



# ARINC771 Standardization to include ATN/IPS and IPv6

## Preliminary Security Considerations

Integrity and Segregation of communications

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**AIRBUS**

# Background

AGCS ARINC771 SATCOM committee in Montreal 20-22th September:

*FAA requested that the ARINC771 standard takes into account ATN IPS specificities, like IPv6, and ATN OSI, as they are the mid-term future of ATC communications.*

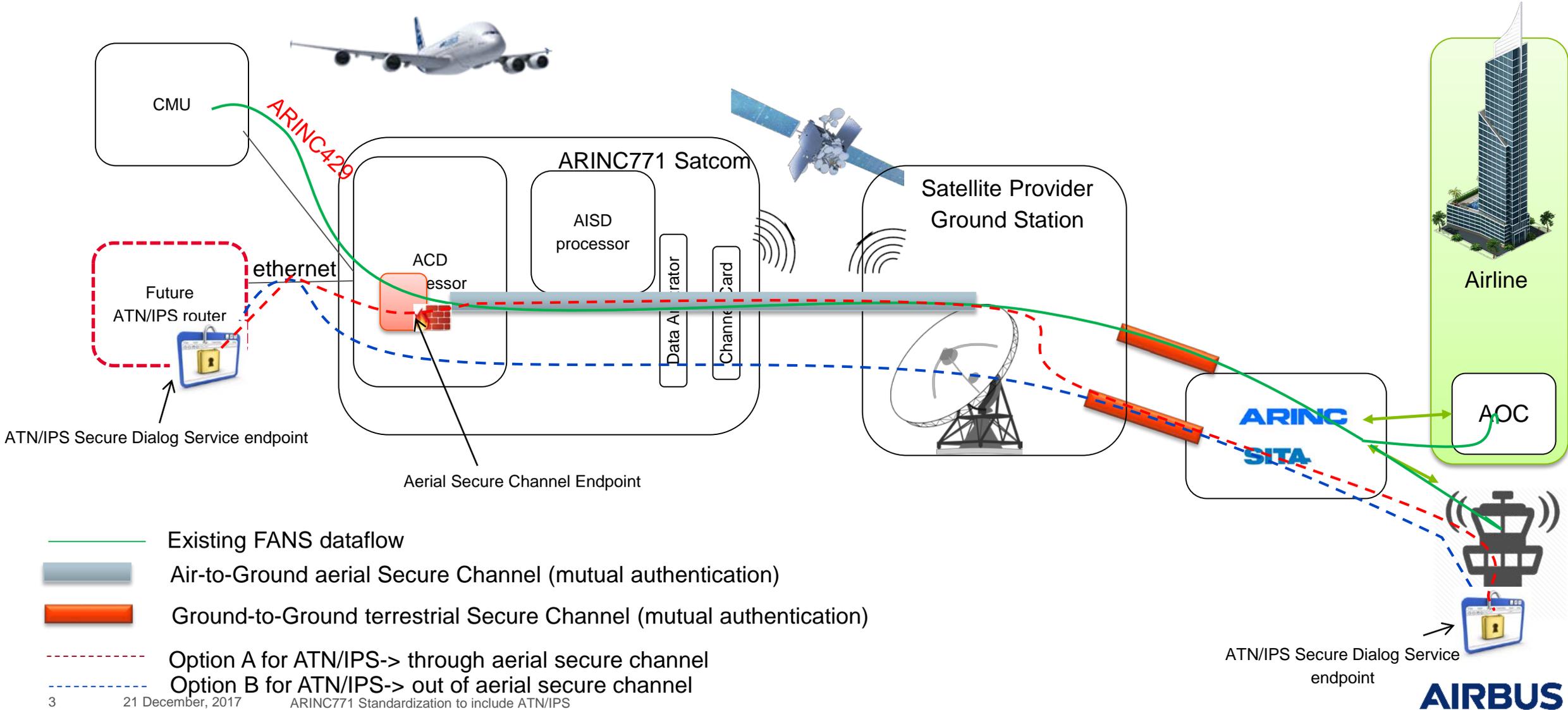
*Security repercussions should be described as well, including the ground part.*

*FAA requests an architecture diagram, and to understand which Certus services will be used to support which functions.*

*FAA highlights that an ARINC771 SATCOM shall be able to support future US and EU Air Traffic systems, to support the retrofit market, and that Iridium and Inmarsat SATCOM shall be harmonized as much as possible.*

# Global overview – multiple options for ATN/IPS end-to-end security

Note: below options are examples and do not necessarily provide a complete list of possible solution



## Security considerations – *to be discussed within the AGCS committee*

**Option A:** Authentication endpoint(s) within the ACD processor controls the origin and integrity of all dataflow from ground. As a consequence, no data is allowed within the ACD unless it is authenticated as coming from the ground security endpoint in the aerial secure channel.

