



ICAO MID CNS SG/13 MEETING

Soniya Nibhani
Regional Officer, ANS Implementation
ICAO APAC Office

2024

20 - 23 October

Saudi Arabia, Jeddah, Ritz Carlton



ICAO APAC-MID CRV Workshop

CRV- An IP based Network

—

Soniya Nibhani

Regional Officer, ANS Implementation

ICAO APAC Office

Agenda Items

01

CRV and GANP

How CRV is related to GANP?

02

CRV Responsible body under APANPIRG

03

Basics and history of CRV

Journey from 2013 till today

04

ICAO APAC-MID CRV Workshop- Why?

Why ICAO APAC Office initiated another discussion with ICAO MID Office?

05

APAC Experience of using CRV

Governance and Network performance

06

CRV for MID

Reasons, benefits, and request and suggestions from CRV OG

01

CRV and ICAO GANP



ICAO APAC
CNSS Section

Communication

Navigation

Surveillance

Spectrum

Information
Management

ICAO APAC CNS SG

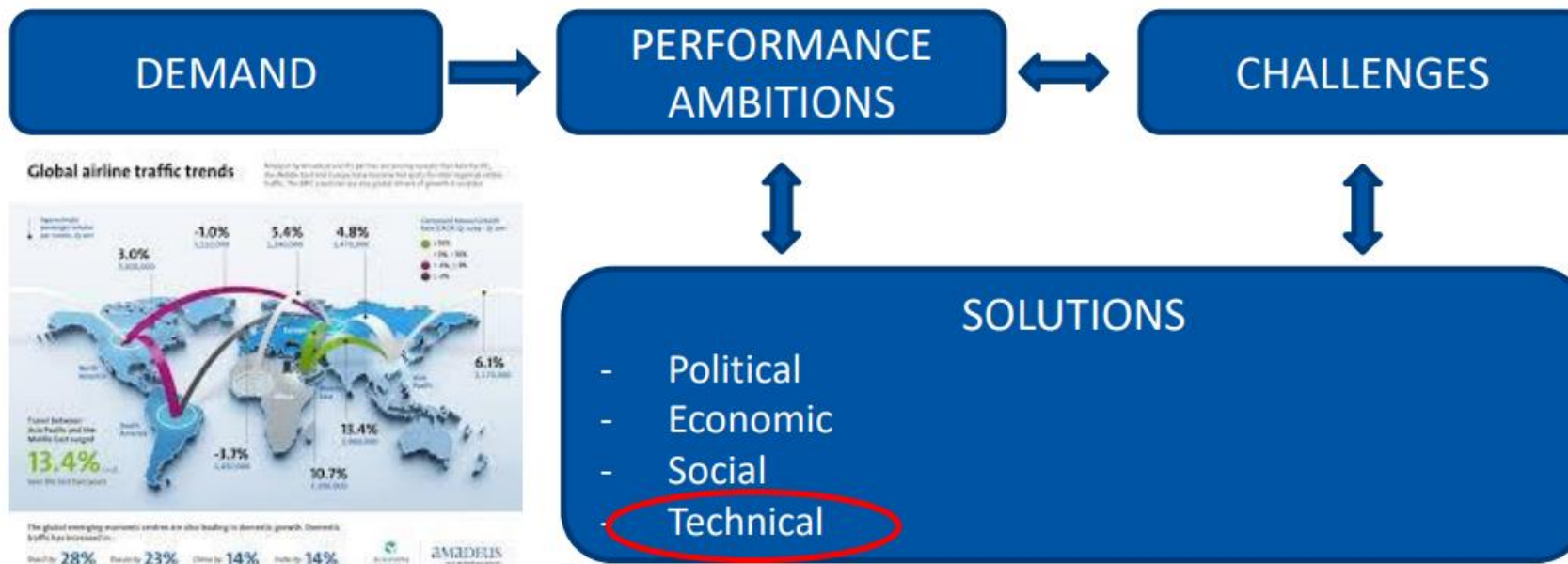
- 1) Ensure continuous and coherent development of the ASIA/PAC Regional Air Navigation Plan in the CNS field in accordance with the Global Air Navigation Plan and Global Aviation Safety Plan.
- 2)





GANP STRUCTURE

STRATEGIC APPROACH





ICAO

UNITING AVIATION

NO COUNTRY LEFT BEHIND



GLOBAL AIR NAVIGATION PLAN

MULTILAYER STRUCTURE OF THE GANP

Click a level to navigate

GLOBAL STRATEGIC

GLOBAL TECHNICAL

REGIONAL

NATIONAL



GLOBAL STRATEGIC

Provides high-level strategic directions for decision makers to drive the evolution of the global air navigation system towards a common agreed vision.



GANP DOCUMENT

GLOBAL TECHNICAL

Supports technical managers in planning the implementation of basic air navigation services and new operational improvements in a cost-effective manner.



ASBUs
& PF



AN-SPA



BBBs

REGIONAL

Addresses regional and sub-regional needs aligned with the global objectives.



AFI ANP



APAC ANP



EUR ANP



MID ANP



NAM ANP



NAT ANP



CARSAM ANP

NATIONAL

Development by States, in coordination with relevant stakeholders, of air navigation plans aligned with regional and global plans.



NANP
TEMPLATE



CBA
CHECKLIST

<https://www4.icao.int/ganpportal/>



<https://www4.icao.int/ganpportal/>



Seventh Edition of the GANP (Minor update)

- No Symposium
- Not discussed in a Conference
- Minor input from HLCC due to cancelation of HLSC in 2021
 - No Secretariat paper
- Endorsed by the 41th Session of the ICAO Assembly in 2022

- <https://www4.icao.int/ganpportal/>



SEVENTH EDITION OF THE GANP

MULTILAYER STRUCTURE OF THE GANP

Click a level to navigate



- Update of the GANP performance framework
 - Safety KPA - Strengthen the link to the GASP
 - Maintenance process for the performance framework
- The Basic Building Blocks (BBBs) and the Universal Safety Oversight Audit Programme (USOAP)
- The Aviation System Block Upgrade (ASBU) framework and the Basic Building Block (BBB) framework
 - Update following the maintenance process



