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**International Civil Aviation Organization
South American Regional Office**

**FOURTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/4)
REGIONAL PROJECT RLA/06/901**

Lima, Peru, 19 to 23 October 2009

Agenda Item 4: Standards and procedures for performance-based navigation operations approval

IATA Equipment Survey

(Presented by IATA)

SUMMARY

IATA has developed an avionics equipment survey (See **Appendix A** to this working paper) to collect and compile accurate data on airline avionic capabilities and future upgrades. This will allow airspace planners to develop realistic proposals for airspace improvements.

1. BACKGROUND:

1.1 A roadmap for the implementation of new technological solutions in Communications, Navigation and Surveillance and ATM areas needs to be a result of a collaborative work between States, regulators, service providers, manufacturers and operators.

1.2 In order to assist in this effort, IATA has developed an avionics equipment survey for the collection and dissemination of aircraft equipment information from airlines/operators.

1.3 This initiative focus is the collection of information of the airlines avionics equipment and development of a global database.

2 DISCUSSION POINTS:

2.1 The IATA equipment survey will collect and compile accurate data on current and future airline avionic capabilities and upgrades. Future decisions on fleet equipment will be based on system regulatory requirements and adequate business cases being made.

2.2 The IATA completed aircraft equipment survey will be based on the information provided by the airlines and will be updated regularly. The avionic equipment database will be provided to ICAO and States as required.

3 RECOMMENDED/DESIRED OUTCOME:

3.1 Note the above information.

APPENDIX A



Airspace Planning – Equipment Survey

Purpose: To collect and compile accurate data on airline avionic capabilities and future upgrades. This will allow airspace planners to develop realistic proposals for airspace improvements.

Directions: Please ask your flight engineering and flight operations support departments to fill out this survey. When you open the file please be sure to enable the macros. Below are further explanations to some of the specific questions in the survey.

1. Rows 16-23. Aircraft types you operate.

- Airlines are requested to answer the questions for each aircraft type in their fleet.
- If there are clear distinctions on the equipage of same aircraft types, e.g. an airline is only upgrading half of their B737-400's then list this as two separate aircraft types.
- If there are more than 6 aircraft types then please fill out two forms.
- Please include information for the future aircraft (firm orders).

2. Rows 16-23. Where you operate and frequency.

This asks for a rough estimate for each region your aircraft operates within and the frequency of operations. There are 3 simple answers in the pull down menu of 1-35; 36-70; or 71+. Another way of looking at this is to answer:

- 1-35, if you operate up to 5 flights per day in this region,
- 36-70, if you operate 6-10 flights per day, or
- 71+, if you operate greater than 10 flights per day in that given region.

3. Rows 28-65. Aircraft Equipment and Capabilities

- These are color-coded to the aircraft types in No. 1 above.
- All answers are by clicking on the pull down menu. Most (but not all) answers are yes, no, before (BF) 2010, BF2012, BF2015 or BF2018.
- Rows 47-54. The RNAV & RNP values are expressed in terms of ICAO Performance-based Navigation (PBN). If you are unfamiliar with these



values the attached PBN table provides comparisons to other types of navigation specifications and their PBN equivalents.

- Row 56. The RNP 0.xx question is asking for the most stringent RNP type operational approval your fleet has (with values from RNP 0.1 – 0.3). For example, if your B737-800 fleet has approval to use RNP 0.15 instrument procedures at a certain airport then click on 0.15.

4. If you have any further information to provide please use the yellow box labeled "Additional Information You Wish to Provide"

5. Please email the completed Excel file(s) to infrastructure@iata.org.

Thank you for taking the time for filling out this survey! If you have any questions or comments please send them to infrastructure@iata.org.