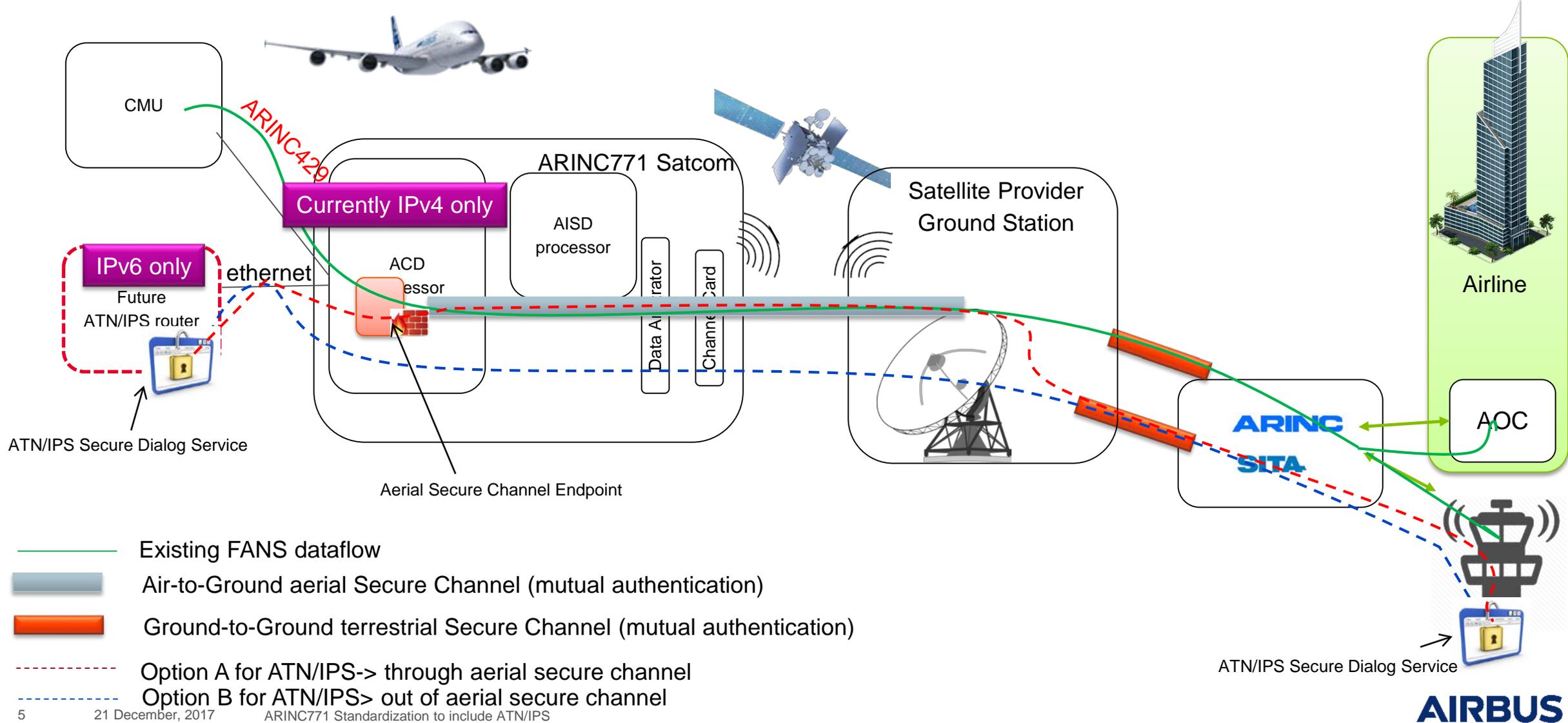
**Option B:** IP data flow not authenticated at satcom level are forwarded to ATN/IPS router.

*Airbus current position:* option A is preferable unless additional security controls (including potentially new hardware provisions) are provided in the frame of Option B not to decrease the existing level of security within the satcom.

**Airbus Proposal : End-to-end security architecture has to be addressed more in details  
Agenda for discussion needs to be addressed**

# Global overview – IPv6 for ATN/IPS

Note: below options are examples and do not necessarily provide a complete list of possible solution



# IPv6 security consideration need to be discussed

Several options need to be assessed in terms of security:

- IPv6 and IPv4 dual stack
- or
- Ipv6 encapsulated within IPv4
- or
- Other solutions

In terms of security, Airbus considers that the two first options **are not transparent in terms of security**

Proposal for the AGCS subcommittee: A dedicated security analysis of IPv6 impacts on Satcom should be performed in the frame of ARINC771

**Airbus Proposal :**  
**IPv6 security consideration need to be discussed in**  
**ARINC771**

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Thank you