



ASBU IMPLEMENTATION

ASBU industry consideration

Date 16/08/2017

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GOAL

To present to the attendants of this workshop the industry considerations for ASBU modules.

In this sense, we will perform a relation between what is preconized in ASBU 0 and what is implemented at Atech ATM/ATFM systems.

In addition, since that ASBU 1 is up to debut, in 2018, we will present some upcoming features at Atech ATM/ATFM systems



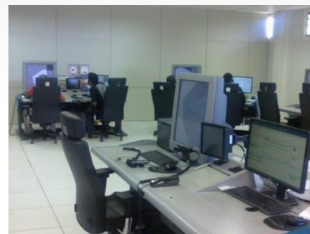
Air Traffic Management powered by SAGITARIO system



SAGITARIO APP Brasília



SAGITARIO APP MACAE



SAGITARIO ICEA



SAGITARIO ACC Recife



SAGITARIO APP São Paulo



SAGITARIO APP Rio de Janeiro



ATECH ATM/ATFM PRODUCTS

Air Traffic Flow Management

powered by SIGMA system



powered by SKYFLOW system

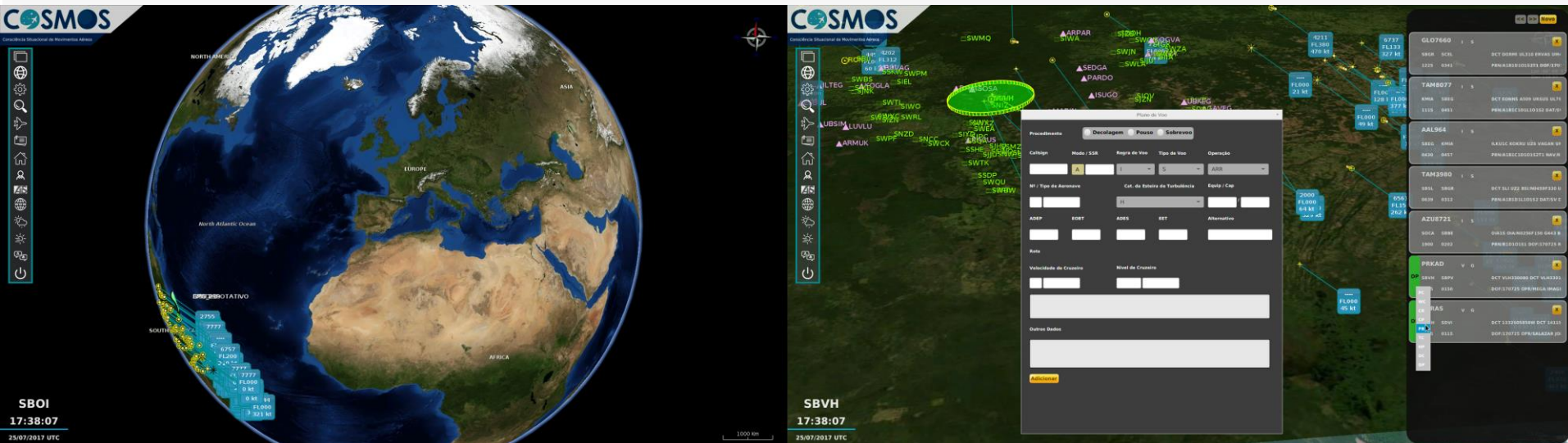


powered by PLATAO system

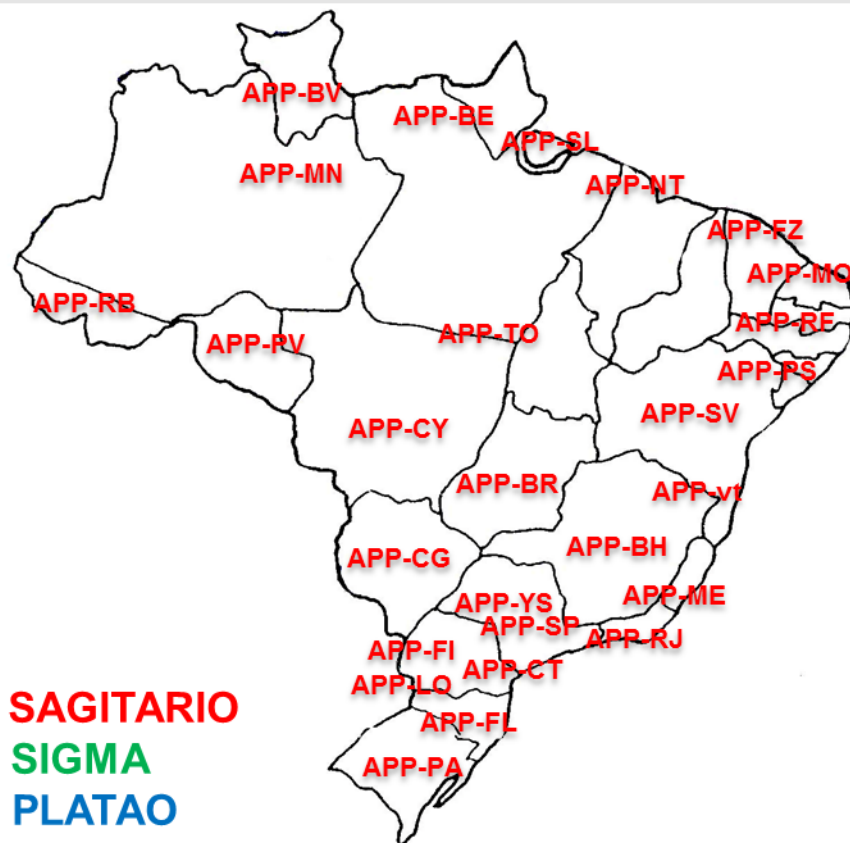
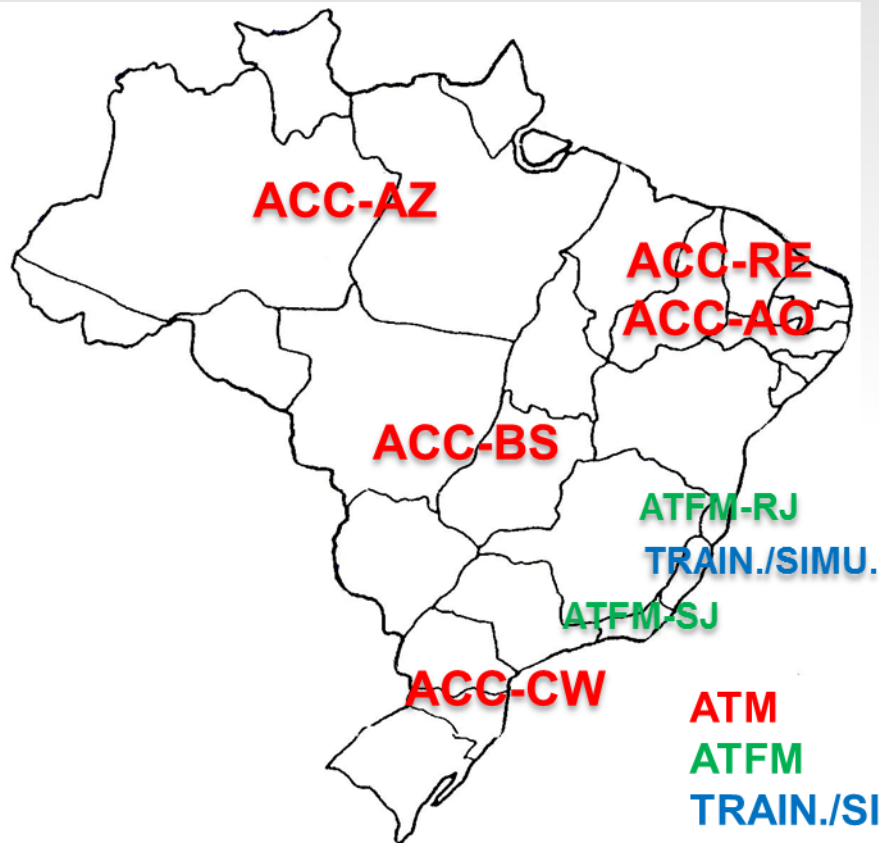


