Airport Automated Assistance for Reduced Mobility Passengers (3A-RMP)

Presentation abstract

This suggested service is offered to passengers with reduced mobility in the airports or to passengers willing to overcome high distance walk in large terminals. It is an automated self-service providing autonomy, safety and security. The suggested system would overcome the existing limitations of the actual mobility assistance provided in most of the airports. Actually passengers needing such assistance, have to contact the airline company before their travel in order to book a wheelchair with an assistant to guide him. Although it is a confortable and satisfying service this approach still have some inconveniences. First the client autonomy which is restricted since he is guided by the assistant and placed in waiting rooms or places instead of visiting many pleasant places in the airport like duty free, restaurants, resting areas… Second, if the passenger needing such service is with more than one family member or friends, most of the time just one person is allowed to be with him and he would no more enjoy others' company. Third, this service is not only used by the clients with limited mobility, but also by passengers having difficulties to find their way in the airport, for this reason the service provider capacity would be overpassed and the client may face unpleasant very long wait times. In order to overcome these inconveniences the first possible solution is let the passenger use his own mean of mobility like a personal power wheelchair. The second issue is to improve the service by increasing the number of wheelchairs and assistants. Both of these solutions are not feasible since the personal power wheelchair can't be loaded on the plane because of the batteries (just a very small battery capacity is allowed to be on the cargo). Also, police checkpoints would enormously delay the passenger with a power wheelchair for security reasons (the passenger is equipped with a device which could not go through the baggage security scanner). Finally improving the airport mobility service system would be complicate and costly.

The suggested solution is to let the passenger benefit from automated wheelchairs (AW) belonging to a private company for selling this service to those who need in the airport mobility, privacy and autonomy. AWs are supposed to be already available in the airport and would be provided by means of an intelligent system linked to the airport flights system in order to guide the user. AWs could operate either autonomously or driven by the passenger. Dropping or pickup areas for these AWs are located on the departure/arrival gates and on the airport exit/entry. The passenger would not be any more delayed at police checkpoints since the provided AW belong to a company supposed to be in conformity with the airport security requirements.

The implementation procedure for this service has to consider many issues. At a first phase of implementation the number of AWs is not yet enough for satisfying all the requirements. Therefore some measures have to be considered in order to restrict the number of users. For this purpose, an automated booking procedure would give the client a booking code according to some given information like traveler identification, time of use, flight information, credit card validity… Also, the booking code wouldn't be provided unless some medical conditions are fulfilled like a medical justification of mobility requirements and certification on the passenger capability to use the AW. The booking code is used at the airport in order to let the passenger pick-up an AW, unlock it with his code and get all necessary instructions concerning AW usability and its accessibility over all permissible areas related to his flight information.

For more security issues, wifi or rfi tag points are installed in the airport in order to localize the used AWs and detect abnormal situations like abnormal time of stay in a same place, access to areas not in conformity with the flight information or any possible violated preset rule. For more security, and if an

urgent assistance is needed, the AW user can call an operator of the service company for solving any ambiguity which could be faced.

The AW design is closely similar to a power wheelchair equipped with specific software in order to process the passenger, the flight, booking information and the data related to allowed trajectory to be performed in the airport. Other software applications could also be installed on the AW for offering more security and comfort to the passenger like instructions on the airport accessibility related to the kind of the passenger mobility deficiency.

In conclusion, we think that the suggested Airport Automated Assistance for Reduced Mobility Passengers (3A-RMP) system represents an original idea worth to be implemented using common advanced technologies related to autonomous vehicles, mobile devices and mobile applications.

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