



Agenda Item 6: Other business

PROBLEMS OBSERVED IN MODULE 5LNC OF THE ICARD DATABASE

(Presented by the Secretariat)

SUMMARY	
This working paper addresses the problems identified in the ICARD database that supports the implementation of unique five-letter name codes (5LNC) used for the significant point designators stipulated in ICAO Annex 11, and the recommendations for their resolution.	
REFERENCES	
<ul style="list-style-type: none">• Annex 11 – <i>Air traffic services</i>• Annex 15 to the Convention on International Civil Aviation• State letter AN 11/45.5-17/101	
ICAO strategic objectives:	<i>A - Safety</i> <i>B – Air navigation capacity and efficiency</i> <i>E – Environmental protection</i>

1. Background

1.1 The ICARD database was established in 2010 and is available to the States through the ICAO portal. One of the objectives of the database is to facilitate the efficient and safe implementation of the five-letter name code (5LNC) for proper route and flight procedure planning, and to support ATS speech communications and aeronautical data management.

1.2 In early 2015, it was noted that States had updated their significant point information in ICARD. However, some situations had emerged that could affect safety, namely:

- existence of a significant number of duplicated names;
- points with similar phonetics located too close to each other or along the same route;
- scarcity of points of easy pronunciation; and
- differences between 5LNC data recorded in ICARD and that published in the AIP.

1.3 Furthermore, it has been noted that these issues are generated by State practices resulting in failure to update the ICARD database.

2. Discussion

2.1 In March 2017, ICAO completed the initial implementation of the new ICARD platform. The updated ICARD database system, available through the ICAO secure portal, replaces the previous platform and will meet the needs of States in support of an efficient and safe implementation of unique 5LNCs.

2.2 The updating of the ICARD system is extremely important, since the prevailing global noncompliance with the provisions of Annex 11 – *Air traffic services* (Appendix 2, paragraphs 3.1 and 3.4) concerning the unique nature of 5LNCs, continues to create difficulties that might generate safety problems. The following issues related to 5LNCs have been identified:

- a) a significant number of duplicated codes (including tripled and quadrupled codes);
- b) codes with similar phonetics located in close proximity or along the same flight route; and
- c) differences between 5LNC data contained in ICARD and that appearing in national aeronautical information publications (AIPs).

2.3 The new platform of the 5LNC module is faster and more reliable. It also offers graphical and search facilities, and provides lists that can be downloaded in XLS and PDF formats, for example, lists of all the 5LNCs of a State or ICAO Region, even indicating the duplicated codes. Duplicated codes occur between two States of the same ICAO Region or, more commonly, between States of different Regions.

2.4 The updated platform is capable of generating alerts in the case of points with similar letters or phonetics, and checks code allocation, preventing the assignment of codes already being used or reserved for another State.

2.5 ICARD management is done by the Regional Offices. The following issues have been identified in the performance of this task:

- a) States use codes that do not appear in the AIPs
- b) States keep codes in the AIP that are no longer in use
- c) States publish procedures or new routes using 5LNCs that have not yet been validated
- d) In many cases, the coordinates of waypoints located in FIR boundaries are not the same in both AIPs.
- e) On occasions, the 5LNCs requested for waypoints located in FIR boundaries are not coordinated between the States involved.

2.6 It is important for States to review all the names of points currently published in their AIPs, on routes and procedures, and compare them with the set of codes reserved for the State. Users could also cross information with available sources, such as aeronautical charts and aeronautical websites (*e.g.*, GIS ICAO, *Skyvector*, etc.). If a State discovers that 5LNCs are being used in its airspace that have not been obtained through ICARD or that are not part of the set reserved for that State, it shall start a gradual process of replacement of those points with ICARD, making a careful selection and communicating it to the Regional Office for validation and release of the names in ICARD.

2.7 States must communicate to the Regional Office those points that were properly reserved and assigned through ICARD but are no longer in use due to elimination or changes in the route/flight procedure, so that they may be released in the ICARD database.

2.8 States must keep their list of responsible planners updated so that the Regional Office may coordinate and control the assignment of ICARD subscriptions.

2.9 In State letter AN 11/45.5-17/101, shown in **Appendix A** to this working paper, the General Secretariat requested States to apply rules to help reduce duplicated points or those with similar phonetics in close proximity or along the same route. The attachment to this letter describes the actions required to solve the problems related to duplication of points.

2.10 ICARD management, at ICAO Headquarters, has identified a list of duplicated 5LNCs. A reference list (three SAM States) appears in **Appendix B** to this paper. The Meeting could urge States to implement the rules for the elimination of duplicated or tripled codes, shown in the attachment to State letter AN 11/45.5-17/101, item 2.

3. **Suggested action**

3.1 Based on the above, the Meeting is invited to:

- a) take note of the information about the new 5LNC platform;
- b) apply, to the extent possible, the recommendations of the General Secretariat regarding ICARD updating and the resolution of duplicated 5LNCs;
- c) urge those States that have not done so yet, to update their list of responsible planners;
- d) review and compare their 5LNC lists and make the necessary amendments; and
- e) submit to the Regional Office any comments and information that will help improve the functions and management of the updated ICARD platform.

APÉNDICE A / APPENDIX A



International
Civil Aviation
Organization

Organisation
de l'aviation civile
internationale

Organización
de Aviación Civil
Internacional

Международная
организация
гражданской
авиации

منظمة الطيران
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航空组织

Tel.: +1 514-954-8219 ext. 6718

Ref.: AN 11/45.5-17/101

11 de agosto de 2017

Asunto: Sistema de base de datos de códigos y designadores de ruta internacionales (ICARD) de la OACI

Tramitación: Aplicar las reglas para corregir las duplicaciones de nombres-clave de cinco letras (5LNC) y presentar información actualizada sobre los 5LNC

Señor/Señora:

1. Tengo el honor de dirigirme a usted para comunicarle que, en marzo de 2017, la OACI finalizó la implantación inicial de la nueva plataforma ICARD. El sistema de base de datos ICARD actualizado, al que se puede acceder a través del portal seguro de la OACI, sustituye a la plataforma anterior y satisfará las necesidades de los Estados para apoyar la implantación eficiente y segura de 5LNC únicos.

