International Civil Aviation Organization

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

Asia and Pacific Regional Sub-Office, Beijing, China
(21 – 25 July 2014)

Agenda Item 4: **Aeronautical Fixed Service (AFS)**

4.1) Review report of the First Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/1) including development by CRV Task Force

**REQUEST FOR INFORMATION (RFI)
FOR THE ASIA PACIFIC COMMON REGIONAL
VIRTUAL PRIVATE NETWORK (CRV)**

(Presented by Thailand)

SUMMARY

This paper presents the draft Request for Information (RFI) for the Asia Pacific Common Regional Virtual Private Network (CRV) which will to be distributed to vendors.

1. INTRODUCTION

1.1　　　　The Common Regional VPN Task force (CRV TF) was established by APANPIRG with a mandate to provide a plan to implement a common region-wide IP network. In order to accomplish the task, the CRV Task Force has established the work program which includes the collection of data from ANSPs through an ICAO survey and from the network service providers trough a Request for Information (RFI).

1.2　　　　Consequently, ICAO APAC Regional Office issued State Letter ref. T 8/2.10, T8/10.21:AP170/13 (CNS) dated 18 December 2013 in order to collect data from ANSPs and RFI was developed by the TF. The attached draft Request for Information (RFI) will be utilized for collecting data from network service providers (Vendors).

2. DISCUSSION

2.1　　　　Following the State Letter, fifteen organizations have positively contributed by answering the ICAO APAC Survey attached in the State Letter. Although the collected data is sufficient, data from more ANSPs is necessary to assure the thorough evaluation by the CRV TF and prospect network service providers. Therefore, CRV TF would like to encourage the States/ANSPs, who have not yet responded to the State Letter, to complete and return the APAC Survey to ICAO APAC Regional office as soon as possible. The minimum information expected before 30 July is to provide the communication site location and contact details at **Appendix 1**.

2.2   With regard to the data collected from network service providers, the CRV TF members have prepared the draft RFI as presented in the **Appendix 2**. The objective to collect data from vendors is to define clear user requirements in the Sealed Tender process, an awareness of typical pricing schemes/prices, and insight into evaluation criteria.

2.3   The draft was developed in compliance with the RFI structure that resulted from CRV TF/2 meeting.

2.4   The RFI is clearly considered by the CRV TF as part of the study mandated by decision 24/32 as it will bring necessary data from the market, and does not commit any State/Administration to further procure any service from any vendor.

2.5   The RFI will not be used for selecting/eliminating vendors. Non response to this RFI will not preclude any service providers from participating in the Sealed Tender. The tendering process will be conducted through the Sealed Tender process in accordance with the ICAO procurement.

2.6   The draft RFI document asks for network-related information and provides templates/schedules for network service providers to complete their responses in an uniform manner and ease the analysis process.

2.7   In order to ensure accessibility to as many network services providers as possible, States are encouraged to provide link to the posted document from their respective websites. The milestones of the RFI process are as follow:

15 August 2014	Public RFI issuance for all telecommunication Service Providers
17 October 2014	Deadline to receive questions
03 November 2014	Deadline to receive RFI responses from service providers wishing to present at the **15 December** CRV TF session
28 November 2014	Deadline to receive RFI responses from service providers not wishing to present at the **15 December** CRV TF session
28 November 2014	Deadline for sending out the presentation for the **15 December** session to the CRV TF
15 December 2014	Presentation of responses to CRV TF (duration of slot will be fairly allocated), questions and answers

2.8   This material will be finalized before 30 July 14 by CRV participants and published on ICAO website before 15 August 14. States/Administrations are invited to publish a link on their website to relay the information.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

    a)   note the information contained in this paper;

    b)   note the information in the draft RFI document placed at **Attachment A**;

    c)   to urge States/Administrations which have not yet responded to ICAO State Letter ref. T 8/2.10, T8/10.21:AP170/13 (CNS) dated 18 December 2013, to provide response according to the APAC Survey or at least complete Attachment A with their communication site location and contact details;

    d)   to invite States/Administrations to publish a link to the ICAO RFI webpage on their own website to relay the information ; and

    e)   discuss any relevant matters as appropriate.

— — — — — — — — — — — —

Request For Information (RFI)
for the
Asia Pacific Common Regional Virtual Private Network (CRV)

Dear Service Providers:

The current point-to-point circuit based telecommunications system for the Asia/Pacific region uses dated technology and is increasingly difficult to maintain and update. This Request For Information (RFI) is to solicit industry input on current technologies to replace the existing system and provide cost-effective growth in both network participants and capacity. The Asia Pacific CRV will provide interactive voice and data telecommunications services between air traffic control facilities associated with international airports in several States located in the Asia/Pacific Region.

