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CA 2723766 A1 2009/11/19

(21) 2 723 766

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) A1

(86) Date de dépôt PCT/PCT Filing Date: 2009/05/13
(87) Date publication PCT/PCT Publication Date: 2009/11/19
(85) Entrée phase nationale/National Entry: 2010/11/05
(86) N° demande PCT/PCT Application No.: EP 2009/003410
(87) N° publication PCT/PCT Publication No.: 2009/138225
(30) Priorité/Priority: 2008/05/13 (DE10 2008 023 249.1)

(51) Cl.Int./Int.Cl. *H04W 4/04* (2009.01), *H04L 29/08* (2006.01)

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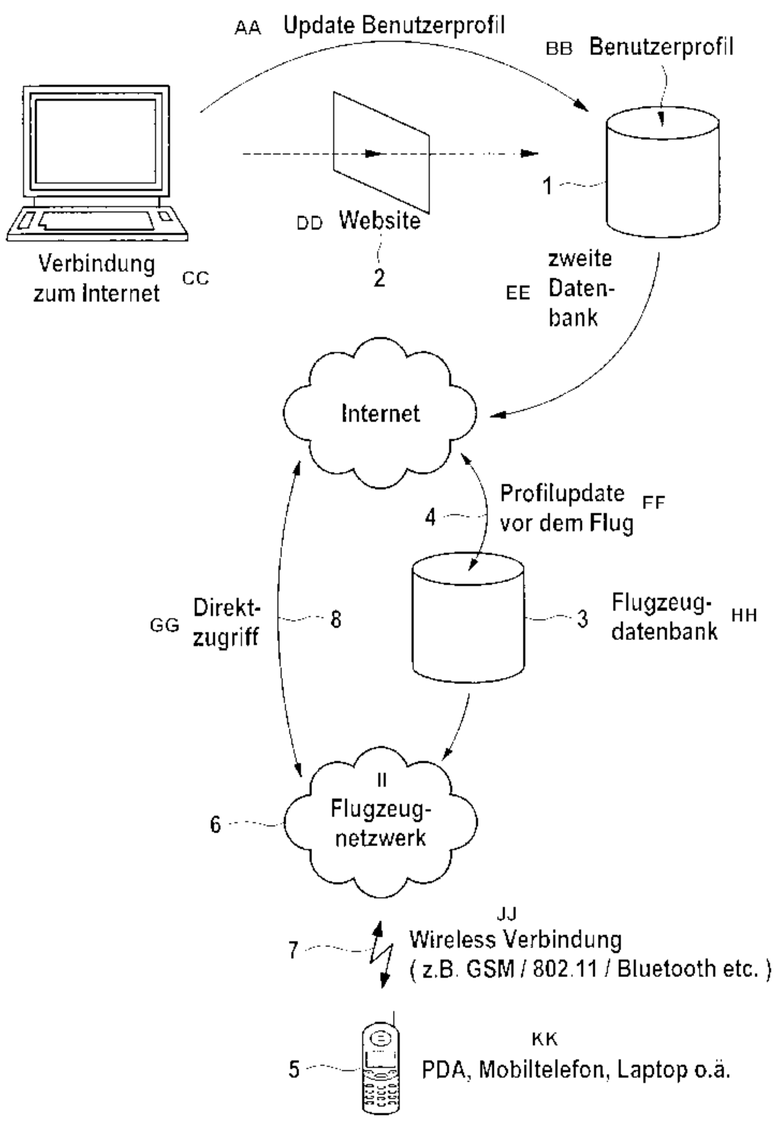
(54) Titre : SYSTEME DE TRANSMISSION D'INFORMATIONS SANS FIL ASSOCIE A UN MOYEN DE TRANSPORT
(54) Title: ARRANGEMENT FOR THE WIRELESS TRANSMISSION OF INFORMATION TO A MOBILE APPLIANCE OF A USER OF A MEANS OF TRANSPORT



AA Update user profile
BB User profile
CC Connection to Internet
EE Second database
FF Profile update prior to flight
GG Direct access
HH Aircraft database
II Aircraft network
JJ Wireless connection (e.g., GSM/802.11/Bluetooth, etc.)
KK PDA, mobile phone, laptop, or the like