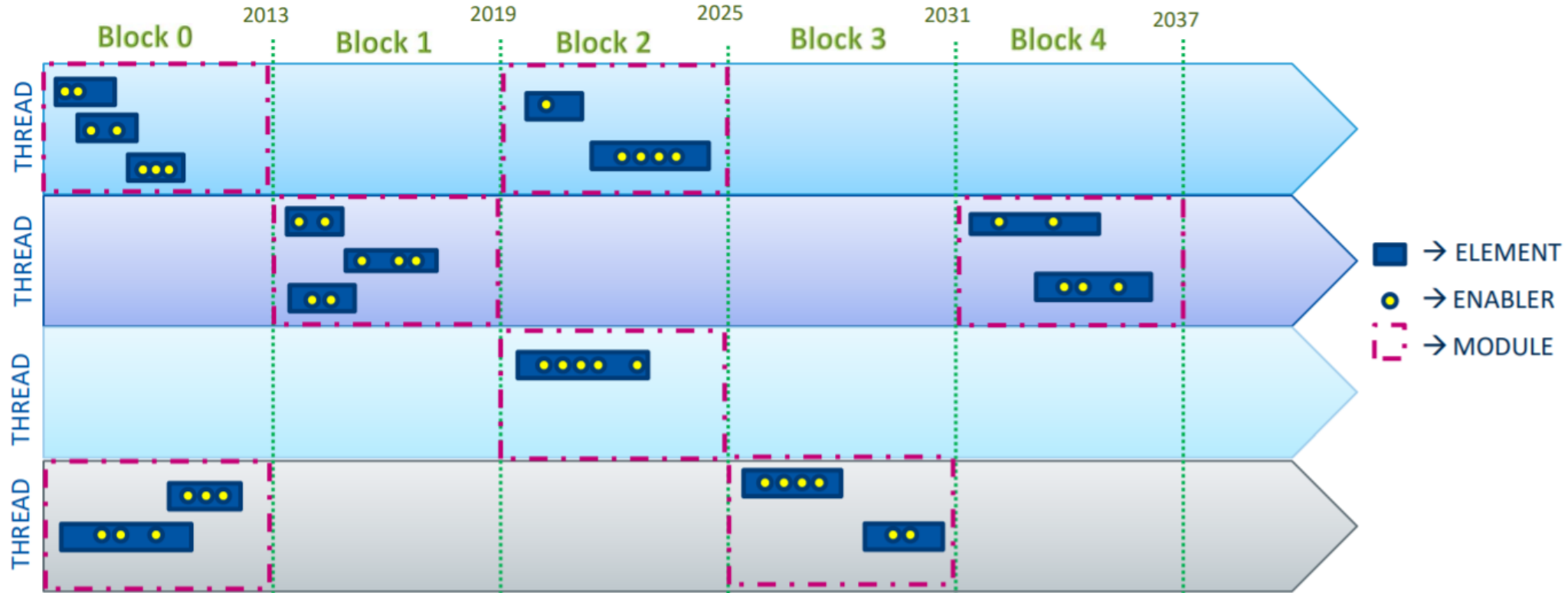
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ASBU key concepts



Blocks (B0 – B4): 6-year “Chunks”

Threads: e.g. APTA, NAVS

Modules: Intersection of a Thread and a Block, e.g. APTA Block 1

Element: Component of a module, e.g. NAVS Block 2/1



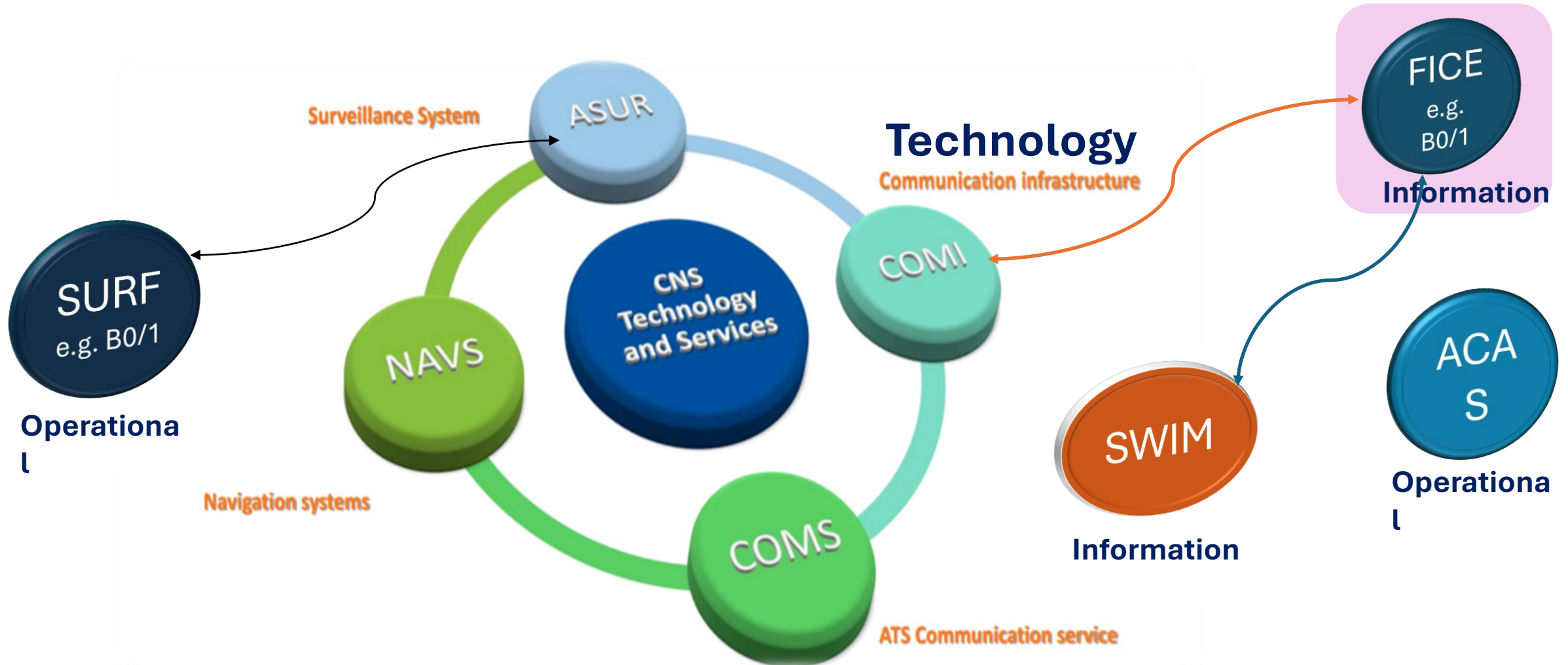
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ASBU Elements for CNS Technology and Services