2. La actualización del sistema ICARD reviste suma importancia ya que el actual incumplimiento, a escala mundial, de las disposiciones del Anexo 11 — *Servicios de tránsito aéreo*, (Apéndice 2, párrafos 3.1 y 3.4) relativas al carácter único de los 5LNC, continúa creando dificultades que podrían ocasionar problemas relacionados con la seguridad operacional. Se han identificado los siguientes problemas en relación con los 5LNC:

- a) un número significativo de claves duplicadas (incluidas claves en triplicado y cuadruplicado);
- b) la cercanía de códigos con similitud en el sonido o en la misma ruta del plan de vuelo; y
- c) diferencias entre los datos 5LNC registrados en la base de datos ICARD y los que figuran en las publicaciones de información aeronáutica (AIP) nacionales

3. A la luz de la creciente demanda de 5LNC para apoyar la implantación de la navegación basada en la performance (PBN) sin comprometer la seguridad operacional, le invito a aplicar las medidas descritas en el Adjunto de la presente comunicación, por medio del coordinador del sistema ICARD de su Estado. Si requiere apoyo u orientación adicional, se le ruega contactar a la Oficina regional de la OACI acreditada ante su Estado.

Le ruego acepte el testimonio de mi mayor consideración y aprecio.

Fang Liu
Secretaria General

Adjunto:

Actualización de la base de datos ICARD y resolución del problema de 5LNC duplicados

S17-2291

ADJUNTO a la comunicación AN 11/45.5-17/101

ACTUALIZACIÓN DE LA BASE DE DATOS ICARD Y RESOLUCIÓN DEL PROBLEMA DE 5LNC DUPLICADOS

La actualización del sistema ICARD y la resolución del problema de 5LNC duplicados son de suma importancia y se invita a todos los Estados a que tomen las medidas que se describen a continuación.

1. DEPURACIÓN DE LA PLATAFORMA ICARD

1.1 Se comparará la lista de 5LNC de su Estado registrada en la base de datos ICARD y los 5LNC que figuran en la publicación de información aeronáutica (AIP) nacional de su Estado, con el objeto de detectar toda discrepancia y actualizar la información en la ICARD, para que esta información esté armonizada con la del AIP de su Estado. Para obtener una lista de los 5LNC asignados a su Estado en la ICARD visite el sitio web <https://www4.icao.int/ICARD> y:

- a) escriba el nombre de usuario autorizado y la contraseña;
- b) en el menú principal, haga clic en "Downloads" (Descargas); y
- c) en la opción "List All per Country" (Lista de todos los 5LNC por país), seleccione la región y el país correspondiente y haga clic en las pestañas pertinentes para generar un informe en formato PDF o Excel.

1.2 La ICARD servirá como sistema central para reservar y asignar 5LNC. Se notificará a la Oficina regional de la OACI acreditada ante su Estado acerca de los 5LNC en uso que no estén registrados en la base de datos ICARD, así como todo 5LNC asignado a su Estado que ya no esté en uso y que deba eliminarse de dicha base de datos. La contribución de su Estado a esta actividad reducirá considerablemente la creación de 5LNC duplicados y, al mismo tiempo, permitirá a la OACI identificar y corregir los 5LNC existentes que estén duplicados o que sean fonéticamente similares y tengan posibles repercusiones en la seguridad operacional.

1.3 Se recuerda a los Estados las disposiciones de la OACI contempladas en el Anexo 11 y el Anexo 15 relativas a los 5LNC, así como la necesidad de coordinar con otros Estados y todas las Oficinas regionales de la OACI lo necesario para corregir los 5LNC existentes que están duplicados.

2. REGLAS PARA CORREGIR 5LNC DUPLICADOS

2.1 Siempre que sea posible, los Estados miembros con 5LNC del mismo nombre pero asignados a más de un emplazamiento físico (duplicados, triplicados, cuadruplicados, etc.) considerarán la posibilidad de liberar voluntariamente el 5LNC duplicado, a fin de permitir que uno de los Estados conserve dicho 5LNC. Si no se lograra llegar a una solución, se aplicarán las siguientes reglas para corregir los 5LNC duplicados:

Regla 1. Se concederá prioridad al 5LNC o a los 5LNC que ya están asignados en la ICARD. Los 5LNC duplicados que no estén asignados en la ICARD se remplazarán por 5LNC nuevos. Si en la ICARD existen dos o más 5LNC con el mismo nombre, se aplicará la Regla 2.

Ejemplo: En la ICARD el 5LNC KOBAS está asignado a dos Estados miembros.

Nota: la Oficina regional o las Oficinas regionales indicarán al Estado o a los Estados en cuestión que cambien los 5LNC duplicados que no figuran en la ICARD. La publicación de 5LNC en las AIP no se considerará como subterfugio de estas reglas.

A-2

Regla 2. Si se asignan dos o más 5LNC del mismo nombre en la ICARD:

- a) Fecha de creación (fecha en que se asignó al Estado el 5LNC en la ICARD)

Si existen dos o más 5LNC con fecha de creación, se dará prioridad a la fecha más antigua. Tras verificar que el Estado con la fecha prioritaria sigue utilizando ese 5LNC, la Oficina regional o las Oficinas regionales propondrán uno o más 5LNC nuevos al otro o a los otros Estados que tienen el mismo 5LNC.

- b) Con fecha de creación y sin fecha de creación

Se propondrá uno o más 5LNC nuevos al Estado o a los Estados que no tienen fecha de creación en la ICARD.

- c) Sin fecha de creación

Si hay dos o más 5LNC con el mismo nombre y sin fecha de creación se aplicará la Regla 3.

Regla 3. Si la aplicación de las Reglas 1 y 2 no resuelve el problema de duplicación de 5LNC, se dará prioridad a las siguientes características:

- a) Los 5LNC utilizados tanto en el espacio aéreo terminal (SID/STAR) como en el espacio aéreo en ruta.

Nota: El número de cambios previstos y de publicaciones requeridas en las partes AD y ENR de las AIP puede llegar a ser muy considerable.

- b) Los 5LNC utilizados en espacios aéreos terminales de alta densidad / gran complejidad (p. ej., procedimientos para SID/STAR, espera, aproximación por instrumentos).

