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*International Civil Aviation Organization***Eleventh Meeting of the Common Aeronautical Virtual Private Network Operations Group (CRV OG/11)***Bangkok, Thailand, 01-03 February 2023*

Agenda Item 3: Review outcomes of relevant meetings

REVIEW OF RELEVANT MEETINGS

(Presented by the Secretariat)

SUMMARY

The paper presents the relevant outcomes of the meetings held in 2022 including the thirty third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/33), the twenty sixth meeting of Communication, Navigation, and Surveillance (CNS SG/26), the ninth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/9), the sixth Meeting of the APAC SWIM Task Force (SWIM TF/6), and relevant discussions in other meetings.

1. INTRODUCTION

1.1 The Thirty-third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/33) was hosted by Indonesia at the Trans Resort Bali in Bali, Indonesia *from 22 to 24 November 2022* as a hybrid event (in-person and virtual participation). The Meeting was attended by **326** participants from **30** Member States, **2** Special Administrative Regions of China, and **7** International Organizations (ACI, CANSO, IATA, ICAO, IFALPA, IFATSEA and PASO). The APANPIRG/33 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2022-APANPIRG33.aspx>

1.2 The Twenty Sixth Meeting of the Communications, Navigation and Surveillance Subgroup (CNS SG/26) of APANPIRG was held *from 5 to 9 September 2022* via Video Tele-Conference (VTC) using Microsoft Teams. The meeting was attended by **247** participants from **26** States/Administrations, and **4** International Organizations, including 21 participants from industry partners. The CNS SG/26 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2022-CNS-SG-26.aspx>

1.3 The Ninth Meeting of the Aeronautical Communications Services (ACS) Implementation Coordination Group (ACSICG/9) was held *from 19 to 21 April 2022* via Video Tele-Conferencing (VTC). The Meeting was attended by **145** participants from **21** States/Administrations, **4** International Organizations and **3** Aviation Industries. The ACSICG/9 meeting report, working papers, information papers, and other resources can be accessed by following link:

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<https://www.icao.int/APAC/Meetings/Pages/2022-ACSICG9.aspx>.

1.4 The Ninth Meeting of the Common aeRonautical Virtual Private Network Operations Group of APANPIRG (CRV OG/9) was held *from 25 to 27 January 2022* via video tele-conference. The meeting was attended by **119** participants from **21** Member States/Administration, **1** International Organizations, and **1** Industry. CRV OG/9 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2022-CRV-OG-9.aspx>

1.5 The Tenth Meeting of the Common aeRonautical Virtual Private Network Operations Group of APANPIRG (CRV OG/10) was held on *18 April 2022* via video tele-conference. The meeting was attended by **89** participants from **21** Member States/Administration and **1** Industry. CRV OG/10 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2022-CRV-OG-10.aspx>

1.6 The Sixth Meeting of the APAC SWIM Task Force (SWIM TF/6) was held from *17 – 20 May 2022* via Video Tele-Conferencing (VTC). The meeting was attended by **213** participants from **18** States/Administrations, **5** International Organizations and **1** service provider. The papers and report of SWIM TF/6 meeting are available at:

<https://www.icao.int/APAC/Meetings/Pages/2022-SWIM-TF6.aspx>.

1.7 The APANPIRG/33 meeting reviewed the outcomes of the CNS SG/26, noted with appreciation the work done and achievements by the CNS SG and the contributory bodies reporting to APANPIRG through the CNS SG. The meeting discussed CNS related matters and took actions discussed in the next section on the report of CNS SG/26 meeting and other papers presented under Agenda Item 3.4.

1.8 This paper summarized relevant information and updates with the highlight on the reviewed outcomes of CRV OG/9 and 10, ACSICG/9, SWIM TF/6, SURSG/2, and relevant discussions of other meetings of CNS SG/26 and APANPIRG/33.

2. DISCUSSION

The actions taken by APANPIRG/33 meeting on Aeronautical Fixed Service (AFS) related matters are highlighted below:

2.1 The CNS SG/26 meeting adopted following **5** Conclusions and **2** Decisions:

Reference	Subject
Conclusion CNS SG/26/03 (ACSICG/09/04)	- Revised AFTN/ATSMHS Routing Directory
Decision CNS SG/26/04 (SWIM TF/06/01))	- The Use of the Internet for MET Information Services in Regional SWIM architecture
Decision CNS SG/26/07 (SWIM TF/06/06)	- Revised SWIM TF Terms of Reference
Conclusion CNS/SG/26/09	- Update of Flight Inspection Guidance Material (FIGM)

Reference	Subject
Conclusion CNS SG/26/10 (<i>SURICG/7/1 (DAPs WG/5/1)</i>)	- Mode S DAPs IGD 4.0
Conclusion CNS SG/26/12 (<i>SURICG/7/4</i>)	- Revised ADS-B Implementation and Operations Guidance Document (AIGD)
Conclusion CNS SG/26/13 (<i>ATMAS TF/3/1</i>)	- ATMAS IGD Edition 1.0

2.2 The contents of above Conclusions/Decisions adopted by the CNS SG/26 are provided in the **Attachment A** to this paper.

