

**STATISTICAL YEARBOOK
OF AERONAUTICAL
GEOINFORMATION
2025**



Department of
Airspace Control



Institute of
Aeronautical Cartography

Table of Contents

Page 3	Presentation
Page 4	ICA Foundations
Page 5	ICA Competencies
Page 8	Ground Charts and Visual Approach Charts (VAC)
Page 12	Instrument Flight Charts (IFR)
Page 16	En-route Charts (ENRC) and Area Charts (ARC)
Page 20	Visual Charts
Page 22	Special Visual Flight Charts
Page 26	Aeronautical Publications
Page 30	NOTAM
Page 34	Protection Zone Plan
Page 36	Objects Projected into the Airspace (OPEA)
Page 38	Topographic Survey
Page 40	Data Provision
Page 41	Drone-based Aerial Survey
Page 42	2025 Highlights
Page 46	Quality Management System

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Presentation

The Institute of Aeronautical Cartography (ICA), founded on May 10, 1983, plays a strategic role in the safety and development of air navigation in Brazil.

With decades of experience and continuous evolution, ICA is responsible for producing and managing Brazil's aeronautical and cartographic information, which is essential to ensuring the efficiency and safety of air traffic in a continental-sized country.

The ICA Yearbook aims to present the activities carried out throughout 2025 and the results achieved. It serves as an important tool to support planning and analysis of new projects within SISCEAB, directly contributing to the continuous development of the aeronautical sector.



ICA Foundations

Mission

The Institute of Aeronautical Cartography is an organization of the Brazilian Air Force Command whose mission is to plan, manage, control, and execute activities related to aeronautical cartography, aeronautical information, air navigation procedure design, and airspace design.

Vision

To be a global reference in aeronautical geoinformation services management, recognized for innovation, sustainability, and excellence in the production of charts, air navigation procedures, and airspace design.

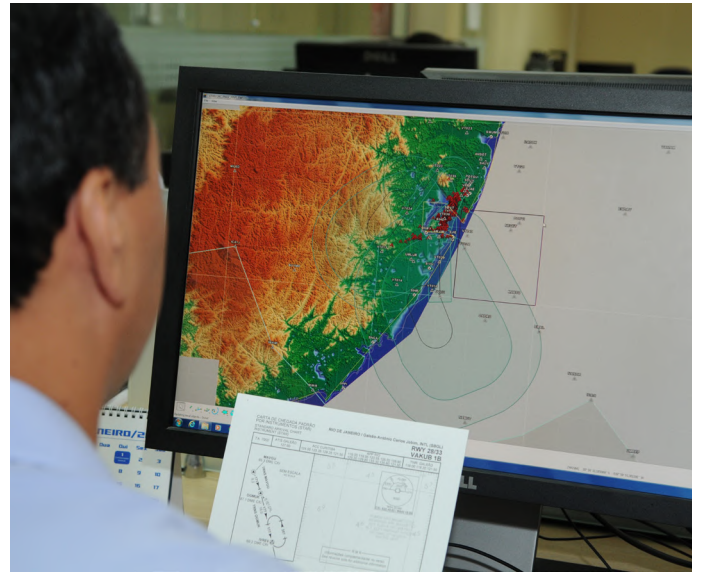
Values

The ICA carries out its mission guided fundamentally by the following values:

- I - Commitment;
- II - Responsibility;
- III - Professional conduct;
- IV - Synergy;
- V - Excellence; and
- VI - Innovation.

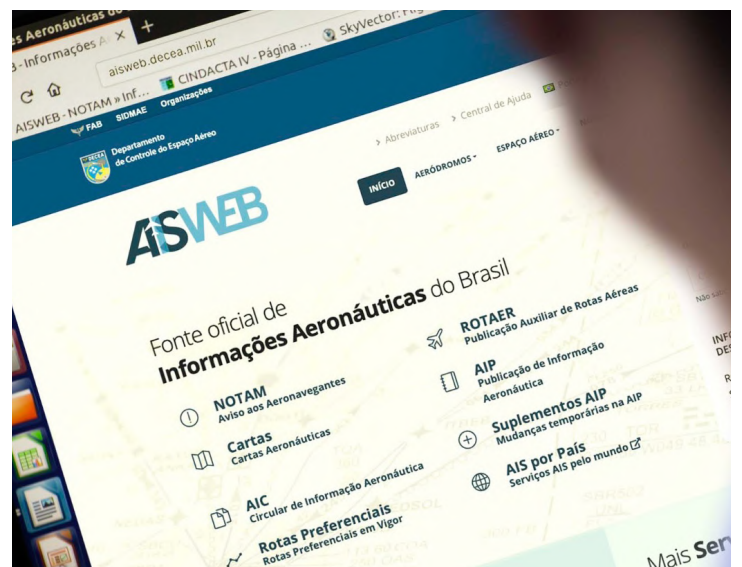
ICA Competencies

The Institute of Aeronautical Cartography, directly subordinate to the Department of Airspace Control (DECEA), is the only Brazilian organization responsible for aeronautical cartography, aeronautical information, air navigation procedure design, and airspace design, serving as the representative of the Air Force Command to national and international organizations within its field of responsibility.



Therefore, ICA is responsible for providing topographic and cartographic support to COMAER organizations through the supply of cartographic products and the execution of geodetic and topographic surveys for purposes related to aeronautical cartography and aeronautical information, as well as for providing technical assistance in matters concerning Geodesy, Aerial Surveying, Cartography, Photogrammetry, Remote Sensing, and other subfields related to the Cartography.

In addition, the Institute is responsible for the management and dissemination of permanent aeronautical information contained in AIS Publications, ensuring that such Publications are maintained in accordance with pre-established schedules. Furthermore, the Institute validates the Basic Protection Zone Plans for Aerodromes and Helipads throughout the national territory.



Guiding your flight through all ph

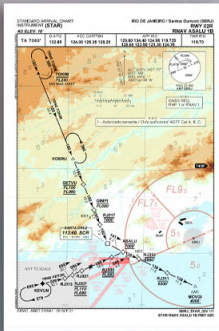


WORLD AERONAUTICAL CHART



WAC

STANDARD INSTRUMENT ARRIVAL CHART



STAR

VISUAL APPROACH CHART



VAC

INSTRUMENT APPROACH CHART

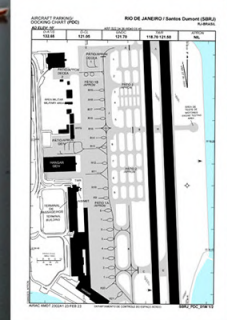


IAC

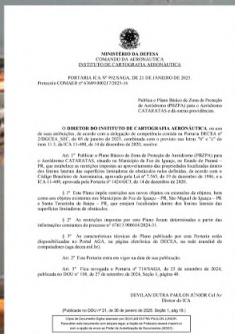
ARRIVAL



AIRCRAFT PARKING/DOCKING CHART



PDC



ICA ORDINANCE

E0019/25 R E9439/24 03/01/2025 20:29

Q) SBWC/QOBXX/IV/M/AE/000/999/2255804310W005
 OBST MOVEL (MSC SEAVIEW) LGTD 74M (243FT) HGT
 DESLOCANDO-SE FM COORD 225340S0431100W (TERMINAL PIER
 MAUA) TO COORD 225626S0430843W (PONTA DE SANTA CRUZ,
 RJ)
 ORIGEM: SDIA F3AFFOC9

25/01/25 21:00 a 01/03/25 22:00 UTC
 25 JAN 25 MAR 01 2100-2200

NOTAM

ROTAER NOTAM Suplementos AP Cartas Metar/TAF Rotas Preferenciais

ROTAER D:AM01 28/06 [Ver mudanças](#)

Santos Dumont (SBR) J / RIO DE JANEIRO, RJ 22 54 36S/043 09 45W
 AD PUB/MIL INFRAERO ZE UTC-3 VER FR L21, L23, L26 3 (10)
 02L - L9(3.23) [1] [1] [2] [1] [4], L12 - (126x30 ASPH 39/F/B/X/T L14, L15) - L9(3.12) SBWC (CRCEA-SE)
 [1] [1] [4], L12 - 20R

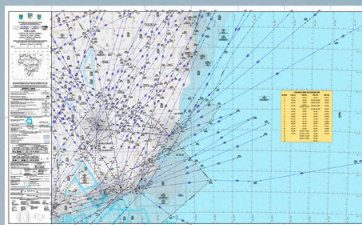
02R - L9(3.23) [1] [2] [1] [4], L12 - (132x42 ASPH 65/F/B/X/T L14, L15) - L9(3.12)
 [4] [1] [4], L12 - 20L

ROTAER

Phases: from planning to parking.



ENROUTE CHART



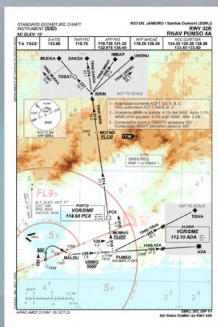
ENRC

SPECIAL AIRCRAFT ROUTES



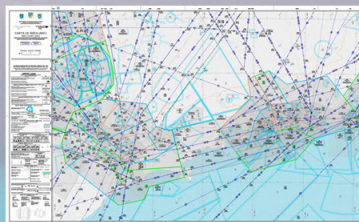
REA

STANDARD INSTRUMENT DEPARTURE CHART



SID

AREA CHART



ARC

DEPARTURE



AERODROME CHART



ADC

CODING TABLE

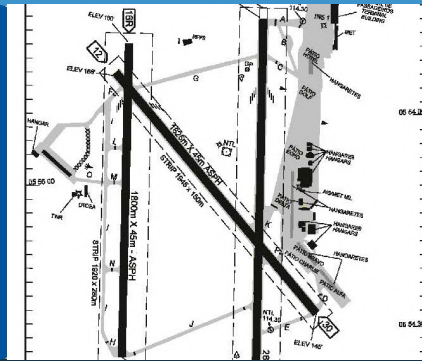
Code	Symbol	Frequency	Power	Class	Altitude	Remarks	Remarks	Remarks	Remarks	Remarks
100	M	100	100	100	100	100	100	100	100	100
101	M	100	100	100	100	100	100	100	100	100
102	M	100	100	100	100	100	100	100	100	100
103	M	100	100	100	100	100	100	100	100	100
104	M	100	100	100	100	100	100	100	100	100
105	M	100	100	100	100	100	100	100	100	100
106	M	100	100	100	100	100	100	100	100	100
107	M	100	100	100	100	100	100	100	100	100
108	M	100	100	100	100	100	100	100	100	100
109	M	100	100	100	100	100	100	100	100	100
110	M	100	100	100	100	100	100	100	100	100

CODING TABLE



FMS

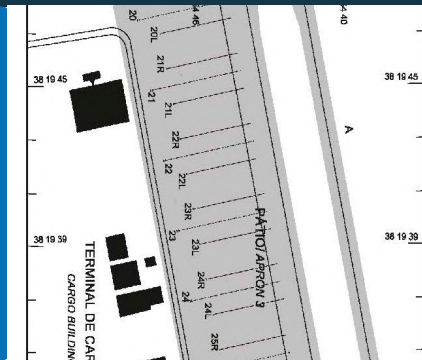
Ground Charts and Visual Approach Charts



ADC – Aerodrome Chart

Chart intended to provide information to facilitate aircraft movement on the surface of an aerodrome.

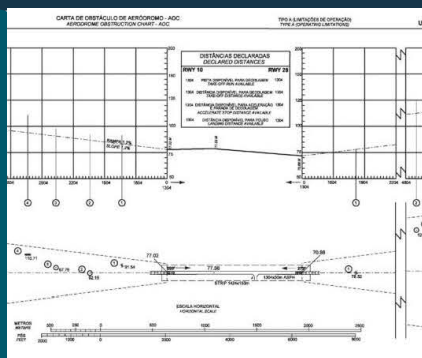
It includes details on taxiing from the apron to the runway and vice versa, as well as data such as runway and apron identification, aerodrome elevation, and its geographic coordinates.



PDC – Aircraft Parking/Docking Chart

Chart intended to provide information on the parking positions available on the aprons of an aerodrome.

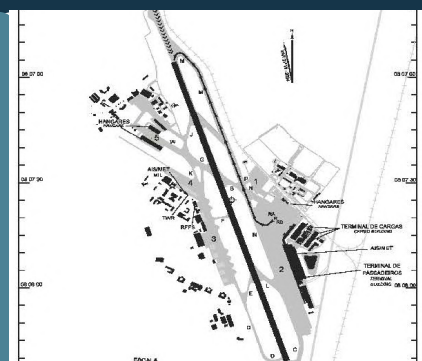
It also includes data such as taxiway and apron identification, aerodrome elevation, and the geographic coordinates of the parking stands.



AOC – Aerodrome Obstruction Chart

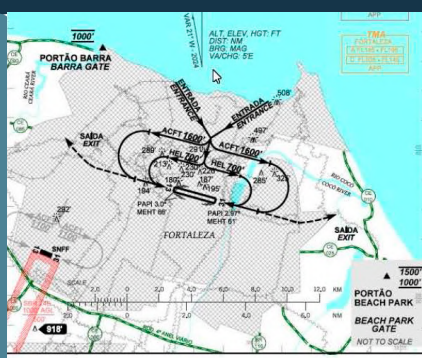
It shows in detail the location and height of obstacles surrounding a visual aerodrome.

It allows the identification of potential hazards and enables adjustments to departure and approach routes.



AGMC – Aerodrome Ground Movement Chart

It provides detailed information on the movement areas and manoeuvring areas of the aerodrome, enabling safe and efficient aircraft ground movement along taxiways and to and from parking stands.



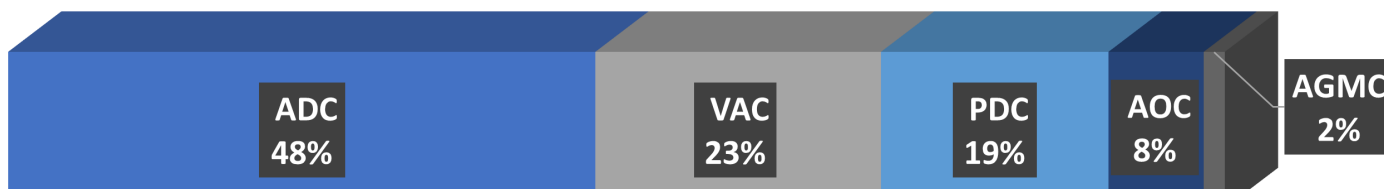
VAC – Visual Approach Chart

It provides information to facilitate entry into the visual traffic circuit and to support the transition from the en-route and descent phases of flight to the visual approach and landing on the intended runway, by means of visual references.