- c) Los 5LNC utilizados en espacios aéreos en ruta (p. ej., cruces entre dos o más rutas ATS, transferencia de puntos de control, rutas en el espacio aéreo superior/inferior, etc). Se dará prioridad al número más alto de travesías en rutas ATS con los 5LNC en cuestión.

- d) Los 5LNC utilizados en espacios aéreos terminales de baja densidad / poca complejidad.

- e) Los 5LNC utilizados en otras rutas (del interior, temporales, de helicóptero, etc.).

Regla 4. Solución de conflictos:

- a) Si ninguna de las reglas anteriores resuelve el problema de las duplicaciones de 5LNC y si las mismas ocurren dentro del área de acreditación de una Oficina regional, dicha Oficina regional tomará la decisión.

- b) Si los 5LNC duplicados ocurren en regiones diferentes, las Oficinas regionales correspondientes convendrán en una solución.

- c) Si ninguna de las reglas precedentes resuelve el problema de las duplicaciones de 5LNC, la Sede de la OACI, en coordinación con la Oficina regional o las Oficinas regionales pertinentes tomará la decisión final.

APENDICE B / APPENDIX B

LISTADO DE REFERENCIA CÓDIGOS 5LNC DUPLICADOS/REFERENCE LIST OF
DUPLICATED 5LNC CODES

ARGENTINA

5LNC	Count	Countries	Priority
DRAKE	5	Chile/Argentina, Costa Rica (COCESNA), United States of America, United Kingdom, China (Taiwan)	United Kingdom
LANDA	4	Egypt, Honduras (COCESNA), Argentina, China (mainland)/China (Hong Kong)	Argentina
SARGO	4	United States of America, Spain, Argentina/Uruguay (FIR boundary), China (mainland)	Spain
TONAR	4	Australia, Japan, Russian Federation, Argentina/Chile (FIR boundary)	Russian Federation
ESPIN	3	Argentina, Brazil, Spain	To be determined by the 5LNC Duplicate Resolution Rules
LUCIA	3	Argentina, Cuba, Venezuela	Argentina. Cuba if not used by Argentina.
MOCHO	3	United States of America, Argentina, Australia	United States of America
SORTI	3	Russian Federation, Argentina, Australia	Argentina
ALGAR	2	Canada, Argentina	Canada
AMORA	2	Mexico, Argentina	Mexico
ANKAB	2	Argentina, Venezuela	Argentina
ANLUK	2	Argentina, Brazil	Brazil.
ARPAS	2	Argentina, Philippines	Argentina
ASIMO	2	Argentina/Chile (FIR boundary), Japan	Argentina, Chile
BISUL	2	Colombia, Argentina	Colombia
BITAG	2	Bolivia, Argentina	Bolivia (Plurinational State of)
BITIS	2	Argentina, Viet Nam	Argentina
BURSA	2	Argentina, Venezuela	Argentina
CABAL	2	Argentina, Philippines	Argentina
CANAS	2	Costa Rica (COCESNA), Argentina	Costa Rica
CHATO	2	Spain, Argentina	Spain
DABLI	2	Brazil, Argentina	To be determined by the 5LNC Duplicate Resolution Rules
DAMIN	2	Argentina, Australia	Argentina
DIGER	2	Argentina, Australia	Argentina
DOKBA	2	Argentina, Brazil	Argentina

5LNC	Count	Countries	Priority
DOLVA	2	Argentina, Brazil	Argentina
DORVO	2	Uruguay/Argentina (FIR boundary), Brazil	Uruguay/Argentina
ELADA	2	Argentina, Indonesia	Argentina
ENTIS	2	Argentina, Venezuela	Argentina
ESNAM	2	Argentina, Algeria	Argentina
GAVOT	2	Argentina, France (French Guiana)	Argentina
IRAVU	2	Argentina, Senegal	Argentina
IRAXO	2	Brazil, Argentina	Brazil
ISONI	2	Argentina, Brazil	To be determined by the 5LNC Duplicate Resolution Rules
ISTER	2	France/Spain (FIR boundary), Argentina	France/Spain
ISUGU	2	Argentina, Brazil	Argentina
KADAT	2	Russian Federation, Chile/Argentina (FIR boundary)	Russian Federation
KALIM	2	Argentina, Thailand	Argentina
KORGA	2	Argentina, Indonesia	Argentina
KOTES	2	Argentina, Indonesia	Argentina
KOTOL	2	Argentina, Brazil	Argentina
KOVAK	2	France, Argentina	France
KRILL	2	New Zealand/France (French Polynesia) [FIR boundary], Chile/Argentina	New Zealand/France (French Polynesia)
KUBIR	2	Ukraine, Argentina/Paraguay (FIR boundary)	Ukraine
LADER	2	India, Brazil/Argentina	India
LITOK	2	Brazil, Argentina/Chile (FIR boundary)	Brazil
LITOR	2	Turkmenistan, Argentina	Turkmenistan
LOBOS	2	United States of America, Argentina	United States of America
LOMEK	2	Argentina, Venezuela	Argentina
MASPI	2	Argentina, Brazil	Argentina
MORRO	2	Argentina, Australia	Argentina
MOSKA	2	Argentina, Indonesia	Argentina
MULTA	2	Kazakhstan/Russian Federation (FIR boundary), Argentina	Kazakhstan/Russian Federation
NIDBA	2	Argentina, Brazil	Argentina
OPROS	2	Peru, Argentina	Peru
ORABO	2	Argentina, Venezuela	Argentina
OSARI	2	Argentina, Venezuela	Argentina
PADEN	2	Argentina, Australia	Argentina
PEDRO	2	Argentina, Spain	Argentina
PORPA	2	Argentina, China (Hong Kong)	Argentina

5LNC	Count	Countries	Priority
PULKA	2	Cuba/Jamaica (FIR boundary), Argentina	Cuba
PUPSI	2	Argentina, Brazil	Argentina
REDIT	2	Ecuador, Argentina	Ecuador
ROGAS	2	Argentina, Australia	Argentina
SAKSA	2	Argentina, Brazil	Argentina
SIBOL	2	Argentina, Indonesia	Argentina
SIGUL	2	Australia, Argentina	To be determined by the 5LNC Duplicate Resolution Rules
SILUS	2	Argentina, Mongolia	To be determined by the 5LNC Duplicate Resolution Rules
TODES	2	Russian Federation, Argentina	Russian Federation
TOPIL	2	Brazil, Argentina	Brazil
VADON	2	Brazil, Argentina	Brazil
VARES	2	France, Argentina	France
VURAK	2	Argentina, Brazil	Argentina