2.3 Based on the outcome of discussions on various agenda items, the CNS SG/26 meeting developed **5** Draft Conclusions and **1** Draft Decision for consideration by APANPIRG/33 Meeting, which were further adopted by APANPIRG/33. The Conclusions/Decisions adopted by APANPIRG/33 are as follows:

Reference	Subject
Conclusion APANPIRG/33/6 (<i>CNS SG/26/01 (ACSICG/09/01 (CRV OG/09/01))</i>)	- Revised Amendment of the Management Service Agreement for CRV project (RAS14801)
Conclusion APANPIRG/33/7 (<i>CNS SG/26/02 (ACSICG/09/02 (CRV OG/10/01))</i>)	- Extension of CRV Contract for one year.
Decision APANPIRG/33/8 (<i>CNS SG/26/05 (SWIM TF/06/03)</i>)	- Harmonization of Timelines for SWIM-related Initiatives
Conclusion APANPIRG/33/9 (<i>CNS SG/26/06 (SWIM TF/06/02, SWIM TF/06/04)</i>)	- The Asia-Pacific SWIM Implementation Timeframe and inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan
Conclusion APANPIRG/33/10 (<i>CNS SG/26/08 (SRWG/6/2)</i>)	- Planning Principle for Aeronautical Frequency Bands of 108-117.975 MHz, 960-1215 MHz and 117.975-137 MHz
Conclusion APANPIRG/33/11 (<i>CNS SG/26/11 (SURICG/7/3)</i>)	- Revised Surveillance Strategy for the APAC Region

2.4 All APANPIRG/33 Conclusions related to CNS are provided in **Attachment B** to this paper.

Ninth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/9) and Ninth and Tenth Meeting of the Common aeRonautical Virtual Private Network Operations Group CRV OG/9 and 10

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Updates on CRV Pioneer State Contribution to the ICAO Managed Service Agreement

2.5 The ICAO Secretariat informed about the fund balance of USD 104,596 and shared the Annex 1 to the Management Service Agreement (MSA) mentioned in Outstanding APANPIRG Conclusion APANPIRG/28/19: *Amendment of the Management Service Agreement for CRV project (RAS14801)*. The meeting noted the need to modify the Annex 1 to the Management Service Agreement (MSA) to accommodate latest information and requirements.

2.6 ICAO Secretariat shared that with the efforts of the ICAO Secretariat, ICAO TCB, CRV OG co-chairs and ACSICG Chair, the Revised Annex 1 to MSA has been prepared. As per the revised Annex 1 to MSA, the fund will be utilised in the span of 5 years.

2.7 The CRV OG/9 meeting requested Member States to provide examples of activities under different categories provided in scope of supporting CRV Network, which created an action item in CRV OG/9. The meeting discussed and agreed for the revised Annex 1 to MSA document also known as revised amended Project Document and formulated a draft conclusion for the next step for using the rest of CRV Pioneer State Contribution to the ICAO MSA, which was further endorsed by ACSICG/9 and CNS SG/26 and adopted as **Conclusion APANPIRG/33/6 - Revised Amendment of the Management Service Agreement for CRV project (RAS14801)** by APANPIRG/33. The Conclusion **APANPIRG/33/6** superseded the outstanding Conclusion APANPIRG/28/19. The adopted Annex 1 to MSA document also known as revised amended Project Document is provided in the **Appendix A** to this paper.

Proposal to Extend CRV Contract

2.8 Endorsed by CRV OG/10, ACSICG/9 and CNS SG/26, the APANPIRG/33 adopted the **Conclusion APANPIRG/33/7 - Extension of CRV Contract for one year**.

Upgrade/Downgrade/Addition of New Services or Sites in CRV Contract

2.9 In the first meeting of ICAO CRV Steering Group, PCCWG shared the revised proposal for upgrade/downgrade/addition of new sites and services with reasonable pre-estimate of the anticipated losses suffered by PCCWG. The revised proposal withdrew cancellation charges and mandate of five years term for each upgrade case and addition of new sites/services. Therefore, Member States may upgrade or add new sites or services in their contract without any additional charges or additional terms on the same rate.

2.10 The revised proposal recommended to calculate pre-estimate of the anticipated losses suffered by PCCWG by a proposed formula in case of downgrade and share the anticipated losses between PCCWG and States equally. Additionally, the mandate of five years term for downgrade cases was withdrawn. Therefore, Member States may downgrade the current package in their contract with additional charges of 50% of the anticipated losses but without additional term on the same rate.

2.11 The proposal was accepted by CRV Steering group for submission to CRV OG/10 deliberation and agreement. The CRV OG/10 meeting held on 18 April 2022 deliberated and reviewed the proposal and endorsed the proposal to work further for revision of relevant documentation of CRV common package.

Publication of the ICAO APAC CRV OG Operations Manual v1.1

2.12 Based on the recommendation by CRV OG/10, the ACSICG/9 meeting adopted the *Decision ACSICG/09/03 - Publication of the ICAO APAC CRV OG Operations Manual v1.1*. The Manual has been published for reference of States/Administrations to facilitate the implementation of the CRV. The CRV OG Operational Manual can be accessed [here](#). It was added that Member States can request access to the manual by requesting access to the portal by following the steps mentioned on [CRV Landing Page](#).

ICAO ATN/AMHS Guidance Document Tree

2.13 The WP/04 of ACSICG/9 presented the ICAO ATN/AMHS Guidance Document Tree and proposed to add CRV reference documents into the ATN Guidance Document tree. The ACSICG/9 meeting further reviewed the ATN/AMHS Documentation Tree and considered the recommendation of the CRV OG/9 for addition of CRV reference documents including the document locations on the ATN/AMHS Documentation tree, and necessary modifications on the tree structure. The ACSICG/9 meeting agreed to deliberate the recommendation of the CRV OG/9 to form an ad-hoc group for this purpose. The Ad-Hoc group was comprised of China, Fiji, New Zealand (Tentative), Singapore, USA, and the ICAO Secretariat and prepare revised ICAO APAC ATN/AMHS Guidance Document Tree and present it to the next ACSICG meeting for endorsement and approval.

