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Agenda Item 3: Air Navigation Issues
3.6 Other Air Navigation Issues

RNAV/RNP Procedure Development in LATAM/CAR

(Presented by IATA)

SUMMARY

RNAV/RNP is a proven method for effectively increasing the safety, dependability and efficiency of flight operations. GNSS is the primary navigational enabler for the optimum exploitation of the benefits of PBN. Regulators and air navigation service providers must follow established RNAV/RNP criteria for the development and implementation of departure, arrival and approach procedures. Likewise, operators must meet specific equipage and operational criteria in order to be able to utilize them. IATA is already engaged in RNAV/RNP procedure implementation projects in the region. IATA's program and support is available upon request to airports, States and airlines. IATA is also evaluating additional training programs to assist regulators as well as operators.

1. BACKGROUND

1.1 IATA supports the implementation of RNAV and RNP, under the globally harmonized ICAO Performance Based Navigation (PBN) concept. RNAV/RNP is a proven method for effectively increasing the safety, dependability and efficiency of flight operations. GNSS is the primary navigational enabler for the optimum exploitation of the benefits of PBN. Several airlines and States have realized the potential of this technology and have requested IATA's assistance in the development of such procedures. IATA is already engaged in RNAV/RNP procedure implementation projects in the region. IATA's program is available upon request to airports, States and airlines.

1.2 Regulators and air navigation service providers must follow established RNAV/RNP criteria for the development and implementation of departure, arrival and approach procedures. Likewise, operators must meet specific equipage and operational criteria in order to be able to utilize them. Today only a handful of airlines are approved for RNP operations. To assist airlines in this regard, the IATA-Miami team partnered with industry pioneer NAVERUS to deliver a 5-day workshop on the in May 2007. This was a unique opportunity to learn how to prepare an airline to achieve RNAV and RNP operational approval status. IATA is evaluating additional training programs oriented towards regulators as well as operators.

2. DISCUSSION

2.1 ICAO released the "final draft" of the Performance Based Navigation (PBN) manual. This supersedes the former RNP Manual (Doc 9613). This is now the new primary guide for the global application of RNAV and RNP procedures, along with the separate RNP AR Procedures Design Manual. This will remain a DRAFT document for a year while ICAO conducts PBN familiarization seminars worldwide. Airlines are strongly encouraged to attend. In our region, the seminars are tentatively scheduled as follows:

- 17-20 June 2008 – Lima
- 24-27 June 2008 – Santo Domingo

2.2 Upon completion of the seminars, all comments will be incorporated into an official first edition of the PBN Manual. IATA does not anticipate any major changes, so this draft status should not discourage any early implementations of PBN.

2.3 The US FAA also has guidance material available. This is fully harmonized with ICAO criteria.

2.4 IATA attended the initial PBN Seminar at the ICAO Montreal Headquarters on 11-15 June. This seminar was by invitation only and was intended to gather PBN experts from around the World to provide feedback and guidance for the development of the regional seminars, training programs and implementation criteria.

2.5 ICAO adopted the following PBN implementation plan during the recent General Assembly:

- All existing RNAV ATS routes to be converted to PBN by 2009
- Enroute oceanic and remote airspace to be RNP 10 or 4
- Enroute Continental airspace to be RNAV 5, 2 and 1
- Terminal areas to be RNAV 1, 2 and basic RNP 1
- International airports to have APV approaches (with vertical guidance)
  10% by 2008
  30% by 2010
  70% by 2014
  100% by 2016
- Domestic airports to have APV approaches
  10% by 2010
  30% by 2012
  70% by 2016
  100% by 2018
- LNAV approaches where operational considerations do not permit APV

2.6 Following is an update on RNAV/RNP regional implementation activity since in the LATAM/CAR region:

<u>Brazil:</u>

- RNAV/RNP procedures implementations are taking place continuously at its domestic and international airports.
- Initial RNAV/GNSS procedures will be followed by RNP approaches where required.

Netherlands Antilles:

- IATA assisted CO obtain DGAC approval to operate a Visual RNAV approach procedure in BON. This is an optimal interim solution to the currently sole NDB instrument approach procedure. IATA has also initiated discussions for implementation of additional RNAV arrival, departure and approach procedures in BON.
- IATA met with Netherlands Antilles CAA, airport authorities, CO and KL to discuss implementation of RNAV/RNP/GNSS approach procedures at BON, CUR and SXM. KL presented an ICAO-spec APV (RNAV/RNP with Baro-VNAV) approach procedure for runway 10 at BON. The CAA also requested KL to develop similar procedures for CUR and SXM. IATA will assist in these projects by providing an independent validation of the procedures as well as the required RNAV/RNP ATC controller training.

Ecuador:

- The UIO procedures were published in the AIP manual effective 29 September 2006.
- Three airlines have already received FAA and DGAC approval and are currently flying these RNP AR approaches (including runway 17).

Peru:

- A project to implement RNAV/RNP procedures at CUZ is already underway. This is a joint effort between IATA, DGAC and LP.

Colombia:

- DGAC continues to be interested in implementing RNAV/RNP procedures. This initiative is expected to start in early 2008.

Panama:

- RNAV/GNSS procedures at PTY have been published in AIP effective 12 APR 2007.
- IATA will assist DGAC in implementing additional RNAV/RNP approach procedures.

Honduras and El Salvador :

- COCESNA and FAA developed RNAV/RNP procedures at TGU, SAP and SAL.
- A final review meeting was held in SAL on 11-13 December 2007.
- These procedures are now ready for Flight Inspection and publication in AIPs.

Costa Rica:

- IATA has agreed to develop RNAV STARs, RNAV SIDs and RNAV/RNP approach procedures at SJO. IATA will finance the entire project, including DGAC/ATC personnel training.
- IATA has also submitted a separate proposal to develop such procedures at LIR on a consulting basis. IATA is still awaiting DGAC response/decision.

Mexico:

- IATA has presented a proposal for the implementation of PBN procedures at TLC.
- DGAC and SENEAM have agreed to provide support and final approval.
- Locally-based domestic airlines will finance the project.

Chile:

- RNAV(GNSS) approach procedures have been implemented at SCEL, SCCI, SCTE, SCBA, SCDA and SCFA.
- RNAV STARs and RNAV SIDs will be added as well.
- An RNP AR implementation project is underway at SCSE in cooperation with LAN. Initial flight validations have already been successfully conducted.

USA:

- FAA is expanding the number of airports that have RNAV/GNSS and RNP procedures.
- MIA and FLL have already implemented RNAV STARs, SIDs and RNP AP procedures.
- PBN in US NAS is used mainly as a tool to increase system capacity. There are very few airports where RNP is needed to enable instrument approaches to mountainous-terrain airports (such as PSP).
- FAA TERPS and ICAO PANS OPS criteria are largely harmonized.

3. THE FUTURE

- IATA's immediate objective is to accelerate implementations of RNAV/RNP procedures throughout the region. IATA is actively involved in several such projects and continues to promote this technology.
- IATA seeks additional support from civil aviation authorities to carry out these implementations.
- IATA will consider providing additional training support upon request from civil aviation authorities and operators.

4. ACTION

- States are invited to promote and support IATA in the implementation of RNAV/RNP procedures.
- States to inform IATA of any RNAV/RNP/GNSS training requirements and material.

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