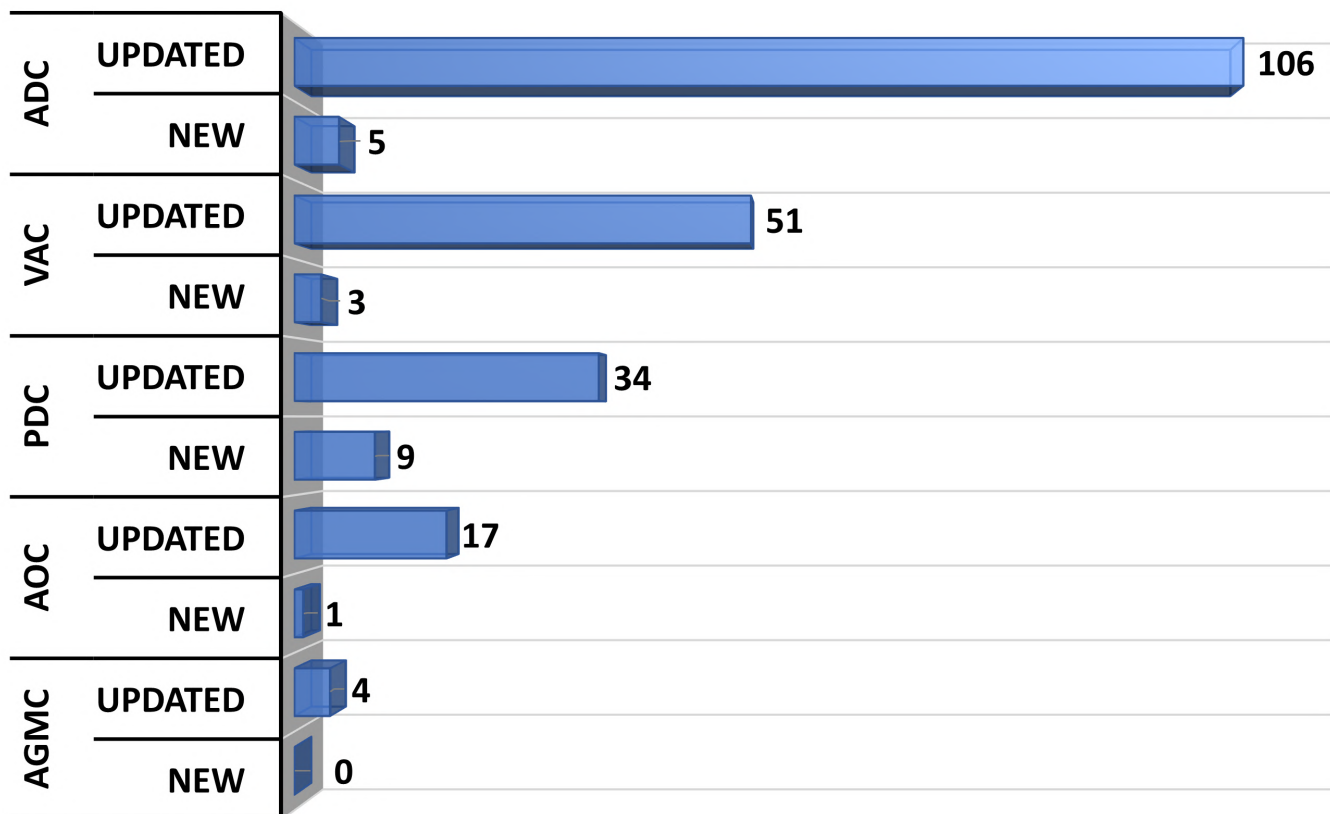
Ground Charts and Visual Approach Charts

Charts Published in 2025

Aerodrome Chart (ADC)	111
Visual Approach Chart (VAC)	54
Aircraft Parking/Docking Chart (PDC)	43
Aerodrome Obstruction Chart (AOC)	18
Aerodrome Ground Movement Chart (AGMC)	4



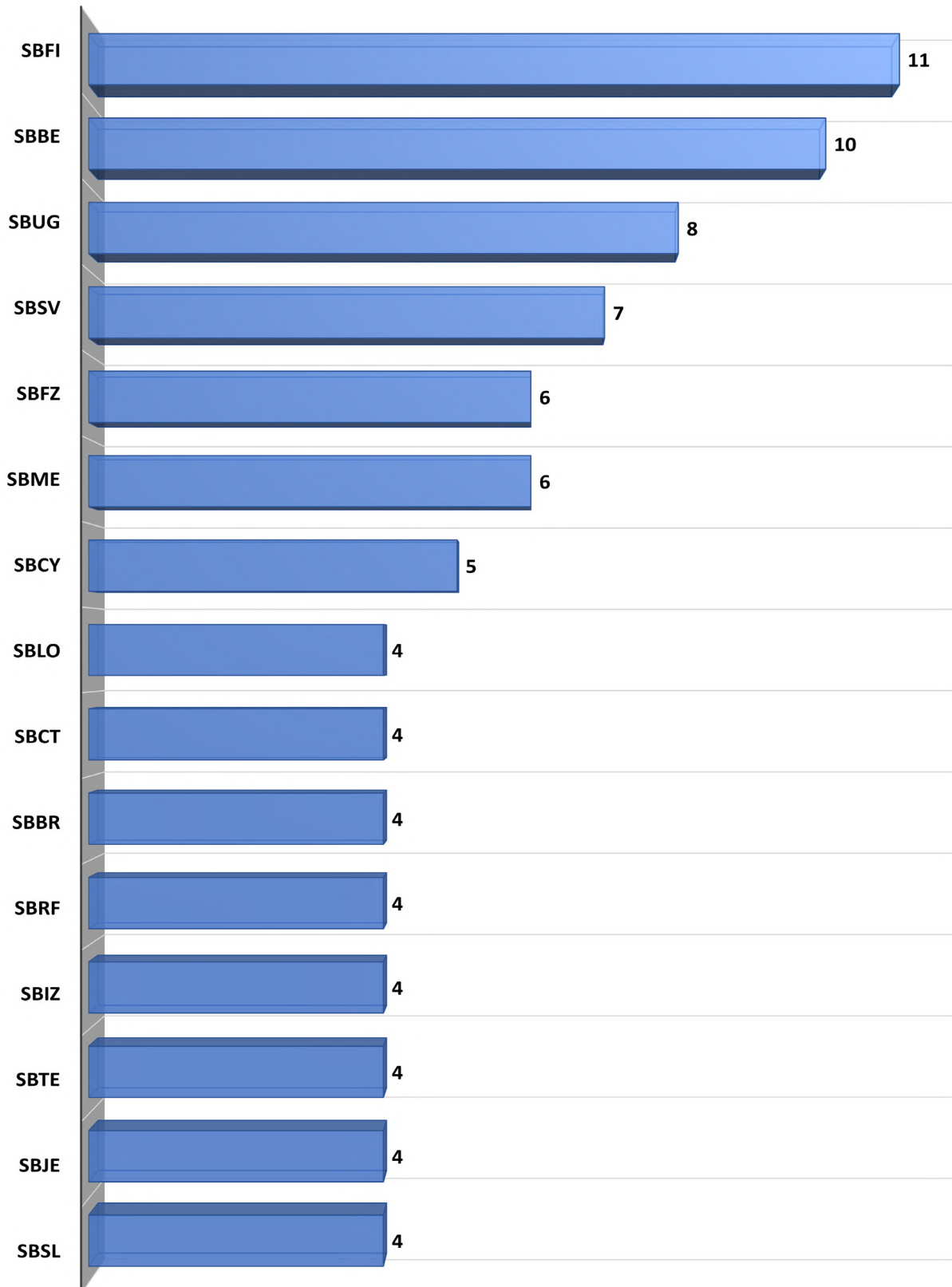
Number of New and Updated Charts



Ground Charts and Visual Approach Charts

Chart Revisions per Aerodrome

Ground charts were published for **90** aerodromes in 2025. The chart below illustrates the top **15** aerodromes with the highest number of updates.

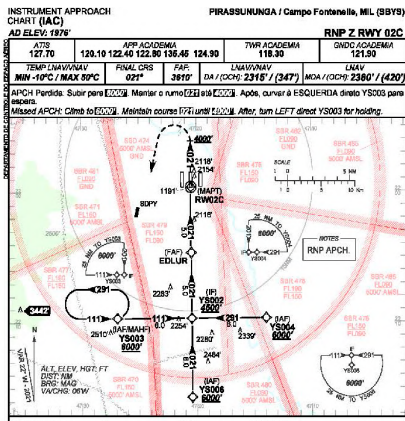


Ground Charts and Visual Approach Charts

Geographical Distribution

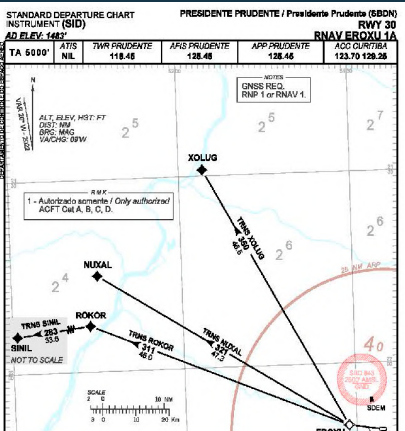


Instrument Procedure Charts (IFR)



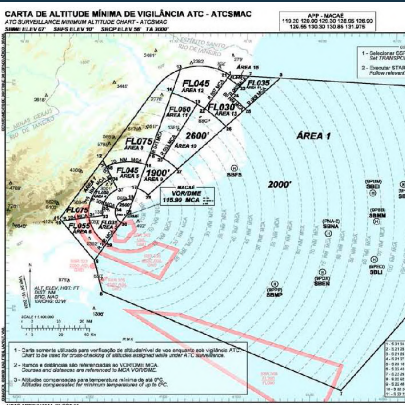
IAC – Instrument Approach Chart

It provides the plan view and profile view of the instrument approach procedure for a specific aerodrome, including the lateral and vertical instructions necessary for the execution of the approach and landing. It specifies the altitudes, headings, and other requirements to be followed at each significant point of the trajectory.



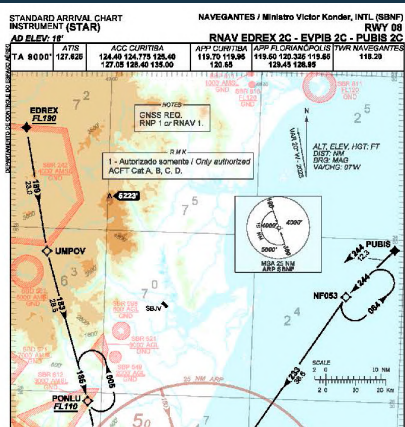
SID – Standard Instrument Departure

It provides the information necessary for the execution of an instrument flight from the take-off phase to the en-route phase. It establishes the routing, headings, altitudes, and other restrictions to be complied with, connecting the aerodrome or a specific runway to a significant point, normally on an ATS route, where the en-route phase of flight begins.



ATCSMAC – ATC Surveillance Minimum Altitude Chart

It provides information on minimum altitudes and distances to assist air traffic controllers in the provision of vectoring services and to ensure adequate terrain and obstacle clearance when aircraft are being vectored or operating outside established ATS routes.



STAR – Standard Instrument Arrival

It connects a point of the airway to a point near the destination airport, at which an instrument approach procedure may be initiated.

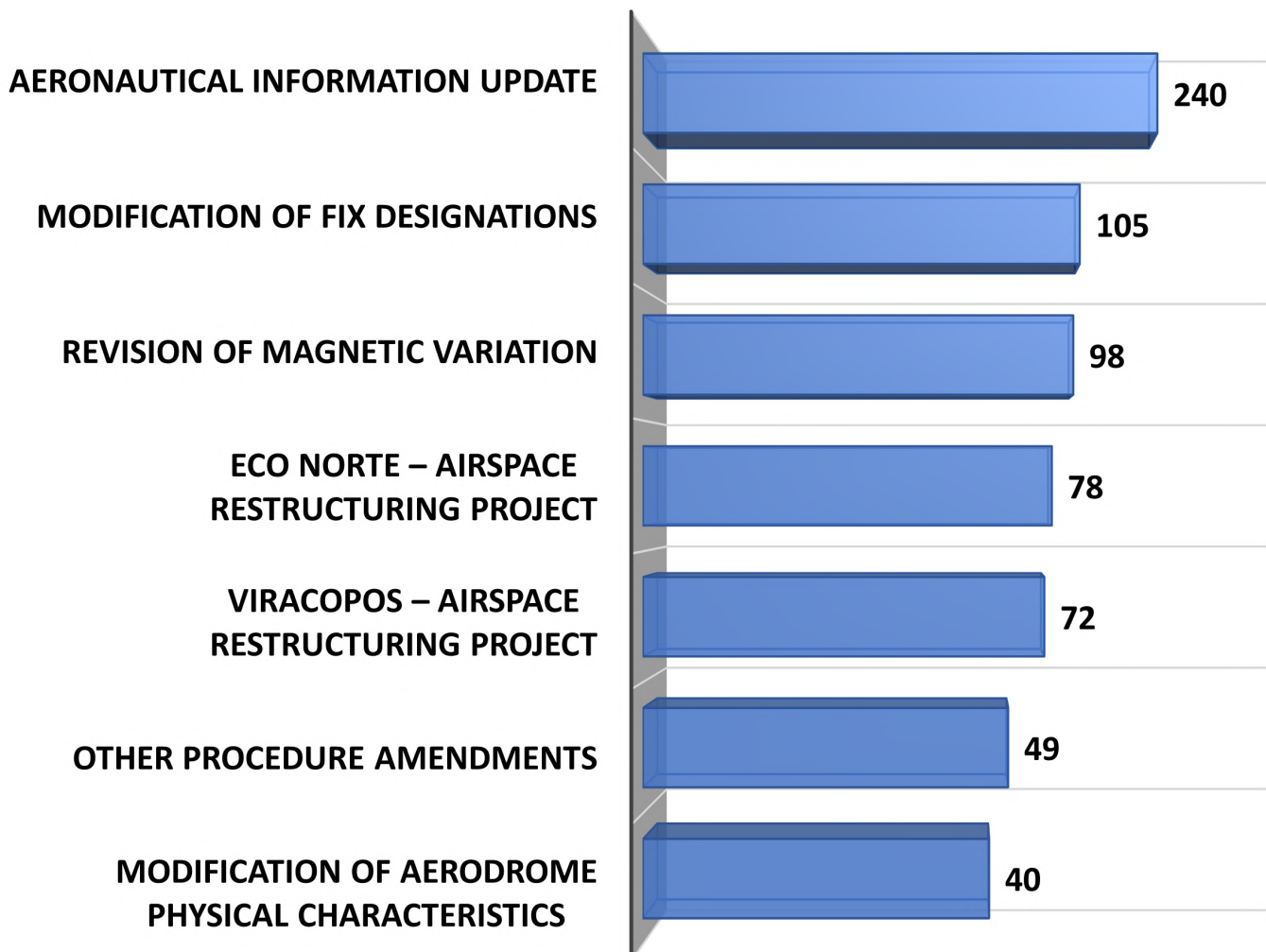
Instrument Procedure Charts (IFR)

Charts Published in 2025

Instrument Approach Chart (IAC)	422
Standard Instrument Departure (SID)	284
Standard Instrument Arrival (STAR)	84
ATC Surveillance Minimum Altitude Chart (ATCSMAC)	11



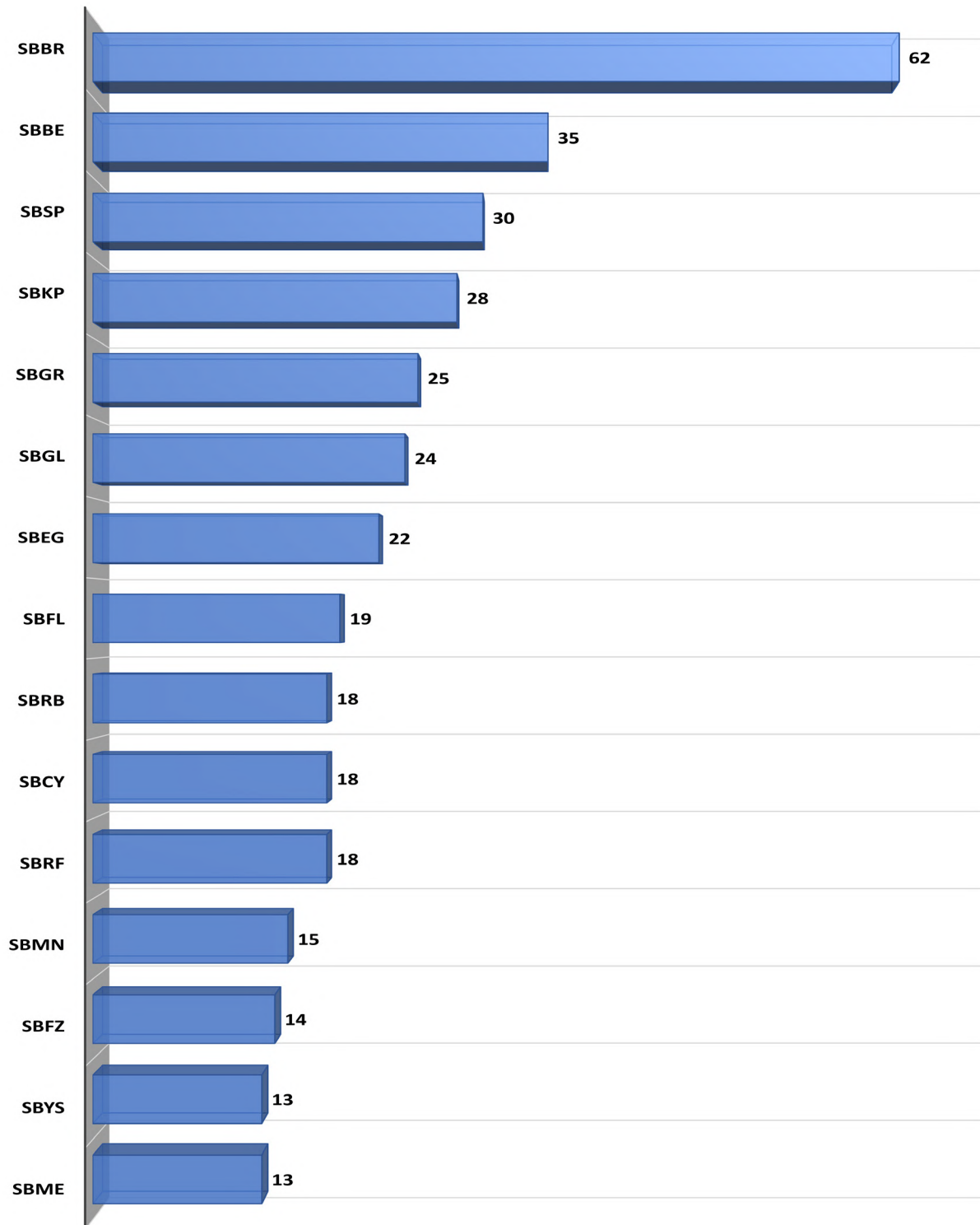
Charts Published per Project in 2025



Instrument Procedure Charts (IFR)