Best regards,

David C BEHRENS

Director

Infrastructure Strategy

Tel +1 (514) 874 0202 Ext.3705

Fax +1 (514) 874 2653

behrensd@iata.org

International Air Transport Association

800, Place Victoria, P.O. Box 113

Montréal, Quebec, Canada, H4Z 1M1

www.iata.org



PBN Values & Application

Area of Application	Navigation Accuracy (NM)	Navigation Specification (current)	Navigation Specification (new)	Require performance monitoring & alerting
Oceanic & Remote	10	RNP 10	RNP 10	No
	4	RNP 4	RNP 4	Yes
En route – Continental	5	RNP 5 Basic RNAV	RNAV 5	No
En route – Continental and Terminal	2	US RNAV type A	RNAV 2	No
	2	N/A	<i>Basic-RNP 2 (TBD*)</i>	<i>Yes</i>
Terminal	1	US RNAV type B P RNAV	RNAV 1	No
	1	N/A	Basic-RNP 1	Yes
	<i>1</i>	<i>N/A</i>	<i>Advanced RNP 1 (TBD)</i>	<i>Yes</i>
Approach	0.3	RNP 0.3	RNP APCH (RNP 0.3)	Yes
	0.3-0.1	RNP SAAAR	RNP AR APCH (RNP 0.3-0.1)	Yes

* *To be Developed (TBD)*



Airspace Planning - Equipment Survey Version 5

NOTES:

- (1) Data provided will be de-identified before publication unless specific permission is obtained from the airline(s) concerned to identify the source.
(2) In the pull down menus, BF = BEFORE. BF2010 means before the year 2010.
(3) Please use your flight plan aircraft type designator for each type.

Airline two letter IATA code >>>>>>		If your airline is not an IATA member, please enter your airline name >>>>>>	
Number of aircraft		Expected Fleet Retire Date	
Aircraft types you CURRENTLY operate		Regions where you operate or propose to operate these aircraft (Please select all that apply and estimate the number of flights or projected flights <i>per week</i>)	
Aircraft type 1	>>>>>>	>>>>>>	AFI Flights ARABIAN SEA Flights ASIA Flights EUR Flights INDIAN OCEAN Flights LATAM Flights MID Flights NAM Flights Atlantic - NAT Flights Atlantic - SAT Flights Pacific - NOPAC/CENPAC Flights Pacific - SOPAC Flights POLAR Flights
Aircraft type 2	>>>>>>	>>>>>>	
Aircraft type 3	>>>>>>	>>>>>>	
Aircraft type 4	>>>>>>	>>>>>>	
Aircraft type 5	>>>>>>	>>>>>>	
Aircraft type 6	>>>>>>	>>>>>>	
FUTURE FLEET 1	Service Entry Date >>>>>>	>>>>>>	
FUTURE FLEET 2	Service Entry Date >>>>>>	>>>>>>	

Aircraft Equipment and Capabilities >>>>>>	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Future Fleet 1	Future Fleet 2
This line will autofill from your aircraft type entries	0	0	0	0	0	0	0	0
FANS 1/A								
FANS RTA								
ADS-C								
ADS-B OUT (Mode S ES) DO-260 transponder								
ADS-B OUT (Mode S ES) DO-260A transponder								
ADS-B OUT (Mode S ES) DO-260B transponder								
If fitted with ADS-B, Transponder Power Output								
ADS-B IN (Mode S ES) with EFB display								
ADS-B IN (Mode S ES) with other MFD								
CPDLC via ACARS-CPDLC FANS 1/A VDL Mode A								
CPDLC via FANS 1/A VDL Mode 2								
CPDLC via ATN VDL Mode 2								
CPDLC FANS 1/A SATCOM (INMARSAT / MTSAT)								
CPDLC FANS 1/A SATCOM (IRIDIUM)								
CPDLC via FANS 1/A HF DL								
Digital Data Link (ARINC 623)								
GPS								
GPS TSO status								
QLS (GBAS)								
RNP 10 (RNAV 10)								
RNAV 5								
RNP 4								
PRNAV								
RNAV 2/1								
Basic RNP 1								
RNP APCH								
RNP AR APCH								
APV BARO VNAV (LNAV / VNAV)								
RNP 0.1xx (select from pull down menu)								
DME								
FMC WPR ACARS								
RF / FRT Turn Capability								
HF RTF								
Inertial Navigation								
ILS								
ATC RTF SATCOM (INMARSAT / MTSAT)								
ATC RTF SATCOM (IRIDIUM)								
VHF RTF (8kHz/33)								

Additional Information You Wish To Provide

Thank you for your assistance with the survey. Please send the completed spreadsheet to infrastructure@iata.org Click >>> infrastructure@iata.org