

*International Civil Aviation Organization*



**THE FIRST MEETING OF AERONAUTICAL  
COMMUNICATION SERVICE (ACS)  
IMPLEMENTATION CO-ORDINATION GROUP  
OF APANPIRG (ACSICG/1)**

Seoul, Republic of Korea, 13 - 16 May 2014



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**Agenda Item 2:           Review outcome of APANPIRG/24 on Implementation of Aeronautical  
Communication Facilities and Services**

**OUTCOME OF APANPIRG/24 ON AERONAUTICAL  
COMMUNICAITON IMPLEMENTATION**

(Presented by Secretariat)

**SUMMARY**

This paper reviews the outcome of APANPIRG/24 on aeronautical communication and works accomplished by the Eighth Meeting of ATN Implementation Co-ordination Group of APANPIRG and the Seventeenth CNS Sub-group meeting.

**1.           Introduction**

1.1           APANPIRG/24 meeting held in June 2013 in Bangkok reviewed the outcome of the Eighth Meeting of the Aeronautical Telecommunication Network (ATN) Implementation Coordination Group (ATNICG/8) and other information on aeronautical communications services (ACS). The outcome of APANPIRG/24 on matters relating to ATN and ACS implementation is provided at **Attachment** to this paper for review by this meeting.

1.2           The report of Eighth Meeting of ATNICG WG also reviewed by CNS SG/17 meeting held in Bangkok, Thailand in May 2013.

1.3           According to APANPIRG Decision, Communications, Navigation and Surveillance Sub-group of APANPRIG was separated conducted from its 17<sup>th</sup> meeting. It had been jointly conducted before its 16<sup>th</sup> meeting.

## 2. Discussion

2.1 CNS SG and APANPIRG/24 meetings noted the outcome of AN-Conf concerning the SWIM Operational Concept Projects prioritization and the outcome of ACP WG/I/16 (28-30) January 2013 as to a regional IP-based network. AN Conf/12 set the priority of SWIM Operational Concept development as one of their top five actions to be presented to 38<sup>th</sup> Assembly held in September 2013.

2.2 The meeting also noted the programme of Mini-global Demonstration being organized by FAA in 2014 and the outcomes of the PIRG-RASG Global Coordination Meeting regarding establishment of regional priorities and targets for air navigation by May 2014 consistent in the GANP/ASBU framework.

2.3 APANPIRG/24 took following actions on recommendations from ATNICG/8 and CNS SG/17 meetings:

- **Adopted Conclusion 24/28 – timely implementation of ATN/AMHS**
  - a) States/Administrations hosting BBIS hubs be urged to review the feasibility and realize interim ATN connectivity using IDRP prior to complete readiness of all the member States in the Region by 2014/15. This will realize early operational benefits of network resiliency and AMHS operations, particularly in the instances where incompatible versions of AMHS currently preclude AMHS connectivity;
  - b) BBIS and BIS States/Administrations be urged to resolve bilateral issues on urgent basis paving the way for effective use of the network and thereby ensuring utilization of resources and the investment made by the States; and
  - c) States hosting BIS nodes be urged to aggressively take up implementation of ATN/AMHS connectivity as per the Regional Plan to complete regional ATN/AMHS network in the whole APAC region by the end of 2015.

(Follow-up State Letter Ref. T8/2.10-AP107/13 (CNS) was issued on 29 Sep.13)

- **Conclusion 24/29 – adopted Interface Control Document for ATN IPS (IP V.4) as regional guidance material.**

(Follow-up State Letter Ref. T8/2.13-AP097/13 (CNS) was distributed to States on 12 July 2013)

- **Through Conclusion 24/30– XML coded NOTAM and OPMET trial over ATN/AMHS – further ICAO Guidance is required)**

(Amendment 76 to Annex 3 became effective Nov. 2013 - States in a position to do so should exchange METAR, SPECI, SIGMET and TAF in a digital form” (XML/GML).

