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Russia tests manned/unmanned integration

In June, an experiment integrating manned aircraft and UAVs took place in the airspace over Sivversky, a Russian air base located to the south of St Petersburg.

The flights demonstrated the use of Automatic Dependent Surveillance – Broadcast (ADS-B) systems provided with 'mode 4' communication links for the organisation and management of manned and unmanned air traffic control. The experiment was run by Russia's State Research Institute of Aviation Systems, with the participation of Transas and NITA.

The manned aircraft used in the test included Mi-171 and Mi-8 helicopters and an AC-5MP powered glider. The unmanned element was provided by a Dozor-100 and a Zala 421-04M mini-UAV. The ground support

sector involved an ADS-B station manufactured by NITA.

All the aircraft made their manoeuvres executing the air traffic controller's commands using voice communication. The crews participated in the flights, and the UAV ground operators observed each other on ADS-B situation displays.

Conflict situations were quickly resolved by flight controllers, aircraft crews and UAV operators. Vladimir Voronov of Transas told *Unmanned Vehicles* the experiment showed that use of International Civil Aviation Organisation-accepted methods and facilities technically allow the operation of UAS flights in 'A' and 'C-class' airspace, and under certain conditions in 'G-class' airspace.

By Denis Fedutinov, Moscow



UAVs have been used for environmental monitoring by an international scientific expedition in the Arctic region of Ny-Ålesund, Spitsbergen.

The decision to carry out such a mission was taken in October 2010 at the Russian Arctic and Antarctic Research Institute in St Petersburg, during an Arctic Monitoring and Assessment Programme conference devoted to the exploitation of UAS for researchers in Arctic areas.

The central aim of the initiative is to improve understanding of the processes controlling the distribution of black carbon in the Arctic atmosphere and its deposition onto snow and ice surfaces, and the impact this has had on the climate.

Representatives of nine scientific and research organisations from France, Germany, Italy, Norway,

Russia and the US participated in the project. The research involved several unmanned systems, including a Manta UAV equipped with devices designed to measure aerosol concentrations, a CryoWing UAV equipped with a payload designed to measure albedo and an Eleron-10 UAV equipped with a television, IR, photographic equipment and a meteorological measurement device.

Flights were performed at ambient temperatures ranging from -12 to +5°C and in moderate snow, with wind speeds reaching 18-19km/s and cloud ceilings ranging from 200m upwards.

A total of 38 flights was completed, although one CryoWing was lost and two vehicles were forced to make emergency landings due to engine failures and loss of electronic guidance.

By Denis Fedutinov, Moscow

On the web

Anglo-French UAV partnership expected to move forward by end of year
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