AFTN/ATSMHS Routing Directory and the Communication Chart

2.14 The 29th edition of AFTN/ATSMHS Routing Directory prepared by ACSICG/9 and adopted by CNS SG/26 as **Conclusion CNS SG/26/03 (ACSICG/09/04) - Revised AFTN/ATSMHS Routing Directory**, has been circulated through State Letter Ref.: T 8/2.5 - AP134/22(CNS) with Subject – *The 29th Edition of the AFTN Routing Directory for the Asia and Pacific Regions* on 7 October 2022.

MPLS/IP Based Inter-Regional Connection

2.15 The Secretariat provided current status of discussion being done for potential interconnection of CRV and REDDIG II and CRV and New PENS, including the final technical proposal for interconnection of CRV and REDDIG II and business models to way forward.

2.16 The ACSICG/9 meeting agreed to form an Ad-Hoc group comprised of APAC Member States having interregional connections, CRV OG Chairs, CRV and REDDIG II service providers, interested Member States of SAM region, and the ICAO Secretariat under CRV OG. It was finalized that the ICAO Secretariat will coordinate with relevant APAC Member States to nominate focal points for the Ad-Hoc group. The ICAO Secretariat will also coordinate with ICAO SAM Office to get nomination from interested SAM Member States.

Aeronautical Fixed Service (AFS) Cybersecurity Considerations for Information over CRV

2.17 Some interim security considerations for CRV were presented, including Digital Identity and Network Information Security, prior to International Aviation Trust Framework (IATF) to be implemented in future. It introduced the requirements for IATF Digital Identity concept using Public Key Infrastructure (PKI) Digital Certificates, Network Information Security which includes the use of

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IPv6, Domain Name System (DNS), information security, network management and network contingencies, and SWIM interchanges with external entities.

CRV Post Implementation Issues in Bhutan

2.18 The ACSICG/9 meeting was informed about the issues faced by Bhutan related to CRV post implementation due to the non-readiness of peer States and the action taken by CRV OG and ACSICG including the two ad-hoc meetings for its resolution by WP/09.

2.19 The ACSICG/9 meeting noted that Thailand has already implemented CRV and planned to test CRV circuits with Bhutan in June 2022. It was agreed that Bhutan and New Zealand would continue to work on on-going proposal for temporary usage of CRV by Bhutan. The Ad-Hoc group will meet in last week of June 2022 to note the status of testing of CRV circuits between Bhutan and Thailand and progress on implementation of the temporary routing through New Zealand. Based on the status, the Ad-Hoc group will decide to continue the task to implement GRE tunnel between Bhutan and New Zealand or to close the action item.

2.20 Bhutan further informed the ICAO Office through email on 6th July 2022 that considering the connectivity between Bhutan and Thailand is currently under inspection process for reliability/stability test, after consensus with New Zealand, Bhutan has decided to discontinue the temporary CRV connectivity with New Zealand.

AMHS readiness status for supporting IWXXM Traffic of the States/Administrations

2.21 ACSICG/9 noted that **13** States/Administrations provided their status on AMHS readiness for supporting IWXXM Traffic, out of the **23** States/Administrations in the APAC Region which put their AMHS into operations per the AMHS Routing Directory Tables from the ATS Messaging Management Centre (AMC). Although there has been a significant increase in the AMHS readiness for supporting IWXXM Traffic, the reporting gap as well as the slow progress on the reporting were still identified, States/Administrations were urged to inform ICAO APAC Regional Office on their readiness and implementation progress/plan of AMHS with FTBP as soon as possible.

Update status of AMHS implementation by States/Administrations

2.22 USA presented on the traffic load measured at the Salt Lake City (SLC) Communications centre that supports AMHS connections to APAC States with a bandwidth of 2Mbps provided by CRV. The current average monthly measurement of the bandwidth usage is 27 kbps for incoming traffic and 35 kbps for outgoing traffic. Based on the traffic, the AMHS bandwidth between FAA, Australia and Japan need to be monitored and action taken as needed to increase the bandwidth in support of IWXXM and other XML based messages being introduced in the near future.

2.23 Thailand presented AMHS/ATN Implementation Status in Thailand by IP/03. The ACSICG/9 meeting was informed that Thailand is transitioning from AFTN to AMHS and has completed commissions of AMHS connection with some BBIS and BIS States. Thailand's AMHS system is able to support IWXXM, and AIDC services over AMHS have been implemented. The paper also shared the AFTN/AMHS traffic load report for Bangkok COM Centre.

2.24 The IP/04 presented current implementation status of AMHS & CRV in India with BIS and BBIS states. The ACSICG/9 meeting was informed that the AMHS connectivity has been successfully implemented between Mumbai and three BBIS and with five BIS. India shared the recent AMHS progresses, and updated the CRV implementation status that the installation and testing on CRV

is expected to be completed in Q3-4/2022. India supplemented that their interregional connection between Mumbai and Muscat are dedicated circuits.