The Asia and Pacific (APAC) Regional Office of the International Civil Aviation Organization (ICAO) on behalf of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) – Communication/Navigation/Surveillance and Meteorology (CNS MET) Sub-Group – Aeronautical Communication Service (ACS) Implementation Co-ordination Group (ACSICG) – Common Regional Virtual Private Network (VPN) Task Force (CRV TF), formal technical entity representing all the Asia Pacific member States/Organizations, is issuing the Request For Information (RFI) document.

Based on responses to this RFI, a Request for Proposal (RFP) under a tendering procurement process will be issued. ICAO in support of the CRV TF will assist the tender procurement process to select a Service Provider and negotiate the terms for a five (5) year contract with a five (5) year option contract that will be signed between the chosen Service Provider and each host Government participating in the Asia Pacific CRV.

Prospective service providers interested in responding to this RFI are asked to issue a written RFI Response by **03 November 2014.**

Prospective service providers willing to present their proposal on **15 December 2014** at the ICAO Asia-Pacific Regional Office located in 252/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900, Thailand are requested to issue a copy of the presentation by **28 November 2014**. Any presentation received after **28 November 2014 will not be accepted.**

RFI Responses received between **03 November** and **28 November** will be accepted, but those service providers will not be invited to present at the **15 December** meeting.

Non response to this RFI will not preclude any service providers from participating in a potential future Sealed Tender.

The RFI documentation is posted on the ICAO APAC Regional Office website
http://www.xxxxxxxxxxx.html.

        Thank you for participating in this process for the modernization of the Asia Pacific communications.

Asia Pacific Common Regional VPN Task Force

Instructions to Prospective Service Providers
For Response to
Request for Information (RFI)

Aeronautical Fixed Services Telecommunications Network "Asia Pacific CRV"

1. This REQUEST FOR INFORMATION is addressed to telecommunication service providers that would like to participate in the modernization process for Asia Pacific air traffic control communications. Companies interested in responding to this RFI are asked to issue a written RFI Response by **17h00 (ICT) on 03 November 2014**. For those vendors expressing interest, the Asia Pacific CRV TF will provide answers to questions that are submitted by e-mail or any other communication means during the permitted time frame.

2. Responses to the RFI must be in English. A hard copy response, with its corresponding electronic version, is requested by **17h00 (ICT) on 03 November 2014** to the attention of:

    Asia Pacific CRV TF
    International Civil Aviation Organization (ICAO) Asia and Pacific Office (ICAO-APAC)
    252/1 Vibhavadi-Rangsit Road, Chatuchak,
    Bangkok 10900, Thailand.

    The electronic version will be forwarded to apac@icao.int in pdf format. Make sure that questionnaire and schedules are forwarded also in format word and excel respectively.

3. The question/answer period regarding the Asia Pacific CRV RFI will be until **24 October 2014**. Questions must be received by email no later than **17h00 (ICT) on 17 October 2014**. All questions and answers to those questions will be posted on the Asia Pacific CRV RFI Webpage http://www.xxxxxxxxx.html no later than **17h00 (ICT) on 24 October 2014**. The identity of the party posing questions will not be divulged to any of the other parties. Service Provider information marked Proprietary or Confidential will not be divulged to any of the other parties. All questions are to be addressed to the following email: apac@icao.int.

4. The following milestones for the Asia Pacific CRV RFI process must be considered by all interested Service Providers:

15 August 2014	Public RFI issuance for all telecommunication Service Providers
17 October 2014	Deadline to receive questions at apac@icao.int. Questions and answers to those questions will be posted on the Asia Pacific CRV RFI Webpage (http://www.xxxxxxxxx.html) by **24 October 2014**.
03 November 2014	Deadline to receive RFI responses from service providers wishing to present at the **15 December** CRV TF session
28 November 2014	Deadline to receive the presentation for the **15 December** session to the CRV TF
28 November 2014	Deadline to receive RFI responses from service providers not wishing to present

15 December 2014	at the **15 December** CRV TF session Presentation of responses to CRV TF (duration of slot will be fairly allocated), questions and answers

5. The technical aspects for the network system described in this Asia Pacific CRV RFI are based on the "Common Regional Virtual Private Network (CRV) Of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) Concept of Operations", dated 19 June 2014.

