



AIRBEAM Report Summary

Project reference: 261769
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Periodic Report Summary 1 - AIRBEAM (AIRBorne information for Emergency situation Awareness and Monitoring)

Project Context and Objectives:

AIRBEAM (AIRBorne information for Emergency situation Awareness and Monitoring) is an FP7 Security project that has been selected by the European Commission (EC - DG Enterprise) in 2010 as answer to the topic "Information acquisition using dedicated platforms, including UAV, aerostatic platforms (balloons) and satellites".

The AIRBEAM Consortium, led by EADS France - Innovation Works, gathers 21 partners and 3 third parties from 11 countries. The partnership includes both small and large companies, research organisations and universities, stakeholders and end-users. The project has started at the beginning of 2012 and will last 4 years.

The number of unmanned air- and space-borne platform available and their associated sensors present a new set of challenges and opportunities to end users involved in the effective management of emergencies and operations of law enforcement. So, AIRBEAM direct and indirect main objectives will be to:

- Demonstrate the availability of unmanned platforms solutions for security purpose to a large community,
- Provide an integrated framework dedicated to security application through a situation awareness toolbox for the management of crisis over medium to large scale areas
- Develop the technological elements in order to support possible take up by the EC Member States,
- Assess the potential of novel services,
- Assist the emerging market of civilian Remotely Piloted Aircraft System (RPAS) by leveraging the market associated to the security applications,
- Convince regulatory stakeholders about the maturity of the technology and associated market.

Focusing on a multi-platform approach, the project intends to develop a modular architecture that enables to optimize the use of available systems (RPAS and satellites) to fit variable needs. Not only are the platform characteristics considered but possible sensor suite and communications assets are also taken into account. The situation awareness toolbox being developed during the project will allow the users to generate added-value information by fusing the various data, increasing thereby the overall situation awareness.

The validation of the AIRBEAM system will be demonstrated through both simulations and live demonstrations focusing on law enforcement and civil protection.

Project Results:

The first period of the project has been mainly dedicated to set up the baseline for the project.

As far as the management part is concerned, a project management plan has been prepared and approved by all partners. The project public website has been launched as well as a private Consortium collaborative tool.

As far as the technical part is concerned, activities have been focused on four main axes.

1. The establishment of links with the end-users community through several events, so as to be able to understand the needs, initiate the definition of the requirements and list the scenarios of interest.
2. The update of the status of the technologies and assets relevant for the project, including platforms, payloads, processing, communications, ...
3. The design of the system and communications architecture: a generic system has been defined taking into account large scale and small scale scenarios. Our system design is based on a core element, the Mission Management and Exploitation (MME) center, which is connected to aerial platform systems or satellite observation services and to end user system.
4. The preparation of the demonstrations which will take place in the last part of the project: the environment and the tools for the simulations have been selected and the locations of the live trials have been pre-selected and the associated constraints.

In parallel, several dissemination activities have also taken place with the presentation of the project at several international conferences, including a workshop at Berlin Air Show 2012.

Potential Impact:

Through intense collaboration between industrial partners, stakeholders and end users, AIRBEAM will define an ambitious yet realistic concept of use.

By running scenarios that will be properly selected and defined by the end-users within the project in a simulated environment, the increased capabilities for situation awareness will be assessed methodically. Various platforms and sensor architectures will be compared using key performance indicators. Live demonstrations with multiple civil unmanned aerial platforms will complete these ground simulation exercises in demonstrating to end users the potential and maturity of the coordinated use of multiple platforms.

Within the scope of crisis management and law enforcement, the project will provide official public users from each Member States the means to assess the technical solutions provided by unmanned aerial platforms and to specify their own needs.

List of Websites:

www.airbeam.eu

Related information

Result In Brief

[Satellites and balloons for security](#)

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Subjects

[Information and Media - Security - Telecommunications](#)

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