Aerodrome Flight Information System

powered by COSMOS system



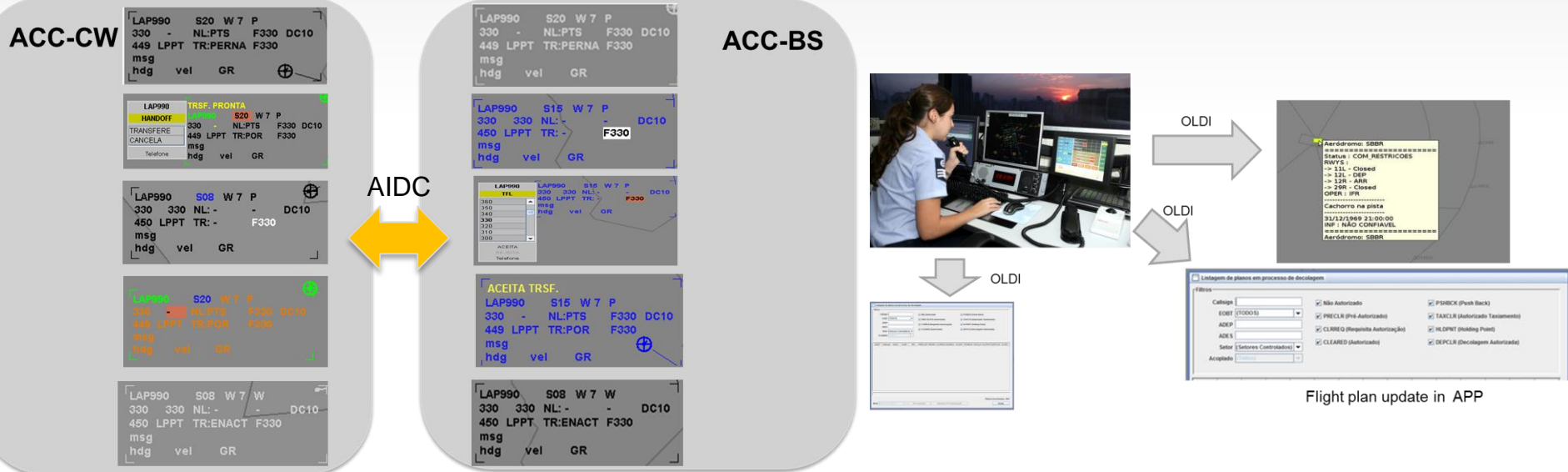
ATECH ATM/ATFM SYSTEMS DISTRIBUTION



Globally Interoperable Systems and Data

B0-25: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

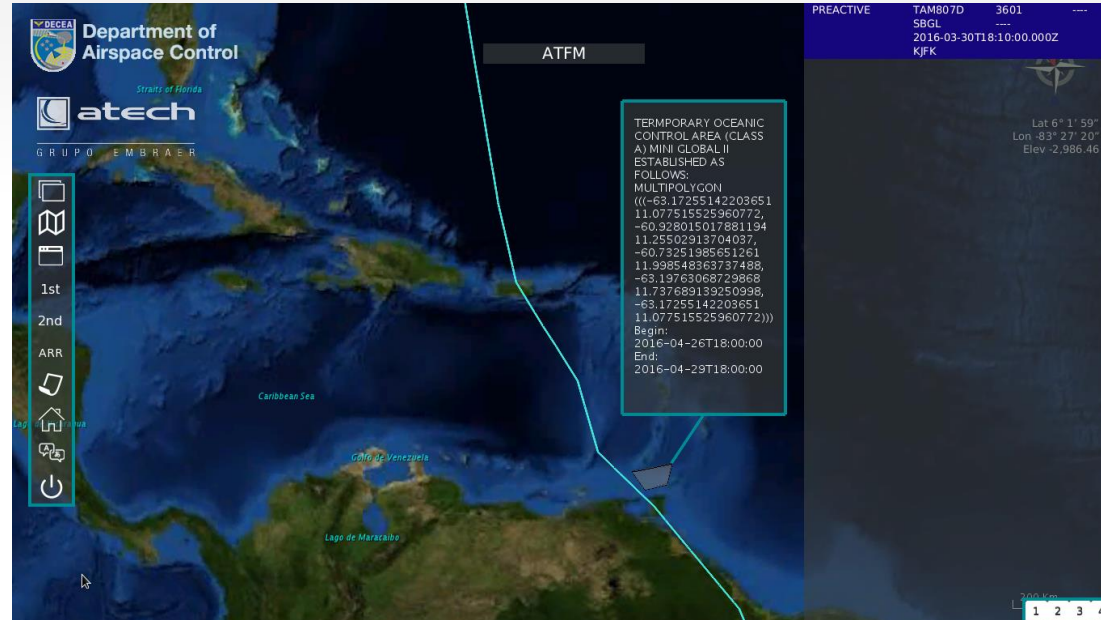
Full AIDC and OLDI are available in SAGITARIO for inter-center and intra-center coordination. In this sense, “silent coordination” benefits air traffic controller from automatic and seamless coordination with adjacent FIRs as well as between positions at Air Traffic Control Centers.



Globally Interoperable Systems and Data

B0-30: Service Improvement through Digital Aeronautical Information Management

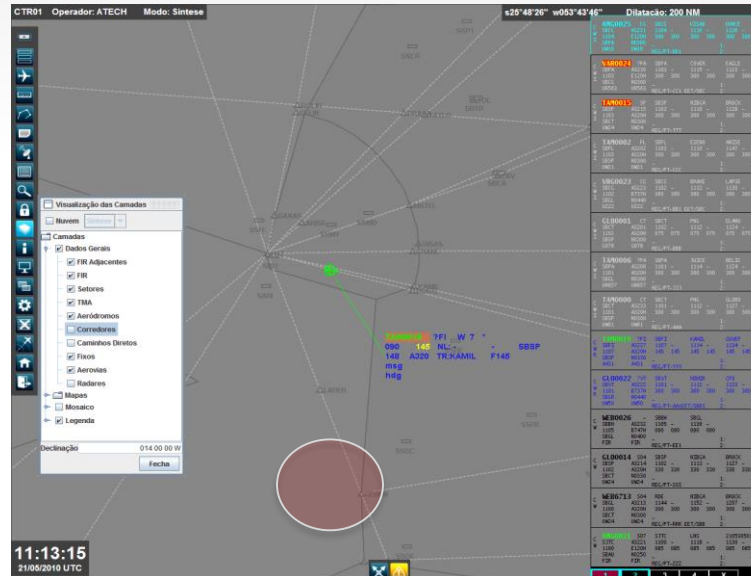
As a component of SAGITARIO system, Atech has developed a integration with AIM databases, capable of managing all aeronautical information based on AIXM 5.1 standard.



Globally Interoperable Systems and Data

B0-105: Meteorological information supporting enhanced operational efficiency and safety

SAGITARIO is integrated to a CSWS (Convective Severe Weather System). In this sense, air traffic controllers and planners has predict and current meteorological situation awareness for planning trajectories - in a pre-tactical context, as well as in for handling trajectories - in a tactical context.