6. Please include in your response any accompanying figures, tables, and commercial literature that support the requested content of the RFI response. Technical data and accompanying information presented in a tabular or summary format will be acceptable. No elaborate technical, management, or cost proposals are being requested at this time however you are expected to provide price estimations for the technical solution proposed. **Also include responses to the questionnaire in the attached document "APAC CRV RFI Response Schedule".**

Instructions:
The table below is to provide supporting information to the Main Response Schedule. If no information can be provided please insert "N/A".
Please insert additional column headings schedule references where necessary. If so, please reference this in the Response Schedule.

State/Administration	ANSP/Civil Aviation Site	City	Services installation Address	Telephone / Fax	Stage 1	Stage 2	Schedule 2.3	Schedule 2.3
Afghanistan		Kabul	Kabul International Airport	Tel: Fax:	No	Yes		
American Samoa		Pago Pago	Pago Pago International Airport	Tel: Fax:	No	Yes		
Australia	Airservices Australia	Brisbane	Air Traffic Services Centre Airport Drive, Eagle Farm, Queensland 4009 Australia	Tel: +61-7-3866-3580 Fax:	Yes	Yes		
Australia	Airservices Australia	Melbourne	Air Traffic Services Centre, Tower Road Tullamarine, Victoria Australia	Tel: 61 2 6268 4111 Fax:	Yes	Yes		
Bangladesh		Dhaka	Hazrat Shahjalal International Airport	Tel: Fax:	No	Yes		
Bhutan		Paro	Paro Airport	Tel: Fax:	No	Yes		
Brunei Darussalam		Brunei	Brunei International Airport	Tel: Fax:	No	Yes		
Cambodia		Phnom Penh	Phnom Penh International Airport	Tel: Fax:	No	Yes		
China		Beijing	Beijing Xijiao Airport	Tel: Fax:	No	Yes		
China		Guangzhou	Guangzhou Baiyun International Airport	Tel: Fax:	No	Yes		
China, Hong Kong		Hong Kong	Air Traffic Control Complex, 1 Control Tower Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: Fax:	Yes	Yes		
China, Macau	AGA. Administration of Airports	Macau	Macau International Airport FAC on Taipa Macao, China	Tel: (+853) 2886 111 Fax:	Yes	Yes		
China, Taibei		Taibei			No	Yes		
Cook Islands		Rarotonga	Rarotonga International Airport	Tel: Fax:	No	Yes		
Democratic People's Republic of Korea		Pyongyang	Pyongyang City	Tel: Fax:	No	Yes		
Fiji	Airports Fiji Limited	Nadi	Nadi Air Traffic Management Center Nadi International Airport Queens Road, Nadi, Fiji	Tel: Fax:	Yes	Yes		
French Polynesia		Papeete	Fa'a'ā International Airport	Tel: Fax:	Yes	Yes		
India	Airports Authority of India	New Delhi	Rajiv Gandhi Bhawan New Delhi- 110003	Tel.: 91-11-24653075 Fax: 91-11-24654142	Yes	Yes		
Indonesia	Jakarta ATS Centre	Jakarta	Soekarno-Hatta International Airport Jakarta, Tangerang, Banten 19120 Indonesia	Tel: Fax:	No	Yes		
Indonesia	Makassar ATS Centre	Makassar	Sultan Hasanuddin International Airport Jalan Raya Airport No. 1 Makassar Sulawesi 90552, Indonesia	Tel: Fax:	No	Yes		
Japan	Systems Development, Evaluation and Contingency Management Center (SDECC)	Osaka	2-2 Koku Ikeda-city Osaka-pref 563-0034 Japan	Tel: Fax:	Yes	Yes		
Japan	Air Traffic Management Center (ATMC)	Fukuoka	1302-17 Nata-Higashi-ku Fukuoka-city Fukuoka-Pref 811-0204 Japan	Tel: Fax:	Yes	Yes		
Kiribati		Tarawa	Bonriki International Airport	Tel: Fax:	No	Yes		
Lao People's Democratic Republic		Vientiane	Wattay International Airport	Tel: Fax:	No	Yes		