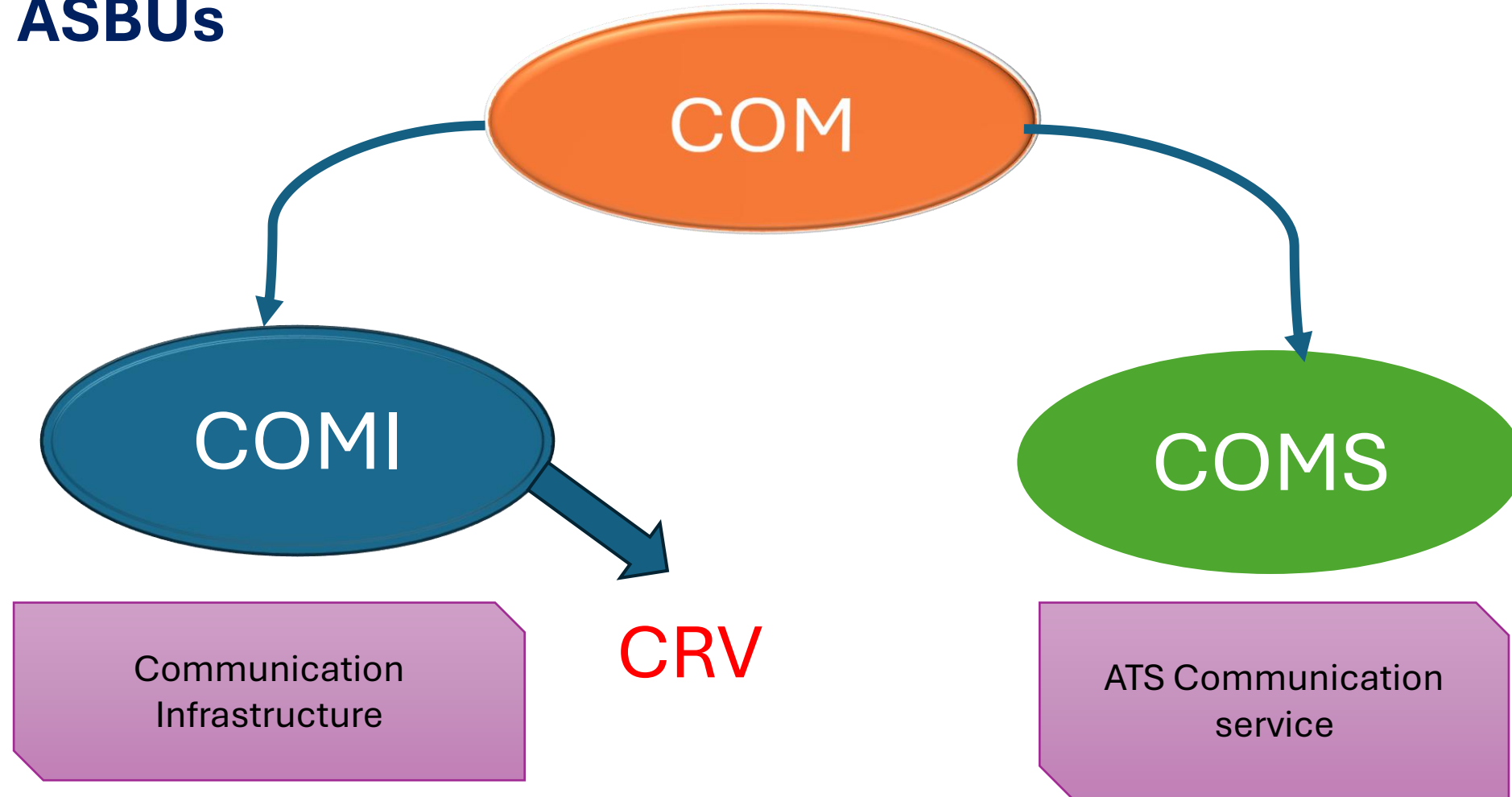
Technology ASBUs

Technology

ASUR	Surveillance systems	Technology	 
COMI	Communication infrastructure	Technology	 
COMS	ATS Communication service	Technology	 
NAVS	Navigation systems	Technology	 



COM ASBU_s



02

CRV
Responsible
body under
APANPIRG



ICAO APAC CNS SG

Communication



ACSICG (from 2014)

**AERONAUTICAL COMMUNICATION SERVICES
IMPLEMENTATION CO-ORDINATION GROUP**

ICAO APAC CNS SG

Communication



ACSICG

**AERONAUTICAL COMMUNICATION SERVICES
IMPLEMENTATION CO-ORDINATION GROUP**

- ATNIGG- Aeronautical Telecommunication Network Implementation Coordination Group (2006-2013)
- ATNIGG was renamed to Aeronautical Communication Services Implementation Coordination Group – (ACSICG) with revised TOR in 2013.
- CRV Task force was formed in 2013.

ICAO APAC CNS SG

AERONAUTICAL COMMUNICATION SERVICES IMPLEMENTATION CO-ORDINATION GROUP

4) To facilitate and coordinate the implementations of aeronautical communication services and infrastructures within the Asia/Pacific Regions to support existing and evolving aeronautical applications, including

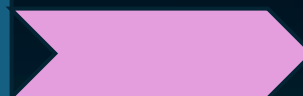
- inter-facility communications,
- datalink implementations,
- air/ground communications
- ground/ground communications
- etc.

ICAO APAC CNS SG

Communication



ACSICG



CRV OG

Common aeRonautical Virtual
Private Network (VPN)
Operations Group (OG)

AERONAUTICAL COMMUNICATION SERVICES
IMPLEMENTATION CO-ORDINATION GROUP

03

Basics and history of CRV



What is CRV?

CRV APAC IP Network

- Common aeRonautical VPN (CRV)
- A cross-border cost-effective telecommunications network for States.
- Dedicated communication network provided by a common network service provider.
- Reliable communications infrastructure for aeronautical communications.
- Enabler for the GANP ASBUs: FICE, NOPS, FF-ICE, VoIP, SWIM, etc.
- CRV Operations are managed by users (CRV OG)

CRV APAC IP Network

- Replaces legacy point to point half circuits that have telco equipment going EoL
- Scaled bandwidth implementation.
- Allows the application of security controls.
- Centrally managed network between the provider and the Operations group.
- Supports future applications and users.

Other Regional Networks

- ✓ European region: New Pan-European Network Service (**New PENS**)
- ✓ North American region: FAA Telecommunication Infrastructure (**FTI**) to support Canada and USA to distribute AFS data
- ✓ South America: SAM Region Digital Network (**REDDIG**)
- ✓ Caribbean: Mejoras al Enlace de Voz del ATS (**MEVA**) - Spanish equivalent of improvements to ATS Voice Link
- ✓ AFI Region- Discussion is ongoing



Background

History

- Eighth Meeting of Aeronautical Telecommunication Network Implementation Co-ordination Group of APANPIRG (ATNICG/8): **March 2013**

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

- IP VPN could result in 30% cost saving and significant additional bandwidth when compared to point-to-point circuits




History

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

APANPIRG/24, 24-26 June 2013, Bangkok, Thailand

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.



Process: From fragmented IP Networks to CRV

- CRV TF/1: 02-04 December 2013- Bangkok, Thailand
- CRV TF/1- 12 May 2014 ROK
- CRV TF/3: 09-12 December 2014- Bangkok, Thailand
- CRV TF/4: 18-19 May 2015- Bangkok, Thailand
- CRV TF/5: 10-11 May 2016- Bangkok, Thailand
- CRV TF/6 and CRV OG/01: 14-16 December 2016- Bangkok, Thailand
- Cost Benefit Analysis (CBA) was conducted in 2014.
- RFI was floated in 2014 for APAC States/Administrations
- RFI responses (7 Responses) were evaluated by CRV TF/3.
- Second Iteration of Cost Benefit Analysis (CBA) was conducted based on outcomes of RFI.

Process: From fragmented IP Networks to CRV

- Final Review of CRV RFP (Tender)- CRV TF/5: 10-11 May 2016- Bangkok, Thailand
- The approval of the evaluation process and report by the ICAO Contracts Board for the CRV Project (reference RAS/14/801 - PR 21101272 – Sealed Tender 22501631)
- Notified to the ICAO APAC Regional Office- 28 November 2016.
- An award notification- 07 December 2016.
- The award notification included: the name of the selected supplier, contract will be awarded on an individual basis by States.



CRV in ICAO MID Meetings

1. The Second Meeting of the MID Region ATM Enhancement Programme Steering Committee (MAEP SC/2)- ICAO MID Regional Office, Cairo, 20-22 October 2015.
2. The MID IP Network workshop- ICAO MID Regional Office, Cairo, 24-25 January 2016.
3. MID Region ATM Enhancement Programme Board- Second Meeting (MAEP Board/2), Cairo, Egypt, 11 - 13 April 2016
4. The Third Meeting of the MID Region ATM Enhancement Programme Board (MAEP Board/3)- Cairo, Egypt, 16 to 18 January 2017.
5. THE MIDANPIRG/16 Meeting, Kuwait, 13 – 16 February 2017.



CRV in ICAO MID Meetings

- ✓ MAEP SC/2 (Cairo, 20-22 October 2015) meeting reviewed the MID IP Network Project Proposal Document developed by the MID IP Network Action Group.
- ✓ The Meeting was apprised of the progress made in the implementation of the Common Regional Virtual Private Network Programme (CRV) in the APAC Region

2.3 The following three scenarios for the development and implementation of the MID IP Network were discussed by the MAEP SC/2 meeting:

- MID Region drives its own IP-based network project and uses CRV procurement framework for all regional and interregional connections.
- MID Region drives its own IP-based network project and uses CRV procurement framework only for interregional connections along the major traffic flows.
- MID Region drives its own IP-based network project and does not use at all the CRV procurement framework.