BRASIL/BRAZIL

5LNC	Count	Countries	Priority
CORAL	7	China (Taiwan), Japan, Australia, Brazil, Cuba, Mexico, Honduras (COCESNA)	Brazil
CEDAR	6	Brazil, United Kingdom, Lebanon, Japan, Australia, China (Hong Kong)	United Kingdom
LUCAS	6	Costa Rica, Netherlands (Netherlands Antilles), Mexico, Brazil, Australia, China (Taiwan).	Netherlands (Netherlands Antilles)
TOMAS	6	Australia, Denmark (Greenland), New Zealand, Brazil, Venezuela, Costa Rica (COCESNA)	Denmark (Greenland)
BRAVO	5	China (Taiwan), India, Syrian Arab Republic, Italy, Brazil	Brazil. To be determined by the 5LNC Duplicate Resolution Rules if not used by Brazil.
CRANE	5	United States of America, Japan, Brazil, Republic of Korea, Australia	United States of America
FRANK	5	Japan, China (Taiwan), United States of America, Brazil, Panama	United States of America
PANDA	5	United States of America, Japan, China (Taiwan), Brazil, Indonesia	United States of America
SAMAR	5	Indonesia, Israel, Spain/Morocco (FIR boundary), Brazil, Mexico	Spain/Morocco
SELVA	5	Venezuela, Ecuador, Brazil, Bolivia, United States of America	United States of America
STONE	5	Japan, Thailand, Brazil, Australia, United States of America	United States of America
ARENA	4	Spain/Morocco (Western Sahara), Brazil, Costa Rica, Japan	Spain/Morocco (Western Sahara)
AVILA	4	Spain, Brazil, United States of America, Philippines	Spain
BACON	4	Brazil, United States, Japan, China (Taiwan)	United States of America
BERTI	4	Algeria, Brazil, United States of America, Australia	United States of America
BLUES	4	United States of America, Brazil, Thailand, Japan	United States of America
CLARK	4	Australia, New Zealand, United States of America, Brazil	United States of America
ESTER	4	Australia, Israel, United States of America, Brazil	United States of America
FLUTE	4	Brazil, United States of America, Thailand, Japan	United States of America
GRACE	4	United States of America, Brazil, Thailand, China (Taiwan)	United States of America

5LNC	Count	Countries	Priority
GROVE	4	New Zealand, United Kingdom, United States of America, Brazil	United Kingdom
JULIA	4	United States of America, Brazil, Japan, Australia	Brazil
MASON	4	Brazil, Australia, Thailand, China (Taiwan)	Brazil
NOBEL	4	Thailand, Indonesia, Japan, Brazil	Brazil
OPERA	4	Thailand, Japan, Spain, Brazil	Brazil. To be determined by the 5LNC Duplicate Resolution Rules if not used by Brazil.
PASTA	4	Australia, China (Taiwan), Pakistan, Brazil	Pakistan
PERLA	4	Brazil, Cuba, El Salvador (COCESNA), Mexico	Brazil
SIMON	4	Brazil, Denmark (Greenland), Australia, Japan	Denmark (Greenland)
TAMAR	4	Venezuela, Israel, Brazil, China (Hong Kong)	Brazil
VERDE	4	Philippines, United States of America, Spain, Brazil	United States of America
ADELA	3	Indonesia, United States of America, Brazil	United States of America
ASTRA	3	Brazil, United Kingdom, Japan	United Kingdom
AUGUR	3	China (Taiwan), United States of America, Brazil	United States of America
BARKA	3	Australia, Algeria, Brazil	Brazil
BASIL	3	Brazil, Japan, Australia	Brazil
BRICK	3	Spain, United States of America, Brazil	Spain
CANOP	3	Japan, Canada, Brazil	Canada
CARDO	3	Brazil, United States of America, Australia	United States of America
CHARA	3	Japan, Brazil, Venezuela	Japan
CIDER	3	Brazil, Japan, Thailand	Brazil
COLOR	3	Brazil, Costa Rica (COCESNA), Japan	Brazil
COVER	3	United States of America, Brazil, Portugal	United States of America
DALMA	3	Venezuela, Brazil, Japan	Brazil
ESPIN	3	Argentina, Brazil, Spain	To be determined by the 5LNC Duplicate Resolution Rules
FLASH	3	China (Taiwan), Brazil, United States of America	United States of America
GEMAS	3	Spain, Malaysia, Brazil/Paraguay	Malaysia
GENUS	3	Brazil, United States of America, China (Taiwan)	United States of America

5LNC	Count	Countries	Priority
GUARI	3	Brazil, Paraguay, Papua New Guinea	Paraguay
HARDY	3	Thailand, Brazil, United Kingdom	United Kingdom
ILTON	3	Russian Federation, United states of America, Brazil	United States of America
IMPEL	3	United States of America, China (Taiwan), Brazil	United States of America
INDIO	3	Costa Rica (COCESNA), Mexico, Brazil	To be determined by the 5LNC Duplicate Resolution Rules
JANES	3	United States of America, Brazil, Costa Rica	United States of America
KENOK	3	Czechia, Haiti, Brazil	Czechia
LANCE	3	Japan, Spain, Brazil	Brazil
LIBRA	3	Thailand, Brazil, United States of America	United States of America
LISBO	3	Brazil, United Kingdom, United States of America	United Kingdom
MAGDA	3	Bolivia, Brazil, Australia	Brazil
MAGNA	3	Brazil, Lybia, Japan	Brazil
MANDU	3	India, Australia, Brazil	Brazil
MARIN	3	Brazil, Japan, Indonesia	To be determined by the 5LNC Duplicate Resolution Rules
MASPU	3	Chile, Brazil, Venezuela	Venezuela
MATRA	3	Brazil, Israel, Indonesia	Brazil
MOSNA	3	Brazil, Cambodia, Colombia	Colombia
NADAR	3	Russian Federation, Brazil, Japan.	Russian Federation. Brazil if not used by Russia.
NAMBI	3	Brazil, Saudi Arabia, Viet Nam	Saudi Arabia
NILON	3	United Kingdom, Brazil, Somalia	United Kingdom
NITRO	3	Thailand, Japan, Brazil	Brazil. To be determined by the 5LNC Duplicate Resolution Rules if not used by Brazil.
PANDI	3	Brazil, Indonesia, Philippines/Viet Nam (FIR boundary)	Brazil
PAPAS	3	Japan, Thailand, Brazil	Japan
PAULA	3	United States of America, Australia, Brazil	United States of America
PERSA	3	Brazil, Australia (2)	Brazil
PONTE	3	Japan, Spain, Brazil	Brazil. To be determined by the 5LNC Duplicate Resolution Rules if not used by Brazil.
RABAN	3	Republic of Korea, Brazil, India/Pakistan (FIR boundary)	India/Pakistan
RAMOS	3	Philippines, Brazil, United States of America	United States of America
RODRI	3	Belgium, Costa Rica (COCESNA),	Belgium