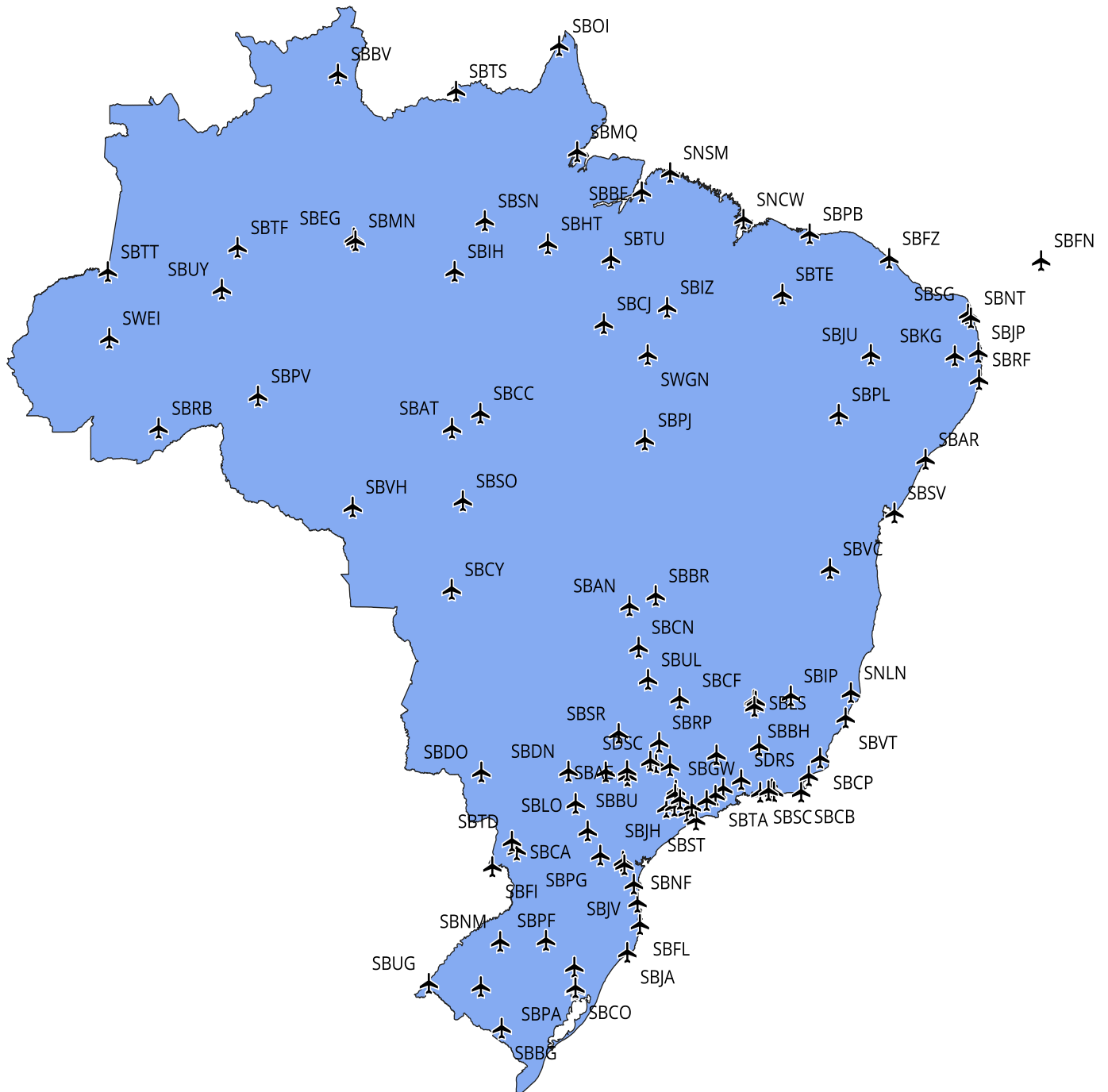
Chart Revisions by Aerodrome

IFR procedure charts were published for **115** aerodromes in 2025. The chart below illustrates the top **15** aerodromes with the highest number of updates.



Instrument Procedure Charts (IFR)

Geographical Distribution



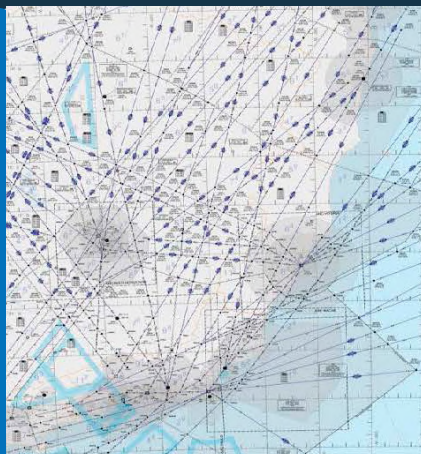
En-route Charts (ENR) and Area Charts (ARC)



ENRC – High Altitude En-route Chart (H)

It provides information to support navigation along ATS routes in accordance with the procedures established by the Air Traffic Service (ATS), ensuring the safe and efficient conduct of flight operations.

High (H) charts depict the upper airspace, covering operations above Flight Level 245 (FL245).



ENRC – Low Altitude En-route Chart (L)

It provides information to support navigation along ATS routes in accordance with the procedures established by the Air Traffic Service (ATS), ensuring the safe and efficient conduct of flight operations.

Low (L) charts depict the lower airspace, covering operations below Flight Level 245 (FL245).



ARC – Area Chart

It provides detailed information on terminal areas to facilitate the transition between the en-route phase of the flight and the approach to an aerodrome, as well as between a missed approach and the en-route phase. It is designed for use in terminal areas with complex ATS route structures, ensuring the safe and efficient conduct of flight operations.

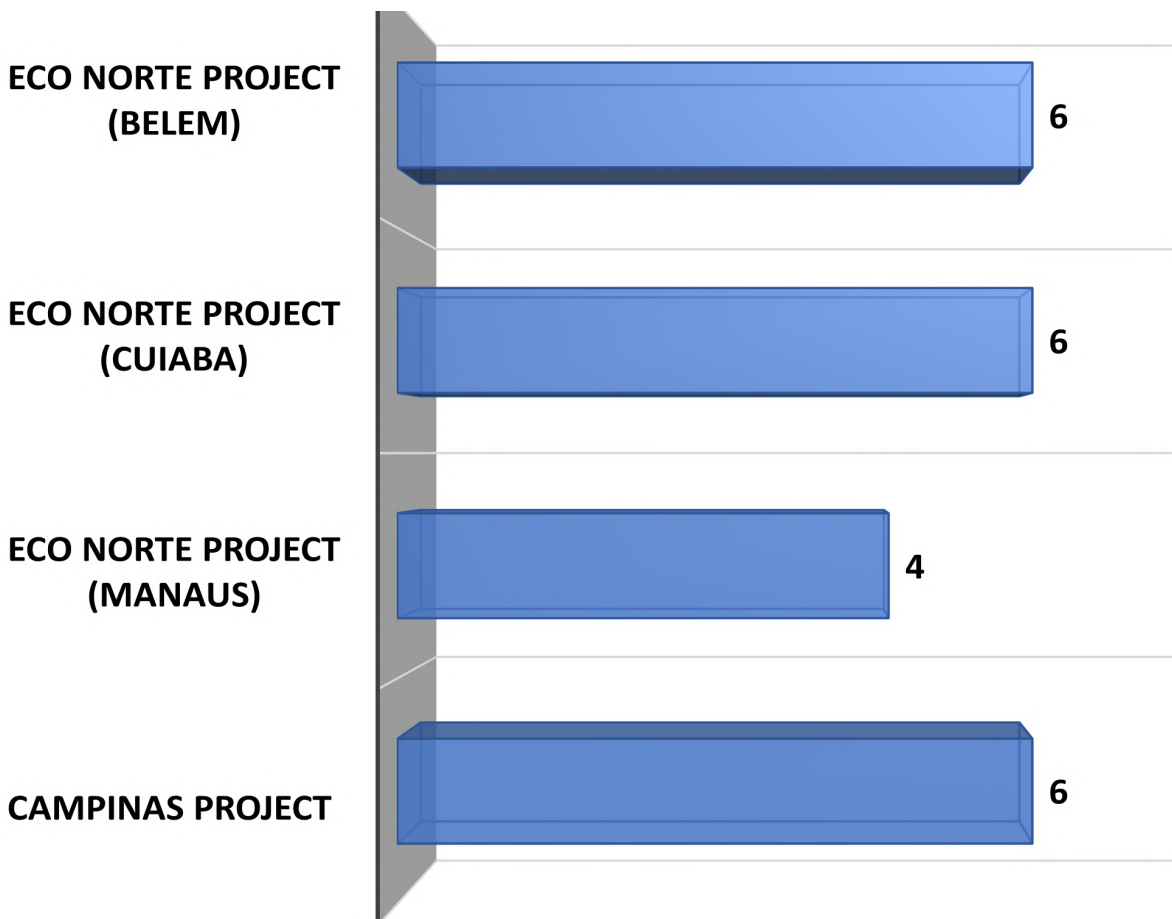
En-route Charts (ENR) and Area Charts (ARC)

Number of revisions to ENR and ARC

En-route Chart (ENR)	331
Area Chart (ARC)	152

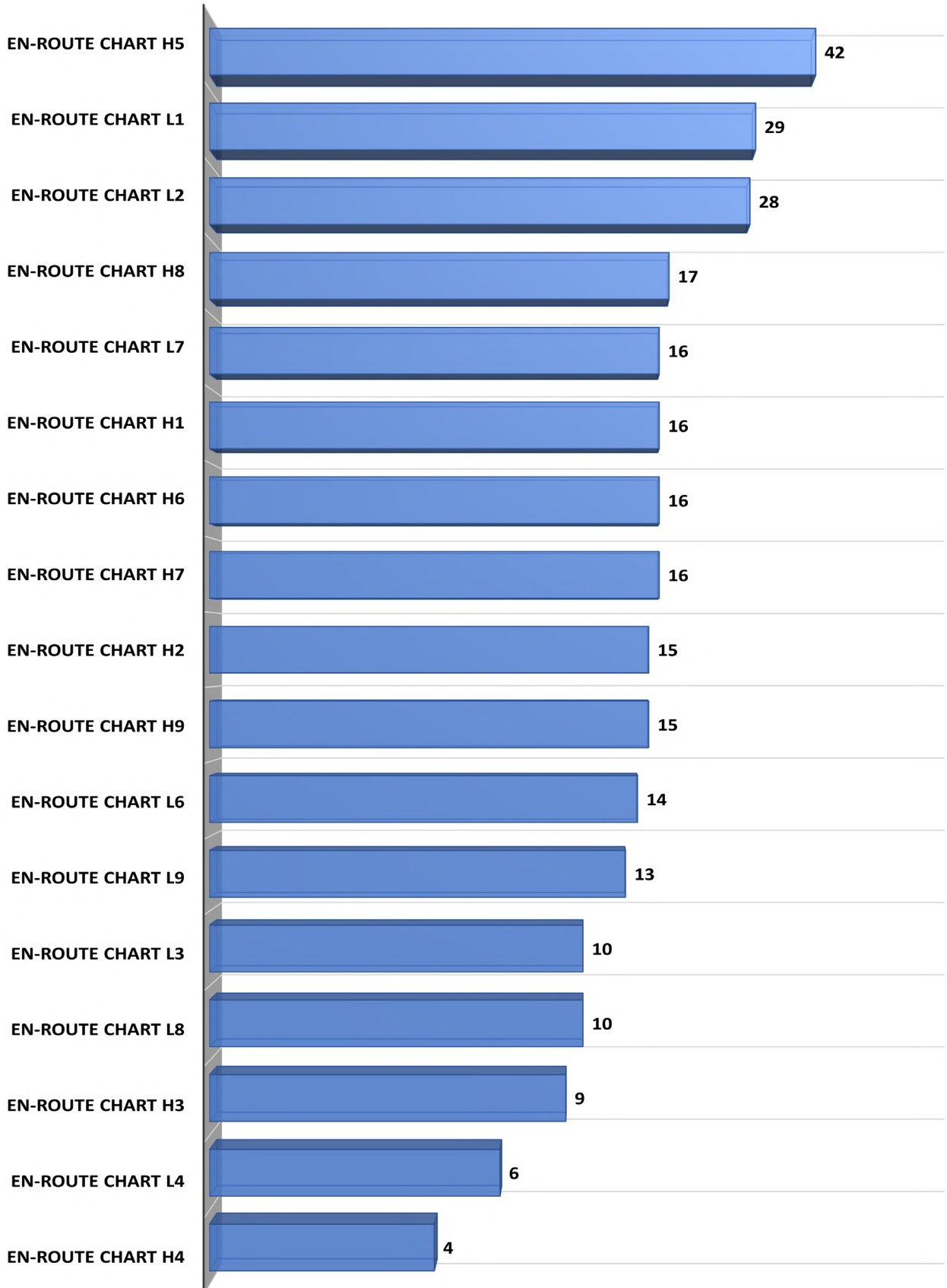


Charts Published per Project in 2025



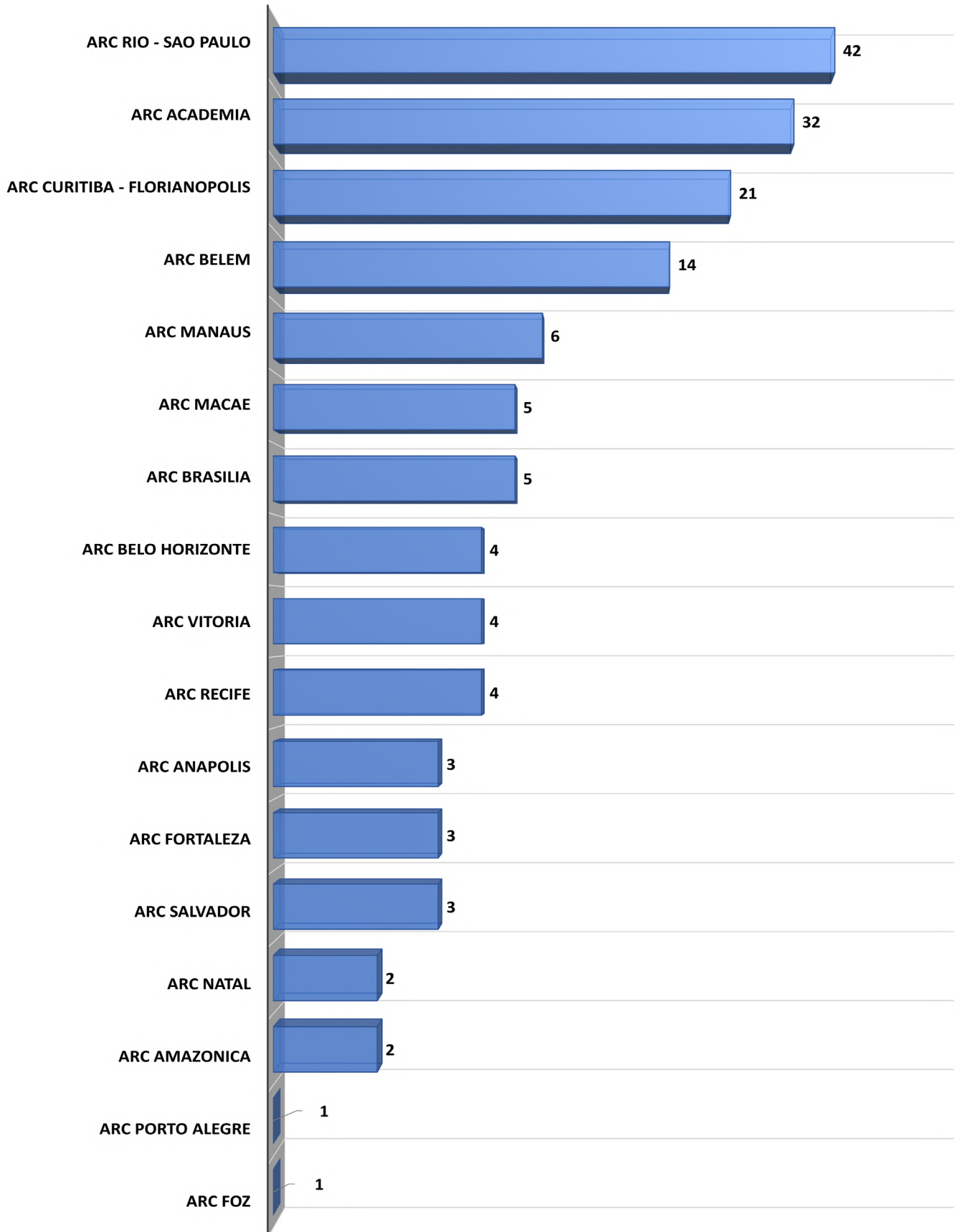
En-route Charts (ENR) and Area Charts (ARC)

Distribution of Revisions per En-route Chart



En-route Charts (ENR) and Area Charts (ARC)

Distribution of Revisions per Area Chart



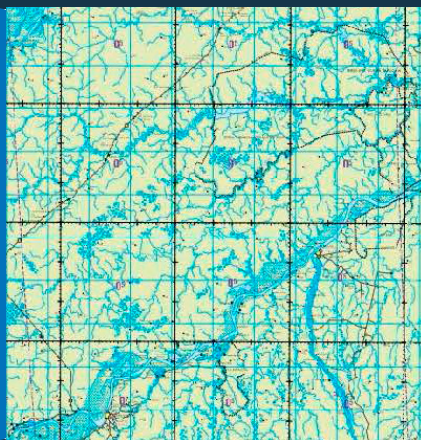
Visual Charts



WAC – World Aeronautical Chart

This chart provides information to support air navigation conducted by means of visual reference.