2.25 The ACSICG/9 meeting discussed on a draft reporting template on the monitoring of AFTN/AMHS traffic load. Upon discussion, the ACSICG/9 meeting agreed to monitor under different scenarios as follows:

- The CRV OG may monitor Bandwidth Utilization Rate of APAC member states already implemented CRV by adding it into its meeting agenda items. The APAC member states may request PCCWG to share information about Bandwidth Utilization Rate in monthly report and then present it to CRV OG meetings, which resulted into an action item of ACSICG/9.
- For States' non-CRV AMHS connections, after deliberation and considering the multi-facet of data sources, the ICAO Secretariat will consult with experts to propose a common template to report on the monitoring of connection loading, which resulted into an action item of ACSICG/9.
- For States' AFTN-only connections, there is no concern over increased traffic load from XML-based message and thus no such need to monitor the traffic in this regard.

Sixth Meeting of System Wide Information Management Task Force (SWIM TF/6)

Aviation Support Service Providers Joining CRV

2.26 PCCW introduced PCCWG Console Connect Aviation Platform for non-ANSP users to exchange SWIM data with CRV members. PCCWG informed that in order to provide an easy, managed, flexible and scalable mechanism for non-ANSP users to exchange SWIM data with CRV users, PCCW Global planned to extend its EMS node with its own developed software defined interconnection platform - Console Connect for Aviation and purposed built SWIM as Service Platform. PCCWG informed that the SWIM services from ANSPs on CRV can be listed on PCCW SWIM Registry, where users can select, subscribe, and concluded that the Console Connect Platform provides an alternative path for non-ANSP users to exchange SWIM data with ANSPs who are on the CRV Network.

2.27 The SWIM TF/6 meeting discussed the certification standard and ability to support MET data of the PCCW Console Connect Aviation Platform, and was informed that the platform is in concept stage. The SWIM TF/6 meeting agreed that there is the need to deliberate in CRV OG **the security impact of mixed operational environment**, i.e. connecting more SWIM technical infrastructure service providers and users using internet/other network based services with CRV through a gateway.

Consideration of SWIM Architecture for Efficient Provision of MET Information Services

2.28 With the operational needs of efficient MET information service provision, the Use of the Internet for MET Information Services in Regional SWIM architecture was endorsed as *Decision CNS SG/26/04 (SWIM TF/06/01)* to include the use of Internet for meteorological information services in designing the regional SWIM architecture. **The SWIM TF/6 meeting also discussed the need of participation of MET experts in SWIM TF and requested Member States to nominate MET**

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experts to contribute and participate in various tasks of SWIM TF. The Meeting also noted that the revised SWIM TF ToR was adopted by CNS SG via *Decision CNS SG/26/07*.

Twenty-Sixth Meeting of the Meteorology Sub-Group (MET SG/26)

2.29 The paper presented outcomes from MET SG/26 relevant to the CNS SG, including discussion on SWIM architecture support for MET information, MET experts' contribution and participation in the SWIM TF, and CNS-related documenting of MET service providers as “non-aviation” service providers. The paper invited the Meeting to adopt the proposals by the SWIM TF and MET SG, which support the cost-effective and efficient exchange of MET information in SWIM.

2.30 MET SG/26 noted that the Sixth Meeting of the SWIM Task Force (SWIM TF/6) discussed concerns raised by the members of MET SG about SWIM architecture for the efficient and cost-effective provision of MET information services through WP19 and formed a Draft Decision SWIM TF/06/01 – *The Use of the Internet for MET Information Services in Regional SWIM architecture* and Draft Decision SWIM TF/06/06 – *Revised SWIM TF Terms of Reference* to include “other IP-based networks” in the APAC Regional SWIM architecture.

2.31 MET SG/26 noted that, given some States' concerns about documenting MET service providers as “non-aviation” service providers, SWIM TF/6 had requested the CRV Operations Group (CRV OG) to finalize an appropriate name for CRV users and subscribers other than ANSPs.

Second Meeting of the Surveillance Study Group (SURSG/2)

Surveillance Data Sharing Proof of Concept

2.32 SURSG/2 discussed the Surveillance Data Sharing Proof of Concept (POC) conducted by HKCAD, PCCWG and Frequentis ComSoft. PCCWG shared the outcomes of a POC conducted on 4 March 2022, which was the collaboration of HKCAD, PCCWG and partner Frequentis ComSoft to demonstrate sharing ADS-B data in a simulated SWIM over CRV environment and the benefits of a Surveillance Central Data Processor (SCDP). PCCWG prepared a video to introduce the POC exercise which was presented in SURICG/7.

ATS Messaging Management Centre (AMC) Updates

2.33 Since the introduction of global routing in AMC, there had been good participation from External COM Centres (i.e. States outside the ICAO EUR Region), and the AMC encouraged external COM Centres to continue to participate in the AMC operation. With the introduction of IWXXM, FTBP capabilities are of greater importance to the AFS. In this regard, all COM Centres were invited to update their FTBP capabilities information under the AMC Network Inventory section. The ACSICG/9 meeting also reminded the action required regarding the Management and update of Air Traffic Services (ATS) Message Handling System (AMHS) address and routing information, including ensuring the international COM Centres in States are registered via <https://www.eurocontrol.int/tool/air-traffic-services-messaging-management-centre> as AMC users, and participate regularly in the AMC procedures for AMHS Address and Routing Management as outlined in the EUR ATS Messaging Management Manual (EUR Doc 021).