- **Conclusion 24/31 – ATNICG replaced by ACSICG**

(Separate Working Paper on this. State Letter Ref. T8/2.11 T8/2.21:AP030/14 (CNS) dated 17 February 2014 refers)

- **Conclusion 24/32 – Common Regional Virtual Private Network (VPN) Task Force.**

(State Letter – Ref. T8/2.11, T8/10.21:AP127/13 (CNS) dated 21 August 2013.

- **Decision RCP/RSP – APANPIRG SGs including contributory bodies include in their work program and implementation initiatives consideration of the RCP and RSP framework.**

(Being addressed by CNS SG and required to be addressed by ACSICG and FIT ASIA based on specifications in GOLD).

2.3 For the aeronautical mobile service (AMS), the APNPIRG/24 meeting adopted the Conclusion 24/34 - Global Operational Data Link Document (GOLD) Edition 2. The follow-up States Letter was distributed to States with Ref. T8/4.13 – AP098/13 (CNS) dated 12 July 2013.

2.4 Through Conclusion 24/34, APANPIRG/24 adopted revised Aeronautical Mobile Service Strategy. The follow-up State letter was distributed to States with Ref. T8/2.11-AP121/13 (CNS) dated 15 August 2013.

2.5 APANPIRG/24 meeting thanked Indonesia for hosting ATNICG/8 meeting in Jakarta and China for hosting a COM Coordination Meeting in Kunming.

### **3. Action by the Meeting**

3.1 The meeting is invited to review the outcome of the APANPIRG/24 and take any further follow-up actions.

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**Agenda Item 3: Performance Framework for Regional air navigation planning and implementation****3.4 CNS Matters**

3.4.1 The meeting reviewed the outcome of the Seventeenth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/17) held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand from 14 to 17 May 2013 as presented in WP/14. The meeting noted with appreciation the work done by the SG. The meeting discussed the CNS related issues and took following actions on the report of the CNS SG/17.

**Election of Chairperson of the Sub-group**

3.4.2 The meeting noted that the SG elected Mr. Lo Weng Kee, Head Technical Standards, Civil Aviation Authority of Singapore (CAAS) as Chairman of the CNS SG and Mr. Richard Wu, Chief Electronics Engineer of the Civil Aviation Department (CAD), Hong Kong China as Vice Chairman of the group.

**Terms of Reference of the CNS Sub-group**

3.4.3 The CNS SG meeting reviewed the new TOR adopted by APANPIRG for the SG. The meeting noted the recommendation by the SG for APANPIRG to provide some guidance on the delegation of its power to the SG particularly with reference to the adoption of regional guidance materials in their own respective areas. APANPIRG/24 discussed this recommendation under Agenda Item 6.

**Status of the SWIM Operational Concept**

3.4.4 The SG meeting noted the outcome of AN-Conf/12 concerning the SWIM Operational Concept Projects prioritization and the outcome of ACP WG I/16 (28-30 January 2013, Montreal) as to a regional IP-based network and the SWIM Operational Concept presented by USA. The meeting was informed that FAA had conveyed the APAC region support for SWIM environment and requested ACP to develop an IMS Operational Concept and expedite the finalization of IPv6 network configuration by ICAO. It was supported by ACP WG I/16 and ANC-12 set the priority of SWIM Operational Concept development as one of their top five actions to be presented at the ICAO Assembly to be held in September 2013. The meeting reconfirmed the need to continue the AMHS implementation and support efforts to explore the possibility of a common IP network in the APAC region to replace point-to-point circuits between the States.

**The Mini-global Demonstration**

3.4.5 The meeting noted that the FAA was developing a program called the Mini-Global Demonstration. This project was aimed at collaborating with other air navigation service providers (ANSPs) working together with them to simulate seamless operations across Flight Information Regions (FIRs). The demonstration was planned for 2014. The demonstration intended to show how ANSPs and flight operators could share common flight information to:

- Improve collaborative decision-making (CDM)
- Improve air traffic management (ATM), and
- Promote international standardization of flight information.