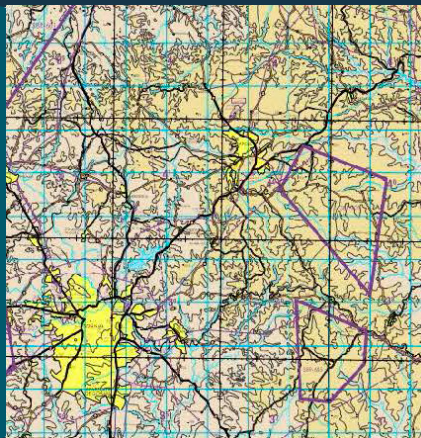
It contains information that may be used for pre-flight planning purposes and also serves as a reference for the production of other aeronautical charts intended for air navigation. This chart is produced at the standard scale of 1:1,000,000.



CNAV – Visual Navigation Chart

This chart provides pilots with information that meets the requirements of visual navigation conducted at low speeds, over short or medium distances, and at low or medium altitudes.

It may be used as a reference for the production of World Aeronautical Charts (WAC) and for flight planning purposes. This chart has a standard scale of 1:500,000.

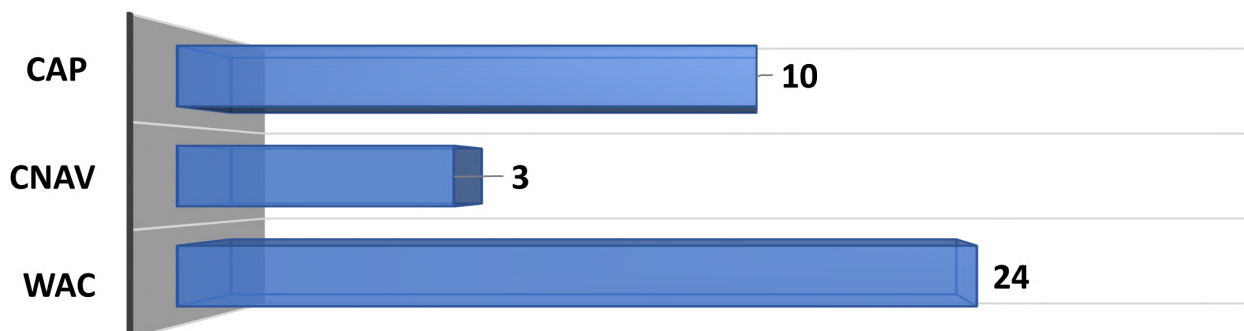


CAP – Aeronautical Pilotage Chart

This chart is intended to meet the requirements of visual flight operations conducted at low altitudes and over short distances within the scope of the Brazilian Air Force.

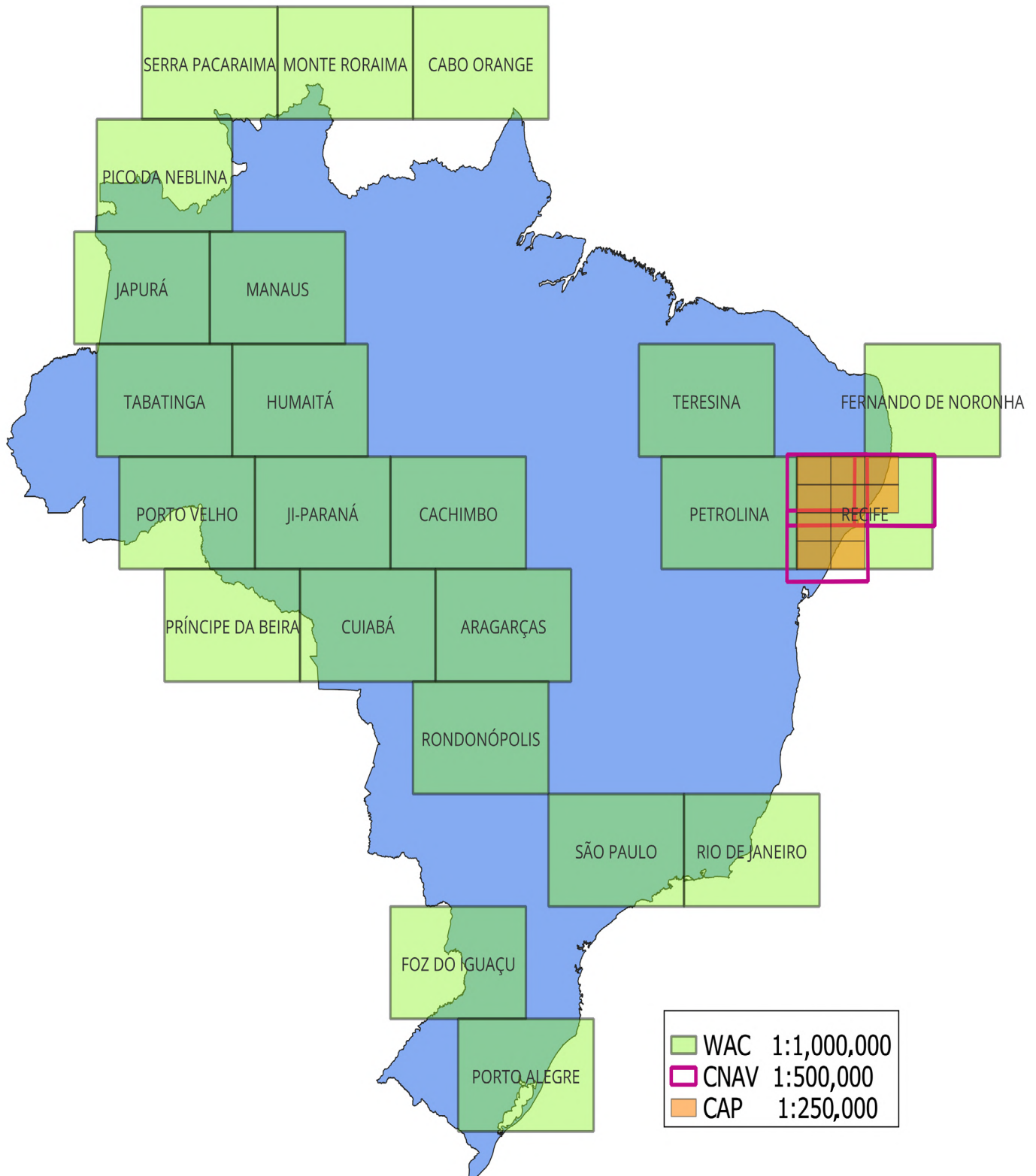
It requires specific characteristics in the scaled representation of visual references. It also supports other small-scale civil aviation activities. This chart has a standard scale of 1:250,000.

Visual Charts Published in 2025



Visual Charts

Geographical Distribution



Special Visual Flight Charts



REA – Special Routes for Visual Flight Aircraft

Chart prepared for areas where it is necessary to organize the use of airspace for aircraft operating under visual flight rules (VFR), in accordance with the requirements of the air traffic control authority.

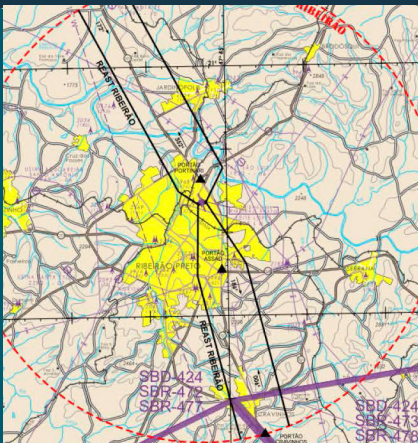
It is identified according to the designator of the terminal control area (TMA) in which the route is located.



REH – Special Helicopter Visual Routes

Chart prepared for areas where it is necessary to organize the use of airspace for helicopter operations under visual flight rules, in accordance with the requirements of the air traffic control authority.

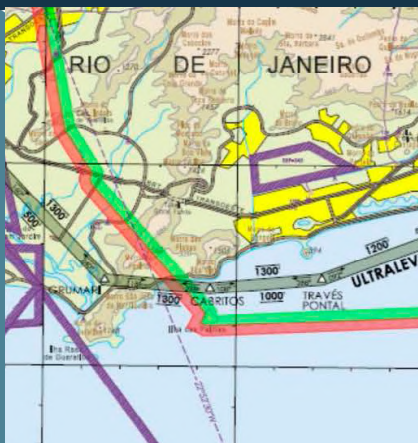
It is identified according to the designator of the terminal control area (TMA) in which the route is located.



REAST – Special Routes for Aircraft Without Transponder

This chart is prepared for areas under ATS surveillance, in accordance with the requirements of the air traffic control authority.

It is intended for aircraft not equipped with a transponder.



REUL – Special Routes for Ultralight Aircraft

This chart is prepared for areas designated for ultralight operations, at the request of the interested party or the air traffic control authority.

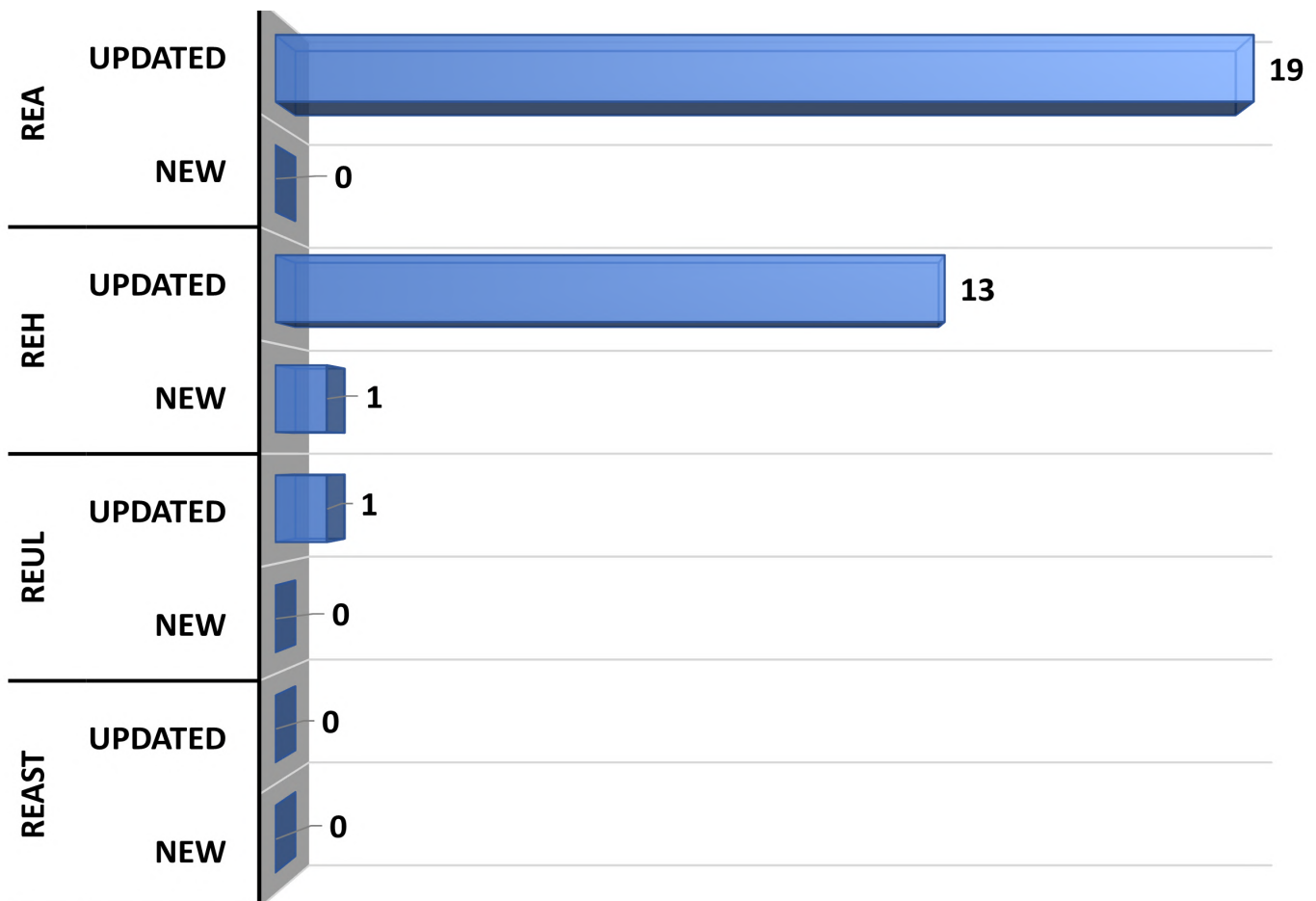
Special Visual Flight Charts

Charts Published in 2025

Special Routes for Visual Flight Aircraft (REA)	19
Special Helicopter Visual Routes (REH)	14
Special Routes for Ultralight Aircraft (REUL)	1
Special Routes for Aircraft Without Transponder (REAST)	0