Challenges Faced in Joining CRV– Sri Lanka

2.34 Sri Lanka presented challenges that AASL/Sri Lanka is facing in joining CRV in CNS SG/26. Sri Lanka informed that it planned CRV migration in a phased manner first with AMHS Singapore and the tests to be started tentatively in Nov 2022. Additionally, India is also migrating CRV very soon and AMHS Mumbai connection is planned to be replaced with CRV. AASL/Sri Lanka shared two possible options on CRV migration with both AMHS Singapore and Mumbai, while Option 1 - Package D with 128kbps BW 64k for Singapore and 64k for Mumbai is economically feasible under the present economic crisis in Sri Lanka.

2.35 It was added that until such time, necessary negotiations are proposed to begin with India on other 3 options. India shared its support to Sri Lanka and suggested *Option C - to migrate CRV with AMHS Mumbai/Colombo under Package D at Sri Lanka end and procure a low cost VPN connection between Mumbai and Sri Lanka as a contingency for CRV* as the best option to implement. The meeting noted that the ICAO Secretariat will follow-up on this matter with PCCWG and Sri Lanka offline and provide all possible technical support to Sri Lanka for CRV Implementation which resulted into an action item of CNS SG/26.

Current Status of CRV Implementation in India

2.36 India shared the information on the latest progress of CRV implementation. The CNS SG/26 meeting noted that the Purchase Order for CRV implementation in India was awarded to M/s PCCWG on 15th March, 2022. As per information received from M/s PCCWG the implementation of CRV network is getting delayed due to shortage of Semiconductor Chipsets required for Cisco Router. The latest delivery date given by M/s PCCWG is Dec, 2022 for CRV Implementation in India. India urged M/s PCCWG for meeting the timelines for establishing the CRV node at Mumbai, India and urged BBIS/BIS States having connectivity with India to keep themselves in readiness to avoid any further delay in establishing the connectivity.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the outcome of the APANPIRG/33, CNS SG/26, and its contributory bodies, and take any necessary follow-up actions; and
- b) discuss any relevant matters as appropriate.

List of Conclusion/Decisions adopted by CNS SG/26 on behalf of APANPIRG on Technical Matters

Conclusion CNS SG/26/03 (ACSICG/09/04) - Revised AFTN/ATSMHS Routing Directory	
What: That, the AFTN/ATSMHS Routing Directory for the APAC Region provided in Appendix B to the report be further updated and distributed to States/Administrations as 29 th Edition.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: A number of new ATSMHS connections have been established and became operational. Consequential amendments to the AFTN/ATSMHS Routing Directory are required.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> CNS SG <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	
Decision CNS SG/26/04 (SWIM TF/06/01) - The Use of the Internet for MET Information Services in Regional SWIM architecture	
What: That, the use of Internet for meteorological information services will be considered in designing the regional SWIM architecture.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To support cost-effective and efficient meteorological information services for exchange of less-sensitive meteorological information in SWIM.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	
Decision CNS SG/26/07 (SWIM TF/06/05) – Revised SWIM TF Terms of Reference	
What: That, the revised SWIM TF Terms of Reference (ToR) as shown in Appendix E be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To align with the progress made since the SWIM TF/5 and outcomes of Action item 25-1 from CNS SG/25.	Follow-up: <input type="checkbox"/> Required from States
When: 09 September 2022	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

Conclusion CNS SG/26/09 - Update of Flight Inspection Guidance Material (FIGM)	
What: That, the Edition 3.0 of the Flight Inspection Guidance Material (FIGM) provided in Appendix F to the Report be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The FIGM is subject to regular review and update, in the light of on-going development of flight inspection standards and recommended practices.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: -	

Conclusion CNS SG/26/10 (SURICG/7/1 (DAPs WG/5/1)): Mode S DAPs IGD 4.0	
What: The Mode S DAPs Implementation and Operation Guidance Document Edition 4.0 provided in Appendix G to the Report be adopted	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The revised draft includes ADS-B DAPs and adds guidance on the measurement of 1030/1090 MHz usage.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Sub-group
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: -	

Conclusion CNS SG/26/12 (SURICG/7/4) - Revised ADS-B Implementation and Operations Guidance Document (AIGD)	
What: That, the revised ADS-B Implementation and Operations Guidance Document (AIGD) provided in Appendix I to the Report, which consolidated all change proposals during SURICG/7, be adopted as Version 15.0.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Updates from SURICG/7	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Subgroup <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG	

Conclusion CNS SG/26/13 (ATMAS TF/3/1) - ATMAS IGD Edition 1.0	
What: The Air Traffic Management Automation System Implementation and Operations Guidance Document Edition 1.0 provided in Appendix J to this Report be adopted	Expected impact: <input type="checkbox"/> Political / Global

List of Conclusions/Decisions adopted by CNS SG/26 on behalf of APANPIRG on Technical Matters

		<input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The revised draft has been added the DMAN function and reviewed/updated with inputs from various States	Follow-up:	<input type="checkbox"/> Required from States
When: 9-Sep-22	Status:	Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: ATMAS TF		