3.4.6 The compatibility of partner ATM systems with respect to FO standards (FIXM / WXXM / AIXM) would be assessed. Administrations, ANSP, flight operators in the APAC Region were invited to participate in or observe the 2014 Mini-Global Demonstration. States may contact the Federal Aviation Administration's Office in Singapore for further information about participation in the Mini-Global Demonstration.

#### **PIRG-RASG Global Coordination Meeting-outcomes**

3.4.7 The meeting noted the outcome of the Global Co-ordination meeting including the agreement on establishing of regional priorities and targets for air navigation by May 2014 consistent with the GANP/ASBU framework. The meeting discussed the APAC regional priorities and targets as presented to the coordination meeting by ICAO regional office and confirmed the items and their specified targets related to CNS items. Nevertheless, it was felt that target dates for the implementation of ADS-B in South China Sea and Bay of Bengal area should be more specific, i.e. relate to partial implementation of surveillance based service for specific major air traffic routes.

3.4.8 The meeting further identified the need for ICAO Regional Office to organize more educational workshops/seminars on the implementation of ASBU in order to develop better and common understanding of the relationship between modules of ASBU Blocks.

#### **Eighth ATNICG Meeting**

3.4.9 The meeting reviewed the outcome of the Eighth Meeting of Aeronautical Telecommunication Network Implementation Co-ordination Group of APANPIRG (ATNICG/8) held in Jakarta, Indonesia in March, 2013.

3.4.10 The meeting reviewed and adopted following conclusions which were formulated by the ATNICG/8 and endorsed by CNS SG/17.

#### **Conclusion 24/28 –Timely implementation of ATN/AMHS**

That,

- a) States/Administrations hosting BBIS hubs be urged to review the feasibility and realize interim ATN connectivity using IDRPs prior to complete readiness of all the member States in the Region by 2014/15. This will realize early operational benefits of network resiliency and AMHS operations, particularly in the instances where incompatible versions of AMHS currently preclude AMHS connectivity;
- b) BBIS and BIS States/Administrations be urged to resolve bilateral issues on urgent basis paving the way for effective use of the network and thereby ensuring utilization of resources and the investment made by the States; and
- c) States hosting BIS nodes be urged to aggressively take up implementation of ATN/AMHS connectivity as per the Regional Plan to complete regional ATN/AMHS network in the whole APAC region by the end of 2015.

#### **Conclusion 24/29 – Interface Control Document for ATN IPS (IP V.4)**

That, the ICD for ATN IPS (IP v.4) as provided in **Appendix A** to the Report on Agenda Item 3.4 be adopted as the regional guidance material.

### **Conclusion 24/30 - XML Trial over ATN/AMHS**

That, ICAO be invited to provide guidance on the requirements for end-user product/message in respect of XML coded NOTAM and OPMET messages.

### **Revised TOR and updated Subject/Tasks List and Action Items**

3.4.11 The meeting noted the proposed revision to the TOR of the ATN Implementation Coordination Group. Considering the need to be in line with recommendations of AN Conf/12 on AFS and SWIM and requirements to provide communication and information management services for operational needs, the meeting agreed on the proposed name change of the group and adopted following Decision:

### **Decision 24/31 - Aeronautical Communication Services Implementation Coordination Group – (ACSICG)**

That,

- a) the name “ATN Implementation Coordination Group” be replaced by “Aeronautical Communication Services Implementation Coordination Group” and
- b) the revised TOR of ACSICG provided in **Appendix B** to the Report on Agenda Item 3.4 be adopted.

### **Proposed APAC Internet Protocol (IP) Virtual Private Network (VPN) (WP/20)**

3.4.12 On behalf of Australia, Fiji, Hong Kong China, Japan, New Zealand, Republic of Korea, Singapore and Thailand, USA presented a proposal for an IP VPN using a private commercial network to provide service for Air Traffic Service Message Handling System (AMHS) and possible future IP-based services.

