AERONAUTICAL INFORMATION SERVICES-AERONAUTICAL INFORMATION MANAGEMENT STUDY GROUP (AIS-AIMSG)

NINTH MEETING

Tokyo, 21 to 25 April 2014

Agenda Item 7 Other Business

SESAR SWIM OUTREACH & PROGRESS

(Presented by Paul Bosman)

SUMMARY

SESAR SWIM Outreach is progressing through the organisation of Masterclass and Global Demonstration activities.

In particular, the second edition of the SESAR SWIM Master Class (2013) welcomed 64 international teams actively learning, developing and / or demonstrating their SWIM-enabled services and applications.

Further a SESAR SWIM Master Class 2014 edition is announced as well as information is provided on recent ICAO initiatives in the area of SWIM.

Introduction

1.1 In this SN information is provided about the progress being made in SESAR on SWIM Outreach & Awareness through Masterclass activities and SWIM Global Demonstrations.

1.2 In addition information is provided on recent ICAO initiatives in the area of SWIM involving SESAR as well as many other global participants.
2. Results of the SWIM Master Class 2013

2.1 The objective of the SESAR SWIM Master Classes is to accelerate the uptake of SWIM and to increase the awareness of SWIM at a global scale. During last year’s second edition, more ATM data providers entered the game, offering ATM Service or Application development teams a wider scope of data and services to exploit in their SWIM-enabled applications or web-services.

2.2 Information Services made available by more than 20 ATM Data Providers covered a wide range of domains such as Flight, Meteo, Airspace, Airport, Aircraft, Routes, Points, Fleet, Digital NOTAM, Volcanic Ash, etc. the ATM Data Providers of the 2013 edition were: 4D-Aerospace/University of Salzburg, AC-B, ACL International, Austro Control, Avitech, EIG EUMETNET, EUROCONTROL, FAA, FlightStats Inc., Flightglobal (Reed Business Information Ltd), GMV SKYSOFT S.A., Harris Corporation, IATAS, IBL Software Engineering, ICAO, LFV, M-Click, NATS, Pildo Labs, SITA, Selex ES, Selex SI, Snowflake Software.

2.3 SWIM Master Class 2013 impressive figures:

- 55 organisations signed up over summer to the SWIM Master Class 2013 (active participants and observers together).
- 53 services were declared in the Registry
- 29 organisations formed 23 teams to put forward one or more proposals each
- 39 proposals were put forward for an assessment by the jury (award) : 19 ATM information services / 19 SWIM Enabled Applications / + 1 A/G SWIM Infrastructure proposal
- 10 more teams piloted services without submitting their work to the jury for assessment.
- 3 best in class winners, each for services and applications, were announced during the final SWIM Master Class 2013 event on 21 November
- 20 Live Show Cases (Services and Applications) were demonstrated during the same event.

Figure 1: SWIM Master Class 2013 participants on a global map
2.4 By participating in the SWIM Master Class, candidates accessed the community of SWIM application and service developers acquired state-of-the-art expertise and shared experience amongst SWIM experts.

2.5 Innovative entries from Barco and NATS/Snowflake have won the top prizes in the 2013 SESAR SWIM Master Class Awards. The winners, which were announced during a Best-in-Class ceremony at EUROCONTROL headquarters in Brussels, were among 39 SWIM-enabled ATM information solutions that were submitted to the Master Class jury for nomination in one of two categories: services and applications. The ceremony also showcased live some 20 services and applications, illustrating that SWIM is quickly becoming a reality within the global ATM system.

2.6 The ceremony brought to a close the second edition of the SESAR SWIM Master Class, which took place between June and November 2013 and welcomed 64 international teams actively developing and demonstrating their SWIM-enabled applications. Held annually, the Master Class is a chance for ATM stakeholders to share their experiences and best practices in implementing the concept of SWIM. In doing so the Master Class has become an important platform through which to build a critical mass of knowledge and excellence about SWIM and to translate the concept into viable solutions.

2.7 In the Services category, the Best-in-Class award went to the London Heathrow Arrival Sequence Service, submitted jointly by NATS and Snowflake. The service supports a key concept in SESAR, which is to slow down aircraft en-route in order to absorb some delay before reaching the holding points. This service is implemented using Snowflake Software technology and NATS operational supervision.

“The project would not have been possible without the SESAR drive for open standards and enabled by the A6 community locally. The exploitation path across Europe for this work is enabled by SESAR, and the Master Class provides the initiative for industry to collaborate on fast time implementation using open standards to deliver SWIM and make real the concepts required by ATM,” said Kevin Loy who accepted the award jointly with Alexis Brooker on behalf of NATS and Snowflake respectively. “The SESAR SWIM Master Class is an excellent way for a small business to gain visibility, enabling great ideas to make it into operational systems,” said Alexis Brooker of Snowflake.

2.8 The Best-in-Class award in the Applications category went to the Controller Working Position (CWP) Human Machine Interface (HMI), submitted by Barco. The application in fact displays real-time arrival sequences calculated by the Arrival Manager (AMAN) for London Heathrow, which the Barco application receives from the winning NATS/Snowflake web services. The application is based on an open HMI “plug-in” platform, designed for the needs of ATM and SWIM.