CRV in ICAO MID Meetings

- ✓ MID Region ATM Enhancement Programme Board (MAEP Board/3)- Cairo, Egypt, 16 to 18 January 2017.
- ✓ The meeting noted that six (6) States (Bahrain, Iran, Jordan, Kuwait, Lebanon and Sudan) confirmed their commitment, and three (3) States (Oman, Saudi Arabia and UAE) confirmed provisional commitment to the project

MID IP Network (Common Aeronautical VPN Network-CRV)

2.17 The MAEP Board/3 meeting recalled that the MAEP Board/2 meeting (Cairo, Egypt, 11-13 April 2016) reviewed the outcome of the MID IP Network workshop and, through MAEP Board Conclusion 2/7, agreed that the procurement framework of the APAC CRV be used for the implementation of the MID IP Network Project; and the MID IP Network be renamed as Common aeRonautical VPN (CRV) in order to represent both Regions. In this respect, it was highlighted that the CRV procurement includes all ICAO MID States as potential users.

2.18 The MAEP Board/3 meeting noted that the CRV Framework accommodates the necessary legal framework for all States, where it is possible to adapt the individual service contract between States and the selected common service provider to the national laws and regulations. Furthermore, the selected common service provider will be responsible for dealing with the national telecommunication service providers in the States and may require standard support letter from the State.



CRV in ICAO MID Meetings

✓ MIDANPIRG/16 Meeting, Kuwait, 13 – 16 February 2017):

5.2.2.42 Based on all of the above, the meeting agreed to the following Conclusion emanating from the MAEP Board/3 meeting:

CONCLUSION 16/15: MID IP NETWORK PROJECT (CRV)

That,

- a) States that have already committed to join CRV, are invited to engage with the recommended supplier to establish individual service contracts; and*
- b) States that have not yet done so, are urged to carry out a comprehensive CBA related to the implementation of an IP Network under the CRV framework; and inform the ICAO MID Office, as soon as possible, about their decision related to the joining of CRV.*

CRV in ICAO MID Meetings

✓ MIDANPIRG/16 Meeting, Kuwait, 13 – 16 February 2017)

Terms of References of MIDAMC STG

5.2.2.119 The meeting recalled that the CNS SG/7 updated the Terms of Reference (TORs) of the MIDAMC STG to include tasks related to the IP Network Project and to act as the MID CRV-OG (Common aeRonautical VPN – Operational Group). Accordingly, the meeting reviewed and endorsed the TORs of the MIDAMC STG as at **Appendix 5.2.20** and agreed to the following Decision:

DECISION 16/25:

TERMS OF REFERENCE OF THE MIDAMC STG

*That, the Terms of Reference and Work Programme of the MIDAMC STG be updated as at **Appendix 5.2.20**.*

*updated as at **Appendix 5.2.20**.*

That, the Terms of Reference and Work Programme of the MIDAMC STG be

International
Civil Aviation
Organization

Organisation
de l'aviation civile
internationale

Organización
de Aviación Civil
Internacional

Международная
организация
гражданской
авиации

منظمة الطيران
المدنى الدولي

国际民用
航空组织

File Ref.: AN 6/31.4-17/160

29 May 2017

Subject: CRV Common Package provisions

Action Required: Reply not later than 7 July 2017

CRV in ICAO MID Meetings

The final review of the CRV engineering package will be carried out by the CRV OG/3 meeting in December 2017. Therefore, you are kindly requested to:

- review the CRV common provisions available on the ICAO Secure Portal (Group: CRV) and provide your comments to the ICAO MID Office, not later than **7 July 2017**;
- engage with the recommended supplier (PCCW Global-Limited) to initiate negotiations on the individual service contract; and
- review and update, as necessary, your CRV Focal point details at **Attachment C**.

Accept, Sir, the assurances of my highest consideration.



Mohamed Khalifa Rahma
Middle East Regional Director

Attachments

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Why MID States did not join CRV?

1. Some MID States negotiated with PCCWG
2. Could not progress (key factor- price??)
3. No discussion after 2019
4. COVID-19



04

ICAO APAC-
MID CRV
Workshop-
why?





Initiation of another effort by CRV OG and ICAO APAC Office- 2023

Why???

1

CNS SG/27 Meeting (28 August to 3 September 2023)

Request raised from India by WP/34 in CNS SG/27 Meeting:

2.5 Additional Requirement to extend the CRV to MID region:

2.5.1 India (Mumbai) is having AMHS connection with East Region and Nairobi in Eastern and Southern Africa. AFTN/AMHS data and Voice etc. Also, Singapore with Bahrain and similarly Pakistan is having connection with Kuwait.

2.5.2 There is a requirement of engaging with other members to extend existing CRV network to MID region to facilitate Aeronautical/meteorological and other traffic information exchange mutually beneficial both to APAC and MID regions. Singapore- Bahrain and Pakistan- Kuwait can be brought on CRV. Further, once MID region adopts CRV, they shall also enjoy all the basic benefits of the networking environment.

2.5.5 India is keen to establish CRV connection with Muscat (OMAN).

2.5.6 Through this paper, the meeting and the ICAO Secretariat APAC Office is requested for taking up the matter with MID region and inviting them to join CRV for the obvious benefits. This will facilitate the setting up of networking environment within MID region, provide smooth connectivity with APAC region and obviate the requirements of IPLC.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- Note the information contained in this paper;
- To take up the matter with ICAO MID Region for inviting the MID region states to join CRV.
- Discuss any relevant matters as appropriate.

CNS SG/27 Meeting

3.20 The Meeting invited Pakistan and Singapore to share their intention to establish CRV connections with connected MID States. Singapore supported India's proposal and shared its intention to establish CRV connections with concerned MID States. As Pakistan could not join the CNS SG/27 Meeting, the ICAO Secretariat will coordinate with Pakistan to get their intention to establish CRV connection with connected MID States. The ICAO Secretariat was requested to ascertain the intention of all members with entry/exit points between APAC and MID Regions. **ACTION ITEM 27-4**

3.21 The Meeting supported the suggestion for MID states to join CRV and the potential benefits to both regions. The ICAO Secretariat of the APAC Office was requested to coordinate with the ICAO MID Office, send a letter mentioning the successful experience and benefits of CRV attained by APAC Member States after joining CRV, invite PCCW Global to present significant information about the CRV network and its benefits to MID ATS Messaging Management Centre Steering Group (MIDAMC STG) (equivalent to the ACSICG in APAC Region) **ACTION ITEM 27-5** and encourage MID States to initiate discussion with PCCWG for this process. The ICAO Secretariat will coordinate with the MID office and PCCWG to organize a joint event to share the requested information with MIDAMC STG and other relevant ICAO MID Meetings. **ACTION ITEM 27-6**

2

ICAO Provisions for FF-ICE

ICAO-mandated **Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM)** – **ICAO Doc 4444**

Current ATS messaging provisions

- FPL, CHG, DEP, CNL etc.,....
- Point-to point
- AFTN-based
- Fit for purpose?