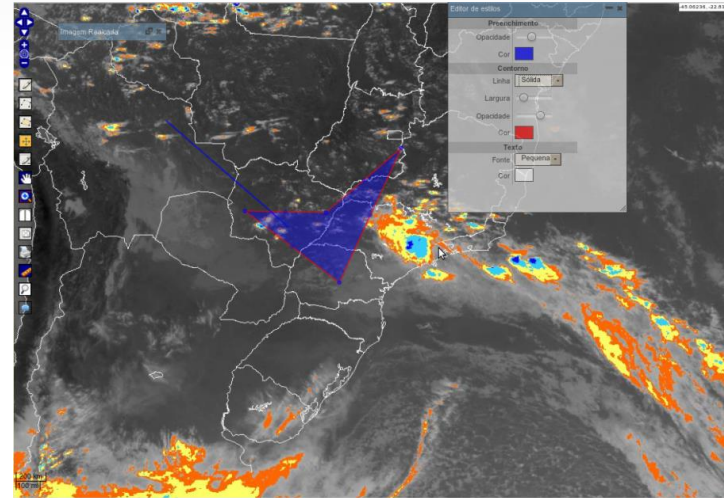


Globally Interoperable Systems and Data

B1-105: Enhanced Operational Decisions through Integrated Meteorological Information (Planning and Near-term Service)

In order to handle tactical context, next version of SAGITARIO – to be deployed in 2018 – will have full access to available meteorological information, based on standards protocols (GRIB, WXXM).

And in a pre-tactical context, next version of SIGMA will consider predict meteorological information in its balance computation.



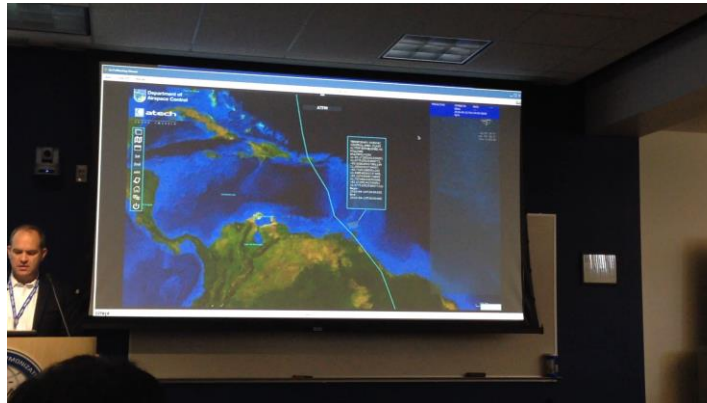
Globally Interoperable Systems and Data

B1-25: Increased Interoperability, Efficiency and Capacity through FF-ICE, Step 1 Application before Departure

B1-30: Service Improvement through Integration of all Digital ATM Information

B1-31: Performance Improvement through the application of System-Wide Information Management (SWIM)

Atech and DECEA has participated in SWIM trials, such as Mini Global II (FAA) and SWIM Global Demonstration (SESAR). These experiences guided both DECEA and ATECH to plan the DECEA SWIM Platform.



Globally Interoperable Systems and Data

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B1-31: Performance Improvement through the application of System-Wide Information Management (SWIM)

In 2015, DECEA has signed an agreement with EUROCONTROL, which encompasses exchanging of flight plan information before departure. In 2017, Atech started to implement and deploy, in phases, the DECEA SWIM Platform



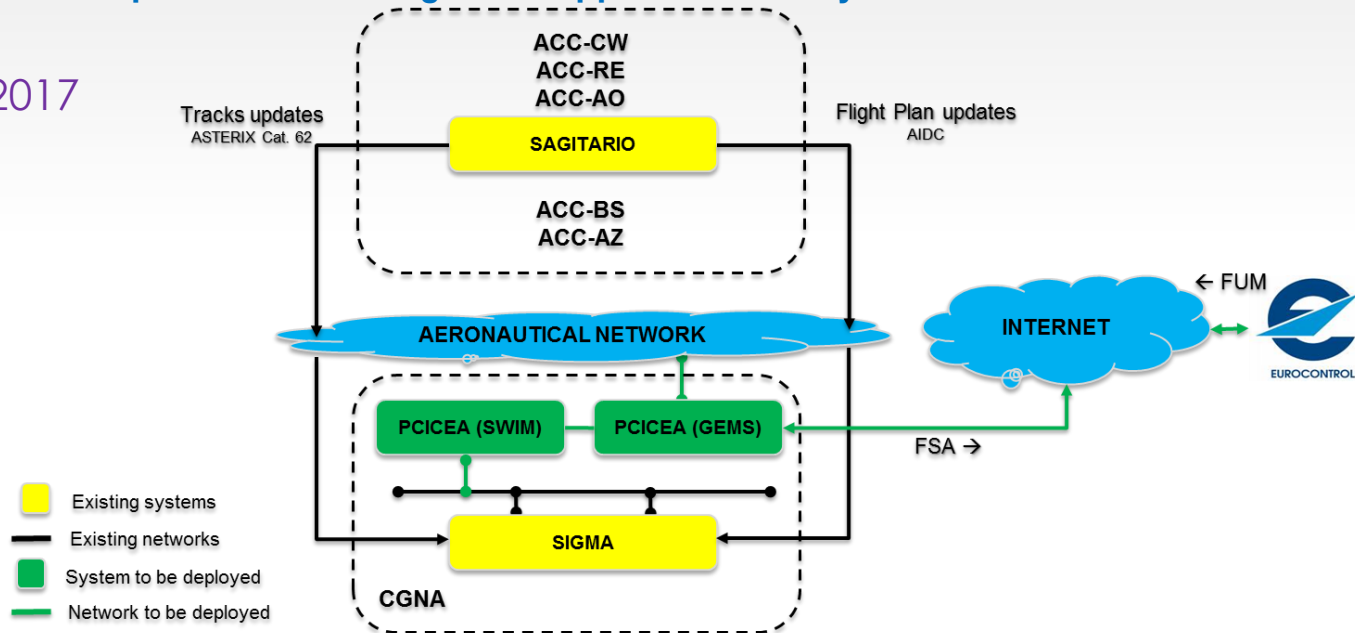
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Phase 1: In 2017