5LNC	Count	Countries	Priority
		Brazil	
RUMBA	3	Thailand, United States of America, Brazil	United States of America
SAMSU	3	Brazil, Panama, Indonesia	Panama
SANKA	3	Cambodia, United States of America, Brazil	United States of America
SERRA	3	Spain, United States of America, Brazil	Spain
SIMEL	3	Indonesia, Peru, Brazil	Brazil
SOFIA	3	Brazil, Paraguay, Syrian Arab Republic	Brazil
TOMBO	3	Brazil, Indonesia, Republic of Korea	Brazil. To be determined by the 5LNC Duplicate Resolution Rules if not used by Brazil.
VANES	3	Greece, Brazil, China (Taiwan)	Greece
VENUS	3	Mexico, Tonga, Brazil	Brazil. To be determined by the 5LNC Duplicate Resolution Rules if not used by Brazil.
WELIN	3	United States of America, United Kingdom, Brazil	United Kingdom
ZORRO	3	Australia, United States of America, Brazil/Colombia (FIR boundary)	United States of America
ABELA	2	Russian Federation, Brazil	Russian Federation
ABUCU	2	Brazil, United States of America	Brazil
ACARI	2	United States of America, Brazil/Guyana (FIR boundary)	United States of America
ADEMI	2	Germany, Brazil	Germany
AGENT	2	United States of America, Brazil	United States of America
AGURI	2	Russian Federation, Brazil	Russian Federation
AKSIN	2	Brazil, Guyana	Brazil
ALBUL	2	Venezuela, Brazil	Brazil
ALGAN	2	Turkey, Brazil	Brazil
ALMAT	2	United States of America, Brazil	United States of America
ANDOR	2	Norway, Brazil	Norway
ANGAS	2	Brazil, Australia	Brazil
ANLUK	2	Argentina, Brazil	Brazil.
ANPIR	2	Brazil/Senegal (FIR boundary), Venezuela	Brazil/Senegal
AROLO	2	Brazil, Bolivia	Brazil
ASGAT	2	Mongolia, Brazil	Brazil
ATARO	2	Brazil, Indonesia	Brazil
ATATU	2	Peru, Brazil/Colombia (FIR boundary)	Peru
BANGU	2	United States of America, Brazil	United States of America

5LNC	Count	Countries	Priority
BARCO	2	Brazil, Republic of Korea	Brazil
BARGE	2	United States of America, Brazil	United States of America
BETAR	2	United Kingdom (Cayman Islands)/Jamaica, Brazil	United Kingdom (Cayman Islands)/Jamaica
BIDEV	2	Brazil, New Zealand	Brazil
BINAS	2	Brazil, Gabon	Brazil
BISSA	2	Algeria, Brazil	Algeria
BIVBI	2	Canada, Brazil	Canada
BLOCK	2	United States of America, Brazil	United States of America
BOMAK	2	Panama, Brazil	To be determined by the 5LNC Duplicate Resolution Rules
BUGAT	2	Brazil, Mongolia	Brazil
BUTRU	2	Brazil, Venezuela	Brazil. Venezuela if not used by Brazil.
BUVIN	2	France (Guyane Française), Brazil	Guyane Française (France)
CALAN	2	France, Brazil	France
CALIF	2	United States of America, Brazil	United States of America
CARAM	2	Brazil, Philippines	Brazil
CARMO	2	Brazil, Philippines	Brazil
CARVA	2	United States of America, Brazil	United States of America
CASTE	2	United States of America, Brazil	United States of America
CHANT	2	United States of America, Brazil	United States of America
CITRA	2	United States of America, Brazil/Bolivia (FIR boundary)	United States of America
CLOSE	2	United States of America, Brazil	United States of America
CLUNG	2	United States of America, Brazil	United States of America
CONDE	2	Brazil, Philippines	Brazil
COSME	2	United States of America, Brazil	United States of America
CROWD	2	United States of America, Brazil	United States of America
CURSE	2	United States of America, Brazil	United States of America
DABLI	2	Brazil, Argentina	To be determined by the 5LNC Duplicate Resolution Rules
DAGEN	2	Chile, Brazil	Chile
DAKAP	2	Brazil, Peru	Brazil
DAKIN	2	Kazakhstan/Russian Federation, Brazil	Kazakhstan/Russian Federation
DANRI	2	Brazil, Philippines	Brazil
DANTU	2	Brazil, Peru	Brazil
DANVA	2	Brazil, Australia	Brazil
DARIO	2	Brazil, Japan	Brazil. Japan if not used by Brazil.
DEMON	2	India, Brazil	India
DENOB	2	Morocco, Brazil	Morocco
DENSE	2	Brazil, United States of America	Brazil
DEPOT	2	United States of America, Brazil	United States of America

