



International Civil Aviation Organization

**EIGHTEENTH MEETING OF THE  
COMMUNICATIONS/NAVIGATION/SURVEILLANCE  
SUB-GROUP (CNS SG/18) OF APANPIRG**

Beijing , China, 21 – 25 July 2014

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**Agenda Item 5:           Aeronautical Mobile Service**

5.3) Other AMS related issues

**STATUS OF IMPLEMENTATION OF SATVOICE FOR ATS  
COMMUNICATION IN INDIA**

(Presented by Airports Authority of India)

**SUMMARY**

Aeronautical Mobile Service (AMS) strategy for Asia Pacific Region was approved by APANPIRG to provide Satellite Voice (SATVOICE) where appropriate, for ATS communication. India adopted SAT VOICE communication and has implemented it at Oceanic control Centers at Mumbai, Chennai and Kolkata. This paper provides implementation status of same in India.

**1.       INTRODUCTION**

1.1           In June 2001, the 37<sup>th</sup> Meeting of the ICAO, NAT SPG, it was agreed that a study would be initiated to assess the viability of using SATVOICE for waypoint position reporting as an initial step.

1.1.1       NAT trials accompanied with the study successfully demonstrated SATVOICE as an effective and reliable long range communication system (LRCS) to support ATS voice communications.

1.2           In 2003, APANPIRG also noted that SATVOICE was available for airline operational control communication and public communications and was also used for emergency communication but there was no procedure available for the use of SATVOICE for ATS function.

1.2.1       APANPIRG (Conclusion 14/17) concluded in 2003 that States use SATVOICE service in compliance with the existing SARPs and that ICAO review the relevant Technical Work Programme (ANC Task No. CNS-9902) with respect to SATCOM to provide a global policy for use of SATVOICE.

1.3 In 2010, ICAO ANC having reviewed the progress of the NAT SPG SATVOICE studies, requested that an ICAO inter-regional task force be established to develop globally applicable Satellite Voice Guidance Material (SVGM) in support of the global implementation of aeronautical mobile satellite (route) communications systems (AMS(R)S).

1.4 Consistent with ICAO's Global Air Navigation Plan (Doc 9750), guidance material is under development by OPLINKP within the global ICAO required communication performance (RCP) and the required surveillance performance (RSP) framework as detailed in the Global Operational Data Link Document (GOLD), for use in voice communication applications.

## 2. DISCUSSION

2.1.1 In the oceanic airspace, HF voice and datalink CPDLC (FANS-1A) are employed to support Air-Ground communication. SATVOICE is also provided as a back-up at Mumbai, Kolkata, Delhi and Chennai for seamless and interoperable communications.

2.1.2 SATVOICE, serves as a back-up to ensure, reducing the risk of communication failures, improving safety and efficiency of operations and alleviating HF/VHF channel congestion. SATVOICE can improve current ATS communications via a radio operator and provide direct controller-pilot communications (DCPC) for more efficient ATS communications, such as in processing negotiations or requests from the flight crew.

2.1.3 It is also proposed to provide SATVOICE at 8 other ATS centres to provide routine and emergency use communications including disaster management.

2.1.4 There are three satellite systems servicing the aeronautical market in the world. Inmarsat and Japan operate GEO satellite systems, and Iridium operates a LEO satellite system. These satellite systems use AMS(R)S L-band frequencies reserved for aeronautical safety services. India is using Inmarsat for SATVOICE.

2.1.4.1 The SSP (Satellite Service provider) authorizes CSPs (Communication Service provider) (or aeronautical communication service providers) to provide network access to users.

2.1.4.2 The aeronautical SATVOICE system uses the public switched telephone network (PSTN) and/or dedicated networks to route calls between the aircraft and the appropriate ground party. Dedicated network access switches locate the aircraft anywhere in the world regardless of the satellite and ground earth station (GES) to which the aircraft is logged on.

2.1.4.3 Dedicated SATVOICE numbers for aeronautical stations and ATS units are published in AIPs (or equivalent publication) where a SATVOICE service is available. SATVOICE numbers are currently published for Mumbai in AIP. For other locations the numbers shall be published shortly.

2.1.5 The underlying SATVOICE technology (Duplex mode/open mic) lends itself to a conversational mode of communications. Therefore, such use can create misunderstanding and confusion. When using SATVOICE, all users follow RTF conventions identical to HF/VHF communications in accordance with applicable standards and regulations pertaining to aeronautical communications.

2.1.6 In oceanic procedural airspace where CPDLC and ADS-C are available and the aircraft is capable, the controller would normally choose CPDLC and ADS-C as the means of communication. However, the controller may choose to use SATVOICE for DCPC, when necessary.

2.1.7 SATVOICE could potentially be considered a LRCS as defined by State MMEL/MEL policies. When approving reduced carriage requirements for HF radio, States may allow aircraft to operate with only one serviceable HF radio provided an approved SATVOICE system is also serviceable. However, airspace requirements will take precedence over the MMEL/MEL requirements.

2.1.8 The guidance for use of SATVOICE in India is currently through standard operating procedures. In future the guidance shall be through SVGM which may shortly be published in form of ICAO DOC.

2.1.8.1 The SVGM shall provide guidance and information concerning SATVOICE communications for aeronautical use and facilitate uniform application of ICAO Standards and Recommended Practices (SARPs) contained in Annex 2 — Rules of the Air and in Annex 11 — Air Traffic Services, the provisions in the Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444) and, when necessary, the Regional Supplementary Procedures (Doc 7030).

2.1.8.2 SVGM shall also Provide a basis for States in determining acceptability of any implementation within an ATS unit, an aeronautical station or aircraft equipage, taking into account routine and emergency use, the provision of ATS using SATVOICE communications, procedures for the radio operator, controller and flight crew, performance specifications and qualification.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to note the contents of the paper.

3.2 Meeting may consider urging states in Asia/Pac region to use SATVOICE as an LRCS option in addition to routine and emergency use.

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