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# Update on 5LNC and ICARD

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## Background

- The ICARD database is a tool used by States and ICAO Regional Offices for the management of five-letter-name-codes (5LNCs)
- ICARD allows States to reserve and allocate 5LNCs to identify significant points not marked by the site of a navigation aid, while ensuring uniqueness in accordance with ICAO Annex 11, Annex 15 and PANS-OPS
- 5LNCs end up on aircraft flight management systems (FMS)
- In the past, non-compliance with ICAO provisions regarding 5LNCs uniqueness led to the duplication of thousands of 5LNCs
- A malfunctioning old and outdated system and lack of directly applicable standards also attributed to the duplication issues
- A new ICARD system was launched in 2017 to replace the obsolete and outdated system
- ICAO State Letter 2017/101 was issued to address the resolution of 5LNC duplications
- Yet not all issues have been addressed and solved and the 2017 version of the ICARD system is becoming “outdated” today

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## Identified issues

- The ICARD system contains a significant number of duplicated codes (including codes in triplicate and in quadruplicate)
- Some similar sounding codes in close proximity (1,000 NM of each other) or on the same flight plan route
- Worldwide, a significant number of differences between 5LNC data registered in ICARD and those published in national Aeronautical Information Publications (AIPs) have been observed
- Many States have still not addressed the actions contained in State Letter 2017/11, which are aimed at resolving the 5LNC duplications
- Many 5LNCs in use worldwide are not registered in the ICARD database

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## Actions Taken to Date

- Many duplicated 5LNCs have been resolved since 2017, including several in close proximity to each other
- In the EUR/NAT region, to address the shortage of available 5LNCs, 50,000 new 5LNCs were created
- To solve future shortage of 5LNCs in other regions, up to 400,000 new 5LNCs can be created, if necessary (currently there are about 162,000 available 5LNCs in ICARD)
- Initial and recurrent trainings have been provided to all ICAO Regional Offices
- Regional offices have organized various trainings, workshops and webinars resulting in a steady increase in number of State registered users in the ICARD database
- Several improvements to the ICARD system have been identified and three have been implemented to date:
  - Display FIR boundaries on ICARD maps
  - Revise proximity search functions algorithm
  - New functionalities of the map function in ICARD
- Several other improvements to the ICARD system are planned (pending allocation of resources)

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## IFPP Job Card on ICARD and 5LNC

- In April 2022 the Instrument Flight Procedures Panel (IFPP) was assigned a job card by the ANC titled - “Enhancement and accuracy of the International Codes and Route Designators (ICARD) system, and resolution of duplicated five-letter name codes 5LNCs”
- The job card aims to address the need to have robust standards and tackle altogether the issues of duplication, similar sounding and homophonous 5LNCs
- The expected benefits include:
  - Increasing air safety through the resolution of duplicated, similar-sounding and homophonous 5LNCs
  - A more complete 5LNCs database and an improved ICARD system meeting operational requirements
  - Improved governance and adherence
- The Panel agreed to form an inter-disciplinary working group with the ATMOPSP and FLTOPSP to tackle this work together
- The ICARD working group will begin meeting in the next IFPP work cycle (Q1 2024)

## IFPP Job Card on ICARD and 5LNC

IFPP.022.01		Enhancement and accuracy of the International Codes and Route Designators (ICARD) system, and resolution of duplicated five-letter name codes 5LNCs					
Source	Thirteenth Air Navigation Conference (AN-Conf/13), Recommendation 3.5/1; First Meeting European Aviation System Planning Group (EASPG/01) AN-WP/9436 and DP No. 1						
Problem Statement	Similar-sounding, homophonous, and duplication of thousands of 5LNCs worldwide represent a safety risk for global air navigation (incidents were already caused and ultimately an accident might occur). Duplication has in part occurred due to the inadequacy of requirements addressing the obligation to submit 5LNCs information to the ICARD system, combined with a widespread non-compliance with the ICAO Annex 11— Air Traffic Services existing provisions regarding 5LNCs uniqueness.						
Specific Details	ICAO issued a State letter in 2017 (State letter AN 11/45.5-17/101) on the new ICAO International Codes and Routes Designators (ICARD) system, which called for the implementation of the five-letter name-code (5LNC) Duplicate Resolution Rules and subsequent submission of updated information on 5LNCs. In addition, the AN-Conf/13, Recommendation 3.5/1 highlighted the need to urgently complete the population of the ICARD database while ensuring the accuracy of the database. However, a majority of States have not addressed the actions contained in State letter AN 11/45.5-17/101 and did not updated information on 5LNCs. It is estimated that only 60 to 70 per cent of all 5LNCs in use today worldwide are registered in the ICARD 5LNC database, while a number of States continue to use 5LNCs that have not been requested or recorded in ICARD.						
Expected Benefits	Increasing global air navigation safety through the resolution of duplicated the conflicts related to duplicate, similar-sounding and homophonous 5LNCs. A more complete 5LNCs database and an improved ICARD system meeting operational requirements. Improved governance and adherence.						
Reference Documents	ICAO Annex 11 — Air Traffic Services Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS, Doc 8168) State letter AN 11/45.5-17/101						
Deliverable Expert Group	Instrument Flight Procedures Panel (IFPP)						
ID	Document Affected	Description of Amendment proposal or Action	Supporting Expert Group	Status	Expected Dates		
					Delivery Date	Effective	Applicability
10272	Actions	Study report on ICARD system evolution - study to assess the current response level of Member States submitting their worldwide used five-letter name-codes (5LNCs) to the ICARD system and the quality of the provided data to ensure the accuracy of the database. The study should address the limitations of 5LNC availability by determining the current situation and the potential to create new codes to be added in ICARD.	FLTOSP ATMOPSP	On-schedule			Dec 2024
10273	Actions	Review the work-around procedure for handling homophonous 5LNCs and improve it if necessary	FLTOSP ATMOPSP	On-schedule			Dec 2024
10275	Actions	Identify other ICAO documents considered as being appropriate to include ICARD-related standards and/or recommended practices.	FLTOSP ATMOPSP	On-schedule			Dec 2024
10276	Actions	Review the technical requirements of the ICARD system and identify improvements to the system functionality.	FLTOSP ATMOPSP	On-schedule			Dec 2024

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## Summary

- There are several known issues related to duplication of 5LNCs
  - Thousands of duplicate 5LNCs identified
  - Including similar sounding codes in close proximity to each other
- Some Member States still need to address the actions in State letter AN 2017/11 and use ICARD to register their 5LNCs
- Several enhancements planned to improve useability of the ICARD system in the near future
- IFPP in coordination with ATMOPSP and FLTOPSP to develop long-term actions to resolve duplicated 5LNCs, improve ICARD functionality and enhance ICAO provisions related to 5LNCs and ICARD



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Thank You!