3.4.13 Currently, Aeronautical Fixed Telecommunication Network (AFTN) and Air Traffic Service Message Handling System (AMHS) services in the Asia/Pacific Region operate over point-to-point international leased circuits. Such bilateral point-to-point circuits would not be able to support dynamic routing for AMHS or a true System Wide Information System (SWIM) environment.

3.4.14 A dedicated, common network operated by a service provider is an approach to be considered to replace the current configuration. Common networks had successfully been deployed in some other ICAO regions (e.g. PENS in the EUR Region and MEVA in the CAR Region).

3.4.15 A preliminary finding concluded that using an IP VPN could result in 30% cost saving and significant additional bandwidth when compared to point-to-point circuits. It was determined that the establishment of such a network would require careful consideration of all issues involved as well as the evaluation of common network proposals as compared to the current point-to-point configuration.

3.4.16 Some of the issues to be considered include following:

- Technical requirements
- Cost, including arrangement for division/allocation of cost
- Methods of billing and payment

- Process for contract award
- Responsibility for network administration
- Need for single point of contact to deal with service provider
- Handling of network service issues
- Performance specifications
- Network security issues
- Network redundancy issues
- Capacity for growth and expansion
- Required lead time for implementation
- Business Continuity / Disaster Recovery issues relating to the network
- Performance management, measurement, monitoring, reporting and control

3.4.17 A number of steps were suggested to be taken to further pursue this direction. The proposal of establishing a dedicated group was supported by a number of member Administrations including Singapore, Japan, Hong Kong China, India, Pakistan and Nepal. Several issues were highlighted by few States including network security, connectivity, disaster recovery and redundancy that would need to be addressed and taken into consideration by the dedicated group. The meeting also noted that the CNS SG had endorsed the recommendation for the creation of a dedicated group of Subject Matter Experts (SMEs) that would further consider and investigate the proposed solution and issues described above, and develop a detailed proposal. Accordingly, the meeting adopted the following decision:

**Decision 24/32 - Common Regional Virtual Private Network (VPN) Task Force**

That, a Task Force with Subject Matter Experts (SME) be established to study the virtual private network and develop a detailed proposal by 2016. The Task Force reports the outcome of its study to APANPIRG through ACSICG and CNS SG.

**Inter-regional APAC/NAT AIDC Document Updates**

3.4.18 The meeting noted the activities of the inter-regional AIDC task force (IRAIDCTF) started in January 2013. The Task Force was established in accordance with NAT SPG Conclusion 48/28 and APANPIRG Conclusion 23/20. The first meeting of the IRAIDTF (IRAIDTF/1) was held on 16-18 January 2013 in ICAO Paris Office. The 2<sup>nd</sup> meeting was scheduled to be held from 22 to 26 July 2013 at ICAO Regional Office Bangkok, Thailand. The latest version (Version 0.7) of the PAN Regional APAC/NAT ICD for AIDC was noted by the meeting.

3.4.19 States/Administrations were encouraged to participate in the activities of the IRAIDCTF and provide contribution to the work of the Task Force.

**AIDC Implementation Status in the APAC Region**

3.4.20 The meeting noted the AIDC implementation status in the APAC Region as provided in **Appendix C** to the Report on Agenda Item 3.4.

### **COM Coordination Meeting**

3.4.21 A COM Coordination Meeting participated by China, Myanmar and Nepal was held in Kunming, China from 18 to 20 February 2013. The meeting was pleased to note the initiatives taken by States concerned and the coordinated Action Plan agreed for improving the performance of some of the concerned circuits to satisfy the established operational requirements. The meeting urged States concerned to take timely action to implement the action items agreed.