New FF-ICE Provisions

- Doc 4444 update planned November 2024
- FF-ICE *Release 1* (R1) provisions in parallel with existing ATS messaging provisions
- Further updates (R1, R2) until....
- **RETIREMENT OF EXISTING ATS MESSAGING PROVISIONS 2034**



Fourteenth Air Navigation Conference (Montréal, 26 August to 6 September 2024)

Transition to flight and flow – information for a collaborative environment services and cessation of FPL2012

Recommendation 3.2/1 – Phasing out and/or optimizing the use of legacy systems

That States:

- a) adopt a phased implementation plan for transitioning to modern communications, navigation and surveillance, and air traffic management systems while maintaining a minimum operation network for the provision of resilient air navigation services;

that ICAO:

- b) develop a global framework to guide Member States in phasing out and/or optimizing the use of legacy systems, ensuring consistency and interoperability;
- c) consider including a methodology to optimize the utilization of legacy systems in the communications, navigation and surveillance technology roadmap, leveraging the communications, navigation and surveillance minimum operation network concept, in a globally harmonized manner; and
- d) establish a knowledge-sharing platform for Member States to share experiences, challenges and best practices related to the transition from legacy systems to modern air traffic management technologies.

Fourteenth Air Navigation Conference (Montréal, 26 August to 6 September 2024)

Recommendation 3.2/2 – Transition to flight and flow – information for a collaborative environment services and cessation of ICAO 2012 flight plan by 2034

That States:

- a) in support of the 2034 global cessation of the ICAO 2012 flight plan, commence the development of a national plan to transition to flight and flow – information for a collaborative environment services along with industry stakeholders;
- b) include plans for the implementation of both minimum and optional flight and flow – information for a collaborative environment services in the national air navigation plans;
- c) share experience and resources for the implementation of flight and flow – information for a collaborative environment services;
- d) and planning and implementation regional groups, consider establishing regional focus groups for coordinating the planning and implementation of flight and flow – information for a collaborative environment services and providing necessary support throughout the transition period; and
- e) support and contribute to the work of their respective planning and implementation regional group and their sub-groups to develop a regional plan to transition to flight and flow – information for a collaborative environment services on the basis of the 2034 global cessation of the ICAO 2012 flight plan;

Fourteenth Air Navigation Conference (Montréal, 26 August to 6 September 2024)

that ICAO:

- f) amend relevant ICAO provisions and guidance material to enable the 2034 global cessation of the ICAO flight plan and associated air traffic services messages;
- g) through planning and implementation regional groups, provide guidance and support for the development of regional plans to transition to flight and flow – information for a collaborative environment to enable the 2034 global cessation of the ICAO 2012 flight plan;
- h) support inter-regional collaboration for a harmonized implementation of and transition to flight and flow – information for a collaborative environment services;
- i) monitor and support the progress of flight and flow – information for a collaborative environment services implementation and transition plan developments of States; and
- j) conduct a periodic assessment and report on the readiness of the global air traffic management community for the 2034 global cessation of the ICAO 2012 flight plan.

FFI-ICE R/1

FF-ICE objective is to replace the current flight planning system/service with a more adaptable and digital information-based flight planning that supports diverse set of Airspace Users (AU). To move toward FF-ICE:

- FF-ICE Release 1 applicability date is November 2024
- Flight Plan 2012 sunset date is target for 2034

Two phases:

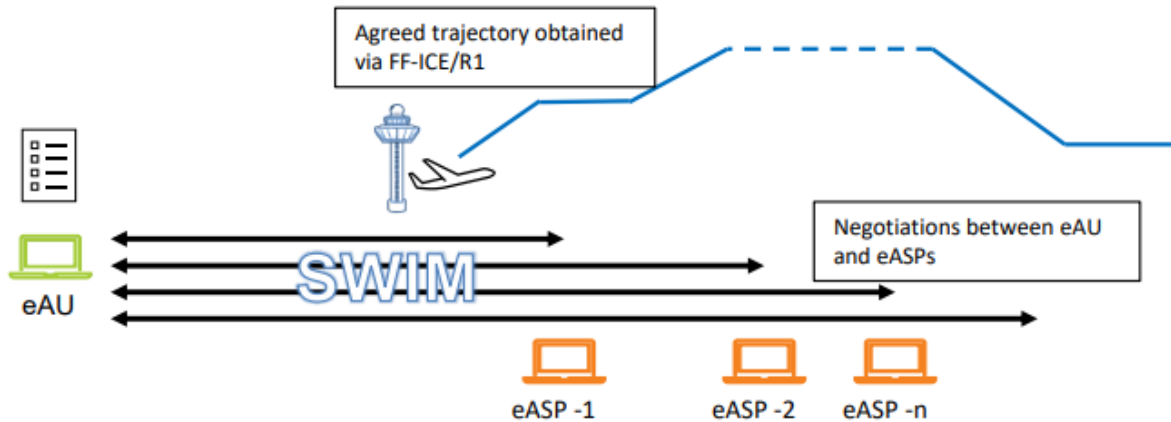
Pre-departure and Post departure

- FF-ICE Release 1 comprised of pre-departure data and procedures
- FF-ICE Release 2 comprise of post-departure data and procedures

FF-ICE to Support TBO

- FF-ICE Release 1 (FF-ICE/R1) refers to the pre-departure phase, while FF-ICE/R2 extends to include active flights
- With FF-ICE/R1, an agreed trajectory can be established among all stakeholders prior to departure, via the FF-ICE flight plan (eFPL). FF-ICE/R2 supports post departure trajectory negotiation and allows continuous updates/revisions to the agreed trajectory

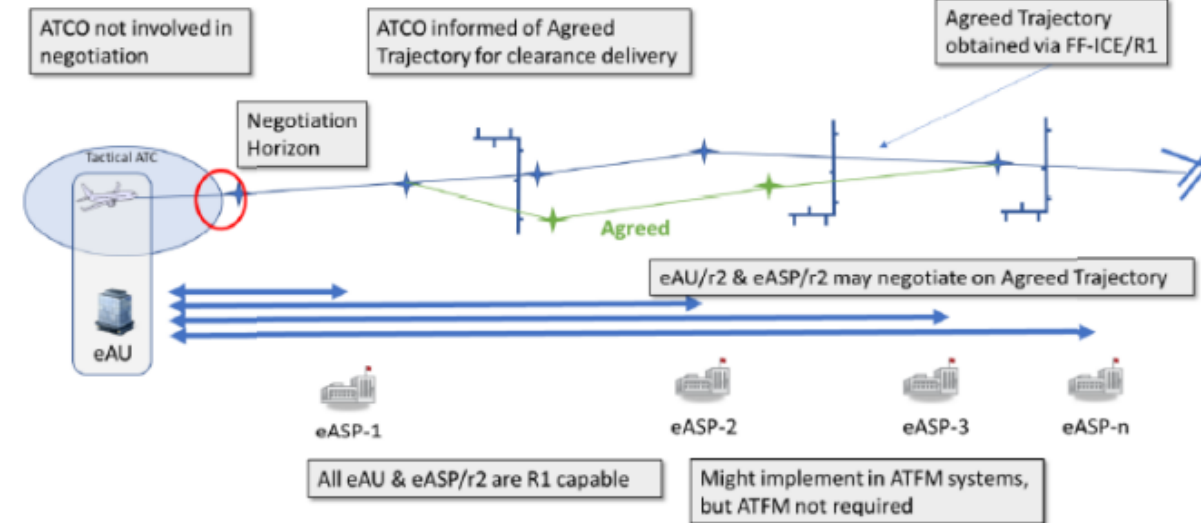
FF-ICE/R1 : Pre-departure



Pre- Departure

- Airspace users and ATM Service Providers collaboratively develop agreed trajectory
- Takes into account AU' preferences and ASPs' limitations and restrictions

