The European Institute

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Can the U.S. and the EU Coordinate Standards and Guidelines for Small UAS?

Industry should encourage U.S.-EU coordination as standards, guidelines and regulations for small Unmanned Aircraft Systems are being prepared. Applications for small UAS are multiplying. As a result, there is a growing need for ensuring the security of air traffic and for transatlantic coordination of this development. The European Institute in Washington whose membership includes 27 European governments and 65 multinational corporations works closely with the European Commission and Eurocontrol, as well as with the U.S. Administration, Congress and NATO. In cooperation with UVS International, the Institute organized its second conference on the regulation of Unmanned Aircraft Systems on November 12, 2007.

European and American government and private sector experts shared their perspectives on the development of standards and common guidelines for small UAS, and addressed the challenges for U.S.-EU cooperation. Discussants included Peter van Blyenburgh, President, UVS International; Gerald «Fred» Pease, Executive Director, Department of Defense Policy Board on Federal Aviation; Holger Mattiesen, Senior Specialist in Air Traffic Management Procedures and the Focal Point for Unmanned Aircraft Systems, Eurocontrol; Robert «Rori» Marston, Director, Policy and Strategic Development, UAS Program, National Oceanic and Atmospheric Administration; and Dana Schulze, Chief, Aviation Engineering Division, National Transportation Safety Board.

Non-military users of small UAS (aircraft with a mass of less than 150 kilograms) now include customs and police authorities, regional and national fire brigades, environmental researchers, and flight services contractors. The growth of flight services using small UAS is outpacing the development and implementation of operational and certification rules and regulations, both in Europe and the U.S. According to Mr Pease, better technology, proper training of UAS operators and a standardized terminology are needed to take advantage of the potential UAS offer. In fact, the issue of definitions and terminology is critical and needs to be tackled quickly. Terms are defined at ICAO, but the UAS community needs to energize the process. UVS International has done substantial work in this area for the international community.

The rules, regulations, and certification norms that are being considered in the U.S. differ from those in Europe, and should be harmonized now. Activity concerning the setting of standards for UAS in Europe is tightly coordinated with the work of RTCA in the U.S. The FAA is involved with RTCA and with EUROCAE 73 in Europe; and Eurocontrol and the European Aviation Safety Agency (EASA) are supplying information to RTCA in the U.S. However, the UAS industry needs to be more proactive in ensuring the proper certification of these systems.

The FAA recently announced the creation of an advisory rule making committee for small UAS. RTCA is establishing the recommended standards for sense and avoid and command and control. However, this work – hazard, safety and interoperability assessments – will likely not be finished until 2014, which worries UAS users, especially environmental researchers.

On both sides of the Atlantic the imperative is safety. There are problems of coordination among the various authorities and regions in the U.S. and Europe. The differences between the U.S. and Europe are principally in interpretation of the rules and a certain leeway that is afforded by European law. As Ms Schulze noted, the NTSB's first investigation of an accident involving an unmanned aircraft system revealed a number of safety issues connected to equipment design and maintenance, operational plans, and safety risk management processes. Safety concerns were also identified in the FAA's air traffic management and monitoring of the operations under the current system of authorization.

Eurocontrol is also attempting to integrate UAS into air traffic management given that air traffic will double by 2020, according to Mr Matthiesen. The fundamental role of Eurocontrol is to ensure that air traffic management meets the needs of all legitimate air space users – i.e., those that fulfil certification requirements. For UAS, the major challenge is achieving certification or at least partial certification in the short term – the work of EUROCAE is important in this regard. Eurocontrol works closely with EASA to address UAS, the existing ATM system, regulatory certification framework for civil and military UAS, and try to introduce them into the airspace. SESAR also creates the opportunity to clearly define UAS in the context of next generation concepts. Interoperability is paramount, as UAS that can operate around the world are needed to deal with issues such as climate change.

The increasing need for scientific UAS missions will push the regulatory requirements on the UAS world. Small UAS can be used to detect pollutants in the Arctic, observe illegal activities, fly into hurricanes, and track such things as fish migrations, coastal erosions, and oil spills. UAS will fill the data gap between satellites and earth-based systems. Ms Nicinska pointed out «the goal internationally for NOAA is to develop that recognition within the environmental community that UAS represent another tier of earth observations, and that this is a critical component of global monitoring that needs to be integrated into international systems.»

One of NOAA's key missions will be in the Arctic – the ideal place to showcase the need for transatlantic cooperation and data sharing. A favorable public opinion is important, especially the acceptance of UAS by those individuals who fly in civil airspace now, such as the Airline Pilots Association. As Mr Marston put it, «If we're going to sell UAS to the world, we have to sell the mission - climate change, hurricanes, safety and security.»