2.9 “We are delighted to be recognised by the SESAR SWIM Master Class and the ATM community for our work. SWIM is making more and more information available through its services, so it is important that we have applications that are SWIM enabled. Thanks to SWIM, the market is moving towards open standards, an important change and message which the SESAR SWIM Master Class is relaying to the decision makers and business community alike,” said Michael Eisele, who accepted the award on behalf of Barco.

2.10 SWIM represents a complete paradigm change in how information is managed along its full lifecycle and across the whole European ATM system. Building on the best practices from different information communities, the aim of SWIM is to provide information users with relevant and commonly understandable information. This means making the right air traffic management information available at the right time to aircraft, airports, air traffic controllers, and air navigation service providers, airline operation centres, military operation centres, ground vehicles, flow management centres, and weather
service providers. The implementation of the SWIM concept will enable direct ATM business benefits to be generated by assuring the provision of commonly understood quality information. SWIM will result in a more cost and time efficient exchange of information between providers and users.

3. **SWIM MASTER CLASS 2014**

3.1 Building on the success and the momentum of the first 2 editions, SESAR Joint Undertaking is scoping a new edition focussing on true interoperability at a global scale, with more focus on operational usability and quantifiable benefits, using common off the shelf techno solutions lowering the threshold for the whole ATM community.

3.2 As the SWIM compliance framework also gains maturity the participants’ prototypes and solutions will be assessed from an information, service and SWIM technical infrastructure perspective.

4. **SWIM GLOBAL DEMONSTRATIONS**

4.1 Coordination has been initiated recently to engage in SWIM global demonstrations between various parts of the world such as USA, Canada, Australia, China, Japan, Singapore, etc. The idea is to align, synchronise and connect between different demonstration activities organised in different regions between the end of 2014 and end 2016. From the SESAR side such demonstrations will build on the developments being made in its programme and where possible on the very successful SESAR SWIM Master Classes. A call for demonstration proposals has recently been published to cover the SESAR part of such global demonstrations and cover series of projects focussing on the demonstration of the operational and safety benefits that can be derived from improvements in flight planning, flight briefing and flight following through global interoperability of the SWIM B2B services. The SJU will provide SWIM foundation material and will organise support to the usage of this material. Project activities under this lot will be embedded in the global SWIM demonstration setup that is targeted to also be supported from other ICAO regions.

The objectives of global SWIM demonstrations are to:

- To share experience in developing and using SWIM enabled ATM solutions.
- To collaborate in identifying best practices for using SWIM.
- To demonstrate that ATM information can be exchanged efficiently using SWIM technical infrastructure and services between stakeholders around the globe.
- To generate shared knowledge that will support the required global [and regional] standards for SWIM.
- To communicate results to the ATM community.

More information can be found on [http://www.sesarju.eu/swim](http://www.sesarju.eu/swim) and soon on [http://www.swim.aero](http://www.swim.aero).

5. **ICAO SWIM Concept paper**

5.1 Through the ICAO ATMRPP (Air Traffic Management Requirements and Performance Panel) the ICAO SWIM Concept document is being agreed which establishes guidelines for information management enabling ATM service providers (ASPs) to ensure global interoperability. While standards will permit interoperability, this ICAO SWIM Concept does not prescribe, or expect, a single global implementation of SWIM.
5.2 This ICAO SWIM Concept document further elaborates the information management concept articulated in the Global ATM Operational Concept (Doc 9854)\(^1\). The purpose of the document is to provide a vision for interoperable, global information management including a mixed transitional environment. The concept addresses:

- Definition of terms of relevance to information management to enable international discourse on system wide information interoperability.
- A layered description of SWIM enabling the reader to understand representative standards that are applicable to different information management elements.
- The layered model further enables an understanding of the separation of the information management from the information being managed and the consumers of that information.
- A description of best practices for interfacing standards that may differ across SWIM regions.
- A description, through operational scenarios including the actors, the expected roles and responsibilities of the actors in the scenarios, and the information exchange through the various SWIM layers.
- A description of how SWIM will operate in a transitional environment with some legacy ASPs.
- An articulation of select trades of relevance to ASPs. For example, while loose coupling might be relevant to ASPs with a multitude of systems, this may not provide significant benefits to an ASP with a single automation system.

5.3 The ICAO ATMRPP meeting which recently took place between 10 and 14 March reviewed the comments provided by all relevant ICAO groups and panels. A final version is now in preparation and hand-over to ICAO for further publication is foreseen in the coming months.

6. ICAO Information Management Panel

6.1 An ICAO Information Management Panel is being setup with the objective to develop a global and harmonised interoperable approach and elaborate on necessary concepts in order to ensure effective management of Information on a system-wide basis within the Air Navigation System.

6.2 A global approach on Information Management is essential to ensure global interoperability and standardisation across all data domains and to support activities such as FF-ICE, the evolution of MET towards digital information exchange and a NOTAM system review.

7. Action by the Meeting

7.1 The AIS-AIMSG is invited:

- to take note of the opportunity to participate in the upcoming SESAR SWIM Master Class 2014 as an ATM information provider, an ATM information consumer and/or observer. A public announcement about the launch of the 2014 SESAR SWIM Master Class will be made by the SESAR Joint Undertaking in April 2014.

• to participate to the global SWIM demonstrations
• to take note of the latest ICAO developments in the area of both the SWIM Concept paper and the Information Management Panel.

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