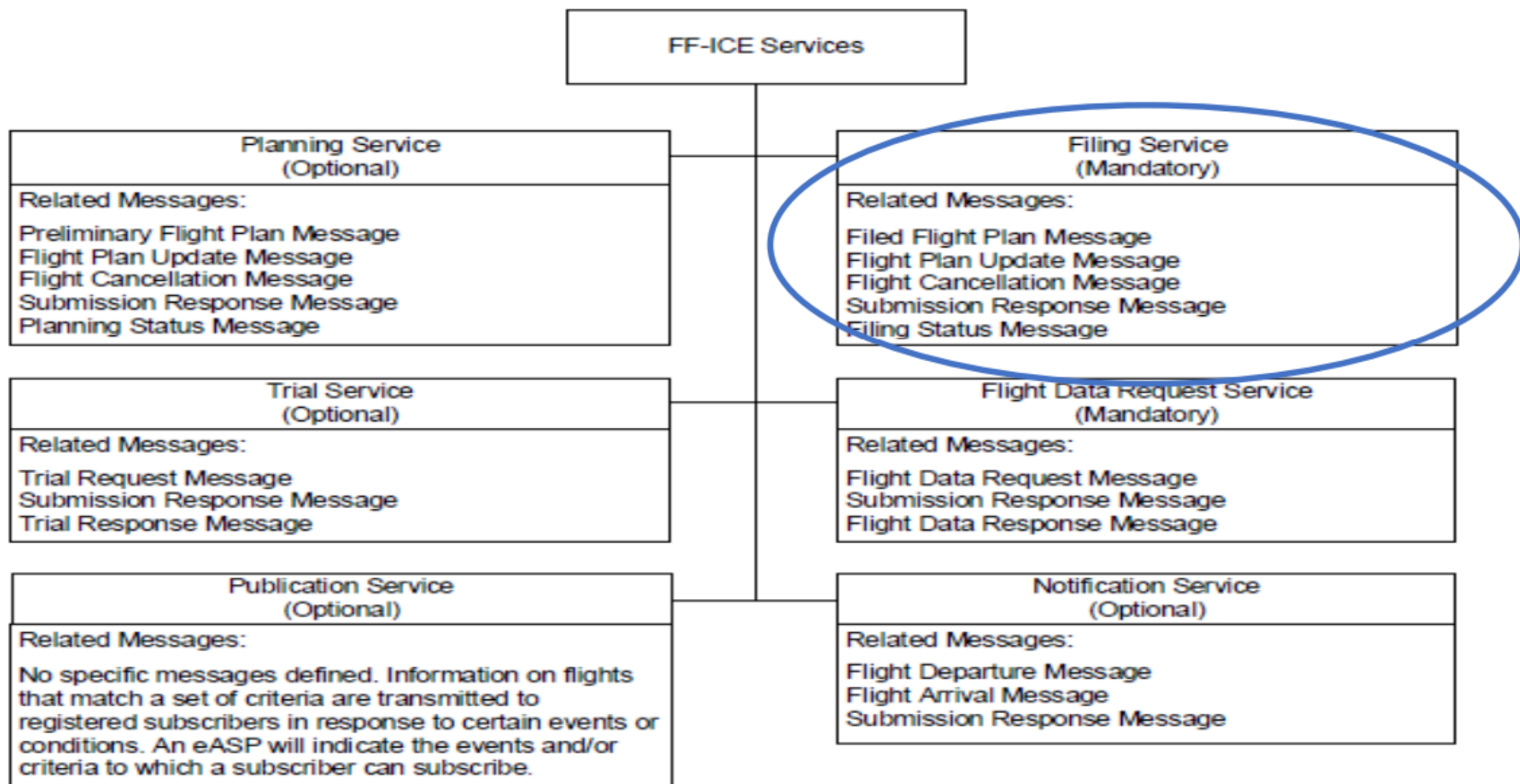
FF-ICE/R2 : Post-departure



Post- Departure

- Updates and revisions to agreed trajectory can be made
- Negotiations continue to take place, taking into account changing environmental factors and tactical events
- Any change is shared timely and consistently with all stakeholders (Ground-Ground and Air-Ground systems)

1. FF-ICE Filing Service (Mandatory)



1. FF-ICE Filing Service (Mandatory) – Overview

- Filed Flight Plan using an FF-ICE (FIXM) format in lieu of the teletype-format FPL (FPL2012).
- FF-ICE eASP's automation provides feedback to the operator regarding whether the flight plan was successfully processed, and whether it is acceptable to the eASP.
- The operator (or its designated representative), is required to generate a FF-ICE flight plan with a Globally Unique Flight Identifier (GUFI).
- Version: an increment to the version whenever an update to the flight plan data
- Reference: a submission response should reference the flight plan version

3

FF-ICE Enablers – SWIM (1)

- System Wide Information Management – to support sharing of ATM information with stakeholders in a standardized format to support operations.
- SWIM and FF-ICE
 - SWIM Registry – allows the information producers to publicized the FF-ICE services and the consumers to discover the services for use.
 - Information Service Overview - A set of information service metadata intended to promote service discovery and an initial evaluation of the information service characteristics.
 - Consumers can discover when FF-ICE services will be available in the information service Overview.
 - Producers of FF-ICE services can specify the geographical region coverage in the FF-ICE information service Overview.



FF-ICE Enablers – SWIM (2)

- What additional information on SWIM?
 - ATFM data/constraints/measures can be made available on SWIM
 - Airspace data/constraints can be made available on SWIM
- Global SWIM Implementation/supporting materials
 - ICAO Applicability Date – November 2024
 - ICAO SWIM Provision – PANS-IM (Doc 10199)
 - ICAO SWIM Implementation Guidance (Doc 10203)

4

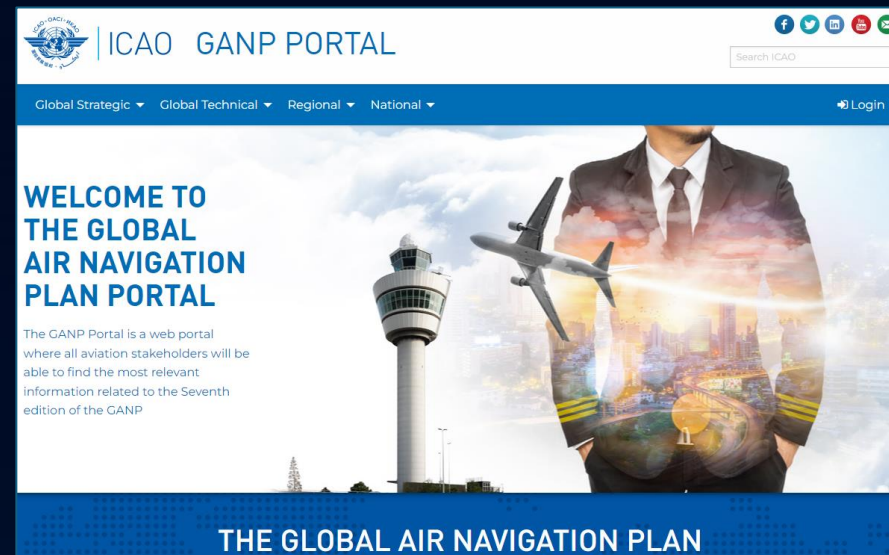
Global Air Navigation Plan



















Aviation System Block Upgrades (ASBUs)

System-Wide Information Management Elements

ASBU Block 2 SWIM-B2/1-5 – 2026 – 2031 implementation

- Dependencies:
 - **COMI-B1/1 – Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)**
 - **COMI-B2/3 – Links meeting requirements for non-safety critical communication**





















