Frequentis Defence

UNCREWED AIR OPERATION SUITE (UAOS)

Safe integration of drones into controlled airspace

FREQUENTIS

FOR A SAFER WORLD

Airspace is a limited and critical resource

Military used airspace is a vital resource for ensuring information dominance and operational superiority through both manned and unmanned platforms across all operational domains. With the rapid growth of Unmanned Aircraft Systems (UAS) for intelligence, surveillance, reconnaissance (ISR), offensive and defensive counter air missions, the need for fully integrated airspace management and coordination has become elementary.

Military forces and homeland security agencies are re-evaluating the concept of airspace use in response to emerging external threats. This requires closer coordination and integrated management to achieve a holistic airspace picture, which is key for future concepts.

Efficient airspace management as a scalable service application

A unified air picture is fundamental to distinguishing friendly, unknown, and hostile UAS. The Frequentis solution enables secure deployment of multiple UAS alongside manned aircraft and helicopters in tightly controlled airspace.

The platform creates a common, integrated air picture for all manned and unmanned systems and safely integrates UAS into the controlled military airspace. Designed as a scalable service, the solution offers digital airspace management optimised by geography, altitude, time, and mission priority, empowering air traffic controllers, drone-operators and air coordination personel to maximise lower airspace utilisation.

Common air traffic situation and dynamic airspace management for all users

- Management of dynamic air situations
- Display of tracks in a unified air picture
- Flight authorisation, flight control, geo-awareness, and alert functions
- Reliable information for planning and control

Air threat picture (part of C-UAS)

- Integration of a wide variety of sensor data
- Identification Friend or Foe (IFF)
- Display of tracks in the air situation
- Integration of flight planning for interceptor

Air operation integration

- Ad-hoc mission reconfiguration integration
- Displaying of specific drone-operation procedures
- Transmission of UAS data via transponders or UAS control stations
- Dynamic adaptation to the situation in the electromagnetic spectrum without data transmission

Integration of planning

- Flight planning transfer
- Airspace coordination measures
- Airspace planning (ATO/ACO)

Frequentis is a leading provider of UAS integration for national and multinational airspace

Maximising available airspace

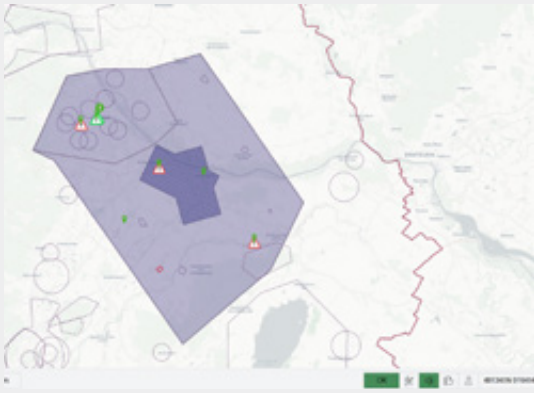
Military airspace usage requires safe, efficient air traffic management to support a wide range of missions. Tactical airspace coordination ensures operational superiority for complex joint-service deployments.

Frequentis empowers military air traffic controllers and tactical/ operative planners to dynamically manage lower airspace for defence operations, maximising mission readiness and operational reach.

Airspace management as a service for all operators

The Frequentis platform provides flight authorisation, air traffic management, geo-awareness, and alert functions that allow airspace managers to allocate and control airspace dynamically.

It enables real-time coordination between airspace controllers and UAS operators in high-stakes scenarios, supporting defence missions and homeland security responses.

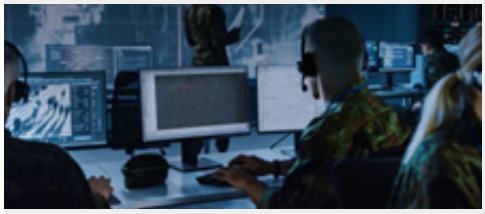


Integration of planning

Surveillance, planning, and control data are securely integrated into a unified operational picture. Depending on integration type, data is sourced from certified transponders or ground control stations, enabling operators to manage missions under any operational circumstances.

The transfer of flight planning between the uncrewed air operation suite and other systems is crucial to integrate drone-operations within the airspace management considerations.

The Frequentis solution is a flexible and scalable platform that optimises airspace operations, enabling precise control of airspace sectors for complex missions.



