

Brazilian SWIM Status and Ongoing Actions



Ministry of Defense

Department of Airspace Control

Brazilian Air Force

Brazilian Airspace Control System

SISCEAB



Air Traffic Management

Aeronautical Communication

Aeronautical Information

Air Navigation Aids

Aeronautical Meteorology

Flight Inspection

Aeronautical Cartography

Search and Rescue

Military Air Operation Support

Specialized Instruction

<https://www.decea.gov.br> // DECEA website | https://www.youtube.com/watch?v=84u-d_xUy5Q // 22 Dimension
<https://www.youtube.com/watch?v=wn8-RUMzhmU> // Institutional video – English subtitles

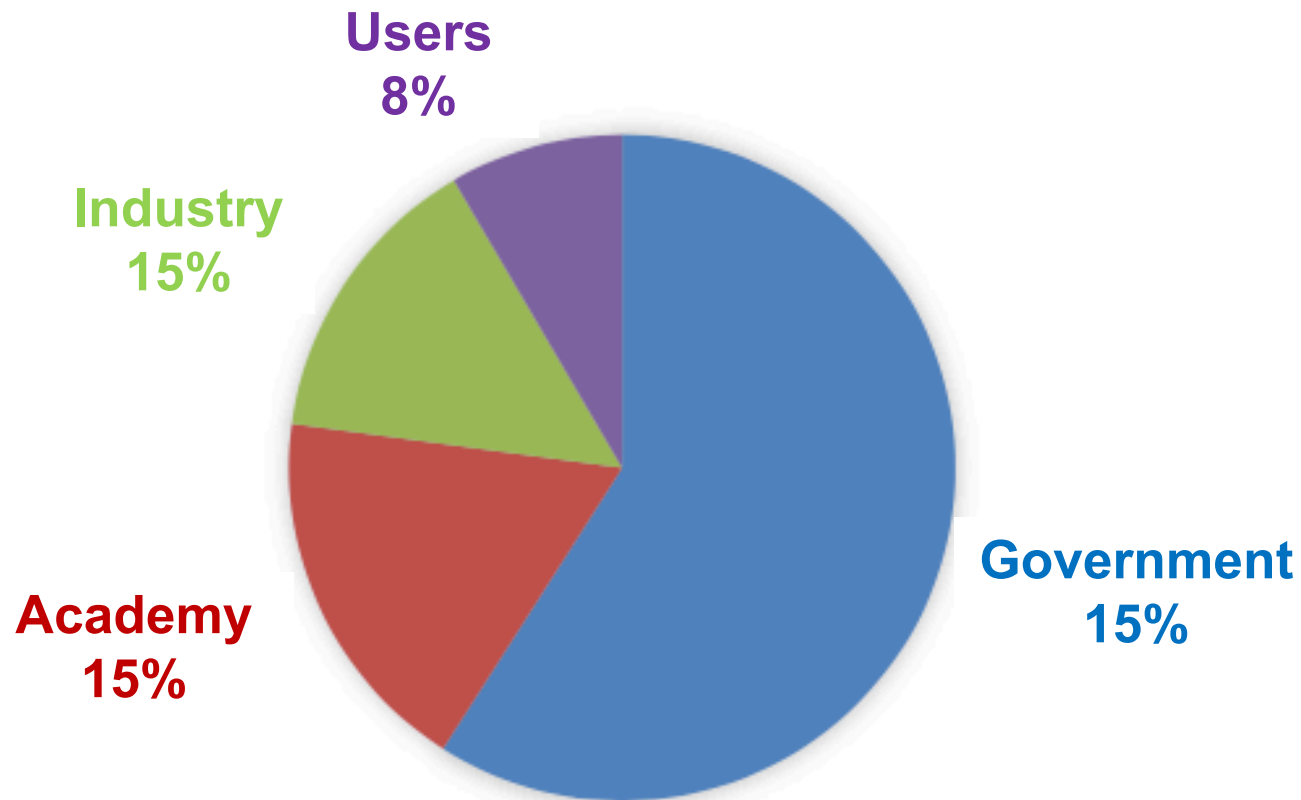
I Workshop on Cyber&SWIM

DECEA, Rio de Janeiro, May 2017.



