Agenda Item 6: Other Business

DECEA's Participation in Mini Global II

(Presented by Brazil)

SUMMARY

This Information Paper presents Information regarding DECEA's participation in FAA's Mini Global II Project.

References

- Doc 9965: Manual on Flight and Flow – Information for a Collaborative Environment;
- (FF-ICE)Mini Global II Participation Package, Aug 13rd 2015;
- DECEA And Atech Participation of Project Mini Global II – System Architecture – Rev D.

OACI Strategic objectives	A – *Safety* *B-Capacity and efficiency of air navigation*

1. **Background**

1.1. In an effort to support the milestones set forth by the ICAO ASBU, Block 1-Globally Interoperable Systems and Data Performance Improvement Area, FAA NextGen has established a demonstration project known as Mini Global. The Mini Global project is a collaborative effort between the FAA and the international aviation community to provide a global networked infrastructure environment for the research and validation of SWIM concepts, the global exchange models including Flight Information Exchange Model (FIXM), Weather Information Exchange Model (WXXM), and Aeronautical Information Exchange Model (AIXM) and the operational concepts outlined in Flight & Flow Information for a Collaborative Environment (FF-ICE).

1.2. In 2013, the Federal Aviation Administration (FAA) started the first phase of Mini Global project, which ended in September 2014 with a demonstration event in NextGen's Florida Test Bed, Daytona Beach, Florida. In this event, referred to as Mini Global I Demonstration, the participant ANSPs were organized in operational use cases, and exchanged information using a global infrastructure (Figure 1) and the new protocols, in order to demonstrate the viability of this new architecture and its benefits over the current architecture. DECEA was an observer during this first demonstration event.

2. **Analysis**

2.1. In 2015, DECEA started its participation in Mini Global project in partnership with Atech. Using the Global Enterprise Message Service (GEMS) provided by Harris, which in turn is connected to other GEMS providers, DECEA participation involves filling and controlling a simulated flight from Rio de Janeiro (GIG) to New York (JFK). This flight has a change in route before departure due to a NOTAM issued by Trinidad and Tobago Civil Aviation Authority (TTCAA), also a participant in

the project. All messages issued by DECEA using the new formats (FIXM) are sent to GEMS infrastructure, which is responsible to feed other parties involved through their GEMS providers.

Figure 1. Information exchange with a Global SWIM Infrastructure

2.2. Figure 2 depicts the architecture of DECEA systems. The Planner, Aeronautical Information Service (AIS) and Air Traffic Flow Management (ATFM) are prototypes that support pilots and airlines on the task of planning and filling flights. Repository, on the other hand, handle and store flight information for the use on the other modules. The ARTCC-CW, ARTCC-BS and ARTCC-AZ are instances of a prototype that simulates the functionalities of the ACC-CW, ACC-BS and ACC-AZ, control centers for the three Brazilian FIR involved in the flight. Surveillance Data Processor (SDP) produces track information for the simulated flight. All these modules use an internal Aeronautical Data Bus to intercommunicate. From this bus, a module capable of translating necessary messages to the FIXM and AIXM formats capture necessary data for publishing to the Harris EMS, which is responsible to deliver the content to the other participants. It is important to notice that different EMS providers intercommunicate to enable their clients to reach the final destination. That is the case for the NOTAM issued by TTCAA, which is received in Brazil.

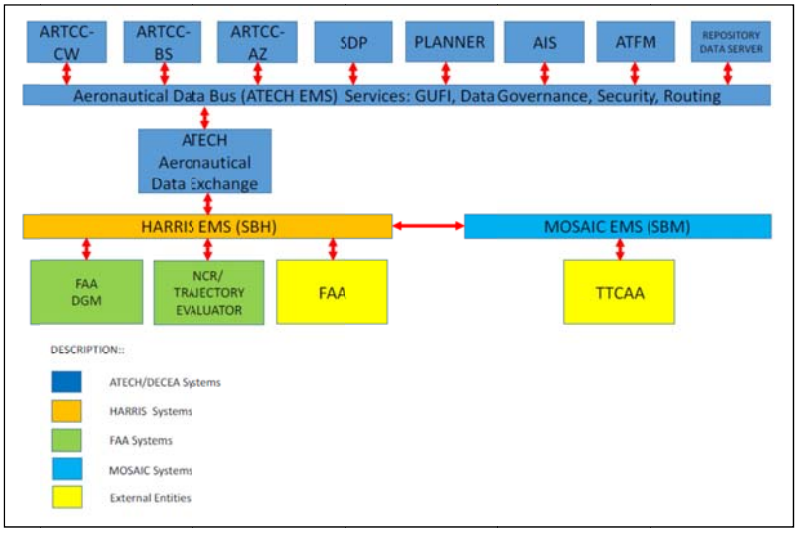

Figure 2. System architecture

3. **Next Steps**

3.1. DECEA will participate in the final demonstration for Mini Global II, which will occur in NextGen Florida Test Bed, Daytona Beach, FL from Apr 26th to 28th. It is expected that this participation will provide insights on how to better implement SWIM services in Brazil and how to make them available to the whole aeronautical community.

3.2. SejarJU has a different proposed architecture for globally exchanging aeronautical information using FIXM, AIXM and WXXM. DECEA is planning to participate in their SWIM Global Demonstration event, in June, exchanging live flight information in FIXM format.

4. **Suggested actions**

4.1. During the meeting, the attendees are invited to take note on the information provided.

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