A List of Conclusions adopted by APANPIRG/33 Meeting related to CNS

<p>Conclusion APANPIRG/33/6 (CNS SG/26/01 (ACSICG/09/01 (CRV OG/09/01))): Revised Amendment of the Management Service Agreement for CRV project (RAS14801)</p>	
<p>What: Recognizing that ICAO Technical Cooperation Bureau satisfactorily completed all the defined work items in the initial Management Service Agreement (MSA) and Project Document of RAS14801, that the required payments were settled, and that in end 2016, all the requirements of both parties have been fully completed and closed on record, That,</p> <p>i) all Pioneer States are encouraged to counter-sign the Revised amended Pro Document provided in Appendix A to Agenda Item 3.4;</p> <p>ii) any Pioneer State not countersigning is entitled to get its share of the remaining fund balance back. and</p> <p>iii) a Pioneer State for which a direct CRV connection is not considered feasible in 2017 by the selected vendor is entitled to get its initial contribution in full</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: The initial scope of MSA was completed by ICAO TCB which allowed for a successful evaluation process and selection of a best and final offer; a majority of Pioneer States is willing to use the rest of their initial contribution to continue to support CRV implementation.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 24-Nov-22</p>	<p>Status: Adopted by PIRG</p>
<p>Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:</p>	

<p>Conclusion APANPIRG/33/7 (CNS SG/26/02 (ACSICG/09/02 (CRV OG/10/01))): Extension of CRV Contract for one year</p>	
<p>What:</p> <p>a) Recognizing that as per current contract, all authorities shall join the CRV project and sign the relevant Service Contract(s) with PCCWG with the billing start date on or before 31 December 2022 to not impose additional charges by the service provider and based on the survey responses of 2022, many Member States are in process to join CRV which may not be completed by December 2022, it is recommended to extend current CRV contract for one year.</p> <p>b) If agreed to extend, as per amended CRV contract, all authorities shall join the CRV program and sign the relevant Service Contract(s) with PCCWG with the billing start date on or before 31 December 2023 to not impose additional charges by the service provider.</p> <p>c) After the extension, the CRV contract expiry date will be 31 December 2028.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>

A List of Conclusions adopted by APANPIRG/33 Meeting related to CNS

Why: Several ICAO Member States have requested to extend CRV contract due to COVID-19 pandemic in CRV Implementation webinar held in 2021 and based on the response of the survey done in 2022, many Member States are in process to join CRV which may not be completed by December 2022.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

Decision APANPIRG/33/8 (CNS SG/26/05 (SWIM TF/06/03)): Harmonization of Timelines for SWIM-related Initiatives	
What: To feedback to the ICAO Air Navigation Commission Technical Panels for a need to harmonize the implementation timelines of SWIM-related initiatives.	Expected impact: <input checked="" type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: There exists different timelines for the implementation of SWIM-related initiatives identified by various ICAO ANC Technical Panels. This creates confusion within States on their corresponding implementation sequences and as to how these different timelines are to be met.	Follow-up: <input type="checkbox"/> Required from States
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

Conclusion APANPIRG/33/9 (CNS SG/26/06 (SWIM TF/06/02, SWIM TF/06/04)): The Asia-Pacific SWIM Implementation Timeframe and inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan	
What: 1. To set the timeframe for the implementation of SWIM in the Asia-Pacific region to be between 2024 and 2030, with 2030 being the target timeline for implementation completion. 2. To include SWIM implementation in the next edition of the Asia/Pacific Seamless ANS Plan.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: This is to set the concrete target implementation of the Asia-Pacific regional SWIM to assist States in harmonizing their implementation plans in order to achieve the seamless information exchange across the region in time for future operations, e.g. FF-ICE. Additionally, to ensure that SWIM, a key building block to achieve the vision outlined in ICAO Doc 9854 Global ATM Operational Concept (GATMOC), is captured in the Asia/Pacific Seamless ANS Plan,	Follow-up: <input checked="" type="checkbox"/> Required from States

A List of Conclusions adopted by APANPIRG/33 Meeting related to CNS

providing an overall framework for Asia/Pacific States to plan their implementations to meet the future performance requirements.	
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

Conclusion APANPIRG/33/10 (CNS SG/26/08 (SRWG/6/2)): Planning Principle for Aeronautical Frequency Bands of 108-117.975 MHz, 960-1215 MHz and 117.975-137 MHz	
What: That, Doc 9718, Handbook on Radio Frequency Spectrum Requirements for Civil Aviation, Volume II, Second Edition – 2022, is adopted as the planning principle for aeronautical facilities and services operating in the aeronautical frequency bands of 108-117.975 MHz, 960- 1215 MHz and 117.975- 137 MHz in APAC.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To implement the updated ICAO provisions	Follow-up: <input type="checkbox"/> Required from States
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: -	

Conclusion APANPIRG/33/11 (CNS SG/26/11 (SURICG/7/3)): Revised Surveillance Strategy for the APAC Region	
What: That, the Revised Surveillance Strategy for the APAC Region provided in Appendix D to Agenda Item 3.4 be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To reflect the outcome of the latest development in surveillance technology.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG	



INTERNATIONAL CIVIL AVIATION ORGANIZATION

ANNEX 1 TO THE MANAGEMENT SERVICE AGREEMENT BETWEEN THE INTERNATIONAL CIVIL AVIATION ORGANIZATION AND THE CIVIL AVIATION AUTHORITIES AND/OR RELATED AIR NAVIGATION SERVICE PROVIDERS HAVING SIGNED THE AGREEMENT

Project Title: Common Regional Virtual Private Network (CRV) multinational service with a common service provider

Project No.: RAS/14/801 – Revision B

Duration: 5 years

Sector and Sub-Sector: Transport and Civil Aviation

Country Implementing Agency: Civil Aviation Authorities and/or related ANSPs

Executing Agency: International Civil Aviation Organization (ICAO)

Location: Asia Pacific

Estimated Start Date: 1 March 2023

Estimated Project Cost: US\$ 88,000

Brief Description: Under Revision B, ICAO will assist the Civil Aviation Authorities and/or related ANSPs in the continuation of the APAC CRV Project through the provision of expertise and support to the CRV Network (Stage 2). The ICAO assistance covers the specific work scope outlined in this project document.