5LNC	Count	Countries	Priority
DIANA	2	Brazil, Japan	Brazil
DIKIT	2	Brazil, Venezuela	Brazil
DINER	2	United States of America, Brazil	United States of America
DOGTA	2	Colombia, Brazil	Colombia
DOKBA	2	Argentina, Brazil	Argentina
DOKTO	2	Chile, Brazil	Chile
DOLTO	2	Chile, Brazil	Chile
DOLVA	2	Argentina, Brazil	Argentina
DONGI	2	Viet Nam, Brazil	Viet Nam
DORMI	2	Brazil, Spain	Brazil
DORVO	2	Uruguay/Argentina (FIR boundary), Brazil	Uruguay/Argentina
DOSMA	2	Brazil, Ecuador	Brazil
DUNCE	2	United States of America, Brazil	United States of America
EAGLE	2	Brazil, Australia	Brazil
EDITE	2	United States of America, Brazil	United States of America
EDVAR	2	Colombia, Brazil	Colombia
EGALE	2	United States of America, Brazil	United States of America
ELENA	2	Brazil, Costa Rica (COCESNA)	Brazil
ENLUS	2	Chile, Brazil	Chile
EPDAD	2	India, Brazil	India
EPDAM	2	Australia, Brazil	Australia
EROPA	2	Brazil, Madagascar/Mozambique (FIR boundary)	Brazil
ERVIS	2	India, Brazil	India
ESLOP	2	Brazil, Peru	To be determined by the 5LNC Duplicate Resolution Rules
ESMEL	2	Bolivia, Brazil	Bolivia (Plurinational State of)
EVLUB	2	Colombia, Brazil	Colombia
EVOLO	2	Norway, Brazil	Norway
FLINT	2	United States of America, Brazil	United States of America
FLORI	2	Brazil, Mexico	Brazil
FOSSE	2	United States of America, Brazil	United States of America
FRAIL	2	United States of America, Brazil	United States of America
FRAUD	2	United States of America, Brazil	United States of America
GALES	2	United States of America, Brazil	United States of America
GARCI	2	Venezuela/Colombia (FIR boundary), Brazil	Venezuela (Bolivarian Republic of)/Colombia
GEDOK	2	Colombia, Brazil	Colombia
GENKO	2	Brazil, Japan	Brazil
GIANT	2	Brazil, China (Taiwan)	Brazil
GIBTA	2	Brazil, Venezuela	Brazil

5LNC	Count	Countries	Priority
GIKRO	2	Colombia, Brazil	Colombia
GIRAL	2	Morocco, Brazil	Morocco
GLINT	2	United States of America, Brazil	United States of America
GOMAL	2	Kazakhstan, Brazil	Kazakhstan
GRAVE	2	United States of America, Brazil	United States of America
GRUFF	2	United States of America (U.S. Virgin Islands), Brazil	United States of America
GRUTA	2	Brazil, Mexico	Brazil
HAMBU	2	United States of America, Brazil	United States of America
HASTE	2	United States of America, Brazil	United States of America
HATCH	2	United States of America, Brazil	United States of America
IBAGA	2	Germany, Brazil	Germany
ILNES	2	Peru, Brazil	Peru
ILNOP	2	Colombia, Brazil	Colombia
ILPUR	2	Brazil, Paraguay	Brazil
IMBIS	2	Colombia, Brazil	Colombia
INASU	2	Brazil, Cameroon/Chad/Congo (FIR boundary)	Brazil
IRAXO	2	Brazil, Argentina	Brazil
IRULI	2	Chile, Brazil	Chile
ISEKI	2	Brazil, Japan	Brazil
ISESA	2	Colombia, Brazil	Colombia
ISLIT	2	Brazil, Nicaragua (COCESNA)	Brazil
ISOKO	2	Panama, Brazil	Panama
ISONI	2	Argentina, Brazil	To be determined by the 5LNC Duplicate Resolution Rules
ISUGU	2	Argentina, Brazil	Argentina
ITAMA	2	Venezuela, Brazil	Venezuela (Bolivarian Republic of)
ITAMU	2	Colombia, Brazil	Colombia
ITASU	2	Brazil, Venezuela	Brazil
JAVAN	2	United States of America, Brazil	United States of America
JOUST	2	United States of America, Brazil	United States of America
JUICE	2	United Kingdom (Anguilla)/United States of America (U.S. Virgin Islands), Brazil	Anguilla I. (U.K.)/United States of America
JURIS	2	United States of America, Brazil	United States of America
KAKUD	2	Colombia, Brazil	Colombia
KALAX	2	Brazil, Malaysia	Brazil
KALER	2	Brazil, Chile	Brazil. Chile if not used by Brazil.
KEVER	2	Colombia, Brazil	Colombia
KIKIS	2	Ecuador, Brazil	Ecuador
KILIS	2	Brazil, Turkey/Syrian Arab Republic (FIR boundary)	Brazil

5LNC	Count	Countries	Priority
KODSA	2	Brazil, Bolivia	Brazil
KOMBO	2	Colombia, Brazil	Colombia
KOMLA	2	Peru, Brazil	Peru
KONVO	2	Chile, Brazil	Chile
KOTOL	2	Argentina, Brazil	Argentina
KOTRA	2	Brazil, Republic of Korea	To be determined by the 5LNC Duplicate Resolution Rules
KOVUM	2	Colombia, Brazil	Colombia
LADER	2	India, Brazil/Argentina	India
LARVA	2	United States of America, Brazil	United States of America
LEBON	2	Indonesia, Brazil	Indonesia
LENOX	2	United States of America, Brazil	United States of America
LIMPO	2	Belarus, Brazil/Peru (FIR boundary)	Belarus
LISAN	2	Brazil, Benin	Brazil
LITOK	2	Brazil, Argentina/Chile (FIR boundary)	Brazil
LIVER	2	United States of America, Brazil	United States of America
LOGIR	2	Brazil, Venezuela	Brazil
LOKAR	2	Brazil, Panama	Brazil
LOVIS	2	Romania, Brazil	Romania
LUNAT	2	Ukraine, Brazil	Ukraine
LUPTA	2	Equatorial Guinea, Brazil	Equatorial Guinea
LUVDO	2	Colombia, Brazil	Colombia
MADOK	2	New Zealand, Brazil	New Zealand
MADRE	2	United States of America, Brazil	United States of America
MADRI	2	United States of America, Brazil	United States of America
MALPO	2	Chile, Brazil	Chile
MAMPO	2	Colombia, Brazil	Colombia
MAPMI	2	Colombia, Brazil	Colombia
MARPU	2	Colombia, Brazil	Colombia
MASPI	2	Argentina, Brazil	Argentina
MATEL	2	Bulgaria, Brazil	Bulgaria
MEDAL	2	Italy, Brazil	Italy
MEDIT	2	Brazil, China	Brazil
MEDLE	2	United States of America, Brazil	United States of America
MICAL	2	United States of America, Brazil	United States of America
MICRO	2	United States of America, Brazil	United States of America
MILOG	2	Colombia, Brazil	Colombia
MILTA	2	Latvia, Brazil	Latvia
MIMER	2	Brazil, Venezuela	Brazil
MITRA	2	United States of America, Brazil	United States of America