Malaysia	Kota Kinabalu Air Traffic Control Centre	Kota Kinabalu	Bangunan ATCC 88810 Kota Kinabalu Sabah	Tel: +6088 224911 Fax: +6088 219198	Yes	Yes		
Malaysia	Kuala Lumpur Air Traffic Control Centre (KL ATCC)	Selangor	Air Traffic Control Centre Block B, ATCC Complex Sultan Abdul Aziz Shah Airport 47200 Subang Selangor Darul Ehsan	Tel: +603 78471573 Fax: +603 78471572	Yes	Yes		
Malaysia	Kuching Sub-Centre Kuching Air Traffic Control Centre	Kuching	Kuching International Airport 93728 Kuching Sarawak	Tel: +6082 455572 Fax: +6082 453199	Yes	Yes		
Maldives		Male	Malé International Airport	Tel: Fax:	No	Yes		
Marshall Islands		Majuro	Marshall Islands International Airport	Tel: Fax:	No	Yes		
Micronesia (Federated States of)	Chuuk/Kosrae/ Ponape/Yap	Pohnpei International Airport		Tel: Fax:	No	Yes		
Mongolia	Communication Navigation Surveillance section, Civil Aviation Authority of Mongolia	Ulaanbaatar	Khan-Uul district, 10th khoroo, Buyant-Ukhaa, Ulaanbaatar, Mongolia	Tel: +976 11 281603 Fax: +976 11700497B5	Yes	Yes		
Myanmar	Department Of Civil Aviation	Yangon	ATC Tower Building, Yangon Int'l Airport Airport Road, (11021), Mingaladon Tsp Yangon, Myanmar	Tel: 95-1-533045 Fax:	Yes	Yes		
Nauru		Nauru	Nauru International Airport – Yaren	Tel: Fax:	No	Yes		
Nepal		Kathmandu	Tribhuvan International Airport	Tel: Fax:	No	Yes		
New Caledonia		Noumea	Nouméa Magenta Airport,	Tel: Fax:	Yes	Yes		
New Zealand	Airways New Zealand	Christchurch	20 Sir William Pickering Drive, Russley, Christchurch, New Zealand	Tel: Fax:	Yes	Yes		
New Zealand	Airways New Zealand	Auckland	Cyrill Kay Road, Auckland Airport, Auckland, New Zealand	Tel: Fax:	Yes	Yes		
Niue Islands					No	Yes		
Pakistan		Karachi	Jinnah International Airport	Tel: Fax:	No	Yes		
Palau		Koror	Roman Tmetuchl International Airport	Tel: Fax:	No	Yes		
Papua New Guinea		Port Moresby	Jacksons International Airport Morea-Tobo Rd Port Moresby 121 Papua New Guinea	Tel: Fax:	No	Yes		
Philippines	Civil Aviation of the Philippines	Pasay City	Old Mia Road, Pasay City, Philippines, 1300	Tel: +63-2-8799255 Fax:	Yes	Yes		
Republic of Korea	AFTN Center	Seoul	62, Haneul-Gil Gangseo-Gu Seoul, 157-711, Korea	Tel: + 823 28800335 Fax:	Yes	Yes		
Samoa		Faleolo	Faleolo International Airport	Tel: Fax:	No	Yes		
Singapore	Singapore Air Traffic Control Centre	Singapore	LORADS II Building, 60, Biggin Hill Road, Singapore Postal Code 509950	Tel: 6214 8050/05 Fax: 6545 9370	Yes	Yes		
Solomon Islands		Honiara	Honiara International Airport	Tel: Fax:	No	Yes		
Sri Lanka		Colombo	Colombo Ratmalana Airport	Tel: Fax:	No	Yes		
Thailand	Aeronautical Radio Of Thailand LTD	Bangkok	102 Ngamduplee Tungmahamek sathorn Bankkok Thailand 10120	Tel: 0-2287-3531-41 Fax:	Yes	Yes		
Timor Leste		Dili	Presidente Nicolau Lobato International Airport	Tel: Fax:	No	Yes		
Tonga		Tongatapu	Fua'amotu International Airport	Tel: Fax:	No	Yes		
Tuvalu		Funafuti	Funafuti International Airport	Tel: Fax:	No	Yes		
United States	FAA Oakland Air Route Traffic Control Center	Oakland	5125 Central Avenue Fremont, CA 94536-6531	Tel.: 510-745-3000 Fax:	Yes	Yes		
United States	FAA Salt Lake City Network Enterprise Management Center	Salt Lake City	2150 W. 700 N. Salt Lake City UT 84116	Tel.: 801-320-2172 Fax:	Yes	Yes		
Vanuatu		Port Vila	Bauerfield International Airport	Tel: Fax:	No	Yes		
Viet Nam		Ho Chi Minh/Hanoi	Tan Son Nhat International Airport Noi Bai International Airport	Tel: Fax:	No	Yes		
Wallis and Futuna		Wallis	Hihifo Airport	Tel: Fax:	Yes	Yes		