Unified air picture

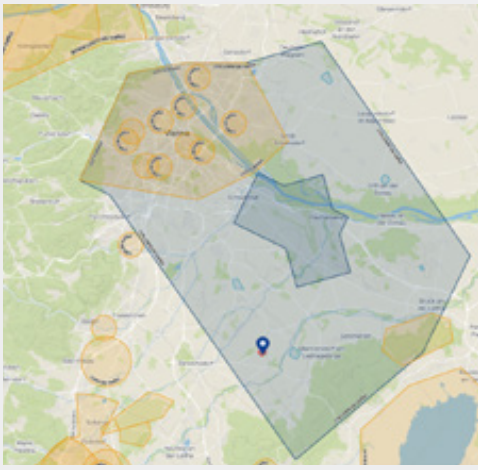
The system collects, converts, and processes flight plans, mission profiles, surveillance, and vector data from ground control stations (GCS) or UAS and manned systems to create a single, integrated air picture for low-altitude airspace.

Multi-sensor data fusion (MSDF)

Using multi-sensor data fusion, the Frequentis solution integrates radar, EO/IR, and acoustic sensor data to create flight tracks and enhance the air situation with additional surveillance information in real time.

This unified air situation is based on the fusion of multi sensor data, the integration of various sensor sources, and the control and mission planning data from the ground control stations of the UAS.

In addition, live surveillance data from UAS transponders can be integrated to further improve situational awareness and ensure even more precise surveillance.



Air threat picture (part of C-UAS)

A unified air situation is essential to protect military facilities from uncooperative or enemy drones, such as spy drones.

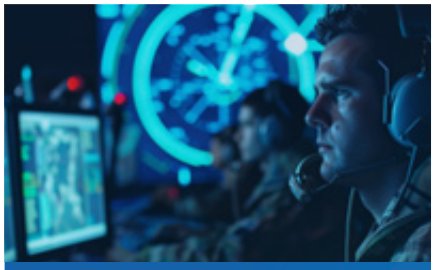
The software solution provides a module for C-UAS platforms with a standardised air picture through open APIs to enable rapid target/non-target identification.

This supports effective defence of military bases, airports, and critical infrastructure against unauthorised drones.

References

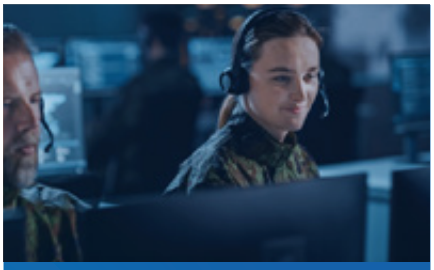
With nationwide systems enabling the safe integration of unmanned systems into controlled airspace across several European countries and Australia, Frequentis has established itself as a pioneer and global market leader in this domain.

Expanded product portfolio

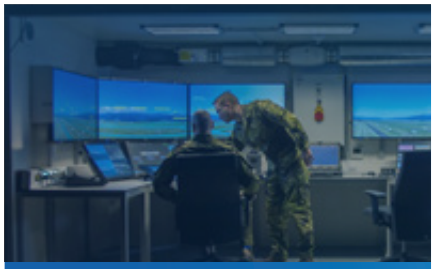


→ Military Radar Data Network (MilRADNET)

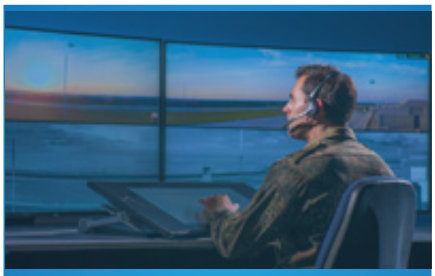
→ MSDF – Fusion of multi-sensor data



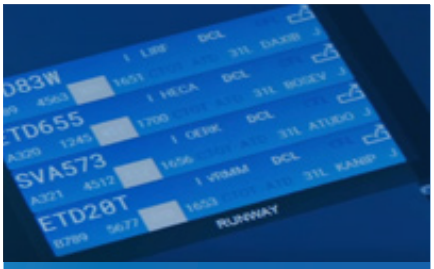
→ Reliable C2 for Air Operations



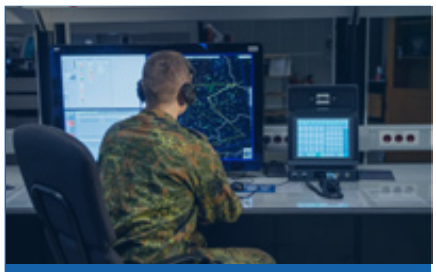
→ Deployable RDT – Deployable Remote Digital Tower



