SATVOICE

Another means of communication

Presented to: ISPACG/28

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Federal Aviation Administration

Overview

- **Performance-based Aviation Rulemaking Committee Communications Working Group (PARC CWG) SATVOICE Project**

- **ICAO Regional activity**

  - Asia-Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG)

  - North Atlantic Systems Planning Group (NAT SPG)

- **ICAO Headquarters**

  - Operational Data Link Panel (OPLINKP)

PARC and CWG

- **Feb 2004 – Performance-Based Operations Aviation Rulemaking Committee (PARC)**

  – Chartered under FAA Administrator's authority

    • Formerly FAA Order 1110.139 → Updated June 2010 as internal document

  – Focus on implementation and operational guidance

    • Includes PBN and PBCS

  – Provides industry recommendations to FAA

  – Considers global harmonization and standardization

- **Jan 2005 – Communications Working Group (CWG) established under PARC**

PARC CWG Members and Affiliates

- **238 members/affiliates from 65 different organizations**

- **Approximately 40 attend 2-3 meetings per year**

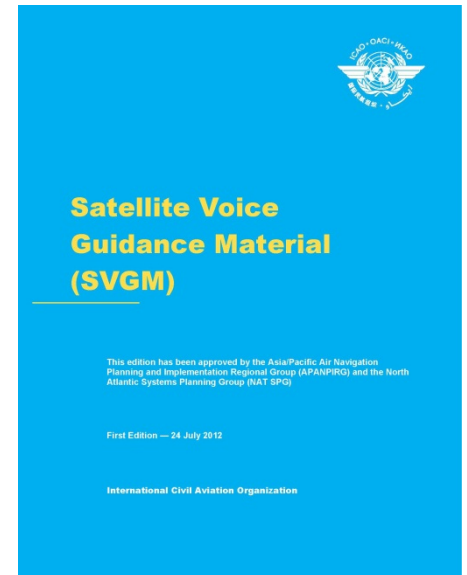|				
Aer Lingus	AeroConnex LLC	Air New Zealand	Airbus	Aireon
Airservices Australia	Air Tran	ACNZ	Alaska Airlines	ALPA
Altran	American Airlines	All Nippon	ARINC	Atlas Air
CASA Australia	Aviacom	Avinor	Avionica	Blue Sky Network
Boeing	Bombardier	British Airways	Cargolux	Cobham SATCOM
Delta Air Lines	EMS	FAA	Fed Ex	FLYTH
Gannet	GE Aviation	Gulfstream	Hawaiian Airlines	Honeywell
IATA	ICAO	ICG	Inmarsat	Iridium
Isavia	JRANSA	JCAB	Jet Blue	L3
Lufthanza	Miami Air Int'l	MITRE (USAF)	Nav Canada	NBAA
QANTAS	Rockwell Collins	SAS	Satcom DIrect	SITA
Southwest Airlines	Thales UK	UK NATS	United Airlines	Universal Avionics
UPS Airlines	USAF	Volpe	World Airways	WIFS

Completed Projects

- ✓ **Jul 2006 – Roadmap for data link**

- ✓ **Sep 2007 – DRAFT Roadmap for Performance-based Communications**

- ✓ **Sep 2012 – FANS 1/A over Iridium (FOI) and Performance-Based Communication and Surveillance (PBCS) Recommendations**

- ✓ **Mar 2011 – FANS 1/A over High Frequency Data Link (FOH) Recommendations**

- ✓ **Sep 2012 - FANS 1/A over Inmarsat-4 Classic Aero (FOICA) Recommendations**

PARC CWG Current Activities

- **PBCS implemenation**

- **Satellite voice (SATVOICE) for ATS communications project – since 2008**

- **FANS 1/A over SwiftBroadband (SBB) safety services project**

- **FAA NextGen → domestic data link**

- **FAA data link recording rules**

ICAO Regional Activity

- **May 2011 – ICAO approves NAT Doc 7030 SATVOICE provisions**

- **July 2012 – Inter-Regional SATCOM Voice Task Force completed Satellite Voice (SATVOICE) Guidance Material (SVGM), First Edition**

  - Harmonize procedures for SATVOICE

  - Support MMEL relief of one HF radio (where 2 required)

- **Later in 2012 – APANPIRG and NAT SPG endorsed SVGM (with some concerns)**

Satellite Voice
Guidance Material
(SVGM)

This edition has been approved by the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and the North Atlantic Systems Planning Group (NAT SPG)

First Edition — 24 July 2012

International Civil Aviation Organization

SATVOICE Security

- **Protecting SATVOICE numbers doesn't help**

- **Security provided by:**

  – 2-stage dialing - first number unlisted

  – Access accounts include PIN/priority to use SATVOICE and are issued via CSP (ARINC/SITA), as authorized by Inmarsat and Iridium