Instructions:

In the Green cells record the indicative Country to Country (within the APAC sits) Jitter (ms)

In the Mustard cells record the indicative Country to Country (within the APAC sits) Round time Trip (ms)

Column headers (left to right):

Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Fiji, Hong Kong China, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Macau, Malaysia, Maldives, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Nauru, Nepal, New Caledonia, New Zealand, Niue Islands, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Sri Lanka, Taibei, Thailand, Timor Leste, Tonga, Tuvalu, United States, Vanuatu, Vietnam, Wallis Island

Row labels (top to bottom):

- Afghanistan
- Australia
- Bangladesh
- Bhutan
- Brunei Darussalam
- Cambodia
- China
- Cook Islands
- Democratic People's Republic of Korea
- Fiji
- Hong Kong China
- India
- Indonesia
- Japan
- Kiribati
- Lao People's Democratic Republic
- Macau
- Malaysia
- Maldives
- Marshall Islands
- Micronesia (Federated States of)
- Mongolia
- Myanmar
- Nauru
- Nepal
- New Caledonia
- New Zealand
- Niue Islands
- Pakistan
- Palau
- Papua New Guinea
- Philippines
- Republic of Korea
- Samoa
- Singapore
- Solomon Islands
- Sri Lanka
- Taibei
- Thailand
- Timor Leste
- Tonga
- Tuvalu
- United States
- Vanuatu
- Vietnam
- Wallis Island

Instructions:

In the Green cells record the indicative Country to Country (within the APAC sits) Pack Loss (%)

In the Mustard cells record the indicative Country to Country (within the APAC sits)
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Column headers (left to right): Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Fiji, Hong Kong China, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Macau, Malaysia, Maldives, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Nauru, Nepal, New Caledonia, New Zealand, Niue Islands, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Sri Lanka, Taibei, Thailand, Timor Leste, Tonga, Tuvalu, United States, Vanuatu, Vietnam, Wallis Island

Row headers (top to bottom):
- Afghanistan
- Australia
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- Bhutan
- Brunei Darussalam
- Cambodia
- China
- Cook Islands
- Democratic People's Republic of Korea
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- Hong Kong China
- India
- Indonesia
- Japan
- Kiribati
- Lao People's Democratic Republic
- Macau
- Malaysia
- Maldives
- Marshall Islands
- Micronesia (Federated States of)
- Mongolia
- Myanmar
- Nauru
- Nepal
- New Caledonia
- New Zealand
- Niue Islands
- Pakistan
- Palau
- Papua New Guinea
- Philippines
- Republic of Korea
- Samoa
- Singapore
- Solomon Islands
- Sri Lanka
- Taibei
- Thailand
- Timor Leste
- Tonga
- Tuvalu
- United States
- Vanuatu
- Vietnam
- Wallis Island

Instructions:

In the Green cells record the indicative Country to Country data restriction EG: no direct IPSEC VPN, no inter contry connectivty allowed, etc.

For no country to country connectivty format the cell colour Pink and insert N.

For restricted country to country connectivty format the cell colour Mustard and insert R.

For no restriction leave the cell clolour green.

Orange cells with a Y reflect current data flows. Please note that in the CRV data could interflow between any contry.

For any restrictions, please use the table below called reasons to explain restricitions

	Afghanistan	Australia	Bangladesh	Bhutan	Brunei Darussalam	Cambodia	China	Cook Islands	Democratic People's Republic of Korea	Fiji	Hong Kong China	India	Indonesia	Japan	Kiribati	Lao People's Democratic Republic	Macau	Malaysia	Maldives	Marshall Islands	Micronesia (Federated States of)	Mongolia	Myanmar	Nauru	Nepal	New Caledonia	New Zealand	Niue Islands	Pakistan	Palau	Papua New Guinea	Philippines	Republic of Korea	Samoa	Singapore	Solomon Islands	Sri Lanka	Taibei	Thailand	Timor Leste	Tonga	Tuvalu	United States	Vanuatu	Vietnam	Wallis Island
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India			Y	Y			Y																																							
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Wallis Island					Y			Y																																						

Reasons

From Country	To Country	Reason for Restriction

ASIA PACIFIC CIVIL AVIATION AUTHORITIES AND AIR NAVIGATION SERVICE PROVIDERS

Request for Information (RFI)

Asia Pacific Common Regional Virtual Private Network (CRV)

RFI RESPONSE SCHEDULES

Table of Contents

INTRODUCTION

These are the Response Schedules for the Asia Pacific Civil Aviation Authorities and Air Navigation Service Providers Asia Pacific Common Regional Virtual Private Network (CRV) Request for Information. These schedules must be completed in full.