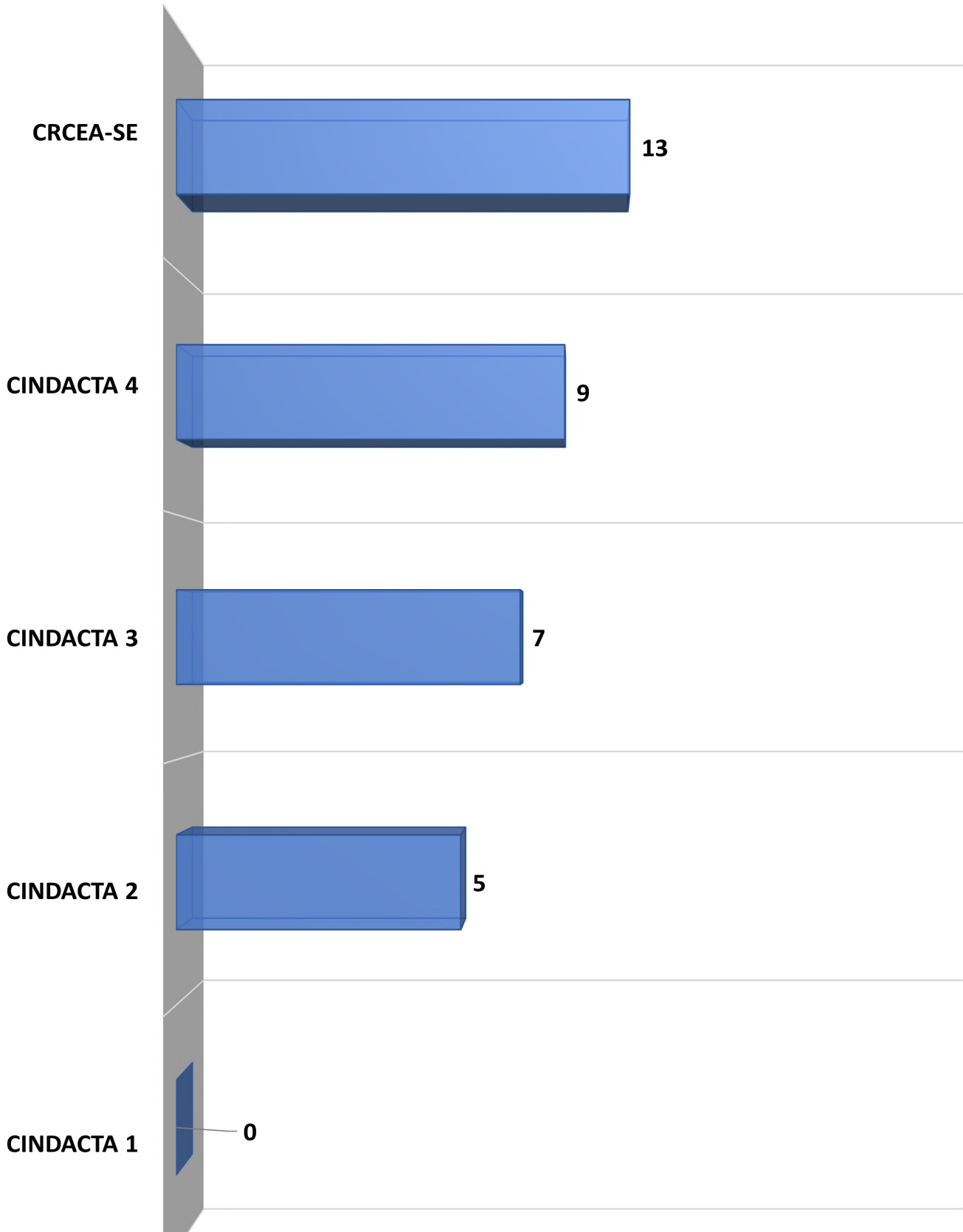


Number of New and Updated Charts



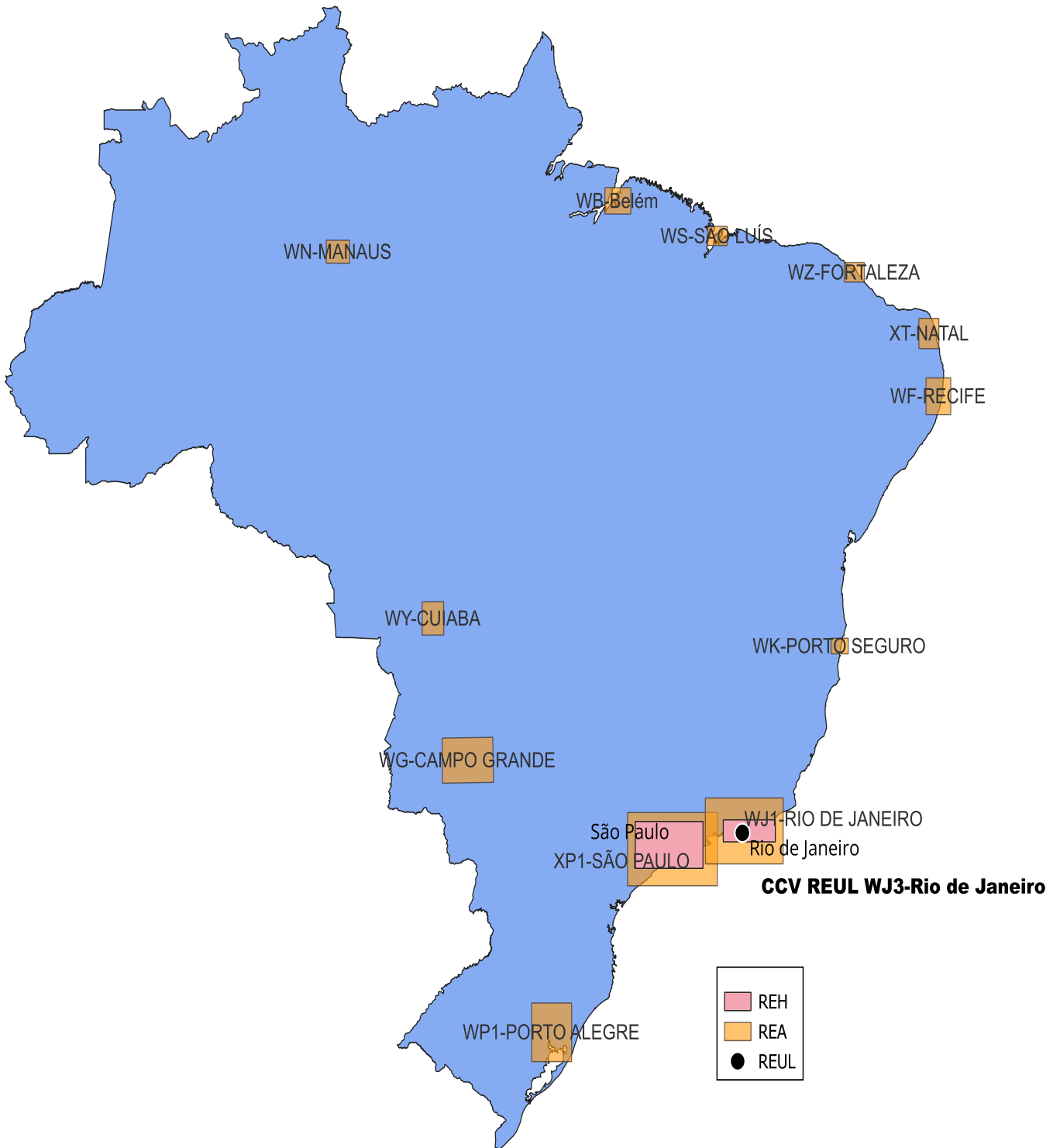
Special Visual Flight Charts

Distribution of Revisions per Regional Unit



Special Visual Flight Charts

Geographical Distribution



Aeronautical Publications

AIP-Brasil

Publicações

AMDT 27/11/25 AMDT 2512A2	AMDT 27/11/25 AMDT 2512A1
AMDT	AMDT
	Completa
	ENRC
AMDT 25/12/25 AMDT 2513A1	AMDT 25/12/25 AMDT 2513A0
AMDT	NIL

AIP – Aeronautical Information Publication

It includes detailed information on aerodromes, airspace structure, the provision of air traffic services (ATS), aeronautical meteorological services, customs and migration requirements, and other data necessary for the safe, orderly and efficient conduct of international air navigation.

Suplementos AIP

Publicações

Código ICAO

2 Suplementos em vigor até a última data airac (25/12/25)

N	Ativação	Tipo	Localidade	Suplemento
N139	2025-12-25	A	SBTS	OUTRAS ILUMINAÇÕES, FONTE - Indicador de direção do vento REF: NOTAM G2556/25 De 25 de Dezembro de 2025, 00 2027, 2359 UTC. AIP AD 2.15
N140	2025-12-25	A	SWJP	PROCEDIMENTO DE APROXIMAÇÃO

AIP SUP – AIP Supplements

AIP Supplements are publications issued to provide temporary information of long duration (three months or more).

They are also used to disseminate information of extensive textual content or containing graphics and illustrations, serving as a complement to the Aeronautical Information Publication (AIP) of the State.

ROTAER

Aeródromos

D-AMDT Tipo FIR Operação

Todos Todos Todos Todos

UF Cidade Jurisdição

Todos Nome ou parte do Nome Todos

D-AMDT 50-25 65 atualizações | entrada em vigor das informações

10 resultados por página

ROTAER – Air Routes Auxiliary Publication

The Air Routes Auxiliary Publication is a Brazilian publication created to assist airmen in flight planning and navigation within the national territory.

Its purpose is to meet the needs of pilots operating small aircraft under Visual Flight Rules (VFR).

Circular de Informações Aeronáuticas (AIC)

Publicações

100 resultados por página

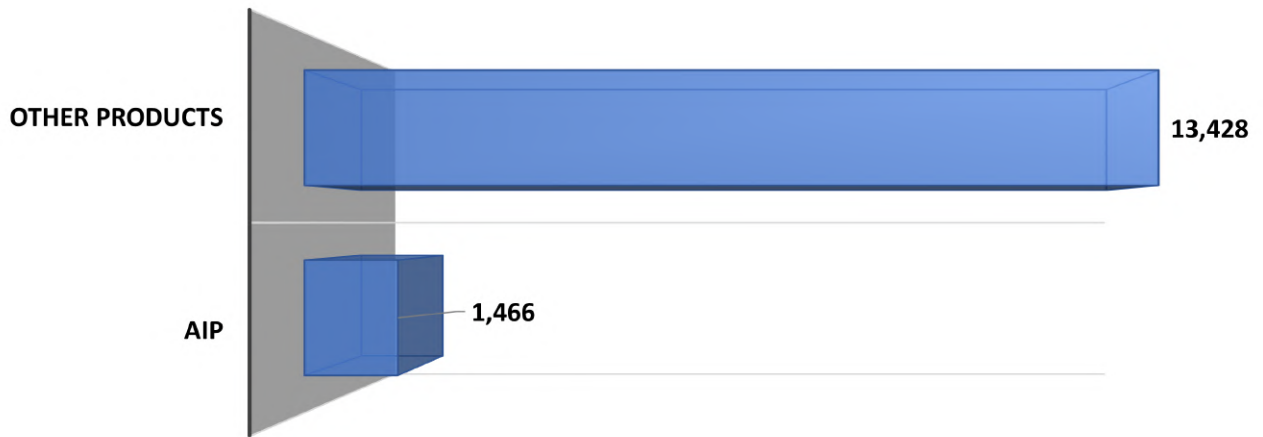
#	Tipo	Número	Título
1	AIC-N	51/25	PUBLICAÇÕES DE INFORMAÇÕES AERONÁUTICAS
2	AIC-A	30/25	AERONAUTICAL INFORMATION PUBLICATION
3	AIC-N	52/25	PUBLICAÇÕES DE INFORMAÇÕES AERONÁUTICAS
4	AIC-A	31/25	AERONAUTICAL INFORMATION PUBLICATION
5	AIC-N	49/25	CIRCULAÇÃO DE AERONAVES EM VOO VFR NA TERMINAL FORT
6	AIC-N	48/25	CIRCULAÇÃO DE AERONAVES EM VOO VFR NA TERMINAL PORT
7	AIC-A	28/25	AERONAUTICAL INFORMATION PUBLICATION

AIC – Aeronautical Information Circular

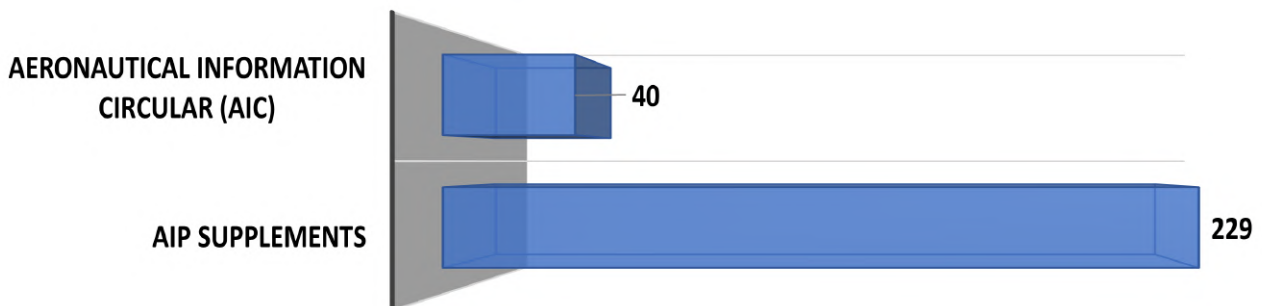
An Aeronautical Information Circular (AIC) is a notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the Aeronautical Information Publication (AIP), but which relates to flight safety, air navigation, technical, administrative or legislative matters.

Aeronautical Publications

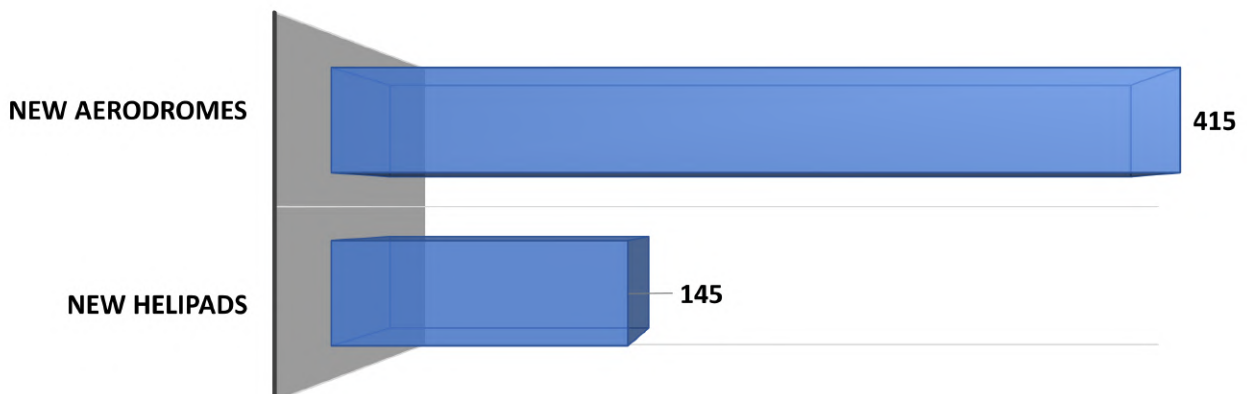
A number of **14,894** aeronautical information publication requests (SDIA) were analyzed, resulting in the update of several aeronautical information products. From these, **1,466** requests referred to AIP updates, while the remaining ones impacted other publications, such as ROTAER, aeronautical charts, and AICs.



The requests resulted in the publication of **40** AICs and **229** AIP Supplements.

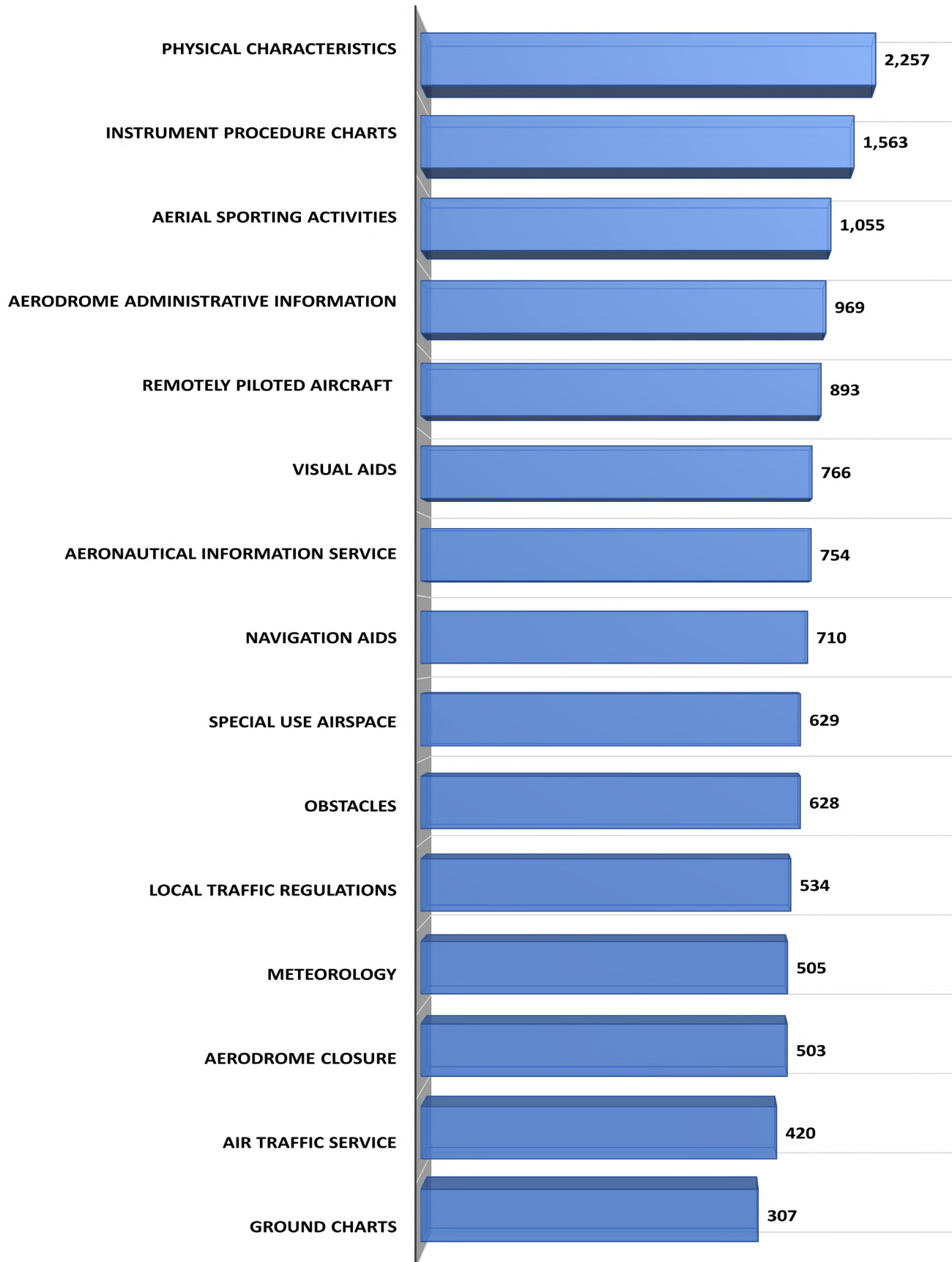


The requests also resulted in new entries in the ROTAER, as shown in the distribution below:



Aeronautical Publications

The chart below represents the **15** most frequently used subjects in aeronautical information publication requests.



Geographical Distribution



NOTAM

NOTAM – Notice to Airmen

NOTAM are notices containing information concerning the establishment, condition, or change of any aeronautical facility, service, procedure, or hazard, whose timely knowledge is essential to the aeronautical community.

E9469/24 **N** 14/12

Q) SBCW/QWPLW/IV
PJE ACONTECERA (C)
TONELEIRO, RJ) R
RIO
ORIGEM: SDIA 3D

↓ GND ↑ 12000FT

📅 06/01/25 09:00

🕒 JAN 06 TIL 10

Temporary NOTAM

It is aeronautical information of a provisional nature. It disseminates temporary changes to facilities, services, procedures, or airspace conditions. It is used for short-duration situations, generally lasting less than 90 days.

E9490/24 **N** 16/12

Q) SBCW/QLPCH/IV
PAPI RWY 31 MODI
2.24 ADC
ORIGEM: SDIA C3F

📅 16/12/24 21:20

Permanent NOTAM

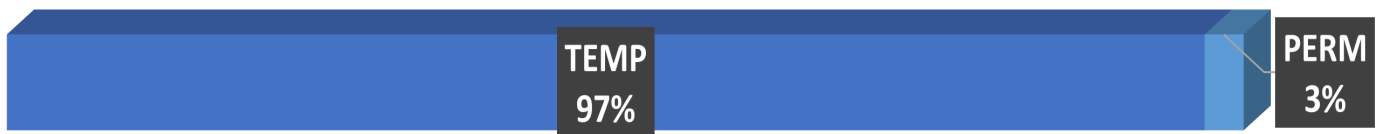
It is used to disseminate information of a lasting character that permanently changes facilities, procedures, services, or airspace conditions.

