myCopter:
Enabling Technologies for Personal Aerial Transportation Systems
A progress report

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The volume of both road and air transportation continues to increase despite many concerns regarding its financial and environmental impact. The European Union 'Out of the Box' study suggests a personal aerial transportation system (PATS) as an alternative means of transport for daily commuting. The aim of the myCopter project is to determine the social and technical aspects needed to set up such a transportation system based on personal aerial vehicles (PAVs). The project focuses on three research areas: the human-machine interface and training, automation technologies, and social acceptance.

In the first phase of the project, requirements were defined for automation technologies in terms of sensors and test platforms. Additionally, desirable features for PAVs were investigated to support the design and evaluation of technologies for an effective human-machine interface. Furthermore, an overview of the social-technological environment provided insight into the challenges and issues that surround the realisation of a PATS and its integration into the current transportation system in Europe.

The presentation will elaborate on the second phase of the myCopter project, in which initial designs for a human-machine interface and training are developed. These are evaluated experimentally with a focus on aiding non-expert pilots in closed-loop control scenarios. Additionally, first evaluations of novel automation technologies are performed in simulated environments and evaluations on flying test platforms. At the same time, technological issues are evaluated that contribute towards a reflexive design of PAV technologies based on criteria that are acceptable to the general public.

The presentation will also focus on the next stages of the project, in which further experimental evaluations will be performed on technologies for human-machine interfaces, and where developed automation technologies will be fully tested on unmanned flying vehicles. The expectations and perspectives of potential PAV user will be evaluated in group interviews in different European countries.

Interesting technological and regulatory challenges need to be resolved for the development of a transportation system based on PAVs. The myCopter consortium combines the expertise from several research fields to tackle these challenges and to develop the technological and social aspects of a personal aerial transportation system.

The myCopter consortium consists of the Max Planck Institute for Biological Cybernetics, the University of Liverpool, the Swiss Federal Institute of Technology Zürich, École Polytechnique Fédérale de Lausanne, the Karlsruhe Institute of Technology and Germany's national research centre for aeronautics and space DLR. http://www.mycopter.eu