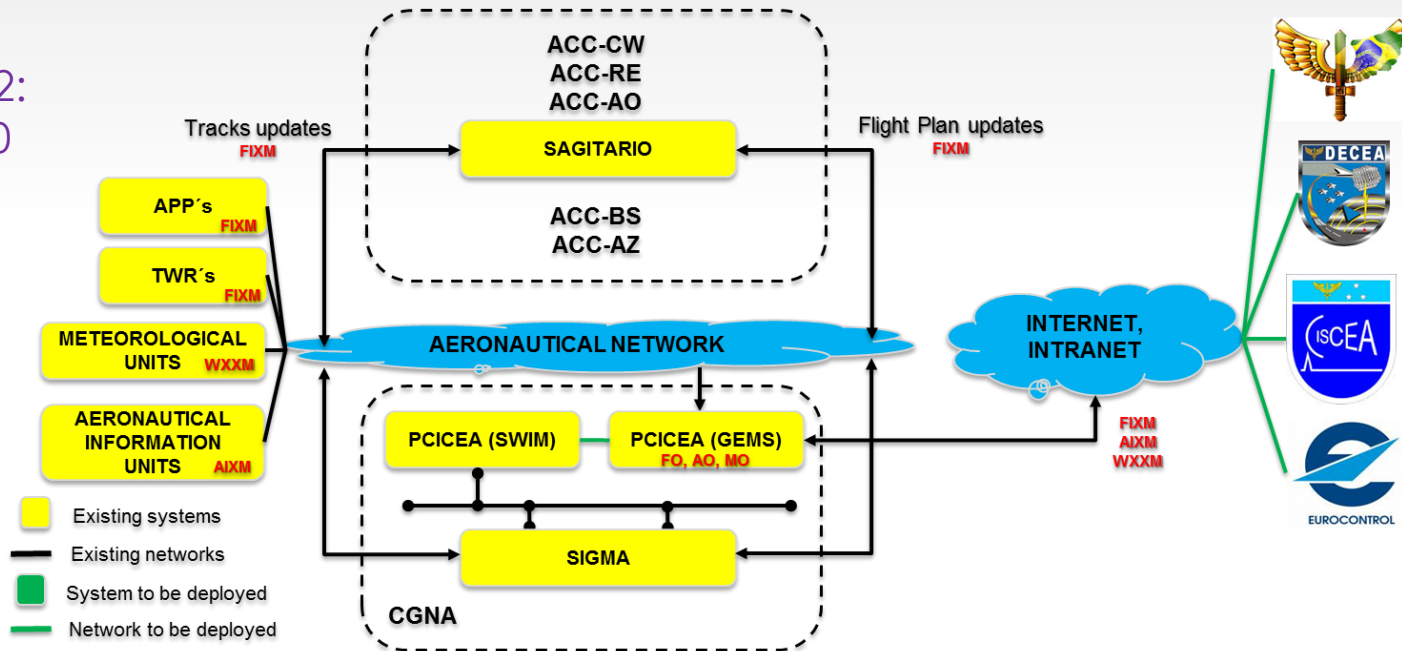
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Phase 2:
2018 - 2020