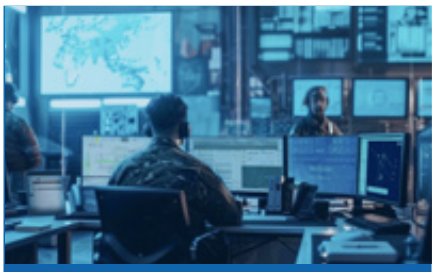
→ smartVISION – VisualiSation and monitoring



→ smartSTRIPS – Electronic-flight strip system andflight data processing

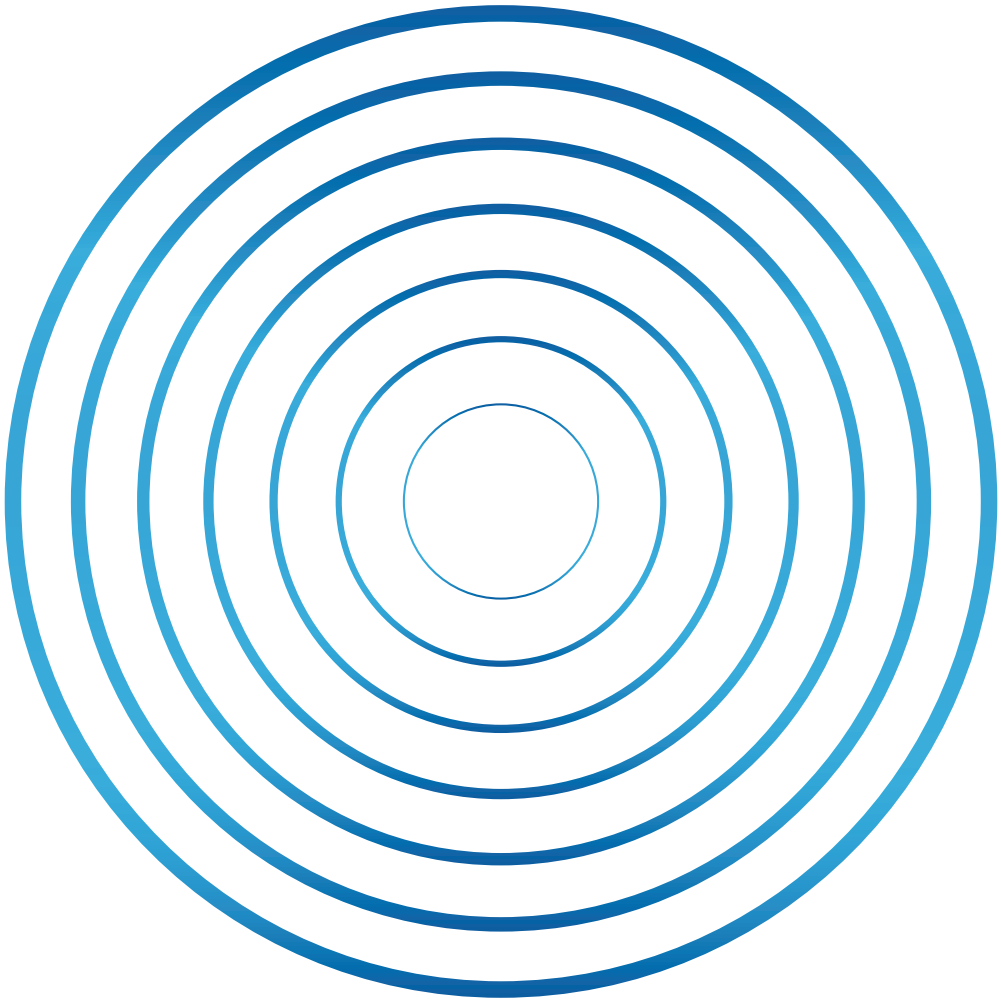


→ iSecCOM – safety critical communication



→ GuardX – Recording and playback solution for all video, image, and voice data

→ Control and flight handling equipment



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