### **Aeronautical Mobile Service (AMS)**

#### **RCP/RSP Workshop**

3.4.22 A SIP Workshop on the Required Communication Performance (RCP) and Required Surveillance Performance (RSP) was conducted in accordance with APANPIRG Conclusion 23/24. The objective of the workshop was to develop better understanding of participants for implementation of a performance based framework for communication and surveillance (RCP and RSP) specified in the Global Operational Data Link Document (GOLD). It was understood that the RCP and RSP framework would initially apply to data link performance specifications and monitoring. 14 presentations on RCP and RSP were discussed at the Workshop.

3.4.23 A survey indicated that the RCP/RSP workshop had been well received by all the participants.

3.4.24 The meeting further noted that RCP/RSP requirements for data link performance monitoring are specified in the GOLD Edition 2. The development of a plan for the performance-based RCP and RSP framework is included in the regional Aeronautical Communication Strategy.

3.4.25 The meeting also recalled that IP/26 from USA recommended at APANPIRG/23 to adopt a draft Decision resulting from recommendation of SOCM/2 meeting on that matter. IP/26 called for inclusion of a RCP & RSP framework in the APANPIRG Sub-groups' work program. APANPIRG/23 did not adopt the Draft Decision, pending a better understanding of RCP and RSP and rather APANPIRG/23 adopted Conclusion 23/24 and 23/13 calling for a Seminar on data-link monitoring and a RCP/RSP Workshop. The seminar on data link performance reporting and monitoring was held in March 2013 and the RCP/RSP Workshop was held in May 2013 in conjunction with CNS SG/17 meeting. Considering the positive feedback on the merits of RCP and RSP from the workshop and seminar, the meeting adopted the following Decision on RCP and RSP which would enable:

- a) States to prescribe RCP and RSP, for operators, aircraft systems and infrastructure, when applying separations predicated on such performance ;
- b) ANSPs to ensure infrastructure, including communication/satellite services, meets RCP and RSP allocations
- c) Operators to obtain operational authorizations from State of Registry or State of the Operator for RCP/RSP operations, to ensure qualified flight crews, properly configured aircraft systems and participation in regional data link monitoring programs; and
- d) ANSPs to manage and support regional data link monitoring programs that identify substandard performance for appropriate action.



**Decision 24/33 - APAC RCP/RSP Implementation Framework**

That, APANPIRG Sub-groups include in their work program and implementation initiatives, consideration of the required communication performance (RCP) and required surveillance performance (RSP) framework.

**Edition 2 of Global Operational Data Link Document (GOLD)**

3.4.26 The meeting noted the activities of the GOLD ad-hoc working group and that the milestones of the GOLD work programme were completed since its 1<sup>st</sup> edition was adopted by APANPIRG in 2010. 120 participants from 27 States and 56 different Organisations assisted in the development of Edition 2.0. International Organisations including IATA, IFATCA, IFALPA, IBAC, CANSO, Eurocontrol, and EASA significantly contributed towards the development of the document. In total more than 1000 comments were submitted and more than 900 were resolved.

3.4.27 The meeting noted the main changes versus Edition 1.0 as follows:

- a) Edition 2.0 applies to all airspace;
  - i) *Where procedural separations are applied*
  - ii) *Where ATS surveillance services are provided*
- b) Applies to FANS 1/A, ATN B1 and FANS 1/A ATN B1 aircraft and ground systems;
  - i) *Generalized Chapter 2 data link description*
  - ii) *Common procedures (for most part) in Chapter 4-6*
- c) Addresses High Level Safety Conference (HLSC) recommendations;
  - i) *For ADS-C conformance monitoring*
  - ii) *CPDLC failure procedure*
- d) Added advanced air traffic services supported by data link;
  - i) *CPDLC for ATC-initiated re-route procedure (NAT originated)*
  - ii) *CPDLC for ADS-B in trail procedure (ITP)*
- e) Clarified position reporting requirements in ADS-C environments, e.g. reporting revised time estimates;
- f) Additional guidance on RCP – RSP and post-implementation monitoring; and
- g) Updated Appendix E, Region/ State specifics, with new look, to include European Region.