(57) Abrégé/Abstract:
The invention relates to an arrangement for wirelessly transmitting information to a mobile device (5) of a user of a means of transport having the following characteristics: a) a first database (3) associated with the means of transportation and containing

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(57) Abrégé(suite)/Abstract(continued):
travel-relevant information; b) a second database (1) containing a profile of the user; c) a device for identifying the mobile device of the user when said mobile device enters the range of a local wireless network (6) of the means of transport; d) a device for selecting information from the first database (3) using the profile stored in the second database (1); e) a device for transmitting the selected information to the mobile device (5) of the user.

Abstract

The subject matter of the invention is an arrangement for the wireless transmission of information to a mobile appliance (5) of a user of a means of transport. The invention provides the following features:

a) a first database (3) which is associated with the means of transport and which contains travel-related information;
b) a second database (1) which contains a profile of the user;
c) a device for identifying the mobile appliance of the user when said mobile appliance comes into range of a local area wireless network (6) of the means of transport;
d) a device for selecting information from the first database (3) using the profile stored in the second database (1);
e) a device for transmitting the selected information to the mobile appliance (5) of the user.

Arrangement for the wireless transmission of information to a mobile appliance of a user of a means of transport

The invention relates to an arrangement for the wireless transmission of information to a mobile appliance of a user of a means of transport.

Users of means of transport, such as aircraft and railways, are sent travel-related information by the operator of the means of transport in various ways before embarking on a journey, during the journey and after the journey has been completed. Such information is normally transmitted by means of announcements, on onboard screens of the means of transport or the like.

The invention is based on the object of providing an arrangement of the type cited at the outset which allows relevant information of this kind to be transmitted easily and in a manner which is convenient for the user of the means of transport. The invention achieves this object for an arrangement as cited at the outset by means of the following features:

- a first database which is associated with the means of transport and which contains travel-related information;
- a second database which contains a profile of the user;
- a device for identifying the mobile appliance of the user when said mobile appliance comes into range of a local area wireless network of the means of transport;
- a device for selecting information from the first database using the profile stored in the second database;
- a device for transmitting the selected information to the mobile appliance of the user.

First of all, a few terms used within the context of the invention will be explained. The term means of transport covers any means of transport, particularly public means of transport, such as aircraft and railways, in particular. This means of transport has an associated first database. In this context, associated means that the database is preferably stored in a computer onboard the means of transport. Alternatively, the database may be stored in a computer outside of the means of transport, in which case it is possible for a connection to be set up to this database during the operation of the means of transport. This first database associated with the means of transport contains travel-related information. This is information which is or could be of interest to a user within the context of the journey made by the means of transport. The term is explained in more detail further below.

The arrangement according to the invention also has a second database which contains a profile of the user. The user therefore needs to be registered with the operator of the means of transport. Particular habits of use or other data, such as seat preferences, preferred meals or the like, form a profile for the user.

The arrangement has a device for identifying a mobile appliance of the user when said mobile appliance comes into range of a local area wireless network of the means of transport. In this case, the term mobile appliance denotes any "PDA" (Personal Digital Assistant) which is suitable for wireless communication, such as mobile phones, portable computers of all kinds or the like. The means of transport has a local area wireless network. The term denotes any wireless communication networks, such as mobile radio networks, wireless LANs, Bluetooth networks or the like. In this context, local area means

that the network is operated by a device onboard the means of transport, for example an appropriate W-LAN router, a device for setting up a GSM picocell or the like.

