

Executive Summary

Unmanned aircraft systems (UAS) – or drones – are nowadays used more and more across a range of activities. For example, they are used in agriculture to control the growth of plants or to spray pesticides. They are also used in movies, sports, mass media, entertainment industry, or in different corporate and private events. In many regions, they are used for the delivery of parcels, including essential medical supplies, to remote locations which are difficult to access by road. Over the last years, there has been an increasing number of accidents and serious incidents involving drones. And these occurrences are not only a challenge for the UAS sector, they have multiple implications for civil aviation and the society at large.

On the other hand, the unmanned aircraft systems can't be seen only as a risk for aviation safety, they also represent an opportunity to improve safety through enhanced investigation methods. For example, drones can register and replay the flight plan of an aircraft to understand where problems occurred or collect the weather conditions or any other topological information which can help air safety investigators to understand the circumstances of an occurrence.

To address these challenges and opportunities, the ECAC Air Accident and Incident Investigation Group of Experts (ACC) organised a workshop on UAS investigations (videoconference, 13-14 October 2021).

One of the main objectives of this workshop was to share best practices on how to investigate serious incidents and accidents involving drones, and benefit from the collective knowledge of the safety investigation authorities (SIAs) of ECAC Member States.

The workshop covered the main topics of UAS investigations, including the applicable regulatory frameworks, the investigation process (e.g., when should a SIA investigate a UAS accident or incident) and related challenges, the development of UAS investigation capability (including training requirements for investigators), the improvement of safety in the UAS sector, and the use of drones to support investigations.

The main outcomes and conclusions of the workshop focused on the need:

- to update ICAO Annex 13 with the objective of clarifying its applicability to UAS investigations;
- to consider the useful derogation within Regulation (EU) No 996/2010 which enables SIAs to focus their resources on the investigation of the more serious UAS occurrences;
- to recognise the need for investigator training and the benefits from training provided by UAS manufacturers;
- to consider recruiting people with different expertise to develop SIAs capabilities (e.g., safety critical software design, strong avionics background);
- to build and maintain good relationships with the UAS industry;
- to find a way for UAS community to report events;
- to create a culture in the UAS community for the implementation and use of the Safety Management Systems; and
- to develop a dedicated taxonomy to help with reporting and data analysis.

For more information, please contact:

ECAC Secretariat
3 bis, Villa Emile Bergerat
92522 Neuilly-sur-Seine Cedex FRANCE
Tel.: +33 1 46 41 85 96
E-mail: secretariat@ecac-ceac.org
www.ecac-ceac.org