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1. BACKGROUND

1.1 The Civil Aviation Authorities and/or related ANSPs as listed in Appendix A, hereinafter collectively referred to as the “Parties” and individually as the “Party”, have determined that the Common Regional Virtual Private Network (CRV) multinational service with a common service provider can more effectively:

- provide network services to the Parties;
- support a common Internet Protocol (IP) network;
- establish services based on Voice over IP (VoIP); and
- enhance network diversity and timely service implementation and delivery.

1.2 In 2014, all Parties jointly agreed to appoint ICAO Technical Cooperation Bureau or TCB to assist in the procurement management (i.e. Stage 1) of the CRV project and in the selection of the common Service Provider (RAS14801 Revision A). Upon selection of the common service provider after a Sealed Tender (ST) process through TCB, each Party were expected to subscribed to the Services by signing an individual Service Contract with the Service Provider for the procurement, installation, training, testing, commissioning and operation of the CRV network and the associated services.

1.3 After selection of the common service provider in 2016, a fund balance of USD 104,596 remained as on 31 March 2017. CNS SG/21 (17 to 21 July 2017) and APANPIRG/28 (11 to 14 September 2017) agreed to manage the remaining funds not used for the CRV selection process, to procure common services or expertise to support the implementation of the CRV Network (Stage 2).

1.4 As at 31 December 2021, the remaining fund for use are approximately USD 88,000 allowing for the return of funds to two pioneer Member States in terms of the Conclusion APANPIRG/28/19 “Amendment to the Management Service Agreement for CRV Project (RAS14801)”.

1.5 As a result of the discussions between the Parties, Revision B has been developed to utilise the carry-over funds from the completion of the activities of Stage 1 to procure common services or expertise to support the implementation of the CRV Network (Stage 2).

2. SCOPE OF SERVICES TO BE PROVIDED

2.1 Through this Revision, the following services will be provided by ICAO within the scope of supporting the CRV Network (Stage 2), as may be required:

- a) Provision of expertise through engagement of subject matter experts;
- b) Capacity building through training;
- c) Procurement of common services to support the implementation of the CRV Network;
- d) Other support, as needed.

3. IMPLEMENTATION STRATEGY

3.1 The Parties, through the CRV OG will be agreed on which activities to undertake based on needs priority assessment. Upon determination, the decision will be communicated to TCB through the APAC Regional Office for execution, as appropriate.

3.2 In case the proposed activities exceed the available funds, TCB will communicate this to the Parties through the Regional Office. At this point, the parties will need to decide to either reduce scope of activities, inject additional funds and/or a combination thereof.

4. BUDGET

4.1 The detailed budget is as attached at Appendix A.

4.2 Funds will be equally shared among the Civil Aviation Authorities and/or related ANSPs that have signed the MSA and continue to be party to this Revision, and provided by them in advance of commencement of the project.

4.3 The total estimated amount is of US\$ 88,000 as per Appendix A. This amount is the total estimated amount including administrative and technical support.

5. RISK ASSESSMENT

5.1 Delay in the signing of this project document.

Risk Level: Medium

Mitigation: ICAO will work through the APAC Regional Office to facilitate the signing of the Project Document Revision B.

6. PROJECT MONITORING, REVIEW AND REPORTING

6.1 Monitoring activities

6.1.1 The overall implementation of the project is monitored through regular reporting and project review meetings as appropriate.

6.1.2 ICAO will execute and monitor the project in close consultation with the focal point designated by each Party.

6.1.3 ICAO will maintain the financial accounting and budgetary control of the project, in accordance with its policies and practices.

6.1.4 ICAO may carry out missions on site to monitor the progress of the project, in accordance with the approved work plan or as required.

6.2 ICAO roles and responsibilities include:

- a) to execute and monitor the project under the direction of the Director, TCB. The Director, TCB will delegate the responsibility for the monitoring/oversight of project activities to the appropriate level within the designated/nominated representatives of the Parties;
- b) to provide financial management and budgetary control in accordance with its policies, rules, practices, processes and procedures;
- c) briefing of personnel;
- d) administering ICAO experts' contracts;
- e) to provide financial statements in accordance with ICAO policies, rules, practices, processes and procedures;
- f) organizing experts' travel to duty station;
- g) formalizing acceptance of the completed project deliverables;
- h) revising the project document (PRODOC) as requested;
- i) formalizing all activities required to close the project.

This Project Document is not intended and should not be construed as a recognition or endorsement by ICAO of any functions and/or responsibilities entrusted to or performed by regional entities.

7 PROJECT RULES AND REGULATIONS

7.1 International experts/personnel

7.1.2 ICAO will recruit and deploy international experts/personnel in accordance with ICAO policies, practices, ICAO/TCB Field Staff Services Rules and applicable process and procedures. In particular, as consultants engaged by ICAO, their entitlement payments will be issued by ICAO. The lead-time required for the recruitment of the experts may range between six (6) weeks to three (3) months, from the moment the funds are committed until the deployment of the experts. In the eventuality of a contract extension being required for one or more ICAO expert(s), the Implementing Agency will need to issue the necessary request at least three (3) months prior to the end of the ICAO expert(s)' contract, subject to availability of funds; the request will include a justification and corresponding additional duration, as appropriate.

