International Civil Aviation Organization

Sixteenth Meeting of the FANS Interoperability Team – Asia (FIT–Asia/16)

Bangkok, Thailand, 9 – 11 June 2026

Agenda Item 7: Any Other Business

CPDLC UPLINK ISSUES CAUSED BY DUPLICATE 5LNCs

(Presented by Secretariat)

SUMMARY

This paper presents information on Controller-Pilot Data Link Communications (CPDLC) route uplink issues associated with duplicate five-letter name-codes (5LNCs). Recent analyses conducted by the North Atlantic (NAT) CPDLC Route Clearance Project Team (CRCPT) identified cases where duplicate fixes resulted in incorrect route loading within aircraft Flight Management Systems (FMS), creating the potential for deviations from cleared routes. The paper highlights interoperability considerations relevant to FIT-Asia and provides an update on actions initiated following discussions at AAITF/21 regarding the removal of duplicate 5LNCs within the APAC Region.

1. INTRODUCTION

1.1 The use of CPDLC route uplink capabilities continues to expand across ICAO Regions. Accurate interpretation of route clearances by aircraft avionics and ground systems is essential to ensuring safe and efficient operations.

1.2 During 2025, the NAT CPDLC Route Clearance Project Team (CRCPT) investigated a number of route uplink issues affecting CPDLC operations. Among the issues identified were occurrences involving duplicate 5LNCs, where aircraft systems selected an unintended waypoint from the navigation database during processing of CPDLC route clearance messages.

1.3 The findings highlighted potential interoperability issues involving aircraft avionics, navigation databases, and CPDLC route uplink procedures. Given the increasing reliance on digital information exchange and the future implementation of FF-ICE services, the issue is of interest to FIT-Asia.

1.4 The matter was also discussed at the Twenty-First Meeting of the Asia/Pacific Air Traffic Management Implementation Task Force (AAITF/21), which recognized the potential operational and safety impacts associated with duplicate 5LNCs and encouraged States and Administrations to continue efforts to resolve long-standing duplicate 5LNCs within the APAC Region.

1.5 According to Attachment B to AAITF/21-WP/08 (APAC 5LNC Status, May 2026), approximately 1,269 duplicated five-letter name-codes (5LNCs) remain recorded across APAC States and Administrations. While this represents a significant reduction from the 2,733 duplicated 5LNCs identified during the ICAO global review conducted in 2018, continued efforts are required to resolve the remaining duplications.

2. DISCUSSION

2.1 Analysis conducted by the NAT CRCPT identified cases where CPDLC route uplinks resulted in incorrect waypoint selection when duplicate 5LNCs existed within the aircraft navigation database. The issue was observed in association with the following CPDLC messages:

- UM74 – PROCEED DIRECT TO (position)
- UM79 – CLEARED TO (position) VIA (route clearance)

In certain cases, aircraft systems applied proximity-based logic when processing duplicate waypoints and selected an unintended waypoint from the navigation database.

2.2 Operational reports indicated that such occurrences could result in:

a) incorrect route loading within the Flight Management System;

b) increased flight crew workload to identify and correct routing discrepancies;

c) rejection of route uplinks; and

d) potential deviations from ATC-cleared routes.

2.3 Following discussions at AAITF/21, the ICAO APAC Office has continued coordination with affected States and Administrations regarding the review and resolution of duplicate 5LNCs within the APAC Region. Efforts are ongoing to identify affected waypoints and develop appropriate corrective action plans.

2.4 From an interoperability perspective, the issue highlights the need for continued collaboration among Air Navigation Service Providers (ANSPs), aircraft operators, avionics manufacturers, navigation database providers, and ICAO to ensure that CPDLC route clearance services operate as intended across Regions.

2.5 With regard to one of the duplicate 5LNCs identified during the review, it was subsequently determined that the waypoint had already been removed from both the State AIP and the ICAO Route Designator and Name-Code (ICARD) database several years earlier and therefore no longer constituted an actual duplicate. Further investigation indicated that the occurrence resulted from the aircraft navigation database not having been updated to reflect the removal of the 5LNC in a timely manner. The State concerned has advised that the deletion of the obsolete waypoint will be incorporated in the next applicable navigation database update cycle.

2.6 FIT-Asia may wish to consider whether additional guidance, awareness activities, or interoperability assessments are necessary to support the elimination of duplicate 5LNC-related issues affecting CPDLC operations.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss the interoperability implications of duplicate 5LNCs on CPDLC route uplink operations;

c) support ongoing efforts by States and Administrations to resolve long-standing duplicate 5LNCs;

d) identify any additional actions that FIT-Asia may consider mitigating interoperability risks associated with duplicate 5LNCs; and

e) discuss any relevant matters as appropriate.

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