International Civil Aviation Organization

Fourteenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/14) of APANPIRG

Bangkok, Thailand, 3 – 7 August 2026

Agenda Item 7: AOP, AIM, MET, SAR

CHALLENGES OF 5LNC UTILIZATION AND SUGGESTIONS TO ICARD

(Presented by China)

SUMMARY

This paper presents the ICAO standards and recommended practices on 5LNCs. Discussing challenges China are facing on managing 5LNCs and giving some suggestions to ICARD.

1. INTRODUCTION

1.1 The significant point is defined as a specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes on Annex 11— Air Traffic Services. It goes on to State/Administration that significant points shall be established and identified in accordance with the principles set forth in Annex 11, Appendix 2.

1.2 Annex 11, Appendix 2 states:

> *3.1 Where a significant point is required at a position not marked by the site of a radio navigation and, and is used for ATC purposes, it shall be designated by a unique five-letter pronounceable name-code. This name-code designator then serves as the name as well as the coded designator of the significant point.*
>
> *3.2 The name-code designator shall be selected so as to avoid any difficulties in pronunciation by pilots or ATS personnel when speaking in the language used in ATS communications.*
>
> *3.3 The name-code designator shall be easily recognizable in voice communications and shall be free of ambiguity with those used for other significant points in the same general area.*
>
> *3.4 The unique five-letter pronounceable name-code designator assigned to a significant point shall not be assigned to any other significant point. When there is a need to relocate a significant point, a new name-code designator shall be chosen. In cases when a State/Administration wishes to keep the allocation of specific name-codes for reuse at a different location, such name-codes shall not be used until after a period of at least six months.*
>
> *3.5 States' requirements for unique five-letter pronounceable name-code designators shall be notified to the Regional Offices of ICAO for coordination.*

1.3 ICARD is the sole repository of 5LNCs ensuring global uniqueness and is the only means by which the requirements of Annex 11 Appendix 2 paragraph 3.5 could be met. The Annex 11 standard requiring that 5LNCs be globally unique has been applicable since 1997. On 2017, the new ICARD platform was came out which would meet the needs of States/Administrations to support efficient and safe implementation of unique 5LNCs.

1.4 In 2022, ATM/SG/10 adopted the ***Conclusion ATM/SG/10-10****: State Reports of 5LNC Status, that, States are urged to provide an annual update on the status of duplicated 5LNCs* in ATM/SG/10 WP/44 Attachment 3 to the ICAO APAC Regional Office by not later than 28 February each year. China deeply recognizes the importance of 5LNC uniqueness for Air Navigation safety and has been cooperating with the ICAO APAC Regional Office to eliminate duplicate codes. Received recognition from the Asia Pacific Office along with countries such as Australia at the AAITF21 conference.

1.5 Annex 11 Appendix 2 paragraph 3.1 Note to State/Administration *'The principles governing the use of alphanumeric name-codes in support of RNAV SIDs, STARs and instrument approach procedures are detailed in the PANS-OPS (Doc 8168)'*. These alphanumeric name-codes are referred to as 5ANNC.

2. DISCUSSION

Outstanding Challenges in 5LNC

2.1 **Large volume of 5LNC applications and increasing difficulty in securing approval for new 5LNC.** With the continuous development of civil aviation transport markets and to support implementation of PBN, the demand for 5LNC from State/Administration has grown significantly. In 2024, China submitted 194 applications through ICARD; in 2025 is 252; and in 2026 from present is 182, with an average annual growth rate of 33.55%. Given the rising complexity of airspace structure and density of 5LNCs distribution, passing the ICARD system's sound-like proximity check has become more challenging.

2.2 **Duration of new 5LNC request approval.** According to ICARD User Guideline requirements, 5LNC can only be published in AIP after the application has been approved by the Regional Data Manager. The Guideline indicates that the typical cycle from application to approval/reject is within 20 working days. In addition, to align with the AIRAC effective dates, approval must be obtained at least 28 days prior to the 5LNC publish. This means that State/Administration need to complete the 5LNC application process at least 2 months before the day planned implementation. This places relatively high requirements on the overall coordination and planning for the 5LNC management.

2.3 Recently, we have also encountered cases where the approval cycle exceeded 20 working days, posing challenges to our scheduled to implementation airspace optimize plan. We fully understand the difficulties faced by Regional Data Manager in processing the rapidly growing workload, and we hope to find appropriate solutions.

2.4 **Sound-like proximity check issues.** ICARD 5LNC User Guidelines describe checking the sound-like proximity of a 5LNC is mandatory and is the responsibility of the Authorized User. It is also the Authorized User's responsibility to coordinate any sound-like issues/mitigation with relevant States, if required. The sound-like proximity check function only shows "allocated" codes (red), it leaves out all the "requested" codes (orange), which may result in some applications being rejected and requiring re-submission.

2.5 Due to the large-scale setting and revision of the RNAV routes at ZBAA, ZBAD, ZLXY and ZUUU with effect from 25 December 2025, it became necessary to obtain 96 new 5LNC.Thanks

to the efforts of the APAC regional office staff, China ICARD planners managed to get the AIP issued in time, but we would like to propose several improvements to the ICARD application so that each state can smoothly register with ICARD in the future.

