Remotely Piloted Aircraft Systems and their access to Brazilian Airspace
DEPARTMENT OF AIRSPACE CONTROL

- A governmental organization
- Subordinate to the Brazilian Air Force (and MD)
- Human resources, equipment, accessories and infrastructure
- Throughout the national territory

Security and fluidity of the air traffic in our sovereign airspace and, at the same time, ensure its defense.
Brazilian Airspace Control System
REMOTELY PILOTED AIRCRAFT SYSTEM

• A new component of the aviation system in huge development
• Different sizes and performances
BRAZILIAN REGULATORS

Telecommunications

Personnel Licensing Operator
Airworthiness

Access to the Airspace

2009

2010

2011

2012
RPAS rules

- Only **RPAS** will be subject of authorization (Pilot in Command)
  - Autonomous Operations are prohibited
- RPAS Operations must meet at least the **same safety standards** required for manned aircraft;
- RPAS Operations shall **adapt to the existing rules and regulations**, 
  - and shall **not** receive **any special treatment** from the Air Traffic Control units;
- No pilot onboard >>> detect and avoid capability
  - Restricted to **segregated airspace**, defined by NOTAM > **SAFETY**.
- Submitted to DECEA’s Regional Units to be approved
RPAS Operations

• Operation’s evolution (2010)
RPAS Operations

- Operation’s evolution (2012)
RPAS Operations

- Operation’s evolution (2014)
RPAS Operations

• Operation’s evolution (2014)
RPAS Operations
RPAS Operations
RPAS Operations
RPAS Operations
RPAS Operations

- FAB (World Cup 2014)
RPAS Operations

- DPF Operations (DPF request)
RPAS Operations

- DPF Operations (DECEA’s Regional Analysis)
RPAS Operations

- DPF Operations (DECEA’s Regional Approval)
RPAS Operations

• DPF Operations (NOTAM published)
What’s Next?

• Joint team for new regulations
• Near term: 2015
• **Main goal: Accomodate Small RPAS (!)**
• Feasible for low altitudes, if...
  – Defined responsibilities to keep the airspace safe.
    • Operators and
    • Pilots
Futures Perspectives

- Middle term
- Increasing studies to integrate in Airspace
- First: IFR
- Long Term: IFR/VFR and Aerodromes.
  - Detect and Avoid capabilities
  - $C^2$ Frequencies (bandwidth) must be reliable and “strong”
- Part of Brazilian CNS/ATM Project: SIRIUS
**Why SIRIUS?**

The immensity of the universe. An endless roof of stars that shelter, at least, two trillion of galaxies. Among them is the Milky Way, with about 400 billion stars spread over their constellations. It’s from the Constellation Canis Major that the light from the Sirius Star reaches our sky. It is the brightest star in our vault of heaven, which can be seen from any point on earth. Despite of the distance of 8.7 light years, Sirius is one of the closest star to our planet, sporting values which surprise us: it emits 23 times more light than the Sun and it is 1.8 times bigger than it.

Throughout human history, Sirius was the guiding star of the great navigators, and venerated also by the Pharaohs and Emperors. Therefore the Sirius star was chosen to identify the Operational Concept of the CNS/ATM in Brazil, representing the new Global Navigation Concept. Sirius represents, from now on, Brazil and its initiatives in sober application of the available technologies for the benefit of the new concept.

**Reference, Technology, modernity and confidence. This is Sirius Brazil.**

www.decea.gov.br/cnsatm
SIRIUS represents a new paradigm to the Brazilian Air Space Control System

The concept is the integration of technologies, resources and procedures intended to support the evolution of air transport, taking advantage of digital communications, satellite technology and a strategic operational management.

Its implementation in Brazil, in accordance with the deadlines outlined in the official implementation schedule which includes actions from 2010 to 2020, involves short, medium and long term complex procedures.

The concept comprises the modernization of Air Communication, Air Navigation, Air Surveillance and Air Traffic Management.

Sirius Project is also fully committed to the environmental issues and demands in order to meet the medium-range efficiency goal of 95% ATM efficiency by 2025 and the long-range goal of 50% net carbon footprint reduction by 2050.

SIRIUS PROJECT OBJECTIVES

- More rational use of airspace.
- Increase in efficiency of the Air Traffic Management.
- Reduction in emissions of GH gases in the atmosphere.
- Reduction of noise in communities adjacent to airports.
- Reduction of controller’s workload.
- Reduction of pilot’s workload.
- Cost reduction for the air navigation services providers.
- Cost reduction for aircraft operators.
- Better services to the air transport users.
THANK YOU!

OBRIGADO!

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Safety, Technology and Sovereignty in the air