

support operations such as e.g. fine tuning of his hearing aid system using a fitting software server that is located remotely from the hearing aid user.

It is therefore a feature of the present invention to provide a hearing aid fitting system that allows distant support to be provided by basically any qualified support provider.

- 5 It is another feature of the present invention to provide a hearing aid fitting system for remote fitting that does not require the hearing aid user to install or maintain software.

It is still another feature of the present invention to provide a hearing aid fitting system that allows the hearing aid user to fine tune his hearing aid system using a remote hearing aid fitting software server.

- 10 It is yet another feature of the present invention to provide a hearing aid fitting system that can perform a remote fitting with a programming device that is independent on the selected software platform for the fitting software.

It is still another feature of the present invention to provide an improved method for remote fitting of a hearing aid.

15 SUMMARY OF THE INVENTION

The invention, in a first aspect, provides a hearing aid fitting system according to claim 1.

- According to the first aspect, there is provided a hearing aid remote fitting system comprising a first client, an external device, a control server, and link means adapted to
 20 allow the first client, the external device and, the control server to communicate with a hearing aid system, wherein said first client comprises fitting software adapted to fit the hearing aid system based on a selected hearing aid user profile having a unique user identification and fitting connection software means adapted to request said control
server to establish a communication channel between said first client and said external
 25 device, wherein said external device comprises a unique device identification, external device connection software means adapted to provide said unique device identification to the control server, redirecting means adapted to direct the content of the data transmitted over said direct communication channel to the hearing aid system, and
wherein said control server comprises a look-up database holding pairs of unique
 30 hearing aid user identifications and unique device identifications, and interface means

adapted to provide the direct communication channel between the first client and the external device based on corresponding user and device identifications, wherein said remote fitting system is adapted such that data for fitting the hearing aid system are transmitted using said first client, said communication channel and said external device.

- 5 This provides a hearing aid fitting system that allows any qualified support provider to carry out the remote fitting.

The invention, in a second aspect, provides a method of remote fitting of a hearing aid according to claim 11.

- According to the second aspect, there is provided a method of remote fitting a hearing aid system comprising the steps of: providing a first client, an external device, and a
10 control server, providing a unique hearing aid user identification, providing a unique device identification, storing a set of paired hearing aid user and device identifications in the control server, using the first client to select a hearing aid user and retrieve the corresponding hearing aid user identification, using the first client to request the control
15 server to retrieve the device identification that is paired with the retrieved hearing aid user identification, using the first client to request the control server to establish a communication channel between the first client and the external device corresponding to the retrieved device identification, using the control server to establish a communication channel between the first client and the external device, using the first
20 client, the communication channel and the external device to remotely fit the hearing aid system.

This provides an improved method of remotely fitting a hearing aid system.

Further advantageous features appear from the dependent claims.

- Still other features of the present invention will become apparent to those skilled in the
25 art from the following description wherein the invention will be explained in greater detail.

BRIEF DESCRIPTION OF THE DRAWINGS

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4. The hearing aid fitting system according to any one of the preceding claims, wherein said unique device identification is a unique hearing aid system identification that has been retrieved by or coded into the external device.
5. The hearing aid fitting system according to any one of the claims 1 - 3, wherein said unique device identification is a unique external device identification.
6. The hearing aid fitting system according to any one of the preceding claims, wherein the Ethernet protocol is used for coding the data transmitted over said communication channel.
7. The hearing aid fitting system according to any one of the preceding claims wherein said first client comprises two sub parts, a first sub client comprising web browsing means and a fitting server part comprising the fitting software, a corresponding graphical user interface and the fitting connection software means.
8. The hearing aid fitting system according to claim 7, wherein said first sub client comprises a wireless Ethernet access point whereby said external device can connect to the internet through said first sub client.
9. The hearing aid fitting system according to claim 7 or 8, wherein said first sub client is smart phone or a tablet PC.
10. The hearing aid fitting system according to any one of the preceding claims wherein said fitting system is adapted to provide and install data comprising hearing aid system software updates.
11. A method of fitting a hearing aid system comprising the steps of:
 - providing a first client, an external device, a control server and a hearing aid system,
 - providing a unique hearing aid user identification,
 - providing a unique device identification,
 - storing a set of paired hearing aid user and device identifications in the control server,
 - using the first client to select a hearing aid user and retrieve the corresponding hearing aid user identification,
 - using the first client to request the control server to retrieve the device