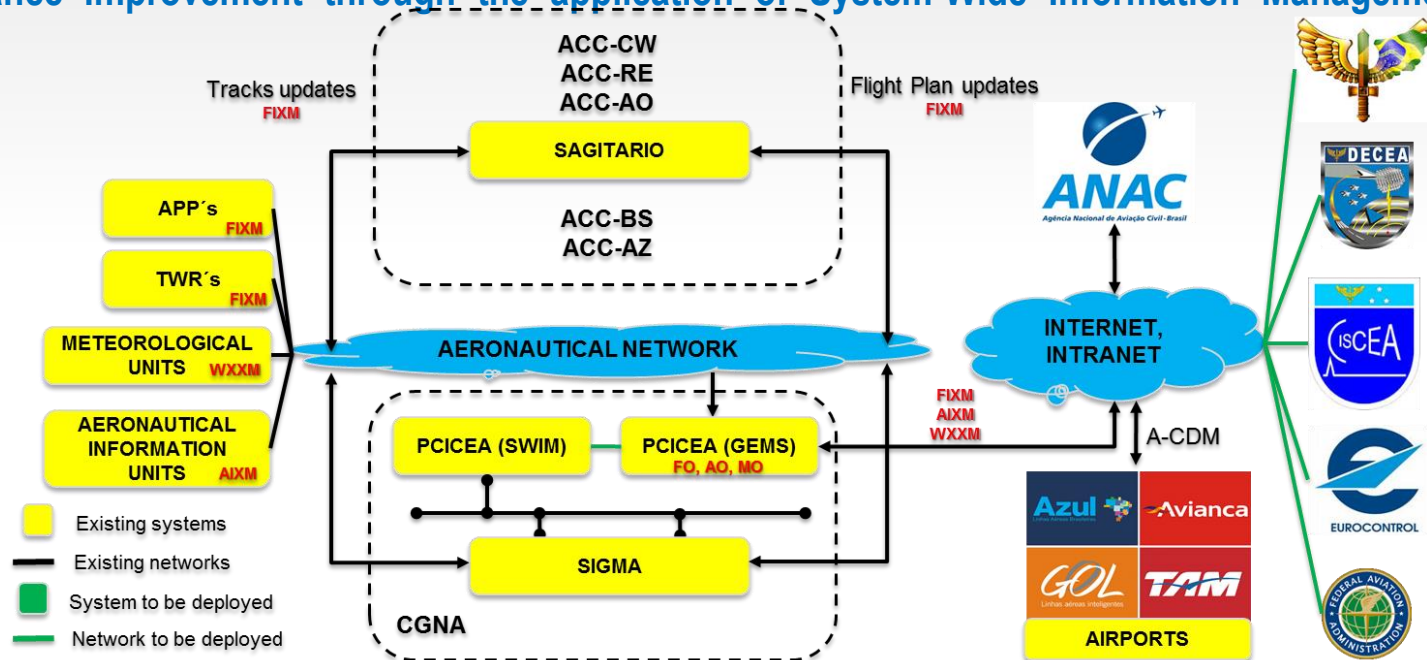
Globally Interoperable Systems and Data

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Phase 3:
2020 - 2022



Airport Operations

B0-15: Improved Runway Traffic Flow through Runway Sequencing (AMAN/DMAN)

SAGITARIO system is integrated to AMAN/DMAN system, providing complete integration among ACC, APP and TWR. In this sense, air traffic controllers from those ATS units have the same situational awareness about the flights, and they can easily coordinate operational actions among themselves.



Airport Operations

B0-20: Improved Flexibility and Efficiency in Departure Profiles - Continuous Climb Operations (CCO)

SAGITARIO provides to ATC planner and air traffic controller all the information related to PBN, grabbed from flight plan. The information are presented in the EFS (Electronic Flight Strip) or in the track data block.

☒ GNSS
☒ RNAV/RNP

Equipamento

JAL98	SBGL	1813	DONA		
-	DEP -	1813	390	1823	
SBGL	KJFK -				
W B777-H	A0112 -				
S3	N0400 -				
CP					

A1 RNAV 10 (RNP 10)
B1 RNAV 5 Todos os sensores permitidos

JAL98	SBGL	1813	DONA		
-	DEP -	1813	390	1823	GR
SBGL	KJFK -				
W B777-H	A0112 PBN/A1B1				
S3	N0400 -				
CP					

Airport Operations

B1-80: Optimized Airport Operations through Airport-CDM Total Airport Management

The SWIM Platform, as explained previously, will be the enabler for a full A-CDM management, foresee to 2022. Before that, currently DECEA is allowing airports operator to receive a remote display from SAGITARIO it its AOCC.



Airport Operations

B1-81: Remotely Operated Aerodrome Control

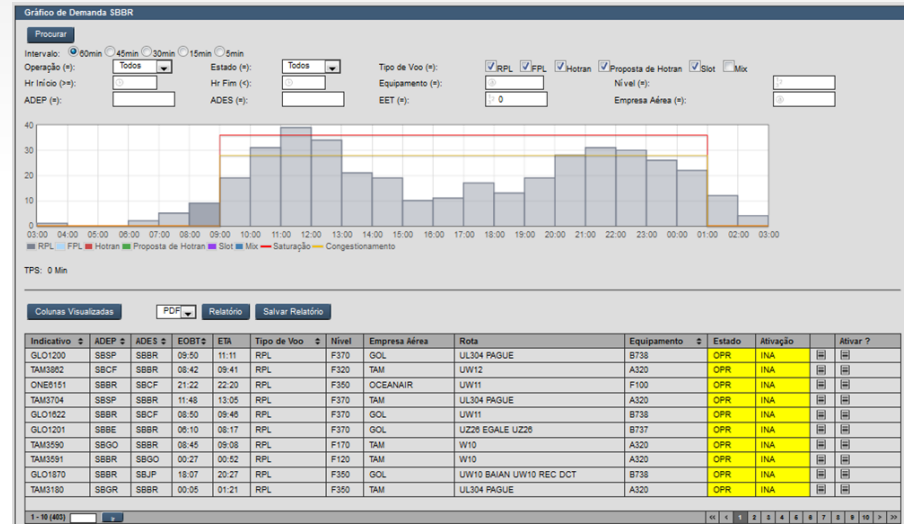
The system COSMOS is a dedicated solution for remotely operated airports. The system is connected to radar network and AFTN, receiving tracks and flight plans. Besides that, it can be connected to the surveillance cameras of the airport. It has been tested in Amazonic Center (ACC-AZ).