- **Display of caller ID on flight deck recommended, but not required**

Use of SATVOICE via MTSAT

- **For operators that log on to MTSAT**

- **Ground-to-Air Calls can be initiated only via access account from SITA**

  - Except Fukuoka has dedicated circuit to voice switch

- **Is it possible to add infrastructure and/or agreements that would allow ANSPs/Aeronautical Stations with access accounts from ARINC to initiate calls?**

Concerns from regional work

- **IATA – Potential for SATVOICE mandates**

- **NAT IMG – Some proposed amendments not included in SVGM, First Edition**

- **APANPIRG – SVGM was not in line with APAC AMS Strategy (circa late 1990s)**

  – CPDLC/ADS-C would be primary means of communication

  – Voice (including SATVOICE) would be used only for emergency and non-routine purposes

APANPIRG/24 on SATVOICE

- **June 2013 – APANPIRG Conclusion 24/35**

  – Adopted revised AMS strategy, which expanded scope on use of SATVOICE – now more general

- **States may still need to update their AIPs**

ICAO OPLINKP

- **Currently in process of converting SVGM to ICAO document, targeting publication for 4th quarter 2014 – on track**

  – Working Paper for OPLINKP/WG2 (March 2014)

- **OPLINKP is also considering amendments to annexes and procedures for air navigation (PANS) to support SATVOICE implementation for ATS communications**

PARC CWG SATVOICE Project

- **PARC CWG is evaluating SATVOICE based on SVGM to facilitate global harmonization of U.S. initiatives**

- **Flight plan information to identify SATVOICE equipment and capability**

  - Item 10 – M1 (Inmarsat), M2 (MTSAT) or M3 (Iridium)

  - Item 18 – CODE/[aircraft address – hex representation]

- **PARC CWG**

  - Established "tiger" team to resolve issues with using Iridium Safety Voice service

  - Continues to working with FAA on policy updates

Tiger Team Introduction

- **Tiger Team included 23 members representing 11 stakeholders.**

- **Stakeholders included**
    - 4 Airline operators
    - Iridium
    - 2 CSPs
    - Boeing
    - 2 LRU OEMs
    - FAA

- **Activities included 8 conference calls over 18 weeks.**

Tiger Team Accomplishments

- **SITA currently has ATS SIM cards available**

- **ARINC is in process of ordering ATS SIMs with Iridium. Expected 2Q14 availability**

- **ATS SIM handling guidance material is now published and available from Iridium**

- **ARINC User's Guide is complete and will be issued to each customer when their ATS SIM cards are issued**

- **ARINC call centers CLIDs have been setup and verified**

- **On-wing ground based testing was planned and executed**

Tiger Team Next Steps

- **Complete ground testing with remaining operators**

    – HAL has done some ground testing already.

- **Review, publish Operational Voice Test Plan to include measurement criteria, reporting, and oversight**

- **Deploy ATS SIMs to participating aircraft fleets**

    – UPS expects to start 6 month deployment of ATS SIMs in March.

- **Start collecting data points according to plan**

SATVOICE – FAA MMEL Policy – HF

- **FAA Policy Letter PL-106 revision expected early 2014**

Subject:¤ High·Frequency·(HF)·Communications¤

MMEL·CODE:¤ 23·(COMMUNICATIONS)¤

Federal·Aviation·Administration¤

MMEL·Policy·Letter·(PL)106,·Revision·5·D2·GC¤

PURPOSE:¶

To·provide·standardized·Master·Minimum·Equipment·(MMEL)·requirements·for·HF·communication·systems.¤

DISCUSSION:¶

Revision·5·introduces·International·Civil·Aviation·Organization·(ICAO)·Satellite·Voice·(SATVOICE)·Guidance·Material·(SVGM)·as·a·basis·for·a·Long·Range·Communications·System·relief;·clarifies·that·data·link·alone·is·not·suitable·for·non-routine·and·emergency·communications;·removes·the·note·from·bottom·of·provisios·requiring·SATVOICE·to·be·used·only·as·a·backup·to·HF·communications;··Flight·Plan·must·be·updated,(as·required)·to·annotate·the·operating·communications·equipment·onboard·the·aircraft;·added·new·proviso·B·preventing·MEL·relief·for·aircraft·SATVOICE·systems·accessible·via·direct·dial·commercial·numbers·as·these·systems·do·not·include·the·necessary·security·switch.¶

Challenges for SATVOICE

- **Amendments to ICAO Annexes and PANS needed**

- **MMEL policy – depends on reliable infrastructure**
  - Sufficient number of lines, dialing capability, receiving calls, safety service

- **Managing SATVOICE numbers for ARTCCs/aeronautical stations**
  - Provide SATVOICE numbers in AIPs and published on aeronautical charts

- **Iridium Safety Voice service is ready for use**
  - Operators need to update SATVOICE system (at least update SIM cards).
  - Suppliers need to provide service bulletins or guidance to operators