



SWIM-BOX® **SYSTEM WIDE INFORMATION MANAGEMENT**

Swim-Box is the Selex ES solution for System Wide Information Management (SWIM) which enables seamless information sharing between air transport stakeholders, such as Airport Operators, Airlines and Air Navigation Service Providers (ANSP).

The significance of SWIM is widely recognized and stands at the very heart of the future ATM defined within both the SESAR and NEXT Gen initiatives. Swim-Box makes it possible to transform this vision into reality and to pioneer its implementation in the real world, as it offers a concrete opportunity to enter the world of SWIM and start building the ATM system of the future.

THE SOLUTION

Swim-Box enables a collaborative environment within a highly distributed system of systems including the most diverse ATM players, each with their own background and needs. As entry point and gateway towards SWIM, Swim-Box opens up a range of new opportunities for information sharing and collaborative processes involving heterogeneous and distributed ATM applications.

Swim-Box is a SW solution providing access to SWIM through standardised interfaces while satisfying all stringent engineering requirements for those complex distributed systems used in critical infrastructure, both in terms of design characteristics, flexibility, maintainability and in terms of reliability, availability and security. Swim-Box is a recognized baseline for SWIM standards, which will evolve as standards get better defined within the international scenarios.

Swim-Box is designed with an open and modular architecture to guarantee its complete flexibility and scalability and therefore its continuous upgrade with changing standards and future information sharing scenarios.

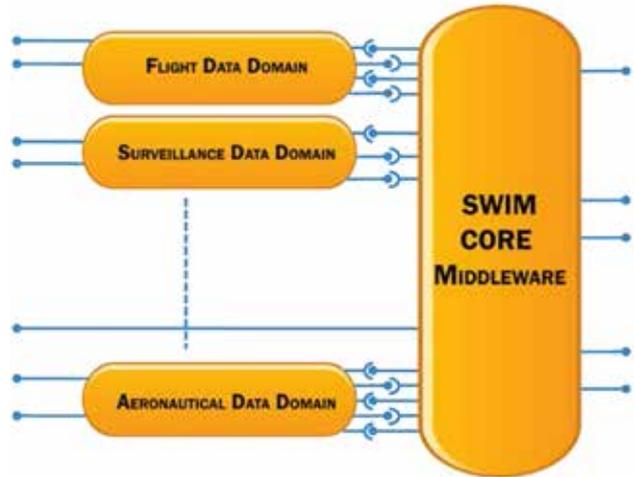
These features are achieved through a decomposition into two basic layers:

- A domain specific layer composed by specialised components which provide added value services and are related to domain specific data representation
- A core common layer with components providing common services like data distribution, encryption, authorisation etc.

This modular architecture is intended to ease the introduction of different specialised data domain components (flight data, surveillance, weather etc), which implement specific standards and technologies (e.g. Web Services). Swim-Box acts as a gateway towards the SWIM collaborative environment and shields the applications from the details and complexities of the SWIM technical implementation, thus providing independence from SWIM technological choices.

Swim-Box takes care of data distribution using a publish subscribe pattern in a many to many environment through multiple technologies such as JMS and DDS, each of which is ready to be supported by commercial and/or open source COTS. Security is fully considered through services for authentication, encryption, digital signatures etc. These core components providing the underlying services for safe and secure communication are independent from the actual domains and therefore ensure the necessary decoupling from the application level.

Swim-Box therefore provides an entry point and interface for the most diverse applications representing the air transport players to plug into SWIM, taking care of the complex communications patterns supporting the large distributed systems. This allows Stakeholder applications to focus on their key functions while leaving the management of communication aspects, including security and data distribution, to the Swim-Box.



By supporting the implementation of net centric federated architectures, Swim-Box also allows ATM players, ranging from ANSPs to Airport Operators and Military organizations, to grasp the immediate benefits derived from these advanced distributed systems.

TECHNICAL FEATURES

- Based on Java enterprise technologies (J2EE)
- Supports Distribution via JMS, OMG DDS technologies
- Accessible via Web Services (following WS standards)
- EUROCAE ED-133 standard ready
- Security based on WS-policy, RBAC
- Domain scalability.