I Workshop on Cyber&SWIM

About 80 participants

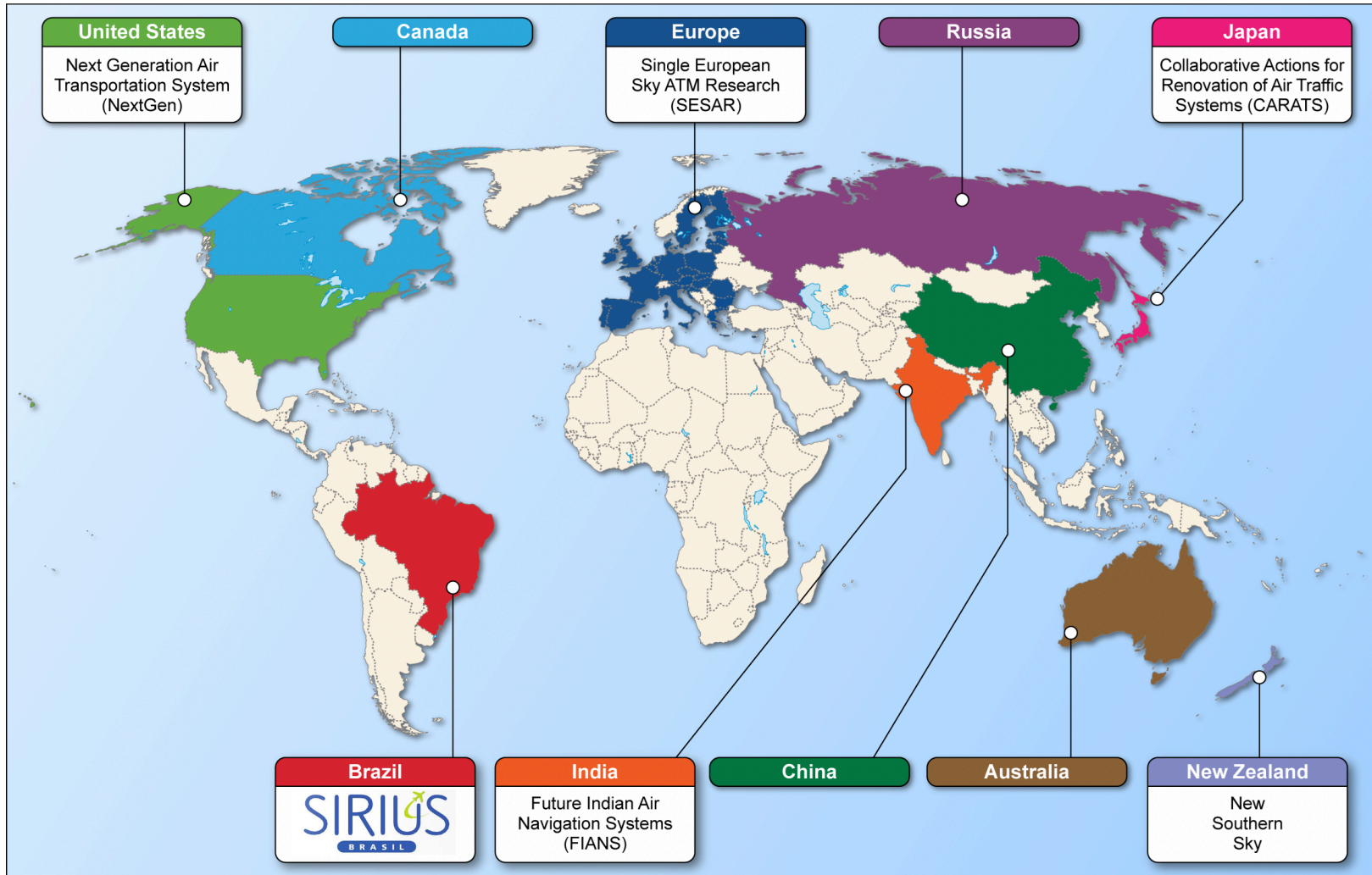


I Workshop on Cyber&SWIM

Main goals achieved:

