CANSO LATIN AMERICA AND CARIBBEAN CONFERENCE 2017
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Data Sharing and ATFM

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Challenges of the Air Navigation System Modernization #1

One challenge, among others, for a more efficient aviation system

- Foster the deployment of Automation in different operating contexts
  - Increasing Capacity, Safety and Efficiency
  - Facilitating smooth cross-border and end to end operations
  - Enabling close cross-domain collaboration between all stakeholders
  - Making the Human tasks evolving from routine services to exception handling
Challenges of the ANS Modernization #1

**R&D programs have permitted to enhance ATC means**

- Enhanced Air & Surface Safety Nets + A-SMGCS + EFS
- Native Integration of Satellite based ADS-B data
- RECAT–EU and Time Based Separation (wake vortex)
- Conflict Detection and Monitoring Aids
- Support tools for Free Route and FUA Concepts
- Integrated Arrival and Departure Management
- ATFM, Extended AMAN and Cross-Border Arrival Management
- SWIM based exchange capabilities & Data-Link Services

Most of the ASBU 1 Technology has been validated & starts to be implemented. Let’s deploy it, when and where needed, with CBA or interoperability rationale.
Another major challenge, for a more efficient aviation system

• Reinforce the cooperation between all stakeholders
  – Increase interaction of the aviation players, relying on a shared Conops
  – Insure the interoperability of the systems and the exchange of data
    • ATC to ATC, ATC to ATFM
    • Between Air Traffic Control, Airline OC, Airport OC, Aircraft, Military
  – Have the regulator encouraging the cooperation process

MOVIE: DIGITAL SOLUTIONS FOR CONNECTED AVIATION OPERATIONS
Secured Platform Enabling Collaborative Data Based Applications

- Shared awareness
  - Common situational picture (weather, traffic, airspace, ...)

- Assessment & alerts
  - Assessment of impacts through customized KPIs
  - Customized alerts

- Mitigation
  - ATFM measures
  - “What-if” scenarios
  - Collaborative Decision Support
Use Case: Optimizing routing in a short term thru TSA – ANSP view

1. Military Area is freed earlier than initially planned

2. FMP proposes what-if direct routes considering
   - use of airspace
   - sector loading
   - weather hazards
   - savings (time, distance)

3. ARV Airport refuses earlier ETA
The Airline accepts direct route and speed reduction Coordination with the Captain through the Electronic Flight Bag

New Flight Plan sent to all stakeholders
- Network manager
- ACCs, Airports
- Airline, Pilot
- Military

Use Case: Optimizing routing in a short term thru TSA – Airline view
Use Case: Collaborative Process through Innovative Tools

Gain for ANSP and Airports
- Short term measures easily implemented
- Gain in operational processes
- Better use of the Airspace and Resources capacity

Gain for Airlines
- Reduction of flight time
- Reduction of flight distance
- Savings of Fuel, reduction of CO2 emissions, punctuality.

Gain for All Humans in the Loop
- Smooth, collaborative and safe process
- Fast and light work-flow thanks to automated & interconnected tools

Gain for All Stakeholders

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Conclusion

• The Aviation Community is on the right path towards automation adoption
  – ASBU 0 and 1 technology in automation domain (will) progress system efficiency
  – Innovative tools enable collaborative data based services with added value for all stakeholders

• Further steps are required
  – Operator training and procedures development must widely expanded
  – Pioneer successful practices must be extended to large scale
  – Standardization efforts in Information Management must be pursued
  – Harmonized aviation cyber-security regulations must grow across the different domains
  – New interoperability challenges are arising with the introduction of UAV
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