The Information Response Schedules set out in this RFI, describe the information that the Respondent is required to provide in their Response. It is the Respondent's responsibility to ensure that the information provided is clear, accurate and complete to allow a full assessment.

The Respondent must specifically address every item in each Information Response Schedule in the format set out and/or requested in that Schedule. Where the Respondent is required to provide additional requirements or further information, the Respondent must clearly mark the Schedule/Annexure with the applicable Schedule reference.

If a section is not applicable or relevant to the Response, please place "N/A" in the relevant schedule.

RESPONSE SCHEDULES CHECK LIST

Schedule	Information Response Description and Summary	Complete (Yes / No / NA)	Comments (e.g. title and location within Response
1	Respondents Details	Yes	
2	Infrastructure Capability And Capacity	Yes	
3	System Architecture	Yes	
4	Service level undertakings	Yes	
5	Network and Service Management	Yes	
6	Project implementation	Yes	
7	Financial considerations	Yes	
8	Contractual considerations	Yes	
9	Supplementary Information	Yes	
10		Yes	
11		Yes	
12		Yes	
13		Yes	
14		Yes	
15		Yes	

SCHEDULE 1:   RESPONDENT'S DETAILS

The Respondent is required to provide the following information, as applicable:

1.1. Respondent's full name.

1.2. If a company, its registered office and principal place of business.

1.3. Any trading or business name.

1.4. Name and contact details of the representative in responsible for the Respondent's Response (who will be responsible for answering all requests for clarification or further information).

Name	
Position	
Postal Address	
Email	
Work office Phone	
Work Mobile phone	

1.5. Location of the Respondent's main administrative centre and the place(s) from which supply of the Requirement would be managed and supplied.

Notes: An Excel file entitled "APAC CRV Participant Site Schedule" known as "Site Schedule" in this document has been provided for response options to be submitted as part of the *Response*. The *Respondent* will annex this requirement to their *Response* marked as "Schedule 9.2 – CRV Participant Site Schedule".

This schedule will assist in recording and analysing common information across Participants sites and Respondents are encouraged to use the CRV Participant Site Schedule.

SCHEDULE 2: INFRASTRUCTURE CAPABILITY AND CAPACITY

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2.1.   Describe your current network infrastructure in the Asia Pacific Region. Including details of your IP VPN Networking capabilities.

2.2.   List if possible current notable customers in the APAC region.

2.3.   Indicate in which countries you own your infrastructure and in which countries you lease or in partnership with another service provider for the provision of their telecommunications infrastructure.

Refer Site Schedule, Worksheet "Schedule Responses" Column H - M

2.4.   There are 21 Participant sites during the initial phase of this RFI. In the future the CRV may require additional 31 sites in the Asia Pacific region. Describe your ability to provide telecommunications services to all Participant sites as detailed in **Site Schedule**.

Refer Site Schedule, Worksheet "Schedule Responses" Column N

2.5.   Provide details regarding your capabilities to deliver IP services using IPv6 and/or IPv4

Refer Site Schedule, Worksheet "Schedule Responses" Column O

2.6.   List the typical Products/Services that are generally available to be provided, such as but not limited to International Private Line (IPL), Ethernet Virtual Private Line (EVLP), IP Virtual Private Network (IPVPN).

2.7.   If possible, list minimum and maximum Ethernet Line (Access) Speeds that are available at each Participants site.

Refer Site Schedule, Worksheet "Schedule Responses" Column P - Q

2.8.   If possible, list minimum and maximum Ethernet Port Speeds that are available at each Participants site.

Refer Site Schedule, Worksheet "Schedule Responses" Column R - S

2.9. If possible, list physical handoff options the for the Products/Services such as but not limited to Single Mode Fibre, Multimode Fibre, Copper, etc

Refer Site Schedule, Worksheet "Schedule Responses" Column T

2.10. List the typical traffic that could be carried by the CRV such as but not limited to XOT, TCP, UDP and VoIP.

2.11. Provide details of the class of service (CoS) that can be provided to segment traffic streams and prioritise the traffic such as but not limited to Voice, Video, Critical Data, Interactive Data, Standard Data, Low Priority Data

2.12. Detail what are your typical site requirements (installation, power, remote logical access, etc), include if these requirements vary in accordance with offered service level agreements (expected performance).