- Technical committee for ATM community cooperation
- SWIM project in SIRIUS program ✓

Examples of Air-Traffic Management (ATM) Modernization Programs Worldwide



Source: <http://www.gao.gov/assets/680/671755.pdf>








SWIM in SIRIUS Scope – As it is

Improvement of the Quality, Integrity and Availability of Aeronautical Information

Expected benefits

- Ensured integrity and accuracy of the data generated in the production process of Aeronautical Information publications.
- Increased success rate in the production of Aeronautical Information publications.
- Migration of services provided in the current AIS Office for the worldwide computers network, including the receipt of flight plans.
- Provision of Aeronautical Information for use in portable devices.
- Customer service standardization.
- Provision of guidelines for initiating the implementation of Brazil's SWIM.
- Provision of terrain and obstacles data, in digital format, through the Electronic Terrain and Obstacle Database – e-TOD.








Projects

Operational Safety	
Air Traffic Management	
Communication, Navigation and Surveillance	
Aeronautical meteorology	
Gestión de Información Aeronáutica	
Search and Rescue	
Human Resources and Performance	

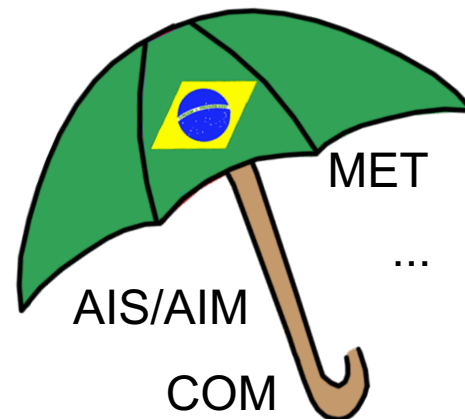
Source: <http://www.decea.gov.br/sirius/?lang=en>

SWIM in SIRIUS Scope – As it is becoming (2017)