It remains in force for an indefinite period until incorporated into a permanent aeronautical publication, such as the AIP or aeronautical charts. It is employed when the formal update cannot yet be completed, but the information must already be made available to users.

NOTAM

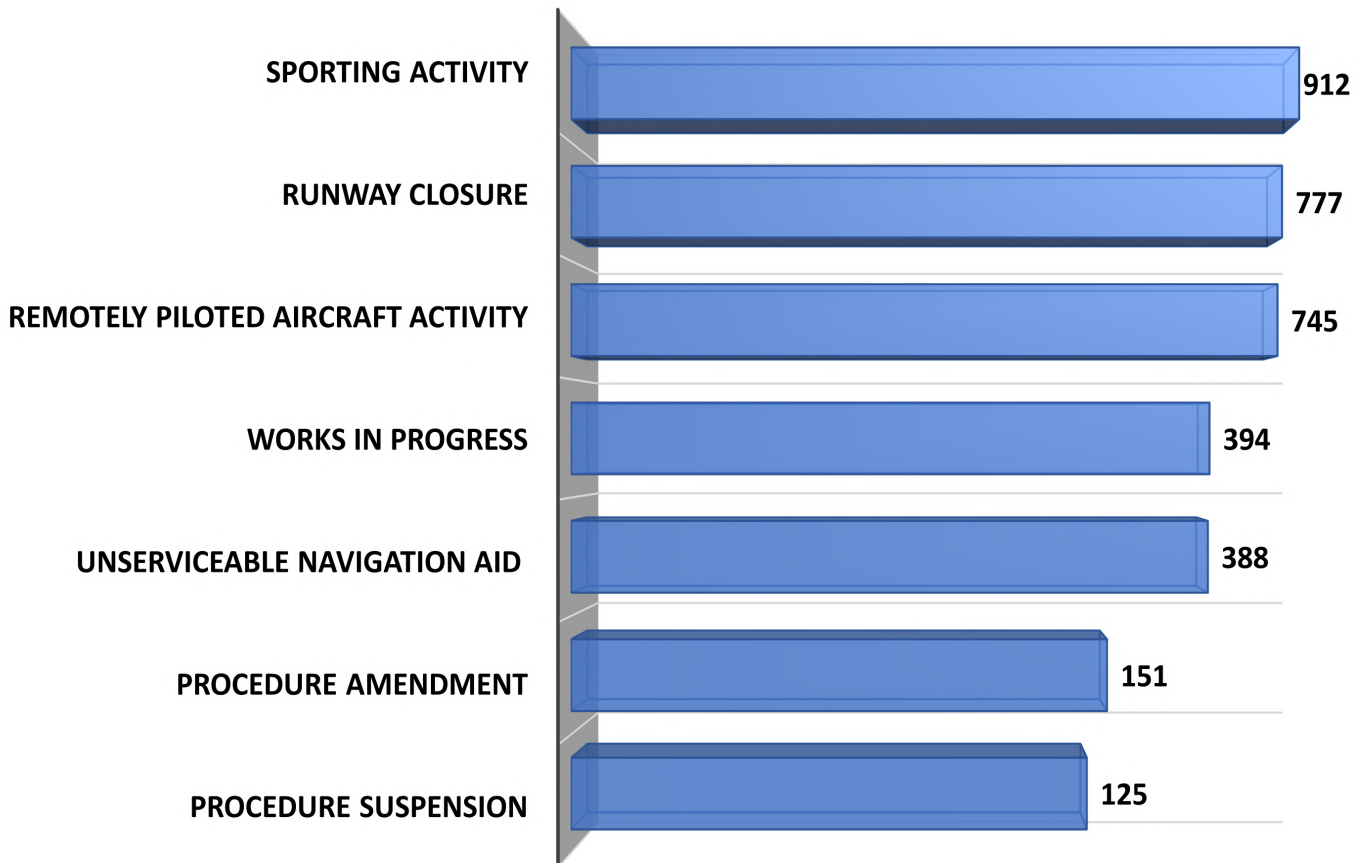
NOTAMs Issued in 2025

Temporary NOTAMs in the national series	21,415
Temporary NOTAMs in the international series	4,446
Permanent NOTAMs in the national series	534
Permanent NOTAMs in the interational series	309



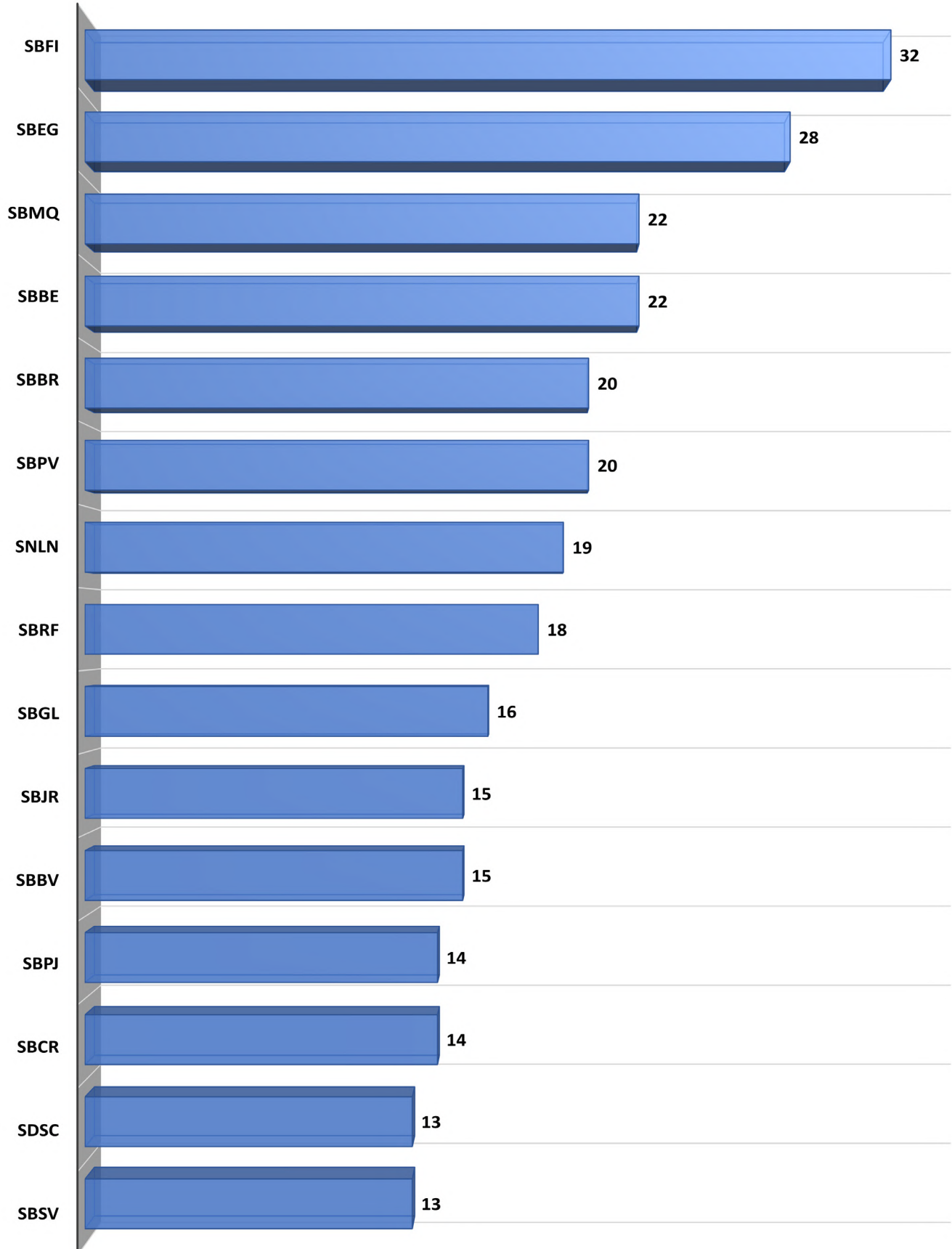
NOTAM Distribution per Subject

The chart below illustrates the main subjects that prompted the issuance of NOTAMs:



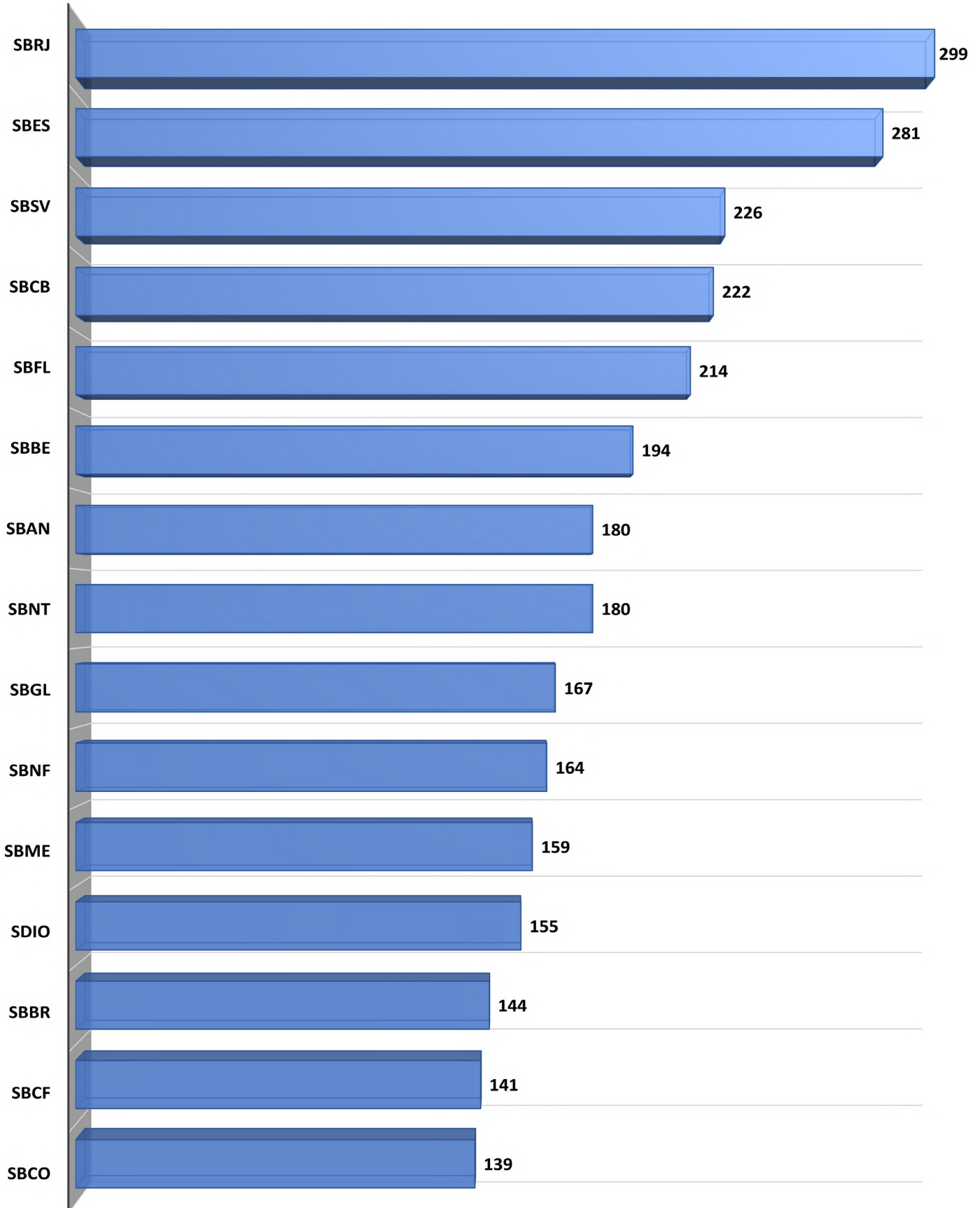
Permanent NOTAM

Permanent NOTAMs were issued for **72** aerodromes. The chart below illustrates the top **15** aerodromes with the highest number of permanent NOTAMs issued.

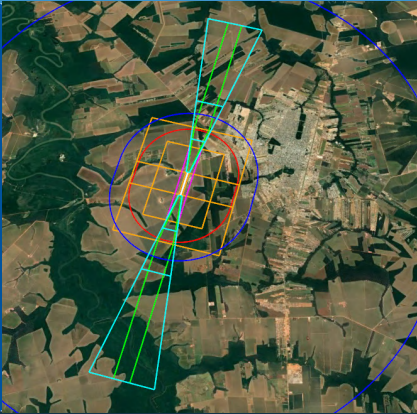


Temporary NOTAM

Temporary NOTAMs were issued for **1,513** aerodromes. The chart below illustrates the top **15** aerodromes with the highest number of temporary NOTAMs issued.

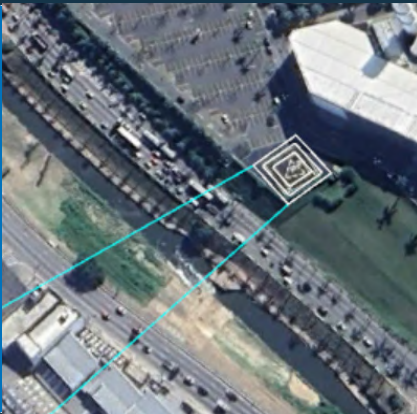


Protection Zone Plan



Basic Aerodrome Protection Zone Plan (PBZPA)

A set of obstacle limitation surfaces that establishes restrictions on land use in the vicinity of an aerodrome.



Basic Heliprot Protection Zone Plan (PBZPH)

A set of obstacle limitation surfaces that establishes restrictions on land use in the vicinity of a helipad.



Air Navigation Aids Protection Zone Plan (PZPANA)

A set of obstacle limitation surfaces that establishes restrictions on land use in the vicinity of air navigation aids necessary for their proper functioning, whether located within or outside the boundaries of a given aerodrome.



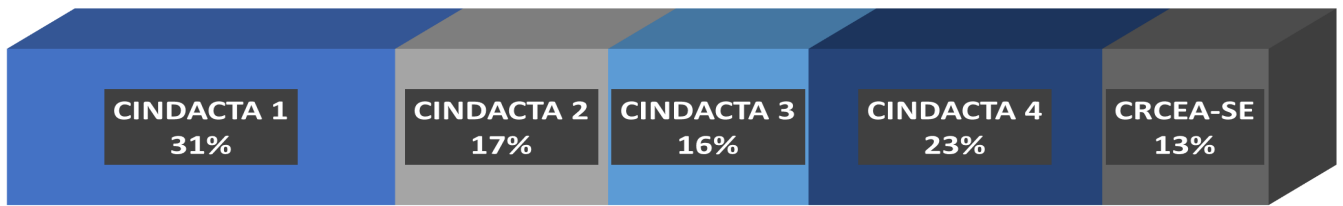
Special Airplane and Helicopter Routes Protection Zone Plan (PZPREAH)

A set of obstacle limitation surfaces that establishes restrictions on land use in the vicinity of special airplane and helicopter routes.

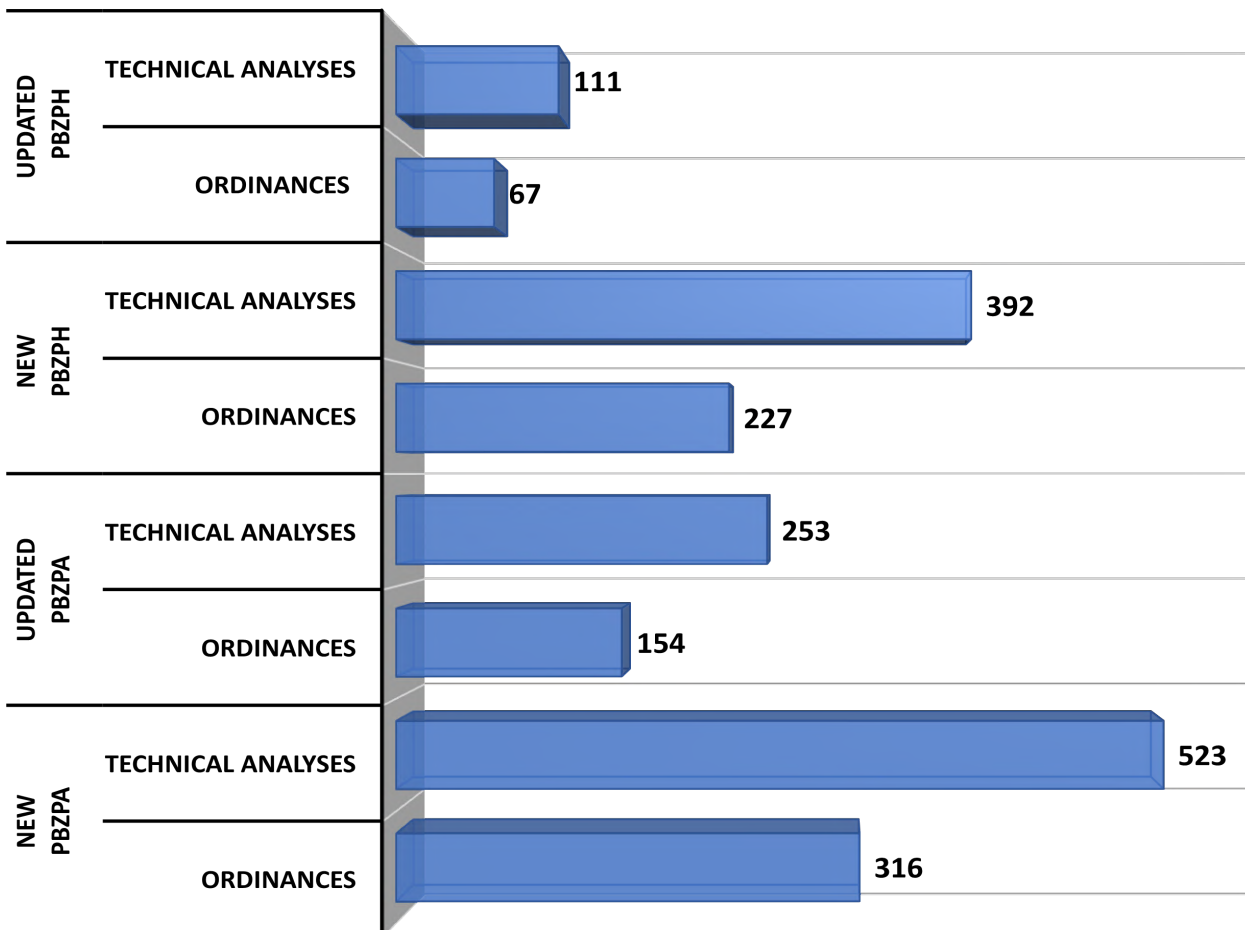
Protection Zone Plan

Protection Zone Plans Published per Regional Unit

Ordinances issued in relation to CINDACTA 1	308
Ordinances issued in relation to CINDACTA 2	169
Ordinances issued in relation to CINDACTA 3	159
Ordinances issued in relation to CINDACTA 4	233
Ordinances issued in relation to CRCEA-SE	132



Ordinances Issued and Technical Analyses per Plan Type



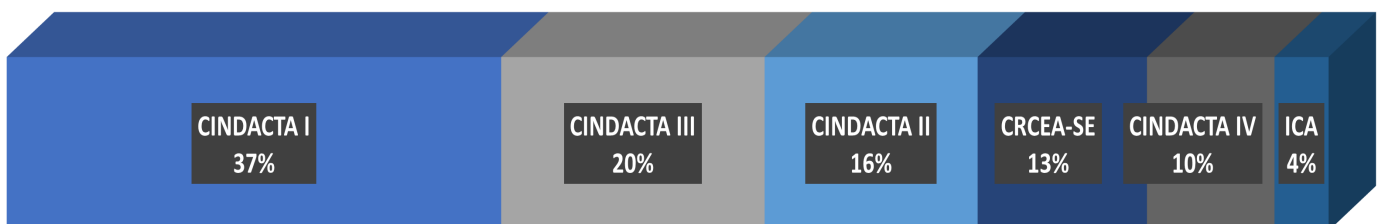
Objects Projected into the Airspace (OPEA)

Objects of any nature, temporary or permanent, fixed or mobile, subject to analysis regarding the use of the national airspace and required to comply with the parameters established in ICA 11-408 and complementary regulations issued by the Brazilian Air Force Command (COMAER).

Information on OPEA is provided by regional units of DECEA, by the Field Operations Section of ICA, or by other legally authorized entities responsible for conducting topographic or geodetic surveys. These data are made available through the AISWeb and GeoAISWeb portals in different file formats to meet the needs of users of the Brazilian Airspace Control System (SISCEAB).

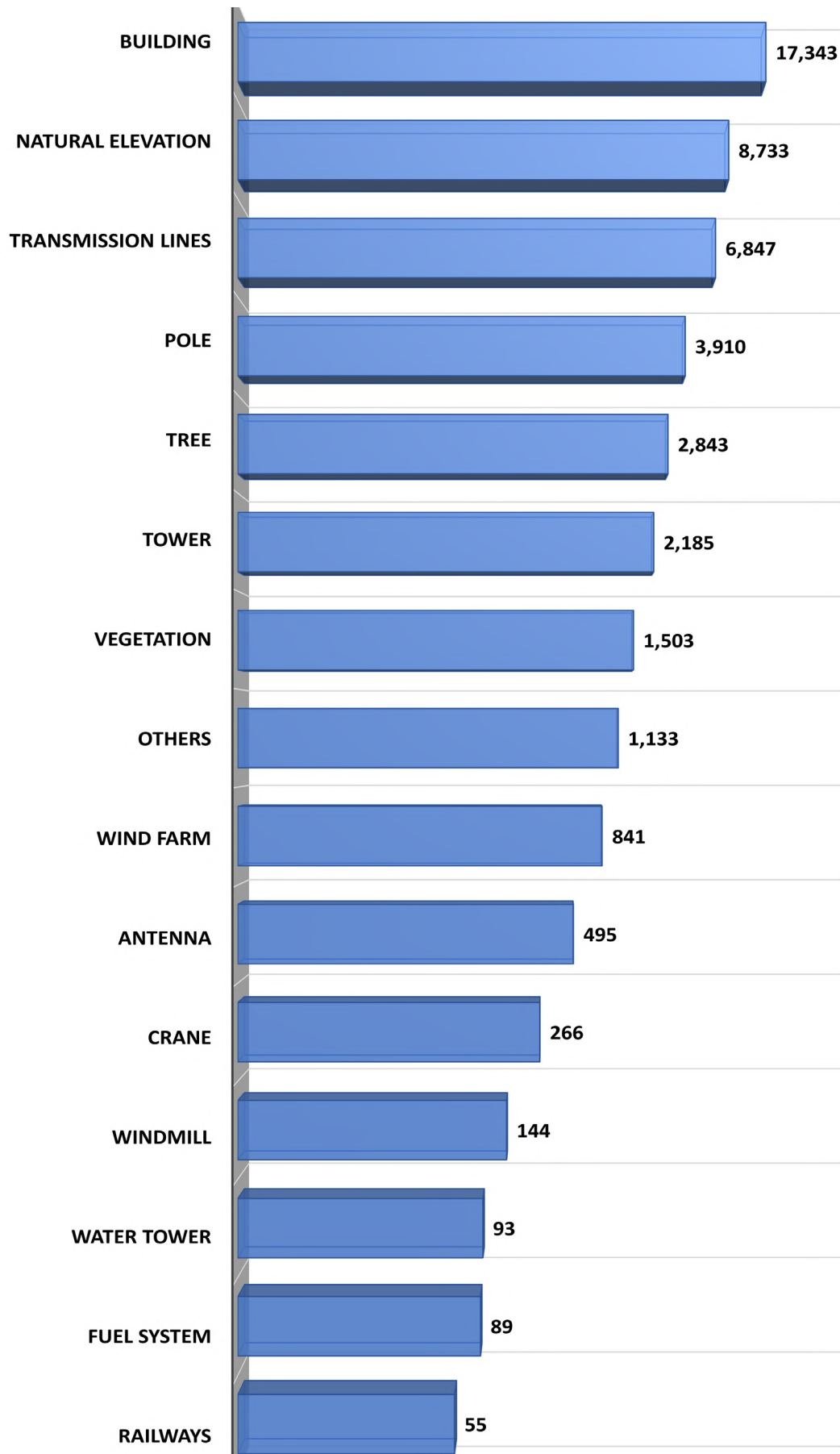
Origin of OPEA Registration Requests

CINDACTA 1	17,521
CINDACTA 3	9,330
CINDACTA 2	7,548
CRCEA-SE	6,002
CINDACTA 4	4,508
ICA	1,918



Objects Projected into the Airspace (OPEA)

OPEA Distribution per Type



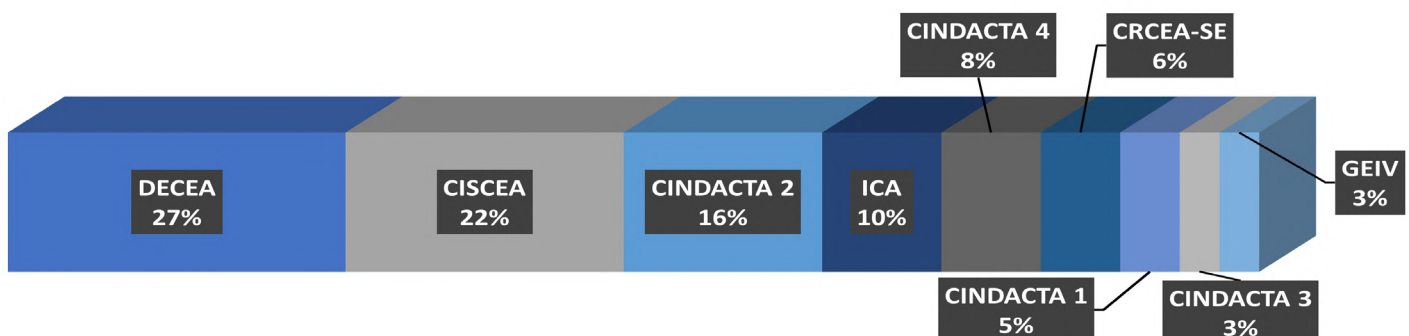
Topographic Survey

Topographic and geodetic surveys conducted by the ICA aim to support the Brazilian Air Force Command, military organizations, and airport administrators in meeting demands for geographic data related to aeronautical activities, as well as registering and providing such data while ensuring positional and altimetric accuracy.

These activities provide precise geospatial data for Airspace Control, supporting Flight Inspection, Aeronautical Information Services, the development of Air Navigation Procedures, Basic Aerodrome Protection Zone Plans, and Meteorology. Additionally, cartographic products are produced to support the certification of air navigation aids, aeronautical meteorology, obstacle surveys, and aerial surveys conducted with drones.

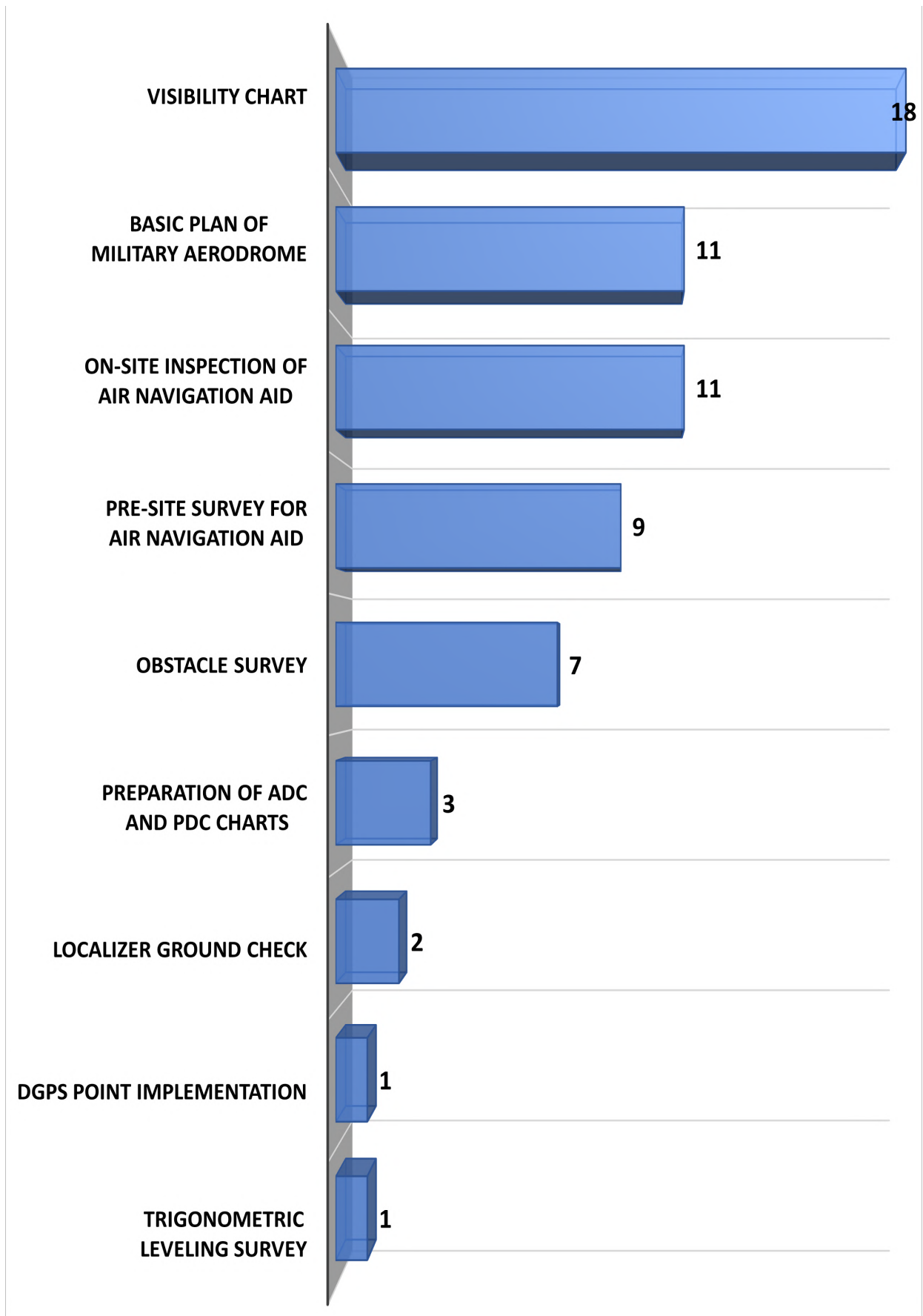
Origin of Field Survey Requests

DECEA	17
CISCEA	14
CINDACTA 2	10
ICA	6
CINDACTA 4	5
CRCEA-SE	4
CINDACTA 1	3
CINDACTA 3	2
GEIV	2



Topographic Survey

Distribution of Field Missions per Purpose

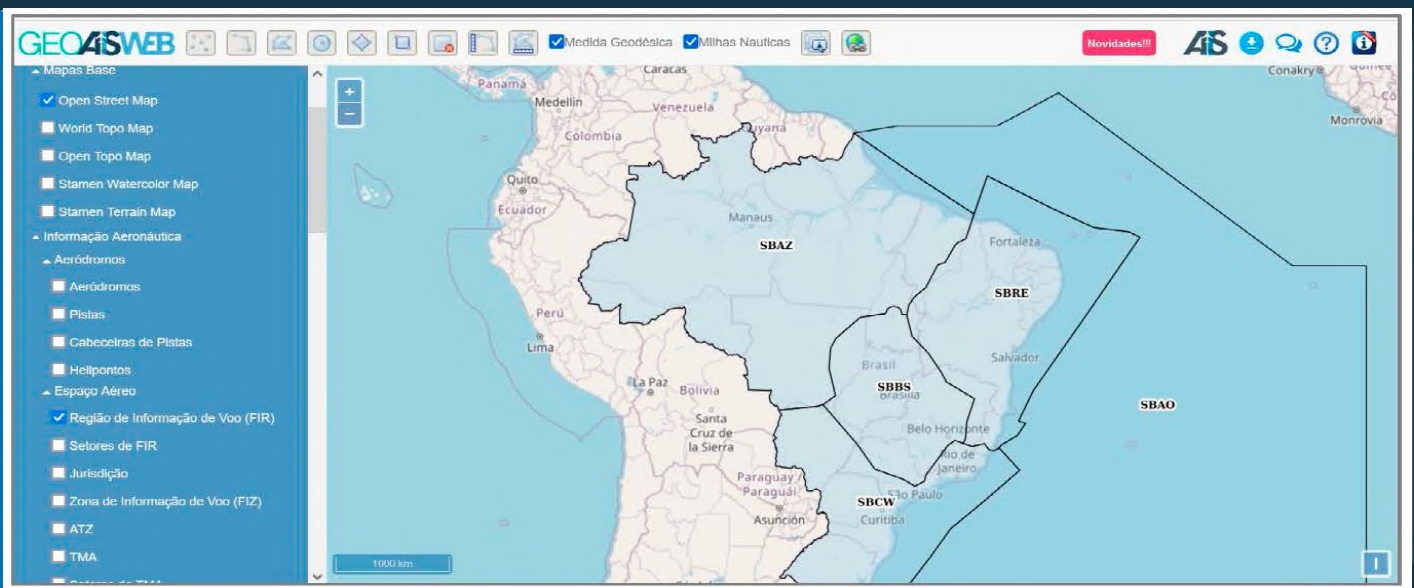


Data Provision

GEOAISWEB

GEOAISWEB displays aeronautical information directly on a map interface. The information provided is updated in accordance with amendments to Aeronautical Publications (AIRAC cycle).

Through GeoSERVER, users may download information layers in various formats, such as KML or SHP, and access DECEA data via geoservices.



API AISWEB

The AISWEB API (Application Programming Interface) enables external systems to use data available in AISWEB, such as AIP, ROTAER, and NOTAM data, facilitating process automation and efficient access to aeronautical information.

API-AISWEB

API para Desenvolvedores

INÍCIO > API-AISWEB

O DECEA disponibiliza uma API (Interface de Programação de Aplicações) que permite que outros sistemas utilizem os dados fornecidos no AISWEB, como NOTAM. Para acessar a API-AISWEB solicite sua chave de acesso

[Documentação da API](#)

Além das API do AISWEB, também estão disponíveis para consumo os dados aeronáuticos em formato geográfico através dos geoserviços, pelos protocolos WFS e WMS.

API para desenvolvedores

Nome

Email

Instituição

URL do site ou aplicação onde a API será utilizada

Verificador

Drone-based Aerial Survey

Aerial surveying using remotely piloted aircraft has become a strategic tool supporting survey and aerophotogrammetric restitution activities, significantly enhancing the quality and reliability of cartographic information produced.

Within the scope of the Institute of Aeronautical Cartography (ICA), this service is performed through the systematic capture of georeferenced aerial images, enabling the generation of accurate, up-to-date cartographic databases compatible with different analysis scales.

The resulting products support a wide range of cartographic and aeronautical information applications, as well as the development and review of air navigation procedures, directly contributing to the planning, safety, and efficiency of air operations.

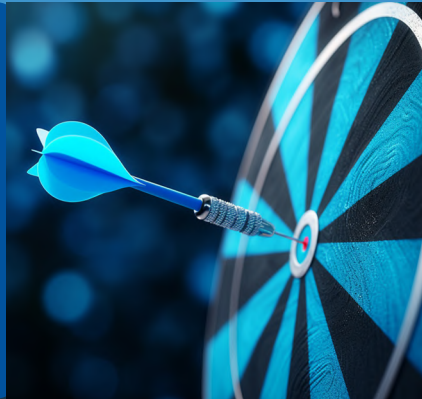
Within the Brazilian Airspace Control System (SISCEAB), the use of these technologies strengthens technical support for airspace control and management activities, combining innovation, precision, and regulatory compliance.

Salinópolis Airport – Para



2025 Highlights

Viracopos Project



Objective

The Viracopos Project was developed by DECEA to increase flight trajectory efficiency, reduce CO₂ emissions, and optimize air circulation within the Sao Paulo Terminal Control Area (TMA), focusing on Viracopos International Airport (SBKP).



Motivation

The project was created due to the growth of operations at Viracopos, with traffic levels 13% higher in comparison to pre-pandemic levels. Even though there is still some capacity potential, structural adjustments are necessary to meet future demand.



Implemented Modifications

Air circulation was reorganized, resulting in a complete revision of IFR procedures at SBKP; targeted adjustments to procedures at Congonhas and Guarulhos; and reconfiguration of sectors and traffic flows within the TMA-Sao Paulo. It has enabled independent IFR operations at Jundiai Airport.

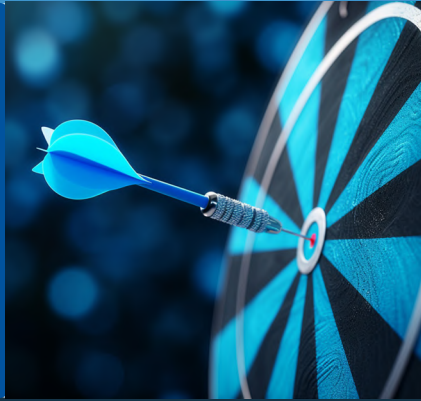


Results

The results indicate an annual reduction of approximately **302,000 nautical miles** flown and a decrease of about **5,400 tons of CO₂** emissions.

2025 Highlights

ECO Norte Project



Objective

The ECO Norte Project was developed to promote greater efficiency in flight trajectories, reduce CO₂ emissions, and optimize air circulation in the TMAs of Cuiaba, Manaus, and Belem.



Motivation

The initiative arose from the need to meet the growing demand for more sustainable operations aligned with national environmental commitments and to prepare the airspace for the 30th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP30), held in Belem.



Implemented Modifications

Air circulation was reorganized, resulting in updated IFR charts; updated Visual Approach Charts (VAC) and updated Special Visual Flight Charts. There were adjustments to airways and greater flexibility in Special Use Airspace.



Results

The results indicate an annual reduction of approximately **62,000 nautical miles** flown and about **4,800 tons of CO₂** emissions.

2025 Highlights

Climb Vectoring Areas (AVS)



What is AVS?

AVS is a specially designed area that allows vectoring below the Minimum Surveillance Altitude, based on terrain, obstacle, and operational analyses.

The AVS concept originated from a Collaborative Decision-Making (CDM) process conducted by DECEA through the Airspace Planning Study Group (GEPEA).



How was AVS designed?

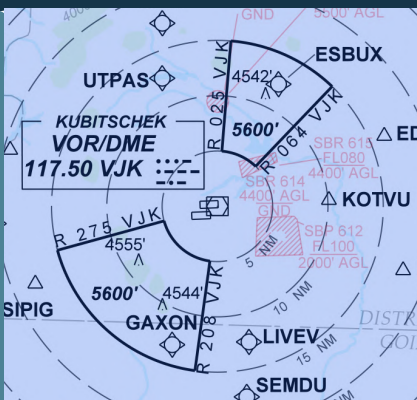
The Institute of Aeronautical Cartography (ICA) played a strategic role within GEPEA, contributing directly to the development of the concept and the cartographic design of AVS.

The project also involved collaboration from various operational units, strengthening adherence to actual operational demands of air traffic control units.



Operational Benefits

- Greater operational flexibility during initial climb.
- Improved contingency management, allowing safe deviations to avoid traffic.
- Enhanced traffic flow, especially in complex terminal areas.



Publication

The first AVS went into operation at Brasilia International Airport on April 22nd, starting in a new phase of integration between ATS surveillance, APP-TWR coordination, and air traffic management efficiency.

2025 Highlights

Climb Vectoring Areas (AVS)



Upcoming Implementation

In 2026, new publications are scheduled to expand the use of AVS in the country:

- February — AVS Campinas
- June — AVS Curitiba
- October — AVS Recife

CARTA DE ALTITUDE MÍNIMA DE VIGILÂNCIA ATC - ATCSMAC

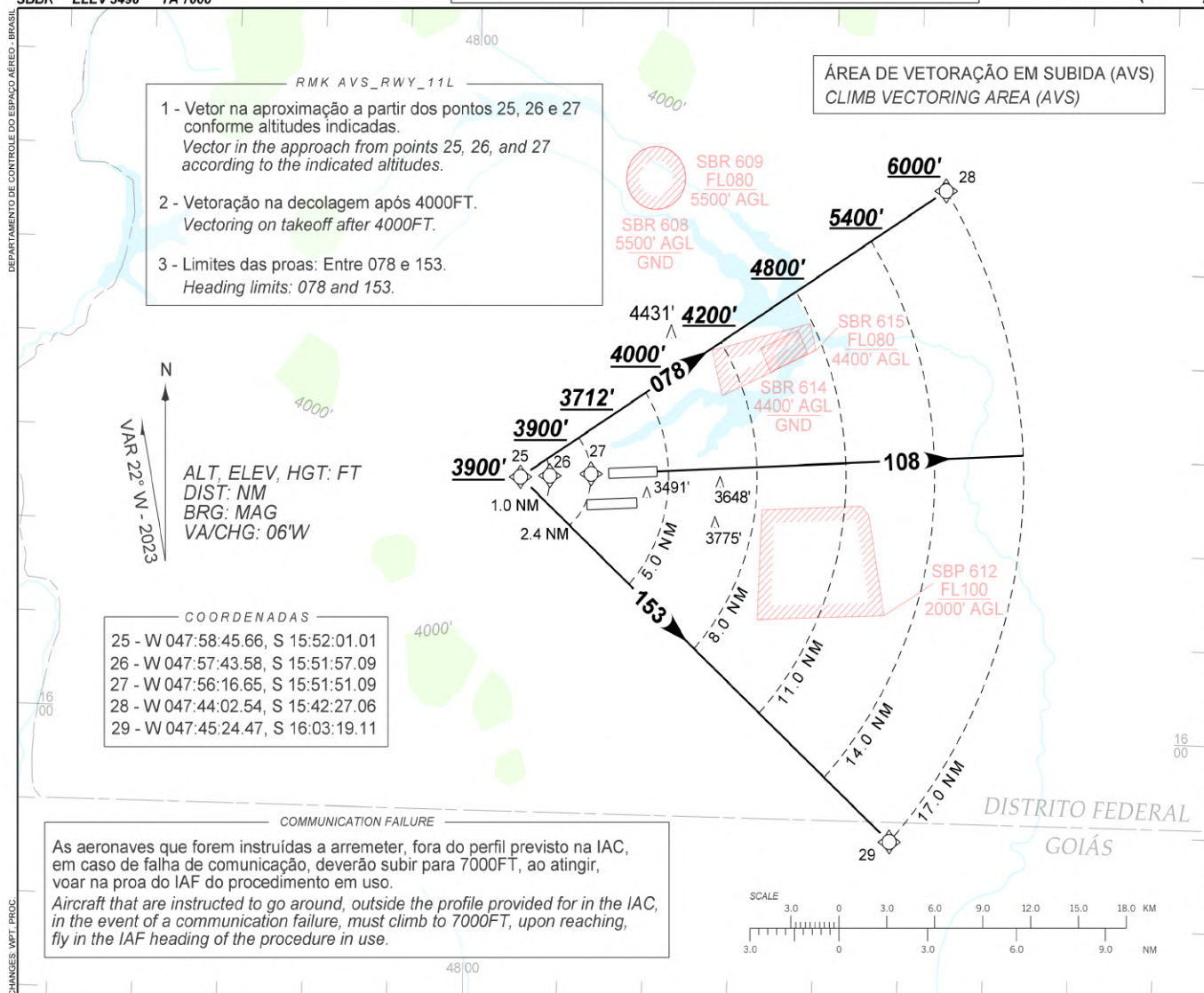
ATC SURVEILLANCE MINIMUM ALTITUDE CHART - ATCSMAC

SBBR ELEV 3498' TA 7000'

APP BRASÍLIA: 119.20 119.50 119.70 120.00 120.30 120.65 129.15 129.60

AVS_RWY_11L

TMA BRASÍLIA (SBWR)



Quality Management System

Certified Processes

In 2025, ICA maintained certification under **NBR ISO 9001:2015 – Quality Management System (QMS)**, covering seven organizational processes: Aeronautical Information Management; Topographic Surveys; Visual Charts; Special Visual Flight Charts; Registration of Objects Projected into the Airspace; Training; and Analyses of Protection Zone Plans.

The certification reinforces ICA's commitment to operational excellence, continuous improvement, and the quality of information and products that support aviation safety and air navigation development in Brazil, besides contributing to users' satisfaction.

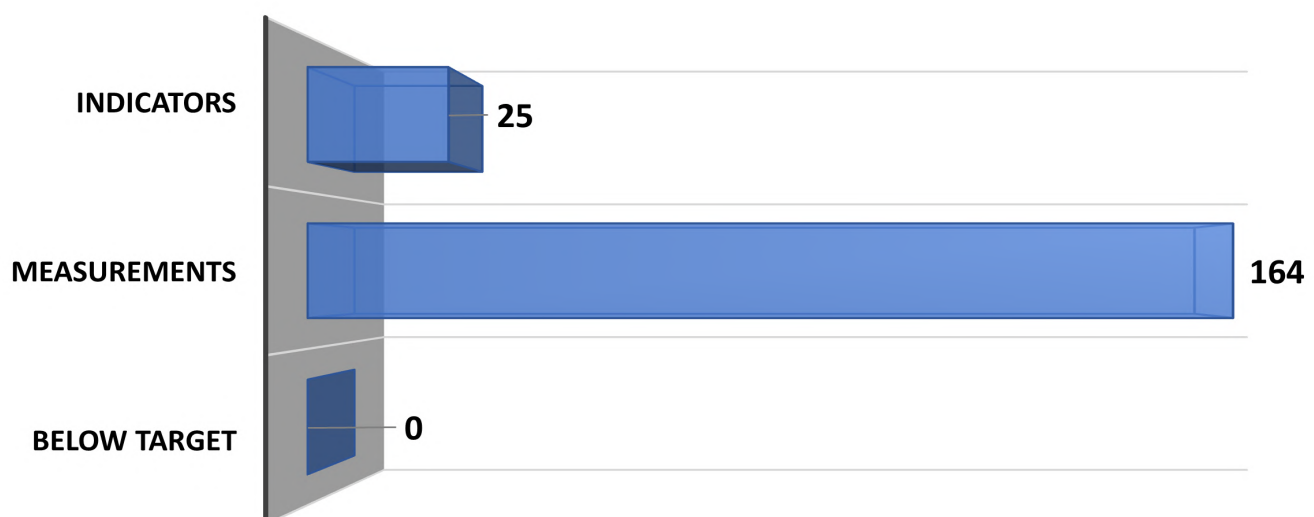
Quality Objectives

ICA achieved **100% of the established Quality Objectives**, demonstrating the effectiveness of its Quality Management System and strong institutional commitment to continuous operational improvement.

Monitoring was conducted through **25 performance indicators** linked to four strategic objectives: ensuring human resource qualification; delivering quality products and services; promoting customer satisfaction; and ensuring safety.

During the period, **164 measurements** were performed with no unmet targets, confirming process robustness and QMS maturity.

Performance Monitoring



Quality Management System

Citizen Service (SAC-DECEA)

ICA maintained the management of users' inquiries through the Citizen Service Center (SAC-DECEA), consolidating it as a strategic channel for **communication, transparency, and the continuous improvement** of the products and services provided.

The demands received were analyzed and processed in a structured manner by the responsible departments, in compliance with established deadlines and defined quality criteria. The information obtained through the SAC supported the identification of opportunities for process enhancement, as well as the continuous improvement of the products and services offered.

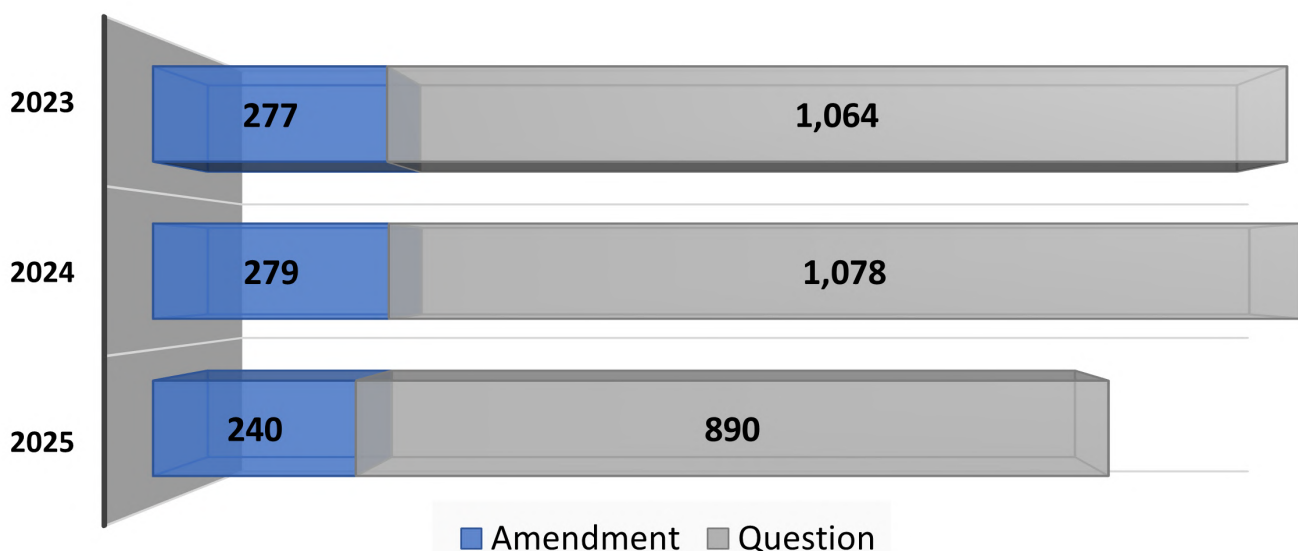
Achieved results

The results highlighted the ICA's commitment to **active citizen engagement**, the strengthening of user relationships, and the use of inquiries as a strategic tool for continuous quality improvement, in alignment with the Quality Management System and operational safety principles.

The process was managed by the Quality Management System Section and involved **135 contributors**, including Specialists, Consultants, and Supervisors, across **21 categories** related to ICA products and services.

The data shown in the chart below demonstrates a consistent volume of tickets received over the years, reinforcing the system's relevance as the primary channel for user interaction.

Number of SAC tickets per Year













Department of
Airspace Control



Institute of
Aeronautical Cartography