



AeroMACS Open Day Florence

AeroMACS : Approaching the FCI

Airtel ATN Ltd.

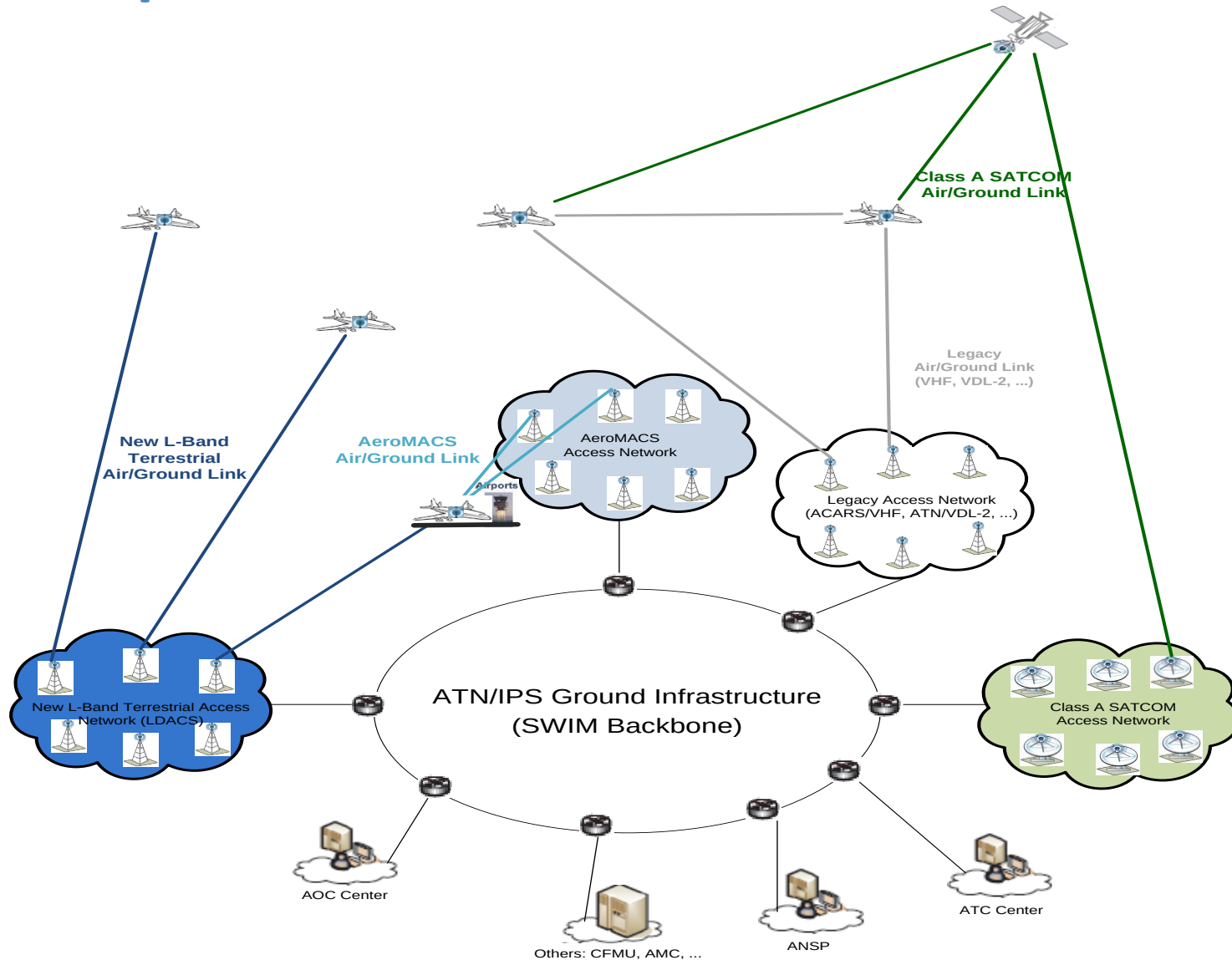
6th July 2018



Founding Members



FCI Operational Context



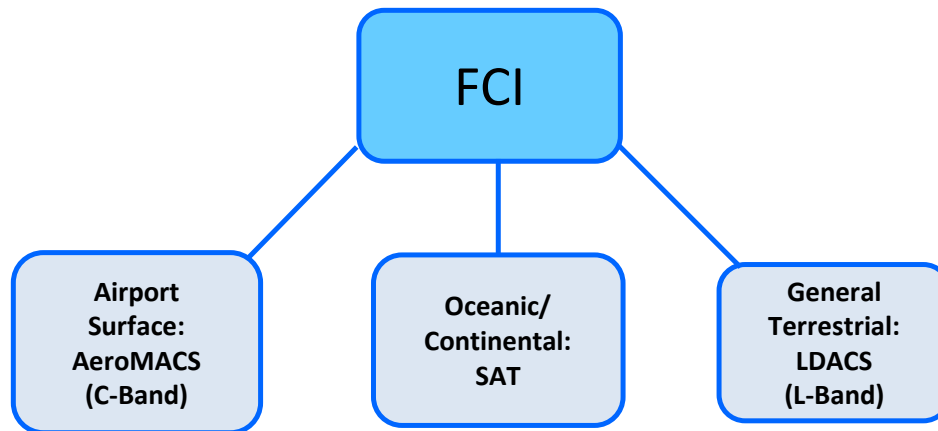
FCI Scope

- Legacy technologies such as:
 - Plain Old Aircraft Communication Addressing and Reporting System (ACARS) (POA),
 - Very High Frequency (VHF) Digital Link Mode 2 (VDL2) for:
 - ACARS Over Aviation VHF Link Control (AVLC) (AOA),
 - Aeronautical Telecommunication Network (ATN/VDL2)
 - Aeronautical Mobile Satellite (Route) Service (AMSRS) (Inmarsat, Iridium, MTSAT),
 - High Frequency (HF) data link
- Short-term technologies such as Class B SATCOM
- Three future technologies:
 - LDACS
 - Class A SATCOM.
 - AeroMACS.