2.6 This is particularly problematic when processing large-scale airspace optimization projects that require submit multiple codes request at same time. Besides, some of them would be rejected and require another round of re-submission. Consequently, the entire process of application, approval, and publication becomes even longer.

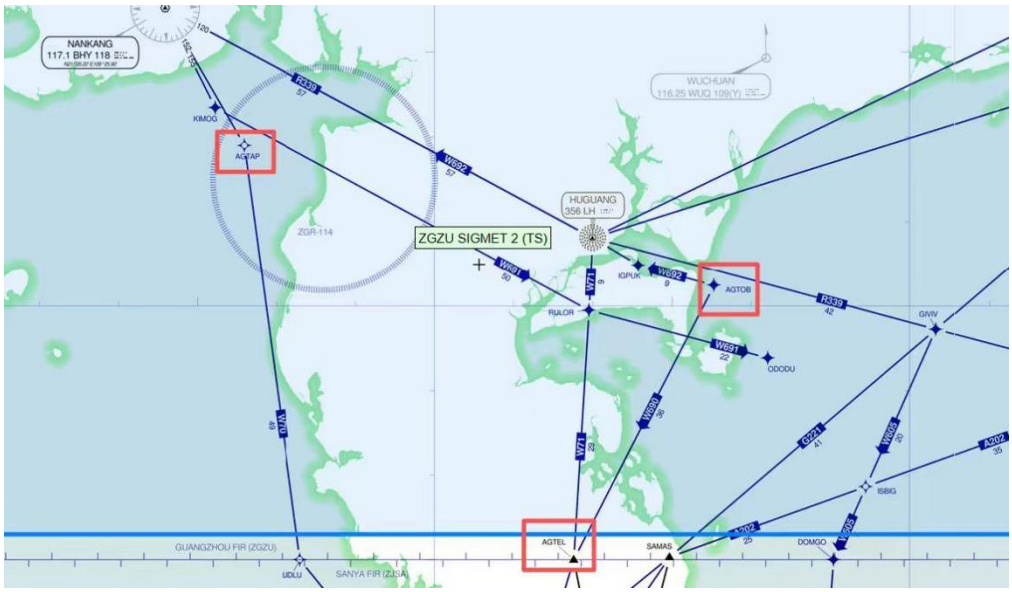
2.7 Example like “ISGID” and “MUGID” submitted on 4 August 2025. “ISGID” is approved at 28 August 2025 then “MUGID” is rejected due to sound-like proximity issue with ISGID. Then we picked “OLNIX” to replace “MUGID” at 1st September, approved at 5th.

Sound-like checking results for code "MUGID" within 250 NM

CODE	Distance (NM)
ISGID	26.46

2.8 We also found some proximity check algorithms issues. Some codes which have been approved through the ICARD but could found multiple similar waypoints located in close proximity, which may cause confusion for flight crews and air traffic controllers.

2.9 There is a very strange case that AGTAP（N21° 19′ 00″ E109° 35′ 55″）, AGTEL（N20° 30′ 00 ″ E110° 17′ 36″）and AGTOB（N21° 02′ 27 ″ E110° 35′ 19″）is very closely to each other (no more than 100NM). Both 5LCNs are approved by ICARD and finished proximity check.