Optimum Capacity and Flexible Flights

B0-35: Improved Flow Performance through Planning based on a Network-Wide view

DECEA has consistently invested resources in SIGMA system, which has brought excellent outcomes, reducing delays and optimizing the airspace



Optimum Capacity and Flexible Flights

B0-84: Initial capability for ground surveillance

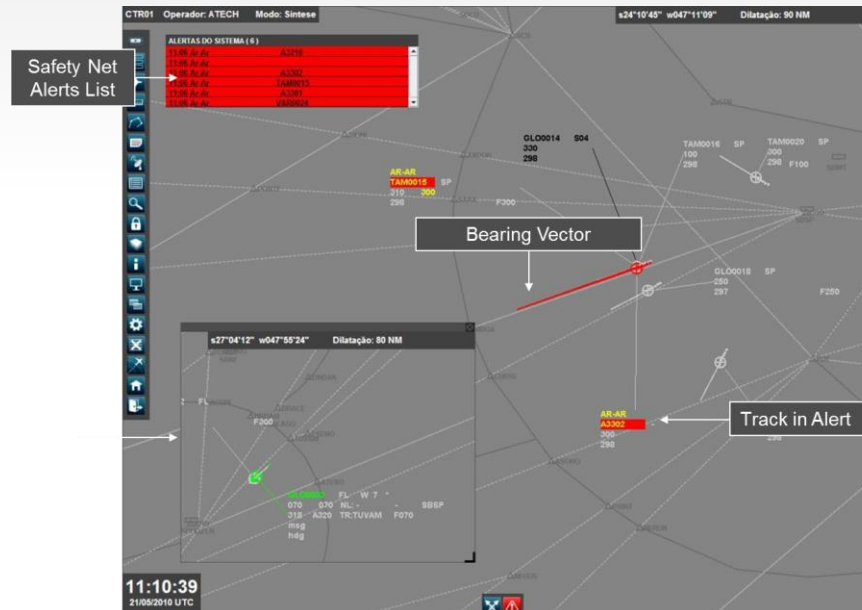
SAGITARIO has incorporated a multi sensor tracking engine, capable of fusing information from radars, ADS-B antennas, MLAT antennas, providing the best and accurate information to air traffic controller.



Optimum Capacity and Flexible Flights

B0-102: Increased Effectiveness of Ground-Based Safety Nets

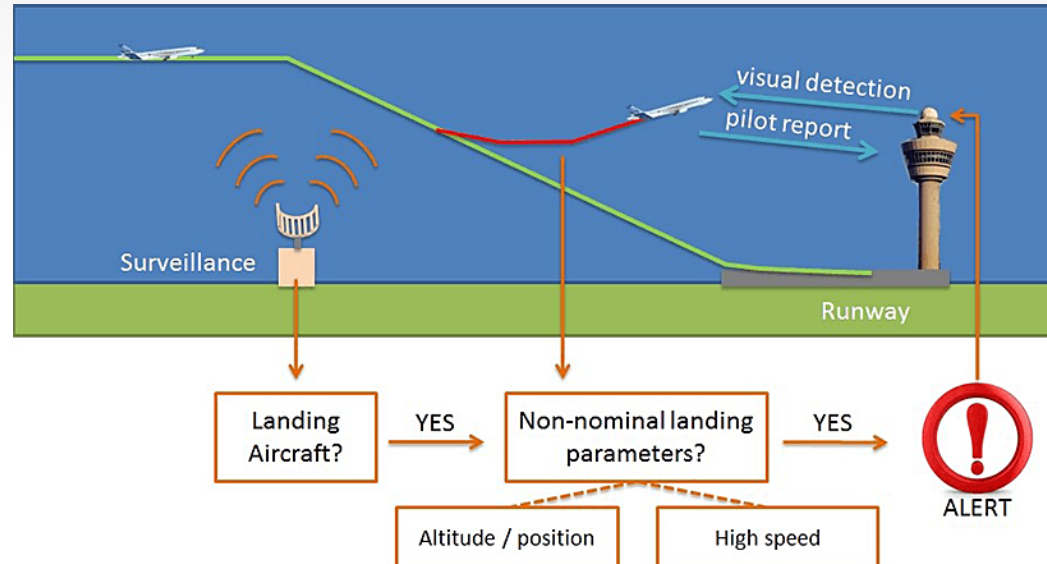
SAGITARIO has incorporated all the Safety Net alerts, as recommended by EUROCONTROL, such as: STCA, MSAW, AIW, etc.



