Metropolis, Urban Airspace Design

Fact Sheet

Project Information

Metropolis

Grant agreement ID: 341508

Closed project

Start date 1 October 2013  
End date 30 April 2015

Funded under
FP7-TRANSPORT

Overall budget
€ 760 197

EU contribution
€ 594 743

Coordinated by
TECHNISCHE UNIVERSITEIT DELFT
Netherlands

Objective

This project proposes the investigation of radically new airspace design concepts for scenarios, which are extreme when compared to today in terms of traffic density, complexity and constraints.

Extrapolating the current developments in aerospace technology, it is considered likely that the following two new types of air vehicles will have arrived in the second half of this century:

- personal air vehicles, used for door-to-door transport, controlled semi-automatically
- unmanned, autonomous flying cargo vehicles in different weight classes and sizes

Considering the door-to-door aspect, even with inter-local trips, the personal vehicles...
will especially cause congestion in and around cities. From the same door-to-door philosophy, it follows that the smallest cargo Unmanned Aerial Vehicles (UAVs) will fly in high numbers and even within cities. This brings up a completely new challenge for Air Traffic Management (ATM): urban airspace design. The challenge is to provide a concept which can handle high volumes, many constraints and autonomous control for these vehicle types.

Apart from being prepared for this potential revolution in aerospace, there is a more fundamental, but still practical, question underlying this challenge. Research so far has shown, that in today’s en-route airspace, dispersing the traffic over the airspace and reducing therefore the structure, reduces the number of potential conflicts and therefore increases both capacity and efficiency.

In the urban airspace scenarios, many envision that these extreme traffic densities will require a very well defined, very structured airspace. The question is: Is this true? And if so, what causes this reversal?

This project has 2 main goals:

- Explore options for future urban airspace design
- Provide a better understanding of air traffic using extreme scenarios

The knowledge gained through studying these radical scenarios for air transport will impact the airspace and traffic complexity.

**Fields of science**

- social sciences
- political sciences
- political transitions
- revolutions
- engineering and technology
- electrical engineering, electronic engineering, information engineering
- electronic engineering
- robotics
- autonomous robots
- drones
- social sciences
- social geography
- transport
- transport planning
- air traffic management
- humanities
- philosophy, ethics and religion
- philosophy

**Programme(s)**

FP7-TRANSPORT - Specific Programme "Cooperation": Transport (including Aeronautics)

**Topic(s)**

AAT.2012.6.3-2. - Radical new concepts for air transport
Call for proposal

FP7-AAT-2012-RTD-L0
See other projects for this call

Funding Scheme

CP-FP - Small or medium-scale focused research project

Coordinator

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Activity type
Higher or Secondary Education Establishments

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EU contribution
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