A device for selecting information from the first database using the profile stored in the second database is provided. The profile therefore stores whether and what information the user wishes to retrieve from the first database and to have transmitted to his mobile appliance. By way of example, the profile may contain the information that the user wishes to receive regular information about arrival and customs regulations at the destination during a journey by means of transport belonging to the operator. Said selection device then selects the relevant information at a suitable time from the first database and transmits it by means of the wireless network to the identified mobile appliance of the user. The second database will generally be stored on a fixed computer of the operator of the means of transport. The two databases can be linked in different ways for the purpose of making said selection. If the first database is stored in a computer of the means of transport, for example, the selection device can immediately connect these two databases if, during the operation of the means of transport, it is possible to set up a connection between the computers of the means of transport and the fixed computer of the operator on a continual basis or at any rate at suitable times, for example using a mobile radio network, a satellite link or another suitable wireless connection. Alternatively, provision may be made for a profile of the user to be transferred to a computer onboard the means of transport before the journey is embarked upon, so that it is available during operation of the means of transport regardless of whether there is a connection to a fixed computer. By way of example, the profiles can be selected using the bookings made before the

journey is embarked upon, or alternatively a selection can be made at the moment at which the user enters the means of transport and his mobile appliance is identified in the local area network of the means of transport. At this time, an aircraft is still at the gate, for example, which means that the profile of the user who has just been identified can be retrieved by means of the data connections which exist locally at the gate and can be transferred to a computer on the aircraft.

In line with the invention, the selected information is transmitted to the mobile appliance of the user. Preferably, this involves what is known as a push transmission, which is actively initiated by a computer onboard the means of transport. The pushed information is preferably stored in a local memory of the mobile appliance and is therefore kept locally for the user. This has the advantage that he can retrieve appropriate information (such as customs or arrival formalities) from said local memory when required even after he has left the means of transport. The information can be transmitted using known protocols, such as e-mail, SMS, using the Internet protocol or the like.

The information in the first database may comprise air, travel or change information (gate of the connecting flight or the like), arrival and customs formalities at the destination, weather information, traffic and means of transport information for the destination, tourist information, hotel and/or restaurant information, for example.

Within the context of the invention, it is preferred for the user to be able to create and/or alter his profile in the second database. On the one hand, the profile can include information which the user transmits to the operator of the means of transport during the booking, for example. On the other hand,

provision is preferably made for the user to be able to view and preferably also change his profile. This can be done over the Internet, for example, which means that the user can change his profile at any time. Alternatively or in addition, it is possible for the user to be able to view and change his profile while he is onboard the means of transport, for example again using the Internet, the local area radio network of the means of transport and his mobile appliance or else using a proprietary access system onboard the means of transport.

In line with a further refinement of the arrangement according to the invention, it is possible for it to additionally comprise a device for transmitting profile information from the second database to service systems and/or the service personnel of the means of transport. By way of example, particular meal requirements of the user can be automatically transmitted to the service personnel from the second database. The preferred seating of the passenger (for example seat adjustment in flight, preferred video and/or audio entertainment programs) can be taken from the profile and stored in appropriate systems of the means of transport, so that they can immediately be retrieved for the user at his seat.

An embodiment of the invention is explained below with reference to the schematic drawing.

In the example according to the invention, the means of transport is an aircraft. The airline has a second database 1, which stores profiles of users (passengers), at a fixed location (on the ground). These user profiles are created, or updated, from booking data; alternatively or in addition, the user himself can view and change his profile over the Internet using a website which is indicated at 2. The second database 1 is connected to the Internet.

Onboard the aircraft there is an aircraft database (first database) 3 which stores travel-specific information of the type described in more detail above. If the aircraft has a continual data connection to the ground, this travel-specific information can be constantly updated even during the journey, for example weather information for the destination. Alternatively or in addition, the travel information can be read into the aircraft database 3 before departure via a data connection (wired or wireless) which is available at the gate or can be brought onboard by means of a data storage medium (for example a USB stick, a DVD or the like).

The aircraft database 3 can also contain user-specific information or data which has/have been created or selected using the user profile of a booked passenger. If the user profile contains particular entertainment or film requirements, for example, the aircraft database 3 can be provided with the relevant data, for example the video and audio data for the desired film, before the start of the flight or possibly during the flight.

