62 and 64, which at most only provide vague references indicating that

- "it is advantageous to send information embedded with the streaming audio data for the purpose of listener comfort and listener preferences" (see page 70, lines 16 to 18),
- "audio control information could be contained in the header" (page 71, lines 4 to 7)

or

- "[r]emote control message as embedded data within a streaming audio header PDU" (caption of Table 62, see also page 72, lines 6 and 7).

Contrary to what is suggested by appellant II, vague or general statements do not provide a direct and unambiguous basis.

The application as filed acknowledges in lines 9 to 12 of page 70 the "volume settings" and "mute states" to be information that can be conveyed for the purpose of controlling the hearing aids, synchronising them or

providing user feedback. However, according to lines 15 to 18 of page 70, this [remote-control] information is to be embedded with the streaming audio *data*, i.e., in the understanding of a skilled reader, in the *payload* of the respective data packet. This is confirmed by Table 64 because its description on page 73, line 22 to page 74, line 4 of the application as filed suggests to include the "volume change command" in the "*payload* bits" (emphasis added), rather than in the packet *header*. Table 62 may concern embedding remote control data in a packet header, but is silent on embedding any "volume" or "mute state" change.

Moreover, the application as filed states in lines 27 and 28 of page 70 that "[i]nformation useful for the remote control of a hearing instrument may be contained within a packet header", but it is doubtful whether the skilled reader would directly and unambiguously understand that the information being "useful for the remote control" comprises the "volume settings" and "mute states" according to lines 9 and 10 of page 70 of the application as filed.

4.6 In view of the above, claim 1 of the main request is not allowable under Article 123(2) EPC.

5. *Auxiliary requests: claim 1 - added subject-matter*

Claim 1 of each of the **present auxiliary requests** suffers from at least some of the deficiencies of claim 1 of the main request:

5.1 Claim 1 of **auxiliary requests 1, 1a, 1b, 2, 10 and 11**, though being based on claim 22 rather than on claim 1 of the application as filed, includes the same deficiencies concerning added subject-matter as

mentioned for **feature (d)** in point 4.1 above.

5.2 Moreover, claim 1 of **auxiliary requests 3 to 9** includes at least the deficiency as mentioned for **feature (i)** in point 4.2 above.

5.3 In conclusion, the auxiliary requests on file are also not allowable under Article 123(2) EPC.

6. With no allowable claim request on file, the patent is to be revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

3. The appeal fee paid by appellant II is reimbursed at 25%.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated