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Automation and the Air Navigation System

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OPERATIONAL ENVIRONMENT

AIRSPACE DEFENSE

Territory – 8.538.000 km² (Control, Defense, SAR)
Exclusive Economic Zone – 3.539.919 km² (Control, Defense, SAR)
International Agreements – 9.922.081 km² (Control, Defense, SAR)

Total – 22 Millions Km²
Civil/Military Integration

Radar Synthesis
Brazilian System

Air Traffic Control
Brazilian System

Air Defense
Brazilian System

Military Communications
SAGITARIO
Advanced Air Traffic Information Management System and Operational Interest Reporting

- Allows overlap of meteorological images in the sector under control.
- Integrates data from satellites and radars, consolidating them into a single visual presentation for the flight controller.
- The flight plans are edited graphically on the map, allowing the insertion, removal and repositioning of points in the flight plan.
- Advanced mouse-based design increases concentration and decreases controller fatigue. Expansion of security features and system availability (BTA)
SAGITARIO
Advanced Air Traffic Information Management System and Operational Interest Reporting
Guarantees the balance between the capacity of service of SISCEAB and the traffic demand.

During 2016 Olympic Games, new SIGMA modules were made available, which allowed sending flight plans over the Internet.

It is in operation at the Air Navigation Management Center (CGNA) in Rio de Janeiro, as well as in the AIS Rooms of the main Brazilian airports.

New version allows the use on mobile devices.
TATIC TWR
Total Air Traffic Information Control

TATIC TWR is a flight plan information system that enables the use of electronic strip in the operation of the control tower.

TATIC TWR is in operation at 34 SISCEAB control towers.

It has integration with SAGITARIO and SIGMA in an automated way, reducing the use of phones to the coordination of flight plans between ATC centers.
It consolidates air data from control towers and generates information for the aerodrome flow management.

It provides statistical information and allows remote management of the control towers movement demand.

It is in operation in the CGNA and in the Operational Divisions of the CINDACTA.
Remote Tower

It allows the provision of the Air Traffic Service remotely, without the physical presence of the ATCO at the aerodrome where the service is provide.

Video surveillance based on sensors (cameras). The image will be high-definition and real-time.

The first implementation of the Remote Tower (Proof of Concept) is in progress (Santa Cruz Air Force Base).
Remote AFIS

It allows the provision of the Air Traffic Information remotely, without the physical presence of the operator at the aerodrome where the service is provide.

Based on real time information: communication, meteorological and situational awareness (COSMOS).

The first implementation of the Remote AFIS (Proof of Concept) was in Fernando de Noronha Island.
Pros

- Lower costs
- Sharing systems
- Integration
- Easy interface
- Lower maintenance schedule
- Availability
- Standardization

Cons

- ATCO x Military regulations
- Resistance to change
- Long Training Programs in simulators and operational centers