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identification that is paired with the selected hearing aid user identification,

- using the first client to request the control server to establish a communication channel between the first client and the external device corresponding to the retrieved device identification,

5 - using the control server to establish a communication channel between the first client and the external device,

- using the first client, the communication channel and the external device to remotely fit the hearing aid system.

12. The method according to claim 11, wherein said communication channel is
10 established using Transmission Control Protocol (TCP) or User Datagram protocol hole punching, mediated by the control server.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A hearing aid remote fitting system comprising a first client, an external device, a control server, and link means adapted to allow the first client, the external device and , the control server to communicate with a hearing aid system, wherein said
5 first client comprises
fitting software adapted to fit the hearing aid system based on a selected hearing aid user profile having a unique user identification and fitting connection software means adapted to request said control server to establish a communication channel between said first client and said external device,
10 wherein said external device comprises
a unique device identification, external device connection software means adapted to provide said unique device identification to the control server, redirecting means adapted to direct the content of the data transmitted over said direct communication channel to the hearing aid system, and
15 wherein said control server comprises
a look-up database holding pairs of unique hearing aid user identifications and unique device identifications, and
interface means adapted to provide the direct communication channel between the first client and the external device based on corresponding user and device
20 identifications, wherein said remote fitting system is adapted such that data for fitting the hearing aid system are transmitted using said first client, said communication channel and said external device.
2. The hearing aid fitting system according to claim 1, wherein said first client
25 comprises fitting software driver means adapted to code the protocol used for the fitting software output into a protocol suitable for transmission in said direct communication channel.
3. The hearing aid fitting system according to claim 1, wherein said external device
30 redirecting means comprises external device software driver means adapted to code the protocol used for transmission in said communication channel into a protocol suitable for communication with the hearing aid system.

4. The hearing aid fitting system according to claim 1, wherein said unique device identification is a unique hearing aid system identification retrieved by, or coded into, the external device.
5. The hearing aid fitting system according to claim 1, wherein said unique device identification is a unique external device identification.
6. The hearing aid fitting system according to claim 1, wherein the Ethernet protocol is used for coding the data transmitted over said communication channel.
7. The hearing aid fitting system according to claim 1 wherein said first client comprises a sub client comprising web browsing means and a fitting server part comprising the fitting software, a corresponding graphical user interface and the fitting connection software means.
8. The hearing aid fitting system according to claim 7, wherein said sub client comprises a wireless Ethernet access point whereby said external device can connect to the internet through said sub client.
9. The hearing aid fitting system according to claim 7, wherein said sub client is smart phone or a tablet PC.
10. The hearing aid fitting system according to claim 1 wherein said fitting system is adapted to provide and install data comprising hearing aid system software updates.
11. A method of remote fitting a hearing aid system comprising the steps of:
 - providing a first client, an external device, and a control server,
 - providing a unique hearing aid user identification,
 - providing a unique device identification,
 - storing a set of paired hearing aid user and device identifications in the control server,
 - using the first client to select a hearing aid user and retrieve the corresponding hearing aid user identification,
 - using the first client to request the control server to retrieve the device identification that is paired with the retrieved hearing aid user identification,
 - using the first client to request the control server to establish a communication channel between the first client and the external device corresponding to the

retrieved device identification,

- using the control server to establish a communication channel between the first client and the external device,

- using the first client, the communication channel and the external device to

5 remotely fit the hearing aid system.

12. The method according to claim 11, wherein said communication channel is established using Transmission Control Protocol (TCP) or User Datagram protocol hole punching, mediated by the control server.