7.2 Procurement

7.1.1 The procurement of equipment or services are carried out in accordance with ICAO's Procurement Code, Financial Regulations and Rules, and applicable process and procedures.

7.2 Finance

7.2.1 The reception and management of funds for this project are subject to ICAO's Financial Regulations and Rules, and applicable process and procedures. The use of any of the resources for this project will be processed upon reception of proper formal authorization.

7.2.2 The unauthorized use of project resources is not allowed and could result in project delay and the discontinuation of the project's activities.

7.2.3 The provision of financial management and budgetary control of the project and submitting financial reports will be in accordance with ICAO rules, regulations, process and procedures.

7.2.4 ICAO will provide the financial statements concerning the services covered by this document, indicating the status of the funds, in US dollars. Any clarification or discrepancy with the financial statements must be officially communicated to ICAO within 30 days of receiving them, after which they are deemed accepted by the Parties.

7.2.5 If additional information is required after the deadlines set in the previous paragraph, costs related to such information will be charged to the project, with prior approval from the Parties.

7.3 General regulations

7.3.1 All project's activities are managed in accordance with the applicable ICAO policies, rules, regulations, processes and practices and applicable process and procedures.

7.3.2 Project activities, including reports and/or deliverables prepared by the ICAO experts may be reviewed by ICAO Headquarters and/or Regional Office, as appropriate.

7.3.3 This document was developed in English by the parties. Any document related to the implementation of this project that is required to be translated into another official language of ICAO, as may be required, shall be performed by ICAO and charged to the project, as appropriate. Any document related to the implementation of this project that is required to be translated into any other language not an official language of ICAO, shall be translated independently by that Party at its own cost. In case of disagreements on the text of any of the documents, the prevailing version will be the text in the original English language.

8 LEGAL FRAMEWORK

8.1 This project document shall constitute Revision B to Annex 1 (RAS14801) to the Management Service Agreement between the Parties.

8.2 The Project Document Revision B will come into force upon its signing by the Parties.

8.3 Any change, amendment or revision to this Project Document Revision (including scope, duration, budget, responsibilities, or other), will need to be formally approved in writing by the Parties.

8.4 Nothing contained in or relating to this Project Document Revision B shall be deemed a waiver, express or implied, of any of the privileges and immunities of ICAO and its personnel.

9 LIABILITY

9.1 The Parties shall indemnify, defend, and hold and save harmless, ICAO and its

officials, agents and employees, from and against all suits, proceedings, claims, demands, losses, and liability of any kind or nature brought against ICAO, including, but not limited to, all litigation costs and expenses, attorney's fees, settlement payments, and damages. For the avoidance of doubt, the Parties shall be obligated, at their sole expense, to defend ICAO and its officials, agents, and employees, regardless of whether the suits, proceedings, claims, and demands in question actually give rise to or otherwise result in any loss or liability.

9.2 ICAO shall advise the Parties about any such suits, proceedings, claims, demands, losses, or liability within a reasonable period of time after having received actual notice thereof. ICAO shall have control over any assertion or defense of the privileges and immunities of ICAO or any matter relating thereto, including the assertion or defense that ICAO is acting as mandatory for the Parties, for which only ICAO itself is authorized to assert and maintain. ICAO shall have the right to be represented in any such suit, proceeding, claim or demand by independent counsel of its own choosing and shall also be indemnified, held, and saved harmless by the Parties for such litigation costs and expenses and attorney's fees.

9.3 ICAO shall have the right to set-off any costs incurred pursuant to this Article from any remaining funds received under this Agreement.

9.4 The obligation under this clause shall survive the termination of this Agreement.

APPENDIX A

**PROJECT BUDGET COVERING MSA CONTRIBUTION
(IN UNITED STATES DOLLARS)**

COUNTRY: REGIONAL PROJECT
 PROJECT NO: RAS14801
 PROJECT TITLE: COMMON REGIONAL VIRTUAL PRIVATE NETWORK (CRV) APAC
 WORK ORDER: RAS14801-01
 VERSION: 3

	TOTAL		2022		2023		2024		2025		2026	
	w/m	\$	w/m	\$	w/m	\$	w/m	\$	w/m	\$	w/m	\$
PROJECT PERSONNEL												
INTERNATIONAL PROFESSIONAL POSTS												
11.501	CONSULTANCIES AND CONTRACTORS (TSS FEE)	35 000	5 000	10 000	10 000	10 000						
	SUB-TOTAL (INTERNATIONAL PROFESSIONAL POSTS)	35 000	5 000	10 000	10 000	10 000						
16.001	INTERNATIONAL TRAVEL	11 000	2 000	2 000	2 000	3 000					2 000	
	TOTAL (PROJECT PERSONNEL)	46 000	7 000	12 000	12 000	13 000					2 000	
EQUIPMENT												
41.001	EXPENDABLE EQUIPMENT - INTERNATIONAL	30 000	10 000	20 000								
	TOTAL (EQUIPMENT)	30 000	10 000	20 000								
MISCELLANEOUS												
51.001	REPORTING COSTS	2 200										2 200
52.001	MISCELLANEOUS EXPENSES	2 000	500	800	300	300						400
B807F	PROFESSIONAL LIABILITY INSURANCE											
53.001	OVERHEAD CHARGES	7 500	2 100	2 700	1 200	1 300						200
	TOTAL (MISCELLANEOUS)	12 000	2 600	3 500	1 500	1 600						2 800
	PROJECT TOTAL	88 000	19 600	35 500	13 500	14 600					4 800	