Projects

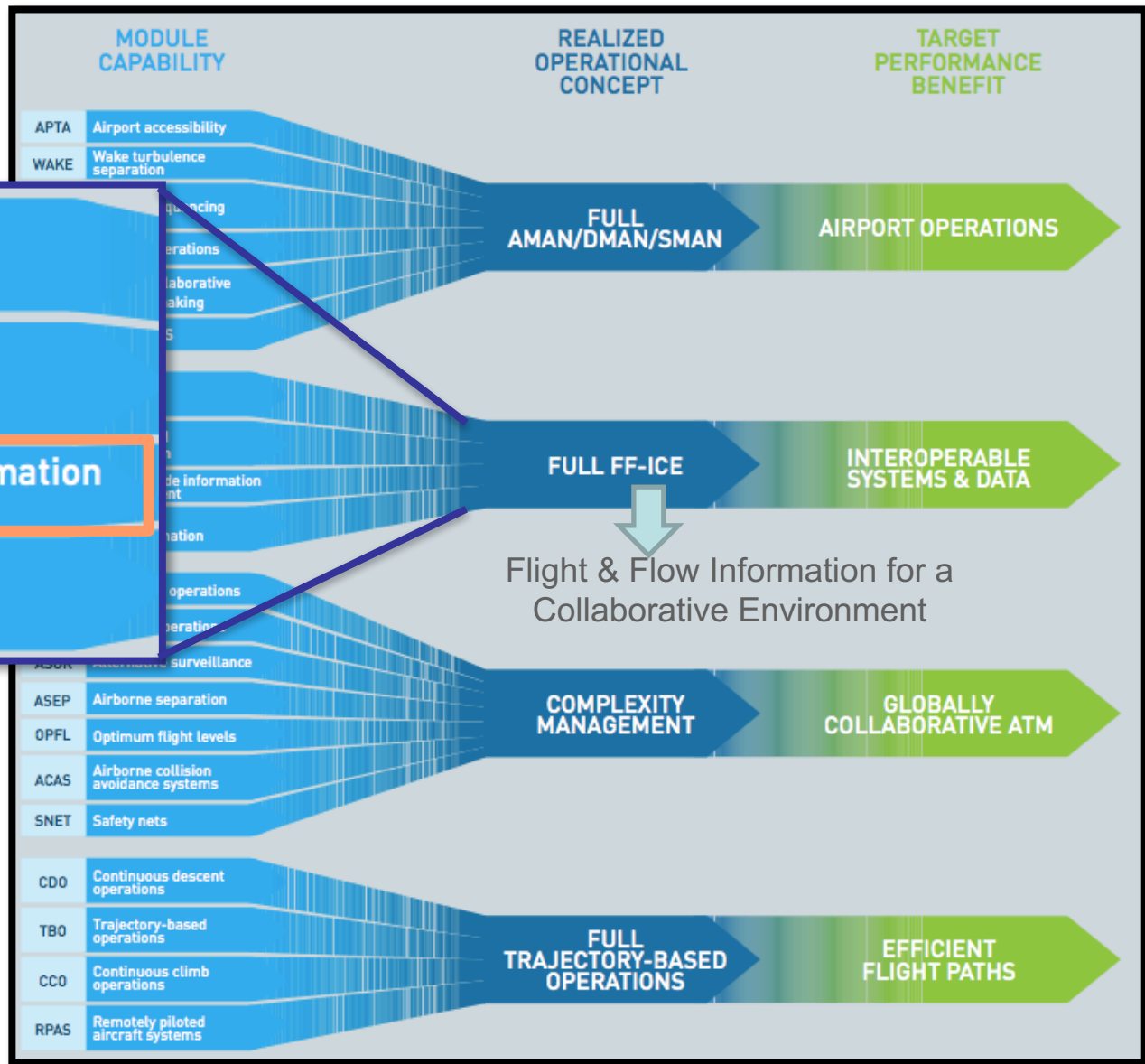
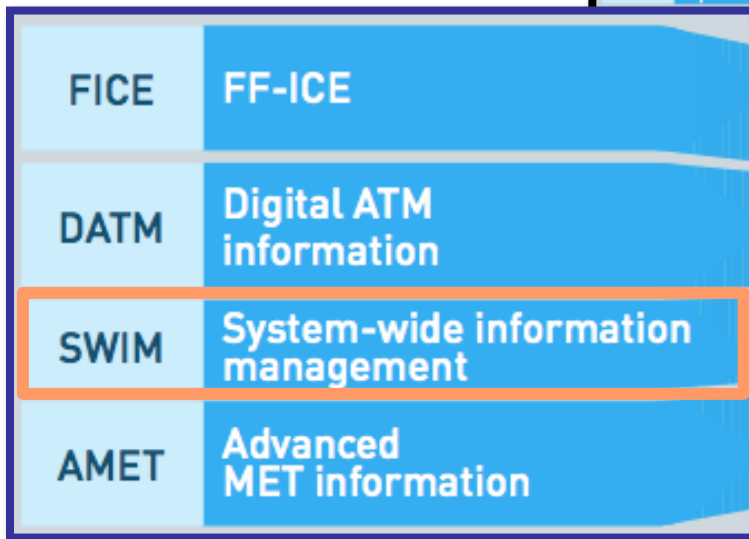
Operational Safety	
Air Traffic Management	
Communication, Navigation and Surveillance	
Aeronautical meteorology	
Gestión de Información Aeronáutica	
Search and Rescue	
Human Resources and Performance	

Improvement of the interoperability of ATM systems and data through the adoption of the **SWIM** concept in the Brazilian Airspace System (SISCEAB)



Source: <http://www.decea.gov.br/sirius/?lang=en>

SWIM is not an end in itself...



