*International Civil Aviation Organization*

**THE FIFTEENTH MEETING OF THE COMMON AERONAUTICAL VIRTUAL PRIVATE NETWORK OPERATIONS GROUP (CRV OG/15)**

*Mumbai, India, 15-19 June 2026*

**Agenda Item 10:** MPLS/IP based inter-regional connection

# REDDIG III GOVERNANCE MODEL, NEED FOR INTER-REGIONAL CONNECTIVITY AND POSSIBLE ESTABLISHMENT OF A REDDIG NODE IN NEW ZEALAND

(Presented by the ICAO SAM Regional Office – Project RLA03/901)

**SUMMARY**

This working paper presents the governance, operational and financial framework of REDDIG III, as well as opportunities for inter-regional connectivity between the SAM and APAC Regions. It also describes the possible establishment of a REDDIG III node in New Zealand as a complementary initiative aimed at strengthening interoperability, resilience and technical cooperation between both regions. The proposal is not intended to replace or modify the existing capabilities of the CRV network, but rather to explore mechanisms that could facilitate future CNS/ATM services, including AMHS, AIDC, ATS Voice, surveillance and SWIM applications.

## 1. INTRODUCTION

1.1 The increasing digitalization of Air Traffic Management (ATM), together with the implementation of AMHS, AIDC, ATS Voice over IP, surveillance data exchange and future SWIM applications, requires robust, secure and interoperable regional telecommunications infrastructures.

1.2 The ICAO South American Region has developed and operated REDDIG for more than twenty years, evolving from a VSAT-based infrastructure into a modern regional IP/MPLS platform capable of supporting multiple CNS/ATM services.

1.3 In parallel, the Asia/Pacific Region continues advancing the modernization of the Common aeRonautical Virtual Private Network (CRV) and assessing future architectures capable of supporting growing operational and information-sharing requirements.

1.4 During the Joint Meeting of the CRV Operations Group Ad Hoc Experts and REDDIG Experts held on 23 October 2025, participants reviewed REDDIG governance arrangements, funding mechanisms, technical architecture, decision-making processes, and opportunities for future interconnections between CRV and REDDIG.

## 2. DISCUSSION

BACKGROUND

2.1 Evolution of REDDIG

The REDDIG Programme has evolved through three major phases:

a) REDDIG I (2003): Regional VSAT-based network supporting basic aeronautical communication services;

b) REDDIG II (2015): Hybrid MPLS and satellite architecture that significantly increased network capacity, availability and interoperability;

c) REDDIG III (2026–2031): Fully terrestrial MPLS architecture featuring dual connectivity, cloud-oriented design, enhanced cybersecurity capabilities, SD-WAN functionalities, improved resilience and support for future CNS/ATM services.

2.2 REDDIG III has been conceived as a regional digital platform supporting:

a) AMHS services;

b) ATS Voice over IP (ED-137);

c) ADS-B data distribution and other surveillance systems;

d) AIDC implementations;

e) Surveillance data exchange;

f) SWIM services and aeronautical information exchange;

g) Inter-regional connectivity initiatives

2.3 REDDIG currently interconnects more than twenty States and Territories while maintaining operational connections with organizations and infrastructures located in North America, Europe, Africa, the Caribbean and South America.

REDDIG GOVERNANCE FRAMEWORK

2.4 The REDDIG governance structure is based on a regional collaborative model composed of:

a) The ICAO SAM Regional Office acting as Project Management/Secretariat and ICAO PRO for contracts processing as per REDDIG requires;

b) The REDDIG Coordination Committee (RCC) as the principal decision-making body (Members Board);

c) Participating States and ANSPs as owners, beneficiaries and members of RCC;

d) The REDDIG Administrator (Based in Manaos Brazil), responsible for technical network management together with a 24/7 staff provided by DECEA Brazil (ANSP) and building facilities for main NCC;

e) Specialized technical groups covering Voice, Surveillance, AMHS, SWIM, technical cooperation and Cybersecurity, among others.

2.5 Strategic, technical and financial decisions are adopted through consensus-based mechanisms within the RCC, ensuring the active participation of all member States.

2.6 Technical studies, implementation proposals and operational recommendations are developed by specialized groups and subsequently submitted to the RCC for consideration and approval.

FINANCIAL AND CONTRACTUAL FRAMEWORK

2.7 REDDIG operates under a collaborative cost-recovery model, through which participating States contribute to the sustainability, modernization and continued evolution of the network. Under the governance framework established by the RCC, infrastructure expansions, technological enhancements and the introduction of new services are collectively evaluated and agreed upon, enabling REDDIG to evolve steadily for more than two decades while maintaining high levels of operational availability and service continuity.

INTER-REGIONAL CONNECTIVITY

2.8 REDDIG currently maintains operational interconnections with various international organizations and networks, including:

a) FAA operational nodes in the United States (Atlanta and Salt Lake City);

b) Aireon service nodes (Virginia and Arizona);

c) European facilities through Madrid;

d) African facilities through Johannesburg (with Dakar planned);

e) Interconnections supporting the NAM/CAR, WACAF and EUR Regions.

2.9 REDDIG III has been designed to facilitate interoperability with other regional IP networks through standardized MPLS/IP architectures and Network-to-Network Interconnection (NNI) mechanisms.