In view of the foregoing, the meeting adopted the following Conclusion:

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**Conclusion 24/34 – Adoption of Global Operational Data Link Document (GOLD) Edition 2**

That, the Global Operational Data Link Document (GOLD) Edition 2 provided in **Appendix D** to the Report on Agenda Item 3.4 be adopted.

**Satellite data link related activities & Data link Monitoring Result**

3.4.28 The meeting noted that an upgrade of Inmarsat 3 satellite Ground Earth Station (GES) for Indian Ocean Region (IOR) took place on 19 March 2013 and an upgrade to new Inmarsat 4 GES hardware was expected to improve GES availability. It was anticipated that RSP 180 and RCP 240 performance would be achievable. The meeting noted information on apparent deficiencies in data-link problem reporting amongst FIT-Asia States and airspace users.

3.4.29 The meeting noted the results of data-link performance monitoring within the Auckland Oceanic FIR. The CRA of the Informal South Pacific ATS Coordinating Group, the ISPACG CRA, has for some time published a collection of data-link monitoring data on its website at <http://www.ispacg-cra.com/performance.asp>.

3.4.30 New Zealand explained that safety targets for the Inmarsat network availability were being achieved but efficiency target consisting of operational efficiency and orderly flow of air traffic was not met. While the Iridium network may meet the safety target, the availability was unsatisfactory. The meeting was informed that the nominal targets for CPDLC and ADS-C continuity were being achieved, but some improvement would be necessary to reach the target for expiration time for CPDLC and delivery time for ADS-C.

**Satellite Voice Guidance Material (SVG M) Amendment**

3.4.31 The meeting noted the amendment proposed by NAT Region to the 1<sup>st</sup> Edition of the SVG M adopted by APANPIRG/23. The meeting was informed that the OPLINKP, at its meeting held in March 2013, agreed that SVG M should become an ICAO document with its own document number. It was also agreed that the SVG M be circulated among the OPLINKP members for review and comments to develop a draft amendment for the OPLINKP/WG/WHL6 meeting, planned for October 2013. The target date for publication of SVG M is 1st quarter, 2014. ICAO HQ had already distributed the SVG M to OPLINKP members requesting for their comments. In view of the foregoing, the CNS SG/17 meeting decided to defer its endorsement for the proposed amendment by the NAT Region.

**Deployment of 8.33 kHz channel spacing in the band 117.975-137 MHz in APAC Region**

3.4.32 India proposed to consider a smooth implementation of 8.33 kHz channel spacing for upper airspace services under the guidance of the ICAO APAC Regional Office. India explained that airborne equipment would need to be backward compatible. The meeting discussed the proposal. The Secretariat informed that for implementation of 8.33 kHz channel spacing, following factors should be taken into consideration:

- the need for a regional air navigation agreement on the implementation of 8.33 kHz channel spacing;
- the need to identify the airspace within which 8.33 kHz channel spacing requires to be introduced ; and
- an appropriate lead time.

3.4.33 The meeting noted that the CNS SG had made a decision (17/6) to establish a small working group to investigate the need for an increase in available VHF COM channels and, on the basis of the outcome, to develop recommendations for further consideration by the SG.

**Regional Aeronautical Mobile Service (AMS) Strategy**

3.4.34 The meeting reviewed the updated regional strategy on AMS and Satellite voice developed by the CNS SG. It was recalled that the strategy was adopted by APANPIRG/18 meeting in 2007 under Conclusion 18/29. It was also noted that APANPIRG (Conclusion 14/17) in 2003 developed an approach on the use of SATVOICE. The meeting adopted the following Conclusion:

**Conclusion 24/35 – Revised regional Aeronautical Mobile Service Strategy**

That, the revised regional AMS strategy provided in **Appendix E** to the Report on Agenda Item 3.4 be adopted.

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