

IBAC Technical Report Summary

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Subject: ICAO Aeronautical Mobile Communications Panel

Meeting: 6th Meeting – Montreal, 23-30 March 1999

IBAC File: Communications

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Summary:

The AMC Panel, with its Working Groups on AMSS (SATCOM), VHF Digital Links (VDL), HF Data Link and Spectrum Matters, met to consider key matters among its several responsibilities. Business aviation was represented by Peter Ingleton, IBAC; and Andy Pickens, IBAC, Rapporteur of AMCP/WG-A.

Agenda Items

1. Development and validation of draft amendments to existing AMSS SARPs
2. Progress of the work on next-generation satellite systems (NGSS)
3. Review of current VDL system (RF) SARPs
4. Future Work

A more detailed report is attached.

Implications for Business Aviation:

Approved evolutionary improvements in the Inmarsat system provide cost advantages where spot-beam coverage is available. Progress in standardizing next-generation systems (e.g., Iridium, Boeing) promises further advantages in cost, full global coverage and avionics suitable for small aircraft.

New amendments to VDL Mode 2 SARPs will require sunset date of 1 Jan 2002 for new installations of "old" equipment; and 1 Jan 2005 in all cases, subject to regional agreements. Similar changes will be introduced in Modes 3 and 4 SARPs, still in development.

VDL Modes 3 and 4 SARPs may be completed and validated in time for AMCP/7 meeting in March 2000.

Decisions Required:

No decisions required now, but careful watch of VDL developments is suggested; concern is multiple-ground-based data links that might lead to differing regional equipage requirements. State frequency management authorities should be advised of the unsatisfactory WRC-97 actions regarding AMSS (Inmarsat) spectrum.

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IBAC Technical Report

Subject: ICAO Aeronautical Mobile Communications Panel, 6th Meeting

Date: October 22, 1999

In Attendance: Peter Ingleton (IBAC) and Andy Pickens (IBAC/AvCom)

Background

The AMCP comprises 6 Working Groups:

WG-A Aeronautical Mobile Satellite Service (SATCOM)

WG-B VHF Frequency Planning Criteria

WG-C VHF Digital Link, Modes 1 & 2 (now dormant)

WG-D VHF Digital Link, Modes 3 & 4 (and Mode 2 maintenance)

WG-E HF Data Link

WG-F Communications Spectrum Issues

Agenda

1. Development and validation of draft amendments to existing AMSS SARPs
2. Progress of the work on next-generation satellite systems (NGSS)
3. Review of current VDL system (RF) SARPs
4. Future Work

Results

1. Inmarsat AMSS SARPs Amendments and Spectrum

Changes made to existing Inmarsat SARPs (Vol. III, Ch.4) to reflect system enhancements, the introduction of new Aero-H+ and Aero-I services, and the planned introduction of the compatible Japanese MTSAT system. The Panel accepted the amendments as mature, complete and validated. It is expected that the ANC will adopt the amendments in November 1999. WG-A also reported on its considerations of the ITU World Radio Conference (WRC-97) actions removing exclusive status for Aeronautical safety use of the frequency band identified in these SARPs, and its recommendations for correction of the situation.

2. NGSS (LEO/MEO Satcom Systems)

Acceptability criteria for next-generation SATCOM accepted, and Iridium was determined as meeting the criteria. Development of next-generation SARPs underway.

3. VDL RF Characteristics

Recent tests indicated a need for tighter control of RF "mask", affecting adjacent channel interference, frequency planning criteria and susceptibility of VDL systems and analog VHF voice. This required amendment of the VDL-2 SARPs already adopted. Sunset dates were established: 1 Jan 2002 for new installations of "old" equipment, and 1 Jan 2005 for all equipment, with provision for regional agreements which specify the airspace of operation and implementation schedules.

VDL-3 expects to use the same modulation, and appropriate changes will be made in maturing VDL-3 SARPs (no "sunset" required as no production equipment yet). Similar fixes will be applied to developing VDL-4 SARPs.

Future Work

The Panel directed the following tasks:

WG-A (AMSS/Satcom)

- develop NGSS SARPs
- monitor Inmarsat/MTSAT interoperability
- investigate/resolve AMSS compatibility issues
- work voice operational issues
- support AMS(R)S spectrum activities

WG-B (VHF Frequency Planning)

- develop criteria for VDL Modes 2, 3 & 4
- assess potential aircraft and co-site constraints
- develop guidelines for introduction of VDL
- spurious emission effects on other CNS equipment
- study need for increased spectrum allocation in VHF

WG-D (VDL Modes 3 & 4)

- complete validation of Modes 3 and 4 SARPs
- coordinate with ICAO SICASP, FS and Human Factors groups
- review channel labeling
- propose removal of Mode 1 from SARPs
- restructure SARPs for VDL Mode 2
- global signaling channels for VDL Mode 4

WG-E (HF Data Link)

- coordination for new AM(R)S frequencies
- study effects on SARPs of multiple providers
- develop material for HF voice-to-data transition

WG-F (Spectrum Issues)

develop draft ICAO position for WRC-2000

prepare amendments needed for RF Handbook

review regional frequency coordination aspects

study future use of VHF band in light of data links

develop method for assessing FM Broadcast / ILS & VOR compatibility

Issues/Actions

1. SATCOM

1.1 Express concern to State frequency management authorities about the absence of full guarantees for aeronautical access to spectrum in the bands 1545-1555 and 1646.5-1656.5 MHz

1.2 Track AMCP/WG-A results of monitoring Inmarsat and Japanese MTSAT progress toward cooperation necessary to avoid avionics differences.

1.3 Encourage continuing development of next-generation SATCOM systems for cost, size, performance and competitive advantages.

2. VDLs

2.1 Monitor carefully developments of standardized ground-based data links; concern is proliferation of differing State or regional equipage requirements.

2.2 Support developing concerns regarding potential interference among CNS systems, a growing concern as pressures on spectrum continue to increase.