

European UAV sense-and-avoid system to begin trial flights by year-end

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First test flights are imminent for a European effort to develop an automated sense-and-avoid mid-air collision avoidance system that would help overcome safety concerns preventing use of unmanned aircraft in civilian airspace.

The so-called MIDCAS system, being ground tested at Selex [Galileo's](#) unmanned systems laboratory in Ronchi dei Legionari, near Trieste, Italy is expected to fly by year-end aboard a manned aircraft operated by France's DGA aeronautical technology agency.

Initial tests, in which the system will provide the pilot with instructions rather than operate the aircraft's control surfaces directly, will be designed to provide data to validate simulations being run on the ground in Ronchi.

The performance of infrared, electro-optical and other sensors, which have yet to fly, will also be validated. An ADS-B receiver is also included, and Selex thinks that could eventually be the main component of a practical system.

If the manned flights - with one or two live aircraft posing as intruders to be avoided - are successful, programme partners, including Saab, Sagem, Thales, Indra and Diehl, will begin miniaturising components for integration with an Alenia Aeronautica Sky-Y UAV.

Selex Galileo unmanned systems and simulators vice-president Furio Bozzola expects that fully-autonomous system to fly before the end of 2013, but the real test of the system, he adds, is expected before the end of 2014 - with a Sky-Y flight across controlled airspace.

The programme, started in 2009 and 50/50 funded by the EU and the industrial partners, is already a year behind schedule, and Selex admits one of the greatest challenges lies ahead - to "close the loop" and go from a manned demonstrator to a fully integrated unmanned system.

However, the timing could prove fortuitous. Bozzola and colleagues at Selex's UAS department admit a protocol for integrating UAVs into civil airspace has been "five years away" since 1998, but they are encouraged to see the US Federal Aviation Administration "moving fast", with 2015-2016 being talked about as a point when some civil or police UAV operations could begin.

Some of that progress is coming from Afghanistan, where air traffic controllers have experience of dealing with mixed use of UAVs and manned aircraft.

Flying over congested European airspace would be an entirely different challenge, but the Afghan experience may feed US and European efforts to open their skies to mixed use.

Talk of 2015-2016 may or may not prove to be over-optimistic, but a mid-decade opening of civil airspace would certainly be welcomed by UAV makers such as Selex Galileo.

With US and European military demand ramping down as forces end missions in Afghanistan, a second sales front cannot come too soon.