2.10 Future inter-regional connectivity initiatives include operational integration with CRV, New PENS and other regional aeronautical networks.

2.11 The present initiative is not intended to replace, modify or duplicate the capabilities currently provided by the CRV network or any other existing regional infrastructure. Rather, it seeks to explore technical cooperation mechanisms that may complement and strengthen existing capabilities by increasing resilience, route diversity and connectivity options between the APAC and SAM Regions, consistent with ICAO principles of interoperability, regional collaboration and mutual benefit.

POSSIBLE ESTABLISHMENT OF A REDDIG NODE IN NEW ZEALAND

2.12 Within the framework of coordination between the ICAO APAC and SAM Regional Offices, as well as discussions held among REDDIG participating States and CRV Operations Group members, the possibility of establishing a REDDIG III node in Auckland, New Zealand, has been identified as an initiative aimed at progressively strengthening operational connectivity between both regions and gaining practical experience in inter-regional connectivity while studies and analyses related to future connectivity between the CRV and REDDIG networks continue to advance.

2.13 This initiative has generated increasing interest among several South American States, as well as Panama and the Central American States (CENAMER), which recognize its potential to improve

CNS/ATM service exchange, enhance the resilience of trans-Pacific aeronautical communications and facilitate future operational cooperation initiatives between the APAC and SAM Regions.

2.14 The initiative could:

a) Improve communications between Auckland, Christchurch and South American aeronautical facilities;

b) Introduce alternative routing and greater resilience for AMHS and other ATS data exchange services;

c) Facilitate future AIDC implementations between adjacent oceanic FIRs;

d) Provide capabilities for future SWIM services;

e) Serve as a platform for broader APAC-SAM interoperability initiatives.

2.15 Preliminary technical studies indicate that this connectivity could be implemented using existing MPLS infrastructures and service-provider interconnections while preserving the operational and governance autonomy of each regional network.

2.16 The proposal could also provide valuable experience for future global connectivity initiatives among regional aeronautical networks.

2.17 The initiative represents an opportunity to further strengthen connectivity and the resilience of aeronautical services between the APAC and SAM Regions by leveraging existing and future infrastructures. REDDIG currently maintains operational nodes in Salt Lake City, Atlanta and Johannesburg, as well as its interconnection with the FAA, while the CRV infrastructure provides connectivity towards Australia and New Zealand. In this context, the evolution to REDDIG III envisages the incorporation of a node in Auckland, further expanding the geographical reach of the network and creating new opportunities for diversified and redundant communication routes between ICAO regions.

2.18 These capabilities could contribute to strengthening contingency mechanisms, service continuity, global information exchange and operational safety, consistent with ICAO strategic objectives and international efforts aimed at enhancing air navigation service resilience.

2.19 Considering that REDDIG III is currently undergoing the procurement process for its 2026–2031 operational period, with implementation expected to commence during the last quarter of 2026, participating States of the SAM Region have expressed preliminary interest in exploring mechanisms that would facilitate the initial establishment of this node within the framework of the REDDIG Regional Project, subject to approval by the relevant governance bodies. This approach would allow a gradual evaluation of the operational benefits of the initiative and provide practical experience in inter-regional connectivity before considering permanent cooperation and funding arrangements.

2.20 Several REDDIG participating States have preliminarily expressed their willingness to consider that the initial costs associated with the establishment of the REDDIG III node in New Zealand be absorbed within the framework of the REDDIG Regional Project, subject to approval by the RCC and participating States. This approach aims to facilitate the implementation of the initiative, demonstrate its operational benefits and allow future funding and sustainability arrangements to be jointly assessed by the APAC and SAM Regions.

BENEFITS AND OPPORTUNITIES OF INTERREGIONAL CONNECTION

2.21 Future interconnection between CRV and REDDIG III could:

a) Improve operational coordination among ANSPs in the APAC and SAM Regions;

b) Increase resilience and redundancy of aeronautical communications;

c) Facilitate ATM digital transformation;

d) Enhance readiness for SWIM implementation;

e) Increase surveillance data and aeronautical information exchange capabilities;

f) Strengthen global interoperability in support of the Global Air Navigation Plan (GANP);

g) Provide geographically diversified communication routes between the APAC and SAM Regions, contributing to enhanced ATM service resilience and supporting operational continuity and contingency management objectives.

PROPOSED COURSE OF ACTION

2.22 It is proposed to continue coordination among the ICAO APAC and SAM Regional Office, participating States/Administrations, ANSPs and telecommunications service providers in order to:

a) Assess technical architectures for a possible CRV–REDDIG interconnection;

b) Identify operational services that could benefit from such interconnection;

c) Evaluate associated governance and funding aspects;

d) Develop a phased implementation roadmap;

e) Identify future interoperability opportunities with other regional aeronautical networks.

## 3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information presented in this paper;

b) note the REDDIG III governance and operational experience as a reference for future regional cooperation initiatives;

c) encourage the conduct of additional technical and operational studies on technical cooperation between CRV and REDDIG III;

d) encourage continued coordination between the ICAO APAC and SAM Regional Offices regarding the possible establishment of a REDDIG III node in New Zealand;

e) recognize that the proposed initiative is complementary to existing regional infrastructures and is intended to strengthen interoperability, resilience and technical cooperation between the APAC and SAM Regions; and

f) provide guidance on future inter-regional connectivity initiatives.

– – – – – – – –