



KEEPING OUR SKIES SAFE AND SECURE: IDENTIFY AND TRACK DRONES IN REAL-TIME

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There is no need to explain why the control of drone topic is more than important today. Our sky traffic becomes different. We have to be ready to work on safety, as a primary issue in order to organize and regulate it.

Let us present you the step forward in that direction made by Thales and Gemalto.

They will work together to develop systems for remote identification and tracking of Unmanned Air Systems (UAS) by regulatory authorities and law enforcement globally.

The civil drone market is best represented by its huge commercial potential and the millions of new drones that are projected to enter our skies over the next 20 years – moving from a world with tens of thousands of flying objects to one with millions, mostly in low airspace.

The resulting complexity in the aviation ecosystem presents significant new challenges to security and safety. This will lead to more stringent registration and identification for Unmanned Aerial Systems (UAS) being required by civil authorities. Regulatory

frameworks will influence how operators plan missions, receive flight approvals and identify and track drones securely.

To support customers in overcoming these complex and varied issues, Thales has developed an aerospace management system that works on the Air Traffic Control of objects in low airspace with flight authorization in controlled airspace. This is a digital, cloud based platform based on live data sharing. It's been connecting aviation actors and optimizing operations for three years, and now integrates Unmanned Aerial Vehicle Traffic Management (UTM), making the link between regulation and operations to deliver automated mission and flight authorizations.

The integration of Gemalto's cyber-secured identity tracking technology into Thales's existing UTM platform brings an even stronger offering to help Civil Aviation Authorities. It provides a "certified drone identity card" meaning that regulators can verify a drone's registration number, identify its pilot and confirm that they have the right authorizations to fly, all in a few seconds. The Gemalto UTM tracker builds on existing airspace and regulatory compliance capabilities already available in the Thales UTM platform.

These capabilities have recently been successfully trialed at the FAA UAS Test Site, at Griffiss International Airport, Rome, (NY – USA), in partnership with Oneida County and the Northeast UAS Airspace Integration Research (NUAIR) Alliance. The trial demonstrated the integration of secure, remote identification and tracking into the Thales UTM solution.

"The current aviation ecosystem was not designed to accommodate the type of growth that we will experience over the next few decades. Our goal as an industry is to maintain the highest levels of safety whilst addressing the needs of a rapidly developing market where manned and unmanned systems can coexist. Data security and protection along with equitable access to the airspace is the biggest challenge we face."

Jean Ferré – Thales Vice President, Air Traffic Management

How does it work?

The UTM tracker is connected and securely authenticated by the Thales UTM system via cellular network or alternative communication technologies, using secure modules and encryption systems. The tracker embeds a GPS for real-time location information, and carries a tamper-proof element used to securely store all the information and crypto functions involved in the mutual process of authentication between the UTM and the operator. Thus, the remote identification signal is digitally signed, and command and control communications between the flight controller and the ground control station are fully encrypted.

Once the drone's credentials are validated, a message is sent to the Thales UTM platform confirming the mission is secured and can be conducted. Without this validation a notification is sent to the UTM invalidating the mission and the pilot and appropriate authorities are alerted automatically.

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