

MosaiX SWIM enables efficient drone information exchange across agencies



The Frequentis common information system (CIS) based on MosaiX SWIM is a key enabler to ensure seamless information exchange between all authority stakeholders and safety during drone flights.

Key benefits:

- Cost efficient
- Integration into existing infrastructure
- Cloud deployment and scalability

Civil Aviation / ATM



Military



Maritime



Emergency



The challenges for safe and reliable integration of drone fleet management systems

The increasing number of civil aviation flights combined with the rapid growth of unmanned aerial vehicle (drones), with very different levels of understanding of aeronautical knowledge and rules, brings new challenges to aviation stakeholders.

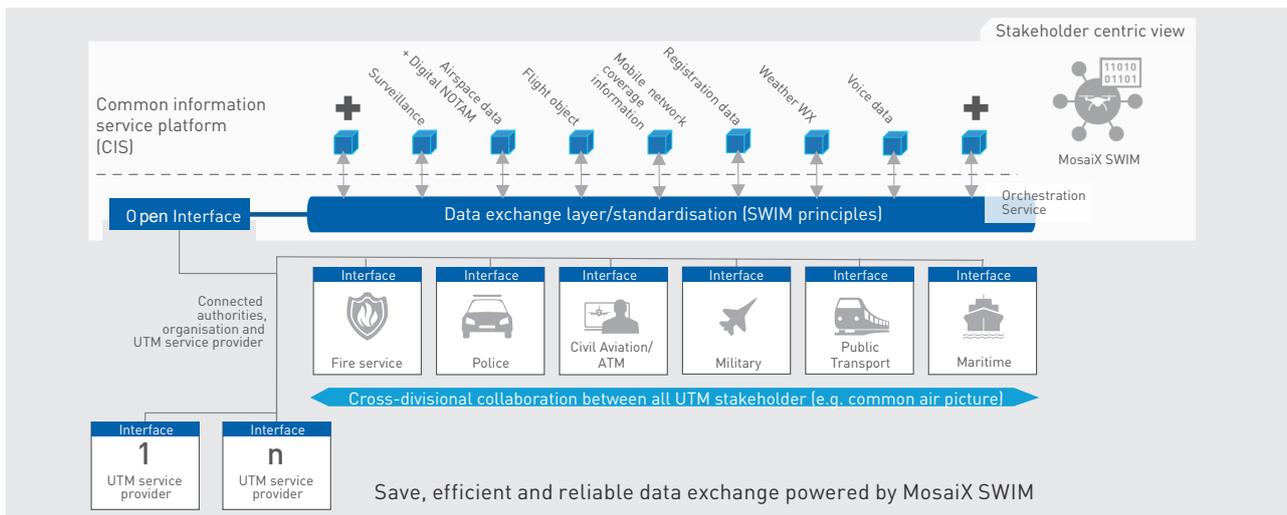
To preserve the current high level of flight safety and security, the aviation stakeholders are taking steps to integrate new airspace users successfully by implementing a common information system (CIS) to facilitate the information exchange across agencies.

ICAO Doc 10039 defines the system wide information management (SWIM) concept and documents the technical infrastructure, exchange models and services that are to be used to ensure the information exchange between air traffic management organisations. The SWIM concept can be extended to support the functionalities required by the common information system (CIS).

The solution

MosaiX SWIM is the solution for safe and reliable integration of various commercial and governmental drone fleet management systems. It is a multi-domain digital data exchange platform, designed around a micro services architecture. MosaiX SWIM supports data validation, data mediation between legacy and SWIM data models (AIXM, FIXM, IWXXM), data fusion between the different information domains (i.e. flight plans and surveillance data) and up to date display of all information (airspace, flight plans weather, surveillance).

MosaiX SWIM comes with a service registry which provides the tools for all agencies to discover the services available by the publisher. As a single source of truth, MosaiX SWIM supports all the stakeholders in the ecosystem with a focus on data accuracy, integrity, consistency and timeliness.



MosaiX SWIM key functionalities

- Data validation, mediation, and fusion
- Data storage
- Data analysing and
- Distributing results to various stakeholders

enabling registration and lookup of drones and drone operators.

MosaiX SWIM empowers

- Drone operation flight planning using mobile applications
- Supporting airspace reservation for drone operation
- Visualisation and exchange of airspace and surveillance information
- Data access from stakeholders, such as drones operators, air traffic controllers, fire department, police
- Seamless data fusion leads to manageable information streams to all stakeholders into their existing systems.

Air traffic management information exchange

The interaction between drones and air traffic management (ATM) requires new service definitions, new data models and conversion rules along with seamless service interconnectivity. Leveraging SWIM reduces overhead, lowers integration cost, and is key to future-proofing today's investments in ATM systems. Frequentis MosaiX SWIM supports seamless information exchange between drone operators and air traffic controllers, creating a unified, shared understanding of the airspace situation.

Military information exchange

Military drone missions will drive new forms of use as they require integration into the military air traffic control system to ensure seamless situational awareness. MosaiX SWIM digital platform is used to manage and enable the seamless information exchange between civil and military authorities, to integrate drone information into their standardised working principles and operations.

Maritime information exchange

In Search & Rescue (SAR), time is the critical factor to rescue seamen in distress situations. With new possibilities, emerging from drone technology, Frequentis integrates drone data via MosaiX SWIM into operations for the upmost effective handling of critical situations. Vessel Traffic Services (VTS) gain reduced load and effort for standard situation. Equipped with specific sensors, drone operations can speed up routine and emergency tasks.

Emergency and public transport information exchange

Public safety agencies are challenged to increase reaction times and are using drones to support their operations. This usage needs enablement tools to providing drone data and exchanging their information with other internal and external agencies. MosaiX SWIM enables a safe and efficient information exchange between stakeholders via common B2B interfaces.

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