2.13. Include any additional information in relation to Infrastructure Capability And Capacity below

SCHEDULE 3: SOLUTION ARCHITECTURE

3.1. Describe in detail your understanding of the function and purpose of Civil Aviation Authorities and Air Navigation Service Providers in the APAC Region and the services that they provide.

3.2. Describe in detail your proposed typical solution architecture(s) for the CRV that could meet the requirements and address the issues as detailed in the Concept of Operations.

3.3. Describe the scalability of proposed solution architecture.

3.4. Describe the methodologies and process that would be used in the design of a solution and how you will iterate with the CRV Task Force to build and validate a final design.

3.5. System security requirements apply to the protection of the physical information technology, the communications equipment, and the data. Protection also applies to the facilities, environment, hardware, software, and people associated with the CRV.

Detail how you would protect data directly associated with the CRV from unauthorized disclosure, modification, or deletion and protect CRV services and resources from unauthorized use and denial of service.

3.6. Detail any country to country data restrictions that may apply for data that is transported by an IP Network.

Refer Site Schedule, Worksheet "Data Restriction Matrix"

3.7. List reference customers to whom you have provided network related services where that customer's traffic/data should be protected from third parties during transmission across a network.

3.8. Include any additional information in relation to Solution Architecture below

SCHEDULE 4: SERVICE LEVEL UNDERTAKINGS

4.1. Provide reference customers to whom you have provided network related services that support the customer's high available environment.

4.2. Provide reference customers to whom you have provided network related services where a network outage may contribute to safety of life concerns, and/or for whom you have contributed to a safety case.

4.3. Describe your capability to meet the availability and reliability performance parameters as specified in the Concept of Operations, and how you would meet safety requirements.

4.4. Detail the service levels and rebates that are available in respect to the following:-
Service Delivery: Service Provisioning Time,
Service Reliability: Service Availability and Mean Time to Restore
Network Performance: Round Trip Delay, Packet Loss, and Jitter.

For Service Delivery and Reliability, Refer Site Schedule, Worksheet "Schedule Responses" Column U – Z

For Network Performance, Refer Site Schedule, Worksheet "Jitter & RTT Performance Matrix" and "PL Performance Matrix"

4.5. Explain how/by whom service levels measurements would be done and reported during the life of the contract.

4.6. Briefly describe the availably of enhanced service levels and if possible the associated costs

Refer Site Schedule, Worksheet "Schedule Responses" Column AA

4.7. Detail the methodologies used to support the network redundancy, availability, reliability and maintainability

4.8.   Indicate your awareness of Required Communication Performance (RCP) and Required Surveillance Performance (RSP) and how they would map to your design/organization.

4.9.   Include any additional information in relation to Service Level undertakings below

SCHEDULE 5: NETWORK AND SERVICE MANAGEMENT

5.1. The CRV may cover up to more than 40 independent states and territories, Please describe your proposed customer service delivery engagement and contract management model to support the following stakeholders (as per Concept of Operations):
- CRV Operation Oversight Group.
- Each Participant

Note: for this schedule 5, you may refer to the ISO Telecommunications Management Network model and framework for network management FCAPS. FCAPS is an acronym for fault, configuration, accounting, performance, security, the management categories into which the ISO model defines network management tasks. Any explicit mapping to those task definitions in your response would be an asset.

5.2. Describe your capability to provide a dedicated 24/7/365 Service Desk staff with technical personal that have awareness of aviation applications, knowledge of business recovery processes and knowledge of safety implications of disruption to the CRV

5.3. Detail your general Global Service Desk including hours of contract, methods of contact, fault management, fault update guidelines, problem severities and national and international escalation process,

5.4. Describe your change management and notification process for services impacted by your Planned Network Maintenance. This should include details supporting change to design documentation and scheduled maintenance.

5.5. Describe your process for managing customer initiated changes

5.6. Briefly describe your service management reporting, which could include network health, report faults, service restoration times, etc. Also detail the methods that these reports are available to be received.

5.7. Briefly describe capability to provide online (internet based) real-time monitoring and report tools available for use by the Participants own service

desk or technical operations centres to provide their own first line fault/failure analysis.