SWIM			
SWIM-B2/1	Information service provision	Information	  
SWIM-B2/2	Information service consumption	Information	  
SWIM-B2/3	SWIM registry	Information	  
SWIM-B2/4	Air/Ground SWIM for non-safety critical information	Information	  
SWIM-B2/5	Global SWIM processes	Information	  
SWIM-B3/1	Air/Ground SWIM for safety critical information	Information	  

ASBU Block 3 SWIM-B3/1 – 2032 – 2037 implementation

- Dependencies:
 - SWIM B/2-4
 - COMI-B3/4 – Links meeting requirements for safety- critical communication

SWIM-enabled network capabilities



SWIM			
SWIM-B2/1	Information service provision	Information	  
SWIM-B2/2	Information service consumption	Information	  
SWIM-B2/3	SWIM registry	Information	  
SWIM-B2/4	Air/Ground SWIM for non-safety critical information	Information	  
SWIM-B2/5	Global SWIM processes	Information	  
SWIM-B3/1	Air/Ground SWIM for safety critical information	Information	  

FF-ICE FIXM

- Flight Information Exchange Model (FIXM) - is an information exchange model capturing Flight and Flow information that is globally standardized.
- FIXM Core – provides a harmonized structure for flight data and FF-ICE messages
 - Filing services may accept flight plan in FIXM format.
- FIXM extension – implementation of extension to meet the specific needs of a particular region implementation of FF-ICE services.
 - APAC FIXM extension
- FF-ICE Implementation Guidance Appendix B Model and Data - important section for the technical/engineers.
- FIXM.AERO website for latest FIXM update

Transition: Translating between ATS Messages and FF-ICE Messages

- There is no direct translation between ATS Message and FF-ICE Message.
- The table only shows close relevant messages.

ATS Message	FF-ICE Template
	Preliminary Flight Plan
	Planning Status
	Submission Response
FPL	Filed Flight Plan
	Filing Status
DEP	Flight Departure
ARR	Flight Arrival
CHG	Flight Plan Update
DLA	Flight Plan Update
CNL	Flight Cancellation
RQP, RQS	Flight Data Request
SPL	Flight Data Response

FFI-ICE R/1

WP/07 of CNS
SG/28: 01-05 July
2024, Bangkok,
Thailand

2.11 State Letters informing the adoption and approval of relevant Annexes and PANS concerning FF-ICE services and SWIM were shared by following Letters:

1. Amendment 179 to **Annex 1- SL 2024/28**
2. Amendment 48 to **Annex 2- SL 2024/29**
3. Amendment 49 to **Annex 6 Part I- SL 2024/34**
4. Amendment 41 to **Annex 6 Part II- SL 2024/35**
5. Amendment 25 to **Annex 6 Part III- SL 2024/36**
6. Amendment 93 to **Annex 10, Vol II- SL 2024/24**
7. Amendment 92 to **Annex 10, Vol III- SL 2024/25**
8. Amendment 53 to **Annex 11- SL 2024/31**
9. Adoption of Amendment 43 to **Annex 15: SL 2024/40**
10. Approval of Amendment 34 to the Procedures for Air Navigation Services- ICAO Abbreviations and Codes (**PANS-ABC, Doc 8400**)- **SL 2024/46**
11. Approval of Amendment 12 to the Procedures for Air Navigation Services — Air Traffic Management (**PANS-ATM, Doc 4444**)- **SL 2024/41**
12. Approval of Amendment 3 to the Procedures for Air Navigation Services — Aeronautical Information Management (**PANS-AIM, Doc 10066**)- **SL 2024/42**
13. Approval of the first edition of the Procedures for Air Navigation Services — Information Management (**PANS-IM, Doc 10199**)- **SL 2024/39**
14. Approval of Amendments 11, 10, 3 to the Procedures for Air Navigation Services — Aircraft Operations (**PANS-OPS, Doc 8168**), Volumes I, II, III respectively- **SL 2024/45**



FFI-ICE R/1

WP/07 of CNS SG/28: 01-05 July 2024, Bangkok, Thailand

The ICAO provisions in various Annexes and the Procedures for Air Navigation Services (PANS) concerning FF-ICE services and SWIM are expected to become applicable on 28 November 2024. The guidance material is also expected to become available for this applicability date.

To enjoy the full benefits of FF-ICE services, all States are encouraged to implement the minimum set of FF-ICE services as soon as possible following the ICAO provisions that become applicable on 28 November 2024

5

Interregional interconnection

1. CRV and New PENS
2. CRV and REDDIG II
3. CRV for AFI

Summary:

1. Sunset date of FPL2012 and associated ATS messages- 2034
2. FIXM FPL requires enhanced IP network capabilities
3. COMI- Enabler for SWIM
4. Interregional connection