Source:
GANP – Doc. 9750
2016

I Workshop on Cyber&SWIM

Main goals achieved:

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<http://www.decea.gov.br/sirius/?lang=en> // SIRIUS website

Improving data and systems interoperability through the adoption of SWIM concept on SISCEAB

Main deliverables

1. Guideline on the implementation of SWIM in Brazil;
2. SWIM concept implementation Plan;
3. Publish or republish all necessary rules, models and operational agreements to fit new criteria and specifications to exchange data, based on SWIM concept;
4. PoC on SWIM adoption on Brazilian scenario;
5. Infrastructure to support SWIM (ATN-BR);
6. SWIM Governance for national ATM SWIM adoption;
7. SWIM Cyber Security; e
8. Inclusion of the aircraft in the ATM collaborative decision process, through SWIM.

Improving data and systems interoperability through the adoption of SWIM concept on SISCEAB

Milestones	Planned Date
Test environment to support proof of concept (collaborative environment for demonstration of SWIM capabilities and analysis to support related strategic decision-making)	12/2017
Mapping the SWIM related initiatives already in progress	01/2018
To create a SWIM website	02/2018
To establish an interactive process for cooperation between all stakeholders	06/2018
Guideline on the implementation of SWIM in Brazil – in force	08/2018

Improving data and systems interoperability through the adoption of SWIM concept on SISCEAB

Milestones	Planned Date
Annual national ATM SWIM Demos	12/2017 to 12/2024
SWIM Registry Users Manual in force	11/2018
Full operational SWIM Registry	12/2018
Adoption of the standard data models (AIXM, IWXXM, FIXM)	12/2018
All services provided by DECEA available via SWIM Registry	06/2019
Rules for third part services being published on SWIM Registry	12/2019

Improving data and systems interoperability through the adoption of SWIM concept on SISCEAB

Milestones	Planned Date
SWIM Cyber Security Threat assessment	09/2018
SWIM Cyber Security management model	10/2019
Inclusion of aircraft as SWIM nodes: exchange of non-safety data supported by commercial links	12/2023
Total aircraft connection as a SWIM node, ensuring full participation in ATM collaborative decision processes through data exchange, including meteorological data	12/2025