Optimum Capacity and Flexible Flights

B1-102: Ground-based Safety Nets on Approach

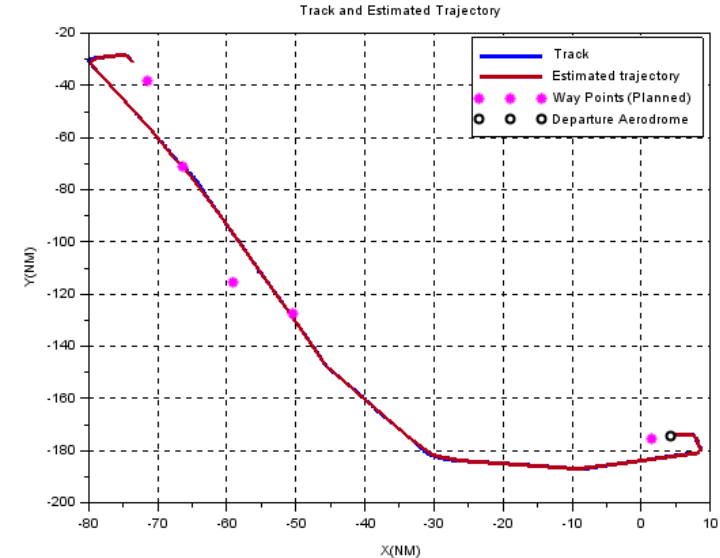
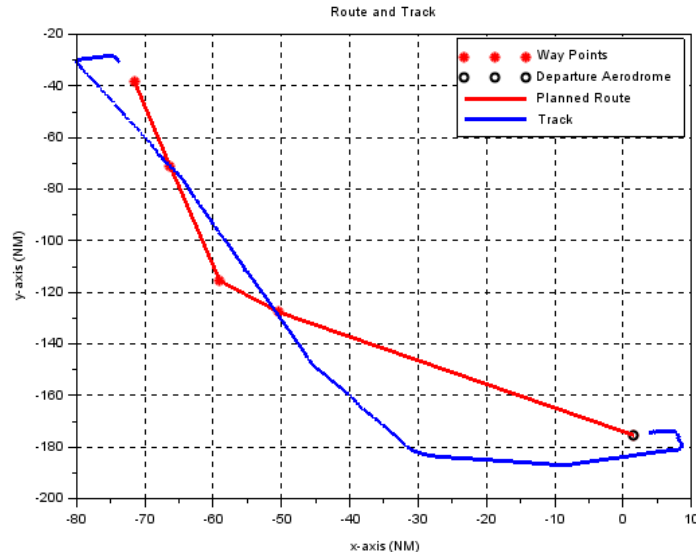
In the next deployment of SAGITARIO, in 2018, Safety Net will be enhanced by the 4D Trajectory capability. Besides of that, new algorithms for Safety Net, such as APM, will be for air traffic controllers, as well as a tool for calibrating such algorithms, taking the best advantage of it.



Optimum Capacity and Flexible Flights

B1-10: Improved Operations through OPTIMIZED ATS Routing

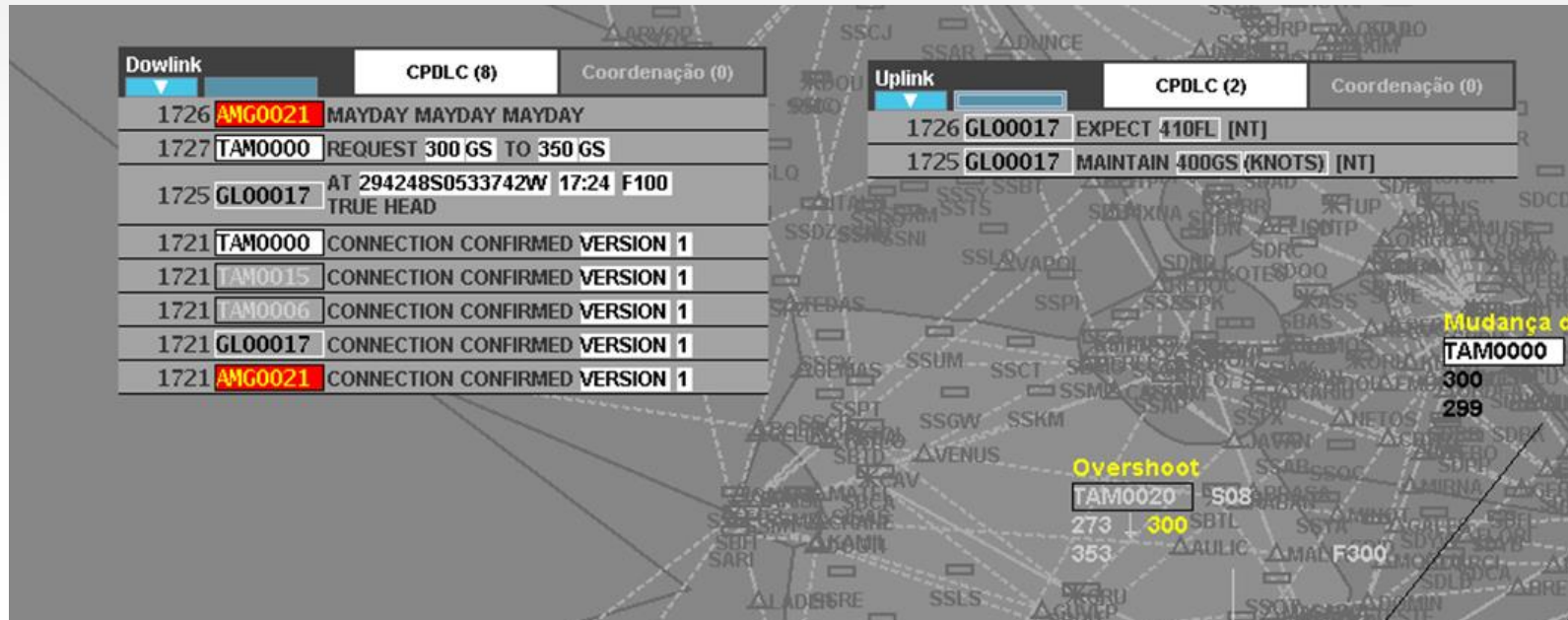
SAGITARIO will incorporate, in the next deployment, the Trajectory 4D capability. It is an enabler for route optimization, route planning, and flexible routes. Besides that, “big data analysis” enhances such capability.



Efficient Flight Path

B0-40: Improved Safety and Efficiency through the initial application of Data Link En-Route

SAGITARIO has full ADS-C and CPDLC capabilities, allowing full air traffic service for oceanic flights.



OBRIGADO !! GRACIAS !!! THANK YOU !!! TACK SÅ MICKET !!





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GRUPO EMBRAER