5.8. Include any additional information in relation to Network and Service Management below

SCHEDULE 6:   PROJECT IMPLEMENTATION

6.1.   Summarize the main programmatic steps you will take to ensure the successful design, implementation, transition and cutover to operation of the CRV network system and required telecommunications services.

6.2.   Describe your basic program management approach, availability of management/technical staff and field resources, and provide an early high level milestone schedule of events and key decision points for the program as seen from their perspective and based on their experience with similar programs, which would take into account a close coordination with each Civil Aviation Authority/Air Navigation Service Provider for installation/decommissioning purposes.

6.3.   Identify any requirements for specific support, decisions, or actions required by the Participants during the course of the program that will affect your ability to meet your schedule commitments.

6.4.   Identify any long lead-time, development items, or implementation activities that may potentially impact your ability to meet Participants requirements for operational services.

6.5.   Include any additional information in relation to Project Implementation below

SCHEDULE 7:   OPTIONAL: FINANCIAL CONSIDERATIONS

Important note: the following considerations will help the CRV Task Force to consolidate its cost benefit analysis and user requirements. They will not be made public in any way. The resulting cost benefit analysis will only quote prices without any reference to any vendor.

7.1.	Please indicate if pricing per Participant country includes or excludes local and or national government taxes and charges.

Refer Site Schedule, Worksheet "Schedule Responses" Column AB

7.2.	For services offered to the Participants for operation and maintenance of the network, please detail the billing method(s) proposed (One-Time Charge, Monthly, Quarterly, Yearly, Pre-Paid, Post-Paid, etc).

7.3.	For billing services, please detail any proposed rebates for issues arising from incorrect billing

7.4.	Detail any conditions and potential cost associated with the early termination of service

Refer Site Schedule, Worksheet "Schedule Responses" Column AC

7.5.	Provide any cost associated with customer initiated changes in US Dollars.

Refer Site Schedule, Worksheet "Schedule Responses" Column AD

7.6.	Provide indicative costs for typical Port Speeds at the Participants Sites in US Dollars for services annually over a 5 year contract

Refer Site Schedule, Worksheet "Schedule Responses" Column AE - AH

7.7.	Provide indicative costs for typical Line (Access) charges at the Participants Sites in US Dollars for services annually over a 5 year contract

Refer Site Schedule, Worksheet "Schedule Responses" Column AI - AL

7.8.	Provide indicative one off costs associated with the provision of a new service

at the Participants Site, including but not limited to commercial or enterprise works, setup of port charge, installation of access (NTU).

Refer Site Schedule, Worksheet "Schedule Responses" Column AM

7.9. Should a final solution include a managed device on the Participants Site such as but not limited to a Router, Switch and or Firewall, please indicate the indicative annual costs associated with the provision of that device in US Dollars annually over a 5 year contract

Refer Site Schedule, Worksheet "Schedule Responses" Column AN - AO

7.10. If any, provide indicative recurrent costs for the provision of the core CRV network per country in US Dollars annually over a 5 year contract. If you plan to have a pricing scheme based on a number of countries/sites/Service Level Agreement/years, please provide early information.

Refer Site Schedule, Worksheet "Schedule Responses" Column AP

7.11. Provide information on other potential ongoing costs not covered in the RFI per country in US Dollars annually over a 5 year contract, such as project management, safety case, global service desk, etc.

Refer Site Schedule, Worksheet "Schedule Responses" Column AQ

7.12. Include any additional information in relation to Financial Considerations below

SCHEDULE 8:   CONTRACTUAL CONSIDERATIONS

8.1.   The CRV may cover up to 44 independent states and territories, Describe in detail your proposed method of contracting each of the participants for the proposed core CRV and the services installed at each of the Participants Sites

8.2.   Please provide minimum and maximum contract terms per Participant country, include any renewal notice periods.

8.3.   Include any additional information in relation to Contractual Considerations below

SCHEDULE 9:   SUPPLEMENTARY INFORMATION

Respondents are required to provide the following information, as applicable:

9.1.   Respondents are to provide any and all supplementary information Respondents wants to provide. Any documents must be annexed to the Response and marked "Schedule **Error! Reference source not found.** – Supplementary Information".

SCHEDULE 10:   DEFINITIONS

Item	Meaning
APAC	ICAO Asia Pacific Region
CRV	Asia Pacific Common Regional VPN
VPN	Virtual Private Network
Participants	Asia Pacific Civil Aviation Authorities and Air Navigation Service Providers as listed in "CRV Site Schedule"