II Workshop on Cyber&SWIM

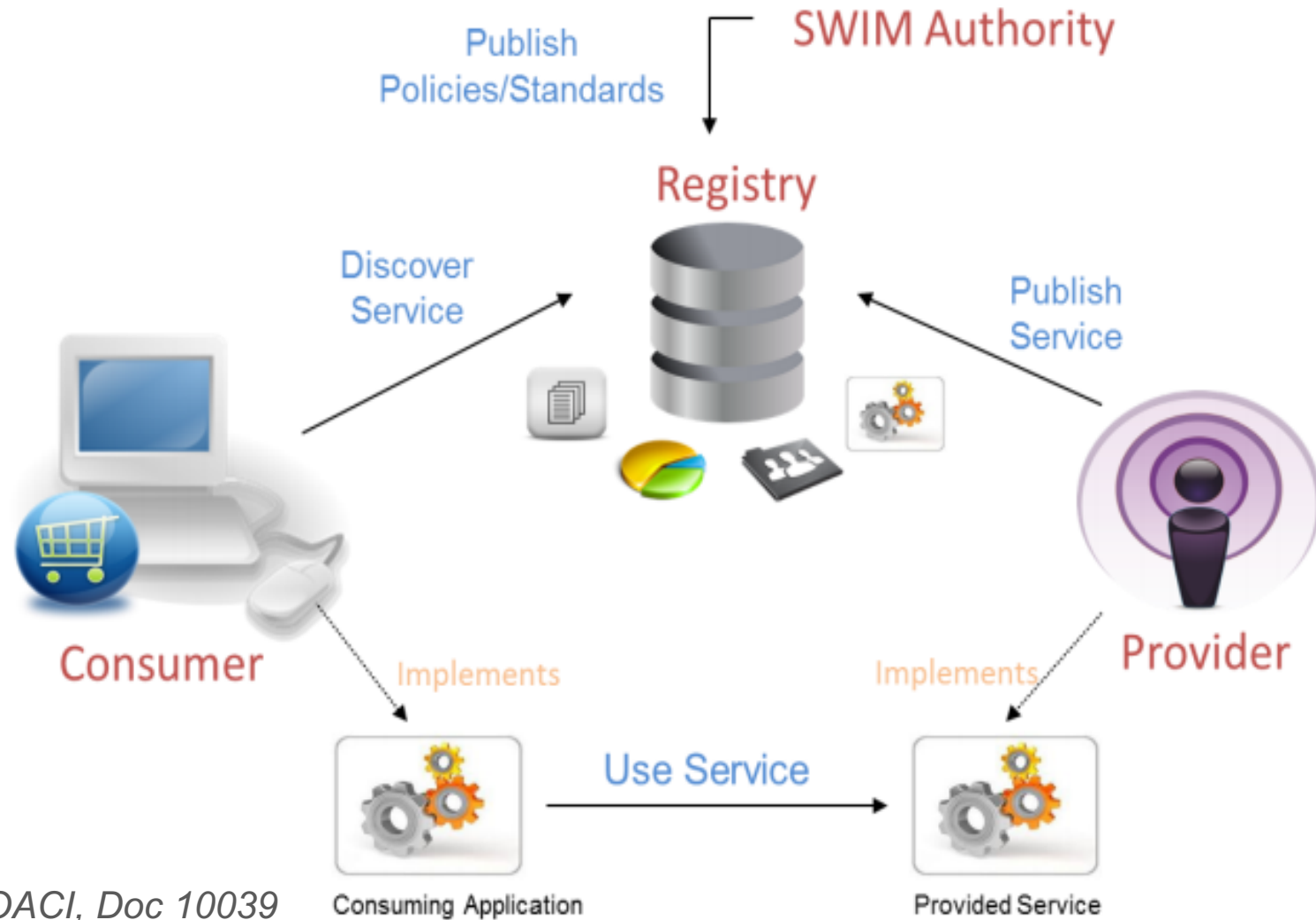
<http://www.icea.gov.br/workshopcyberswim/>

ICEA, São José dos Campos, 28-30 Nov 2017.