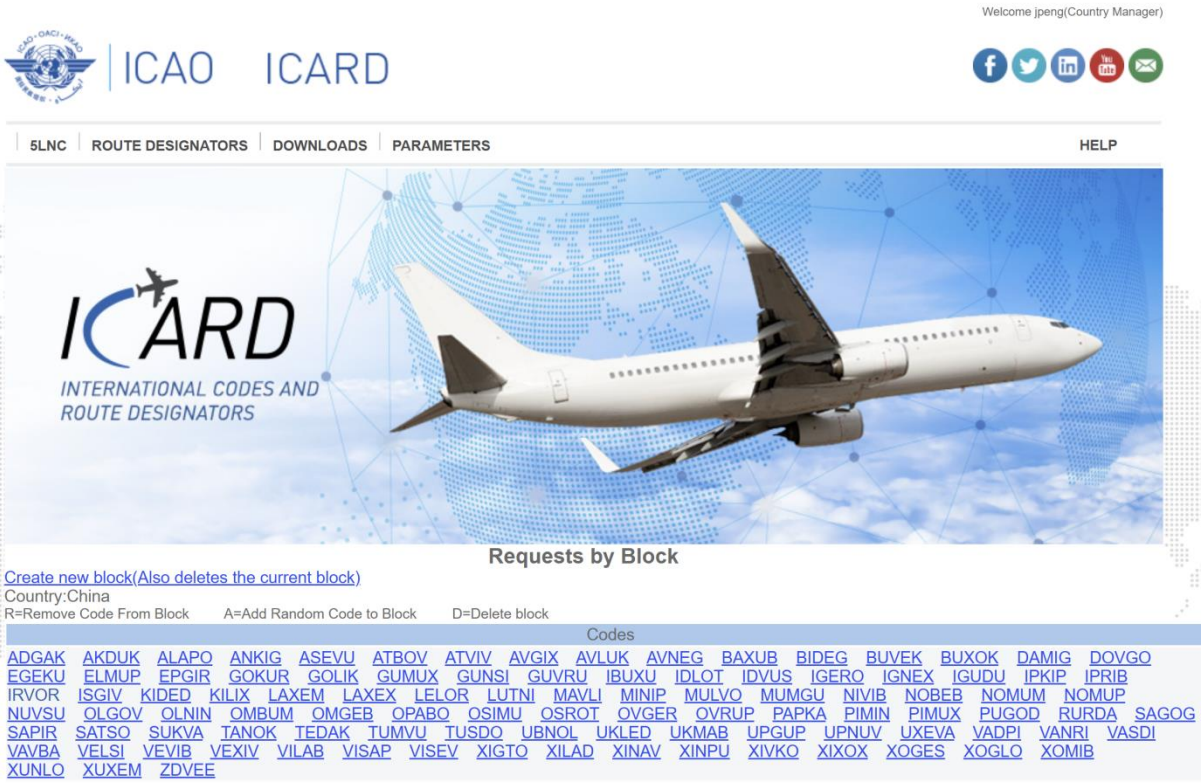
Code	Latitude	Longitude	Coord. States	Purpose	Creation Date	Last Modified Date	Available Date	Action	Comment
AGTEL	203000N	1101736E	CHN	ENR	16/10/2018 02:58:09	16/10/2018 02:58:09			

Code	Latitude	Longitude	Coord. States	Purpose	Creation Date	Last Modified Date	Available Date	Action	Comment
AGTAP	211900N	1093555E	CHN	ENR	06/12/2024 03:25:58	06/12/2024 03:25:58			on route W70

Code	Latitude	Longitude	Coord. States	Purpose	Creation Date	Last Modified Date	Available Date	Action	Comment
AGTOB	210227N	1103519E	CHN	TA	18/09/2024 01:20:16	18/09/2024 01:20:16			used by flight procedures on ZGZJ

2.10 During 63 simulated training sessions for ATCs, the waypoints AGTAP, AGTOB, and AGTEL – due to their similar pronunciation and spelling – led to confusion or repeated confirmation between controller and pilot on 15 occasions. As a result of the risks identified in these simulations, on-duty controllers had to adopt the practice of reading out each letter individually for these waypoints to avoid confusion, thereby increasing communication workload.

2.11 **Conclusion ATM/SG/13-8**: *That, 5LNCs starting with "X" in the ICARD system that are not registered to any Administrations shall be removed for selection from the ICARD system; and the release of 5LNC block codes to the general pool by 31 December 2025*. However, recent queries to the ICARD system show that a large number of starting with "X" codes still in our block, occupying code pool resources and reducing the flexibility and availability of 5LNC applications.



Suggestions for the ICARD System

2.12 In view of the growing demand for code applications from States, it is recommended to further enhance the functionality of the ICARD system and strengthen regional staffing to accelerate the approval timeline as much as possible.

2.13 Review the procedures and approval timeline outlined in the ICARD 5LNC User Guidelines to ensure consistency and efficiency in the approval process.

2.14 Enhance advanced proximity check algorithms on ICARD, the starting 3 letters or ending 3 letters are same can be detected and refuse that request.

2.15 In the EUR/NAT region, a sound-like proximity check of 300 NM has been adopted, compared with the current 500 NM criterion applied in the APAC region. Discussions were therefore conducted on the background of this difference and on the feasibility of introducing a similar approach in APAC. Obviously, the applicability of a 300 NM criterion in the APAC Region should be carefully assessed, the key is how to evaluate the concerns about aircraft safety caused by narrowing the range of proximity checks. Maybe the APAC regional office could coordinate EUR/NAT regional office to provide some support and guidance on this matter.

2.16 Accelerate the implementation of the ***Conclusion ATM/SG/13-8*** to release more codes to States.

2.17 The ICAO APAC Office has made considerable efforts to address the 5LNC shortage - by releasing reserved codes, reminding States to delete unused codes in a timely manner and has achieved some short-term improvements, these actions do not resolve the underlying issue of 5LNC depletion. The use of five-alphanumeric name codes (5ANNC), either as a replacement for existing 5LNC or as a new allocation, has been discussed within the AAITF as a potential mitigation measure to address this issue.

2.18 Currently, Annex 11 and Doc 8168 indicate that 5ANNC used in support of RNAV SIDs, STARs and instrument approach procedures, not for en-route phases. We recommend that ICAO strengthen practical guidance on this matter, including through discussions in relevant working groups. We further suggest consulting the ATM Operations Panel regarding the proposal to utilize 5ANNC for en-route phase, considering compliance with and potential amendments to Annex 11 and Doc 8168.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss suggestions to ICARD;

c) discuss any relevant matters as appropriate.

— END —