5LNC	Count	Countries	Priority
MOMVO	2	Ecuador, Brazil	Ecuador
MONIC	2	Australia, Brazil	Australia
MOVER	2	United States of America, Brazil	United States of America
MOVSI	2	Australia, Brazil	To be determined by the 5LNC Duplicate Resolution Rules
MOXEP	2	Ecuador, Brazil	Ecuador
MOXIL	2	Bolivia (Plurinational State of), Brazil	Bolivia (Plurinational State of)
MOXIP	2	Colombia, Brazil	Colombia
MUDAR	2	Brazil, Chile	Brazil
MUDOL	2	Chile, Brazil	Chile
MULUX	2	Colombia, Brazil	Colombia. Brazil if not used by Colombia.
MUMIL	2	Ecuador, Brazil	Ecuador
NACRE	2	Brazil, China (Taiwan)	Brazil
NADIR	2	United States of America, Brazil	United States of America
NAXUP	2	Colombia, Brazil	Colombia
NEBAL	2	Brazil, Chile	Brazil
NEGAR	2	Russian Federation, Brazil	Russian Federation
NEGON	2	Dominican Republic/United States of America (Puerto Rico) [FIR boundary], Brazil	Dominican Republic/United States of America
NEGRA	2	Germany/Switzerland, Brazil	Germany/Switzerland
NEGUS	2	United States of America, Brazil	United States of America
NEKET	2	Latvia/Sweden (FIR boundary), Brazil	Latvia/Sweden
NERVO	2	Spain, Brazil	Spain
NIDBA	2	Argentina, Brazil	Argentina
NIPKA	2	Paraguay, Brazil	Paraguay
NISBO	2	Colombia, Brazil	Colombia
NITER	2	United States of America, Brazil	United States of America
NOISE	2	United States of America, Brazil	United States of America
OBLAD	2	France, Brazil	France
ONDAK	2	Canada, Brazil	Canada
OPABA	2	Australia/Indonesia (FIR boundary), Brazil	Australia/Indonesia
ORATE	2	United States of America, Brazil	United States of America
OSAMU	2	Brazil, Japan	Brazil
PADAM	2	Brazil, Thailand	To be determined by the 5LNC Duplicate Resolution Rules
PADEK	2	Brazil, Australia	Brazil. Australia if not used by Brazil.
PAINT	2	United States of America, Brazil	United States of America
PALAT	2	Brazil, Thailand	Brazil
PALIO	2	Spain, Brazil	Spain

5LNC	Count	Countries	Priority
PANAP	2	Brazil, Japan	To be determined by the 5LNC Duplicate Resolution Rules
PANID	2	Colombia, Brazil	Colombia
PANOK	2	Panama, Brazil	Panama
PANOL	2	Serbia, Brazil	Serbia and Montenegro
PAROL	2	United States of America, Brazil	United States of America
PEDAL	2	United States of America, Brazil	United States of America
PEPER	2	United States of America, Brazil	United States of America
PERNA	2	Brazil, Canada	Brazil
POLAN	2	Brazil, Democratic Republic of the Congo	To be determined by the 5LNC Duplicate Resolution Rules
POPRI	2	Panama, Brazil	Panama
PORTE	2	United States of America, Brazil	United States of America
POSTA	2	Mexico, Brazil	Mexico
POTBA	2	Colombia, Brazil	Colombia
PRIMA	2	Brazil, Indonesia	Brazil
PROST	2	United States of America, Brazil	United States of America
PROVE	2	United States of America, Brazil	United States of America
PUBLA	2	Spain, Brazil	Spain
PUPSI	2	Argentina, Brazil	Argentina
RAXOR	2	Brazil, Guyana	Brazil
REDOC	2	United States of America, Brazil	United States of America
REGIS	2	United States of America, Brazil	United States of America
REINA	2	Brazil, Norway	Brazil
RELEX	2	Brazil, Republic of Korea	Brazil. Republic of Korea if not used by Brazil.
REMEK	2	Brazil/Paraguay (FIR boundary), Russian Federation	Brazil/Paraguay
RIDAL	2	Brazil, Australia	Brazil
RITMO	2	Tunisia, Brazil	Tunisia
RODAX	2	Panama, Brazil	Panama
RODES	2	Brazil, Australia	Brazil
ROMUS	2	Brazil, Chile	Brazil
ROPEN	2	Brazil, Chile	Brazil
RUBIC	2	United States of America, Brazil	United States of America
SAKSA	2	Argentina, Brazil	Argentina
SAKSI	2	Colombia, Brazil	Colombia
SARPA	2	Bolivia (Plurinational State of), Brazil	Bolivia (Plurinational State of)
SARTA	2	Japan, Brazil	Japan
SASLA	2	Colombia, Brazil	Colombia
SATNA	2	Australia/Indonesia (FIR boundary), Brazil	Australia/Indonesia