– SWIM Brazil Demo

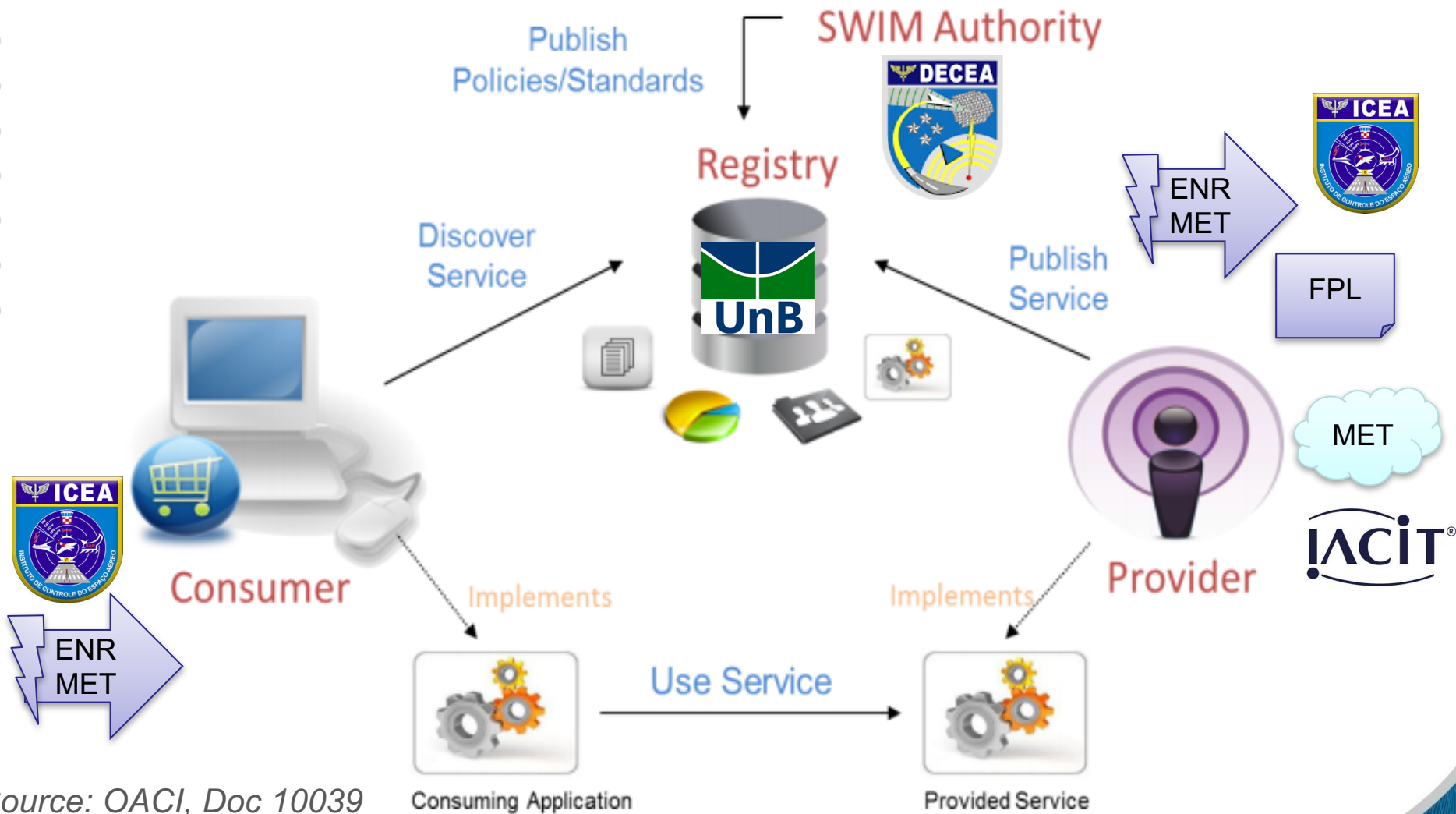


1st Demo Architecture



Source: OACI, Doc 10039
Concept of a SWIM Registry

1st Demo Architecture



Source: OACI, Doc 10039
 Concept of a SWIM Registry

Useful links

- USA SWIM general info:
<https://www.faa.gov/nextgen/programs/swim/>
- USA SWIM Registry: <https://nsrr.faa.gov>
- EUROCONTROL SWIM general info:
<http://www.eurocontrol.int/swim>
- Europe SWIM Registry: <https://eur-registry.swim.aero/about>
- ATIEC 2015 FAA presentation about the SWIM Common Registry Concept:
http://www.aixm.aero/sites/aixm.aero/files/imce/library/ATIEC_2015/25_day2_swim_common_registry_scr_conceptual

