



Traffic Control Systems

SWIM-BOX® SYSTEM WIDE INFORMATION MANAGEMENT

Swim-Box Platform is the solution for System Wide Information Management (SWIM) enabling 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 NextGen initiatives.

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

It provides 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 reliability, availability and security.

Swim-Box Platform is designed with an open and modular architecture to ensure complete flexibility and scalability thus allowing a continuous alignment with changing standards and future information sharing scenarios.



SWIM-BOX®



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

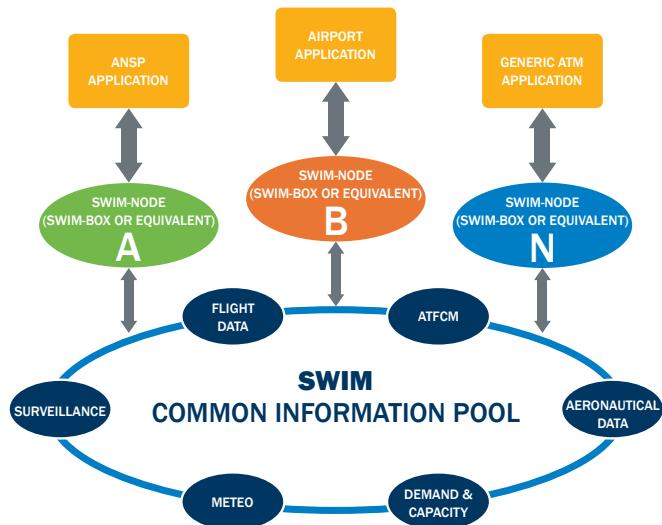
- A domain specific layer composed by specialised components which provide added value services and are related to domain specific data representation
- A core common layer with components providing common services like data distribution, encryption, authorisation etc.

This modular architecture is intended to ease the introduction of different specialised data domain components (e.g. flight data, surveillance, weather etc), which implement specific standards and technologies (e.g. Web Services). It also greatly facilitates the transition of existing systems from “legacy” to SWIM based interactions.

Swim-Box Platform 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 Platform takes care of data distribution using a publish subscribe pattern in a many-to-many environment through multiple technologies such as JMS, DDS and AMQP, each of which is ready to be supported by commercial and/or open source COTS.

Swim-Box Platform provides an Access 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 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.



iSWIM READY

EC Regulation 716-2014 (a.k.a. Pilot Common Project) requires an Initial SWIM to be deployed in Europe. Swim-Box Platform is ready to support AF#5 (ATM Functionality #5), by implementing the required SESAR SWIM Blue and Yellow profiles and providing support for a range of specialized services dealing with Meteorological, Aeronautical and Flight Information exchange represented in the latest exchange standards (e.g. iWXXM, AIXM5.1, FIXM).

AWARDS WINNING SOLUTION

The Swim-Box Platform has been awarded by SESAR Joint Undertaking the first prize as Best in Class SWIM Technical Infrastructure during 2014 Edition of the SWIM Master Class.

The Swim-Box Platform was the underlying infrastructure used when winning its two 3rd prizes in Best ATM service and Best SWIM Enabled Application categories during SWIM Master Class 2013 Edition. It has been successfully demonstrated in a number of international interoperability events including latest SESAR/NextGen SWIM Global Demonstration/ MiniGlobal II.

TECHNICAL FEATURES

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