A connection - indicated at 4 - is used before the start of the flight for what is known as a profile update from the second database to the first database (aircraft database). This profile update is used to store - locally in the aircraft database - information about whether and what travel information the respective user wishes to have provided from the aircraft database at what time. Such a profile update can actually be made using the booking data and regardless of whether the respective passenger has already boarded the aircraft. By way of example, this profile update using the booking data allows an early update, even with large volumes of data, when the passenger has stored a particular film request in his

profile, for example. Alternatively or in addition, a (possibly more extensive) profile update can be made when the passenger actually boards the aircraft and his mobile appliance - indicated at 5 - is actually identified in the local area aircraft network 6 by means of the wireless connection indicated at 7. A profile update only when the passenger actually boards the aircraft has the advantage that it takes account of booking changes at short notice, no shows or the like. A drawback is that when the passenger gets on shortly before departure, there may not be sufficient time available for a comprehensive update (for example transmission of video data for a film) or the passenger boards the aircraft with his mobile appliance switched off, which means that it cannot be identified. A combination of these update options is therefore conceivable. By way of example, a profile update can first of all be made using the booking data, and additionally a further update can be made as soon as the passenger actually boards the aircraft with his mobile appliance switched on. If appropriate, a further update process can also be initiated via the boarding process, since in this case the passenger is identified using his boarding card and this allows a profile update to be initiated.

As soon as the mobile appliance 5 logs into the aircraft network 6 and is identified therein, information can be transmitted from the aircraft database 3 to the mobile appliance 5. Preferably, this is done by the push method already outlined; alternatively, interactive information transmission using the Internet protocol, for example, is also possible. The relevant information is preferably stored in the local memory of the mobile appliance 5, so that it is still available to the passenger at any time (even after leaving the aircraft).

Further interactions between the mobile appliance 5 and devices in the aircraft via the aircraft network 6 are possible. By way of example, the passenger can use his mobile appliance 5 to send service requests to the cabin staff when required or (if there is an Internet connection to the ground during the journey) can use direct access - indicated at 8 - to view and possibly change his user profile in the second database 1, for example.

In addition, interactive options may be provided which, by way of example, allow a currency conversion using exchange rates stored in the aircraft database 3 or allow the booking of transportation and accommodation at the destination or the like. In the case of these interactions, the mobile appliance 5 allows communication with the aircraft database 3, or else the direct access 8 and an Internet connection to the ground allow communication with computers of the airline or external surface provides (for example hotel or car rental companies).

Patent Claims

1. An arrangement for the wireless transmission of information to a mobile appliance (5) of a user of a means of transport, characterized by the following features:
   a) a first database (3) which is associated with the means of transport and which contains travel-related information;
   b) a second database (1) which contains a profile of the user;
   c) a device for identifying the mobile appliance of the user when said mobile appliance comes into range of a local area wireless network (6) of the means of transport;
   d) a device for selecting information from the first database (3) using the profile stored in the second database (1);
   e) a device for transmitting the selected information to the mobile appliance (5) of the user.

2. The arrangement as claimed in claim 1, characterized in that the first database (3) is stored in a computer arranged onboard the means of transport.

3. The arrangement as claimed in claim 1 or 2, characterized in that the first database (3) comprises information selected from the group comprising air and/or travel information, change information, arrival and customs formalities at the destination, weather information, traffic and means of transport information for the destination, tourist information, hotel and/or restaurant information.

4. The arrangement as claimed in one of claims 1 to 3, characterized in that the second database (1)

is stored in a computer of the operator of the means of transport.

5. The arrangement as claimed in one of claims 1 to 4, characterized in that the user can create and/or alter his profile in the second database (1).

6. The arrangement as claimed in claim 5, characterized in that the profile can be accessed by the user via the Internet and/or onboard the means of transport using his mobile appliance (5).