05

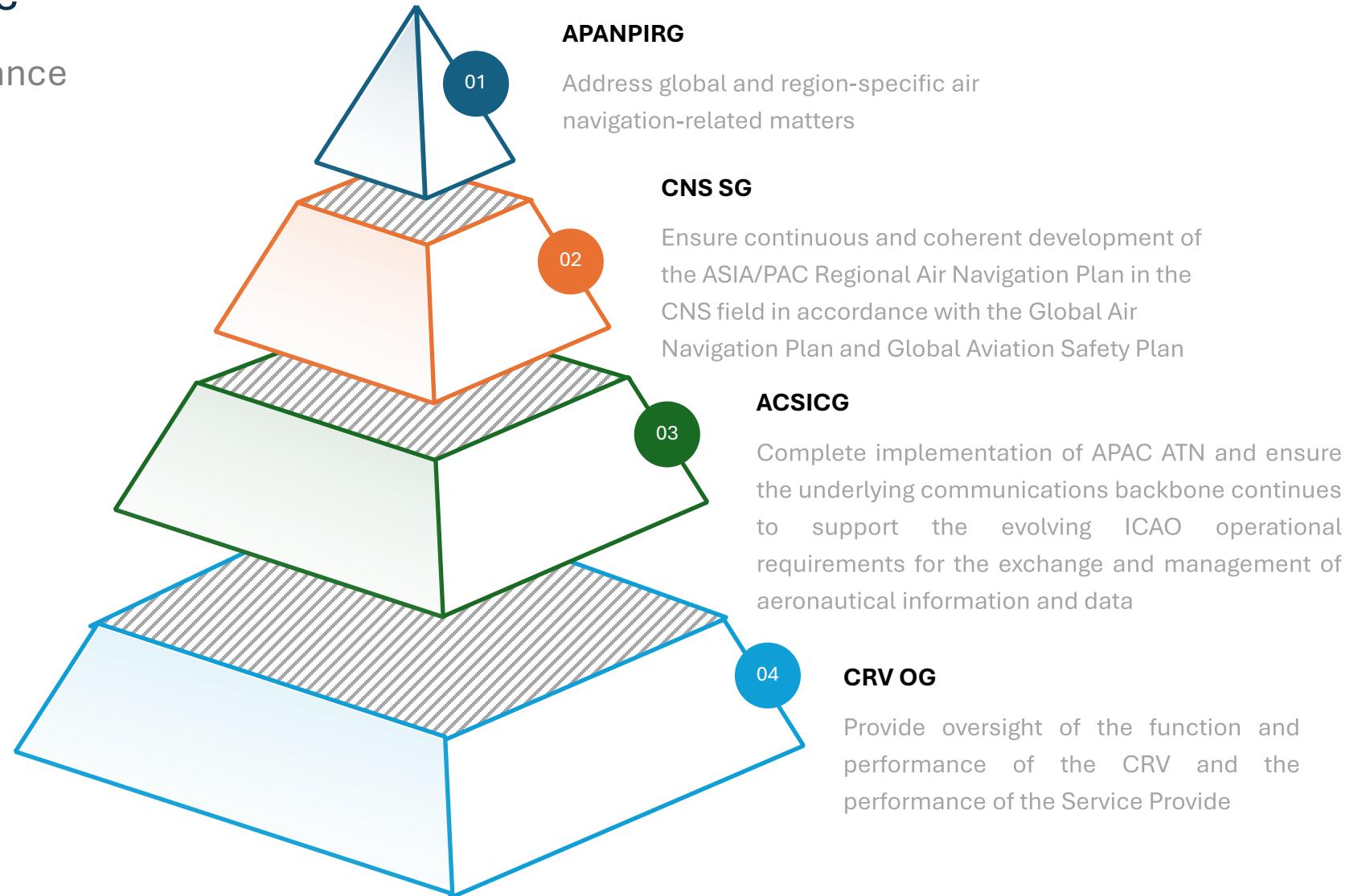
APAC
Experience of
using CRV



1. CRV Governance

CRV Governance

Current CRV Governance



CRV OG ToR

2. Terms of Reference

The Common Aeronautical Virtual Private Network (VPN) Operations Group (OG) will provide oversight of the function and performance of the CRV and the performance of the Service Provider. The following are the activities to be performed:

- a) Oversee the implementation of the CRV post Contract Award;
- b) Manage issues arising from the transition with CRV TF, if any;
- c) Co-ordinate and standardize the establishment or upgrade of CRV services as required;
- d) Co-ordinate activities with other ICAO CRV OGs, if any, to make sure that decision making and communication with CRV Service Provider is consistent and timely;
- e) Oversee the performance of the CRV Service Provider, including customer service;
- f) Oversee the performance of the CRV network;
- g) Oversee the escalation and solving by the CRV Service Provider of issues associated with the provision of the CRV, including safety and security related issues;
- h) Assist with the resolution of issues associated with the provision of the CRV among the CRV Users as required, including safety and security related issues;
- i) Assist with the migration of Aeronautical Fixed Services (AFS) onto the CRV, in line with the GANP and seamless ATM plan;
- j) Maintain CRV OG documentation associated with the function, performance and management of the CRV, including the CRV OG Operations Manual, a list of CRV users and a record of variations to the common tender package;
- k) Accept deliverables from the CRV Service Provider on behalf of the CRV Users as required;
- l) Promote the use of CRV;

CRV OG ToR

- m) Undertake continuous service improvements review to ensure CRV meets future needs; and
- n) Perform any other activity as required by CRV operations.

3. Reporting

The CRV OG will report to Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) through ACSICG and CNS SG.

4. Participation

The CRV OG will include all APAC Member States/Administrations, and any other organization as needed. Member States and/or inter-regional entry/exit Administrations in other ICAO regions may also be invited or request to participate in the activities of CRV OG.

5. Conduct of the work

It is anticipated that the CRV OG will conduct its work primarily by Web Conferences, teleconferences and other electronic means of communications. Face to Face meetings of CRV OG may be required on an annual basis.

The ICAO APAC Regional Office will provide secretariat support for the CRV OG.

6. Rapporteur

There will be two Co-Chairpersons of the CRV OG, one primarily responsible for Asia coordination and the other for Pacific coordination.

Success stories- CRV OG

1. Support to all States/Administrations
2. CRV portal hosted by New Zealand
3. Package flexibility option for CRV users
4. Formalization of Package D+
5. CRV Users definition
6. CRV joining process for users other than ANSPs
7. Negotiation with CRV Service provider for PSIDS promotion
8. New CRV contract process initiation
9. Mediation.



2. CRV Implementation



CRV Implementation

- **24 States/Administrations** have joined CRV and implemented operations:
Australia, Bhutan, Cambodia, China, Hong Kong China, Macau China, Fiji, India, Indonesia, Japan, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, PNG, Republic of Korea, Sri Lanka, Thailand, Singapore, USA and Vietnam.
- **8 States** (Bangladesh, Brunei, Cook Island, French Polynesia, New Caledonia, Lao PDR, Maldives and Samoa) are in process to join CRV.
- 82% of APAC States/Administrations joined/about to join CRV
- Satisfaction with Network performance and CRV Service providers services

Last Minute offer program for Pacific Island

Order needs to be signed by 30st April
Provisioning period – Q3 2024



Bandwidth: 2M		Package D		Package D+	
Tiers and required countries:		NRC (USD)	MRC(USD)	NRC (USD)	Package D
					<div>64 k</div> <div>128 k</div> <div>256 k</div> <div>512 k</div> <div>1024 k</div> <div>2048 k</div> <div>Once off Installation(64 K to 2M)</div>
>10 countries	Tier 3	1000	1500	Up to 1000 50%	<div>3,000</div> <div>3,000</div> <div>3,000</div> <div>3,000</div> <div>3,000</div> <div>3,000</div> <div>1,000</div>
>7 countries	Tier 2	1000	1800	1000	2400
>3 countries	Tier 1	1000	2000	1000	2600

Cisco 1000 series will be provided as the NID
The above packages are for data only

3. New CRV- 1 January 2029 onwards

New CRV Contract

1. Current Contract expiry- 31 Dec 2028
2. New CRV RFI- **March 2025**
3. CRV OG/11- **05-08 March 2025**, Wellington, New Zealand (Tentative)
4. CRV OG/14- December 2025 (Review of Proposals)
5. RFP- 2026
6. New CRV Installation and site readiness- December 2028
7. New CRV- 1 January 2029

06

CRV for MID





Why MID States may consider joining CRV?



Reasons

1. CRV was APAC/MID IP Network
2. APAC States are connected to MID States
3. Many APAC States are running CRV for more than 5 years: Significant experiences
4. CRV OG Experts- Knowledge sharing
5. CRV Performances statistics available for all Package Options
6. Price quoted in 2014 → Technology enhancements, coverage extension, price reduction → Potential cost reduction
7. New CRV- 1 January 2029- Time/Resource sharing
8. CRV Service provider- PCCWG Special promotion offers for MID States
9. You can have your own reasons.....

Benefits for all of us

1. Individual States contract- flexibility
2. Users are governor for CRV network
3. Support SWIM, FF-ICE and TBO
4. Secure Network
5. Any to Any connectivity
6. APAC SWIM Architecture- Principally over CRV
7. New CRV RFI improvement
8. One contract for two regions
9. CRV OG/11- **05-08 March 2025**, Wellington, New Zealand (Tentative)
10. New CRV- 1 January 2029
11. Regional interconnection (Seamless information sharing)

Requests/Suggestion from CRV OG for ICAO MID CNS SG

- Form Dedicated/Utilize Existing contributory bodies for CRV implementation / Operations
- ICAO MID CRV OG/ ICAO APAC and MID CRV OG?
- CRV OG Chair (Asia), CRV OG Chair (Pacific) and CRV OG Chair (MID)?
- IP address management is under ANSP
- One yearly meeting of APAC and MID CRV OG together for regional coordination- if a separate CRV OG for MID States
- Strict Adherence to common contract terms & conditions
- Inputs for New CRV draft RFI
- One contract for Two Regions

Questions???





THANK YOU

2024

20 - 23 October

Saudi Arabia, Jeddah, Ritz Carlton

