International Civil Aviation Organization

MIDANPIRG Communication, Navigation and Surveillance Sub-Group

Thirteenth Meeting (CNS SG/13)
(Jeddah, Saudi Arabia, 20 – 23 October 2024)

Agenda Item 3:   **MID ATS Messaging Management Centre Steering Group (AMC STG/9)**
Main Matters including AMHS-AMC

LEGACY LINKS

(Presented by UAE)

SUMMARY

This paper underscores the challenges associated with the continued use of "legacy links" in the Middle East region's air navigation systems. It provides an overview of the current state of legacy infrastructure and assesses their impact on safety, efficiency, and overall operational effectiveness. The paper proposes a phased approach for transitioning to modernized infrastructure to support improved connectivity and performance.

Action by the meeting is at paragraph 3

REFERENCE(S)

- ICAO Global Air Navigation Plan (GANP), 6th Edition (2019-2022):
- ICAO Middle East Region Air Navigation Plan (MID ANP)

1.   INTRODUCTION

1.1   The legacy links refer to obsolete CNS infrastructure still in use by several Air Navigation Service Providers (ANSPs) in the MID region. These links, while still operational, are increasingly becoming obsolete and inefficient, resulting in challenges that affect the overall safety and efficiency of air navigation

1.2   This paper aims to highlight the impact of these legacy links on air traffic management (ATM) performance and to recommend a roadmap for transitioning to more modern CNS technologies

2.   DISCUSSION

2.1   Many Air Navigation Service Providers (ANSPs) in the MID region continue to rely on legacy infrastructure for data transmission and connectivity. These outdated systems, while foundational in earlier stages of air traffic management (ATM) development, now pose significant challenges to the real-time exchange of critical information between air traffic control centres, airlines, and other stakeholders.

2.2   Legacy Communication, Navigation, and Surveillance (CNS) systems and Internet Service Provider (ISP) links are increasingly unreliable and costly to maintain. Their incompatibility

with newer technologies results in fragmented networks that impede seamless integration across the region's airspace, directly affecting the efficiency of air traffic management, especially during peak periods and emergency situations.

2.3		The limitations of legacy ISP links restrict the ability to effectively share critical data across various platforms and stakeholders. This constraint impacts decision-making, situational awareness, and overall system resilience. Modern ATM and CNS systems, which require high-capacity and reliable data connections, are hindered by the existing legacy infrastructure.

2.4		The issues identified with legacy infrastructure in the MID region are directly aligned with the strategic objectives outlined in the ICAO Global Air Navigation Plan (GANP) and the Middle East Region Air Navigation Plan (MID ANP). Both plans emphasize the need for modern, interoperable systems to enhance regional and global air traffic management, making the modernization of CNS systems a critical priority for the region.

2.5		To address these challenges, a phased strategy is proposed. This includes a regional assessment of legacy infrastructure, development of a modernization plan prioritizing advanced CNS technologies, and the facilitation of training and capacity-building initiatives. This approach ensures a smooth transition to modern infrastructure while maintaining alignment with the performance-based frameworks of the GANP and MID ANP:

- Phase 1: Encourage a collaborative regional assessment of all existing legacy infrastructure, including both CNS systems and ISP links, to identify critical gaps and vulnerabilities.

- Phase 2: Develop a regional modernization plan that prioritizes the replacement or upgrading of legacy infrastructure with advanced CNS technologies and high-capacity ISP links, such as fiber-optic networks and next-generation satellite-based communication systems, in collaboration with relevant stakeholders, including potential MPLS (Multiprotocol Label Switching) integrations.

- Phase 3: Facilitate training, capacity-building, and technical support for ANSPs and other stakeholders to ensure a smooth transition to the new infrastructure.

- Phase 4: Monitor and evaluate the implementation of the modernization plan, with regular updates to ensure alignment with regional safety and performance targets.

**3.	ACTION BY THE MEETING**

3.1		The meeting is invited to:

a) note the information provided in this paper;

b) endorse the proposed phased strategy for modernizing legacy infrastructure, including CNS systems and ISP links, as outlined in the paper; and

c) encourage member states to participate actively in the collaborative regional assessment and transition process.

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