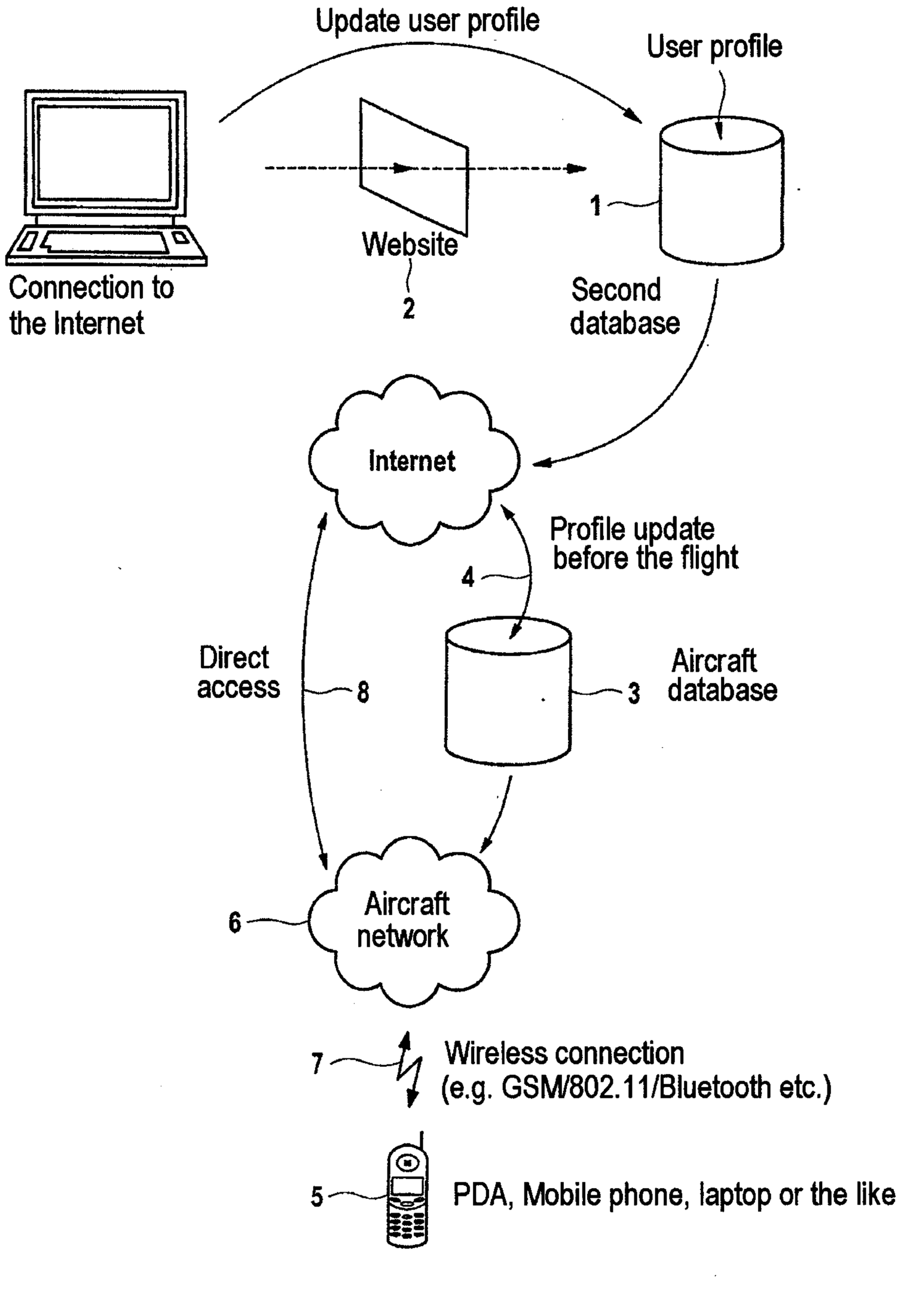
7. The arrangement as claimed in one of claims 1 to 6, characterized in that the local area wireless network (6) of the means of transport is selected from the group comprising a mobile radio cell, a W-LAN and a Bluetooth network.