5LNC	Count	Countries	Priority
SELDI	2	Ecuador, Brazil	Ecuador
SIDOV	2	Colombia, Brazil	Colombia
SIGAK	2	Brazil, Japan	To be determined by the 5LNC Duplicate Resolution Rules
SIGAR	2	Brazil, Indonesia	To be determined by the 5LNC Duplicate Resolution Rules
SIGAS	2	Brazil, Indonesia	Brazil
SIGIR	2	Colombia, Brazil	Colombia
SIKEM	2	Peru, Brazil	Peru
SIKIL	2	Brazil, Indonesia	Brazil
SOLDO	2	United States of America, Brazil	United States of America
TARIB	2	New Zealand, Brazil/Colombia (FIR boundary)	New Zealand
TERES	2	United States of America, Brazil	United States of America
TEXAS	2	United States of America, Brazil	United States of America
TIMBO	2	Australia, Brazil	To be determined by the 5LNC Duplicate Resolution Rules
TIPLI	2	Brazil, Democratic Republic of the Congo	Brazil
TOKIM	2	Brazil, Singapore	Brazil
TOPAM	2	Brazil, India	Brazil
TOPIK	2	Brazil, Venezuela	Brazil
TOPIL	2	Brazil, Argentina	Brazil
TOSAR	2	Brazil, Japan	Brazil
TROVA	2	United States of America, Brazil	United States of America
UGOTA	2	Brazil, Colombia	Brazil
VADON	2	Brazil, Argentina	Brazil
VULRI	2	Colombia, Brazil	Colombia
VURAK	2	Argentina, Brazil	Argentina
VUSTA	2	Brazil, Peru	Brazil
ZAMBI	2	United States of America, Brazil	United States of America

COLOMBIA

5LNC	Count	Countries	Priority
ANGEL	4	Thailand, Japan, Honduras (COCESNA), Colombia/Ecuador (FIR boundary)	Colombia/Ecuador
COLON	4	Costa Rica (COCESNA), Colombia, United States of America, Spain	Spain
MANGA	3	New Zealand, Viet Nam, Colombia	Colombia
MOSNA	3	Brazil, Cambodia, Colombia	Colombia
NEMAL	3	Austria, Colombia, Fiji	Austria
ORTIZ	3	United States of America, Colombia/Venezuela (FIR boundary), China (Taiwan)	United States of America
ZORRO	3	Australia, United States of America, Brazil/Colombia (FIR boundary)	United States of America
ALBAK	2	Colombia, Australia	Colombia
ALPON	2	Panama/Colombia (FIR boundary), Indonesia	Panama/Colombia
AMBAL	2	Colombia, Saudi Arabia	Saudi Arabia
ANDIL	2	Colombia, Madagascar	Colombia
ASANO	2	Japan, Colombia	To be determined by the 5LNC Duplicate Resolution Rules
ASIVI	2	Colombia, Venezuela	Colombia
ATAKI	2	Colombia, Turkey	Colombia
ATATU	2	Peru, Brazil/Colombia (FIR boundary)	Peru
BABOR	2	Algeria, Colombia/Venezuela (FIR boundary)	Algeria
BISUL	2	Colombia, Argentina	Colombia
BOGAL	2	Colombia/Panama (FIR boundary), Australia	Colombia/Panama
BURDU	2	Colombia, Guinea-Bissau	Colombia
BURPA	2	Colombia, Australia	Colombia
BUTAN	2	Colombia, Philippines	Colombia
DALNA	2	Colombia, Peru	Colombia
DOGTA	2	Colombia, Brazil	Colombia
EDVAR	2	Colombia, Brazil	Colombia
EGISA	2	Colombia, Venezuela	Colombia
EVLUB	2	Colombia, Brazil	Colombia
GARCI	2	Venezuela/Colombia (FIR boundary), Brazil	Venezuela (Bolivarian Republic of)/Colombia
GEDOK	2	Colombia, Brazil	Colombia
GIKRO	2	Colombia, Brazil	Colombia

5LNC	Count	Countries	Priority
GILGA	2	Aruba (Netherlands)/Colombia/Venezuela (Bolivarian Republic of) [FIR boundary], Republic of Korea	Aruba (Netherlands)/Colombia/Venezuela (Bolivarian Republic of)
ILNOP	2	Colombia, Brazil	Colombia
IMBIS	2	Colombia, Brazil	Colombia
ISESA	2	Colombia, Brazil	Colombia
ITAMU	2	Colombia, Brazil	Colombia
KABOS	2	Colombia, Japan	Colombia
KAKUD	2	Colombia, Brazil	Colombia
KAMIS	2	Colombia, Japan	Colombia
KEVER	2	Colombia, Brazil	Colombia
KEXAN	2	Colombia, Venezuela	Colombia
KOMBO	2	Colombia, Brazil	Colombia
KORKI	2	Colombia, Cambodia	Colombia
KOTIN	2	Colombia, Australia	Colombia
KOVUM	2	Colombia, Brazil	Colombia
LITOL	2	Colombia, Guyana	Colombia
LOKOS	2	Colombia, Russian Federation	Colombia
LUVDO	2	Colombia, Brazil	Colombia
MAKBU	2	Colombia, Japan	Colombia
MAMPO	2	Colombia, Brazil	Colombia
MAPMI	2	Colombia, Brazil	Colombia
MARPU	2	Colombia, Brazil	Colombia
MILOG	2	Colombia, Brazil	Colombia
MOREL	2	Australia, Colombia	To be determined by the 5LNC Duplicate Resolution Rules
MOXIP	2	Colombia, Brazil	Colombia
MULUX	2	Colombia, Brazil	Colombia. Brazil if not used by Colombia.
NAXUP	2	Colombia, Brazil	Colombia
NISBO	2	Colombia, Brazil	Colombia
OPMEL	2	Colombia, Venezuela	Colombia
OSAMA	2	Colombia, Jordan	Colombia
PANID	2	Colombia, Brazil	Colombia
PANOR	2	Colombia, Australia	Colombia
POTBA	2	Colombia, Brazil	Colombia
PUKAM	2	Colombia, Venezuela	Colombia
PUMPA	2	Colombia, Australia	Colombia
RELUN	2	Peru, Colombia/Venezuela	Peru
SAKSI	2	Colombia, Brazil	Colombia
SASLA	2	Colombia, Brazil	Colombia

5LNC	Count	Countries	Priority
SERVO	2	Colombia, Chile	Colombia
SIDOV	2	Colombia, Brazil	Colombia
SIGIR	2	Colombia, Brazil	Colombia
TARIB	2	New Zealand, Brazil/Colombia (FIR boundary)	New Zealand
UGOTA	2	Brazil, Colombia	Brazil
VENTA	2	France, Colombia/Venezuela (FIR boundary)	France
VULRI	2	Colombia, Brazil	Colombia

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