AIS > AIM

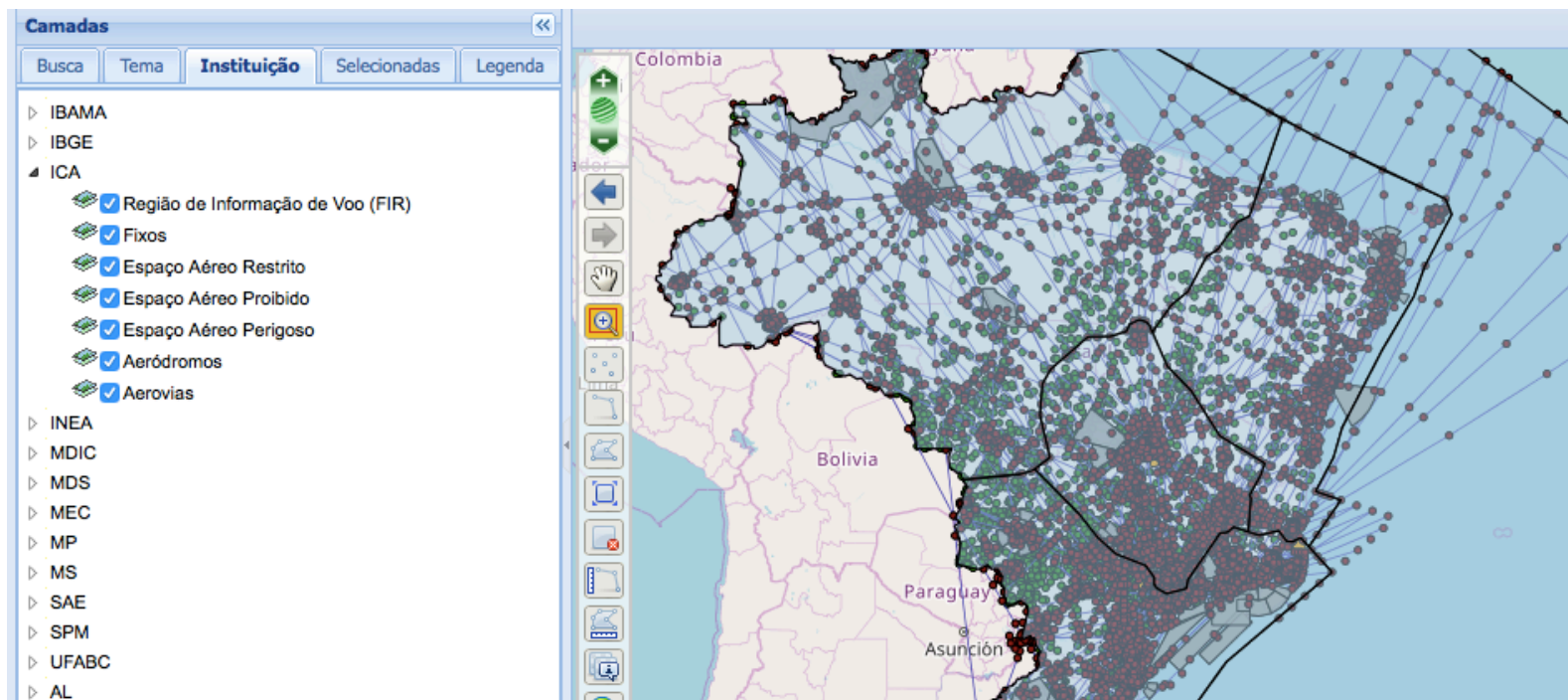
Some 'AIS to AIM' goals achieved | Challenges

- From product based to data based (AIS domain)
- Going Digital and Standardized > Paperless
- FLP submission / analysis / approval > internet based
- e-TOD*
- Remote AIS/MET Services > cost reduction
- Online services helps with Pre Flight Information:
 - AISWEB: <https://www.aisweb.aer.mil.br> (includes 'Geoserver' - under development)
 - MET Services: <https://www.redemet.aer.mil.br>
- SWIM adherent initiatives e.g ACDM

Some 'AIS to AIM' goals achieved | Challenges

- Aeronautical data and information available through our national spatial data infrastructure:

<http://visualizador.inde.gov.br>



AIS > AIM

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