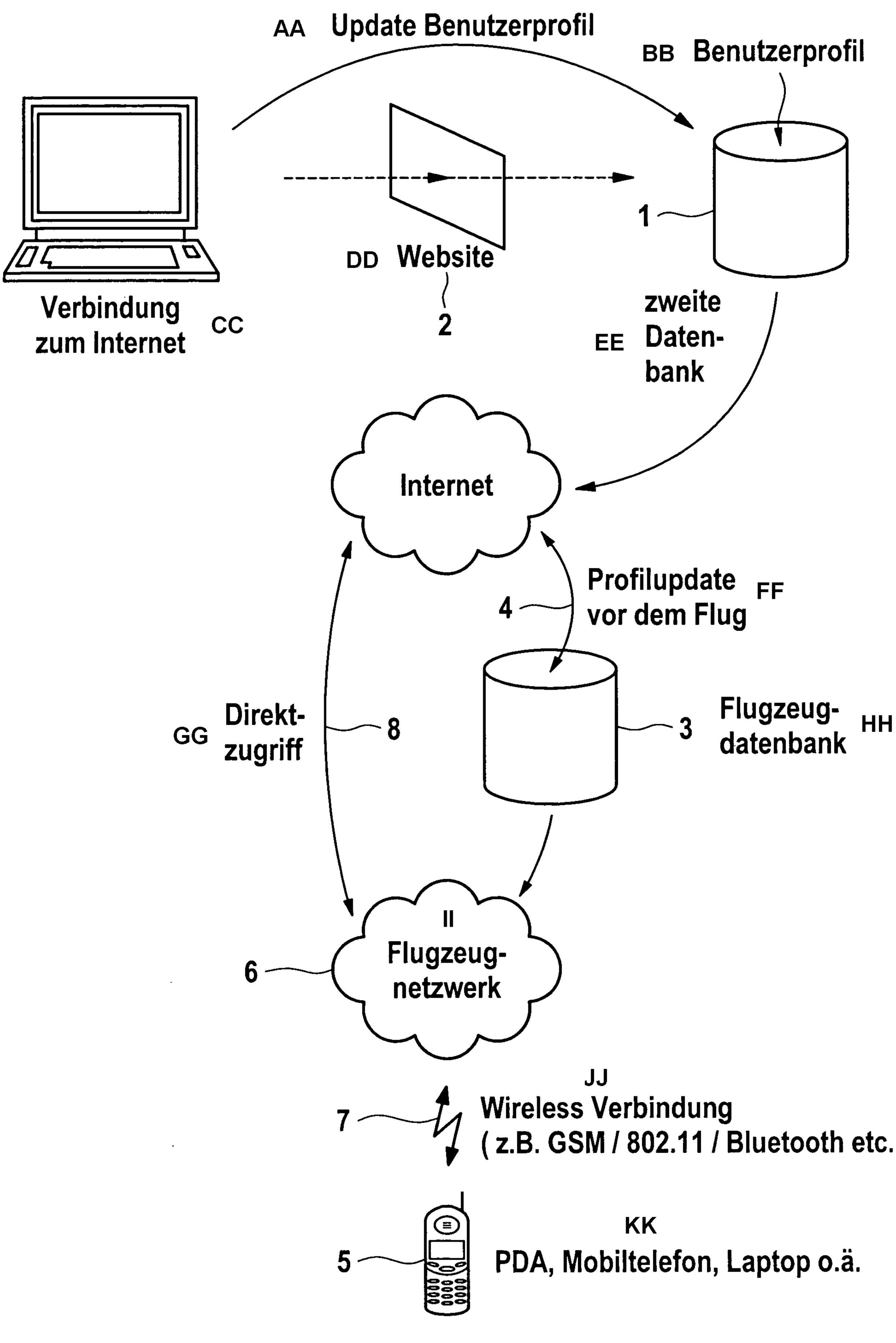
8. The arrangement as claimed in one of claims 1 to 7, characterized in that it is designed to retrieve profile information from the second database (1) and to store a copy of said profile information in a computer of the means of transport as soon as the mobile appliance (5) of the user has been identified.

9. The arrangement as claimed in one of claims 1 to 8, characterized in that it is designed to actively transmit (push) the selected information to the mobile appliance (5) of the user.

10. The arrangement as claimed in one of claims 1 to 9, characterized in that the selected information is transmitted to the mobile appliance (5) of the user by means of e-mail, SMS or by means of the Internet protocol.

11. The arrangement as claimed in one of claims 1 to 10, characterized in that it additionally comprises a device for transmitting profile information from the second database (1) to service systems and/or the service personnel of the means of transport.


Update user profile
User profile
1
Website
2
Connection to
the Internet
Second
database
Internet
Profile update
before the flight
4
Direct
access
8
Aircraft
database
3
Aircraft
network
6
7
Wireless connection
(e.g. GSM/802.11/Bluetooth etc.)
5
PDA, Mobile phone, laptop or the like



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