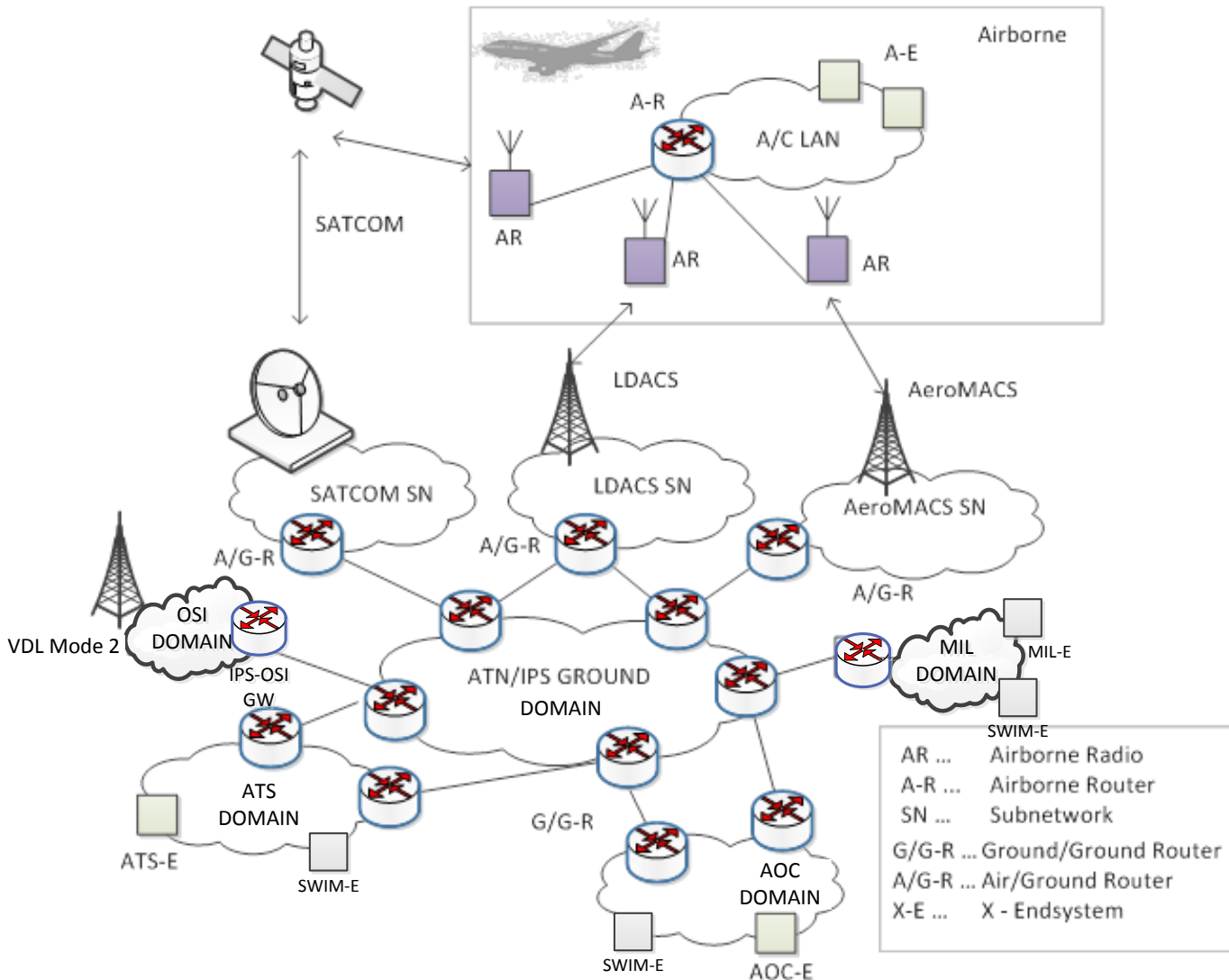
FCI Technologies

Future Communications Infrastructure (FCI) is characterised by:

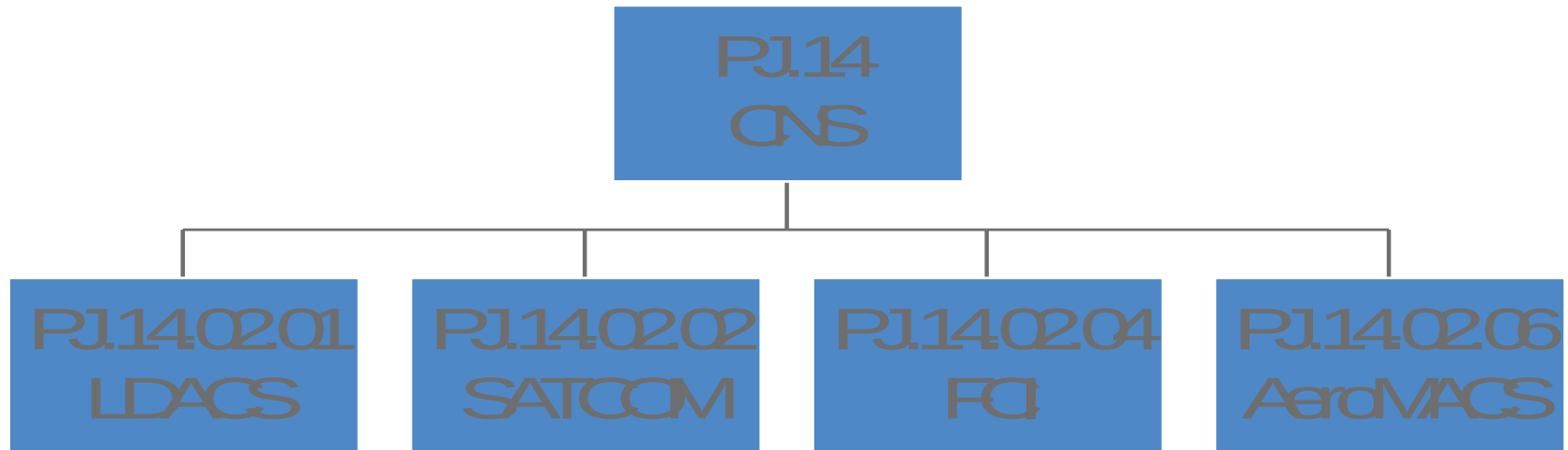
- ❑ ATN IPS networking
- ❑ Multiple Subnetworks with IPS Multilink
 - LDACS
 - SATCOM
 - AeroMACS



FCI Infrastructure



SESAR2020 Wave 1 Organisation



Solution 14.02.04 (led by Frequentis and Leonardo) is defining and prototyping the Future Communications Infrastructure in Wave 1 up to TRL-4. Expected to reach TRL-6 in Wave 2 (Candidate Solution 77).

Deployment

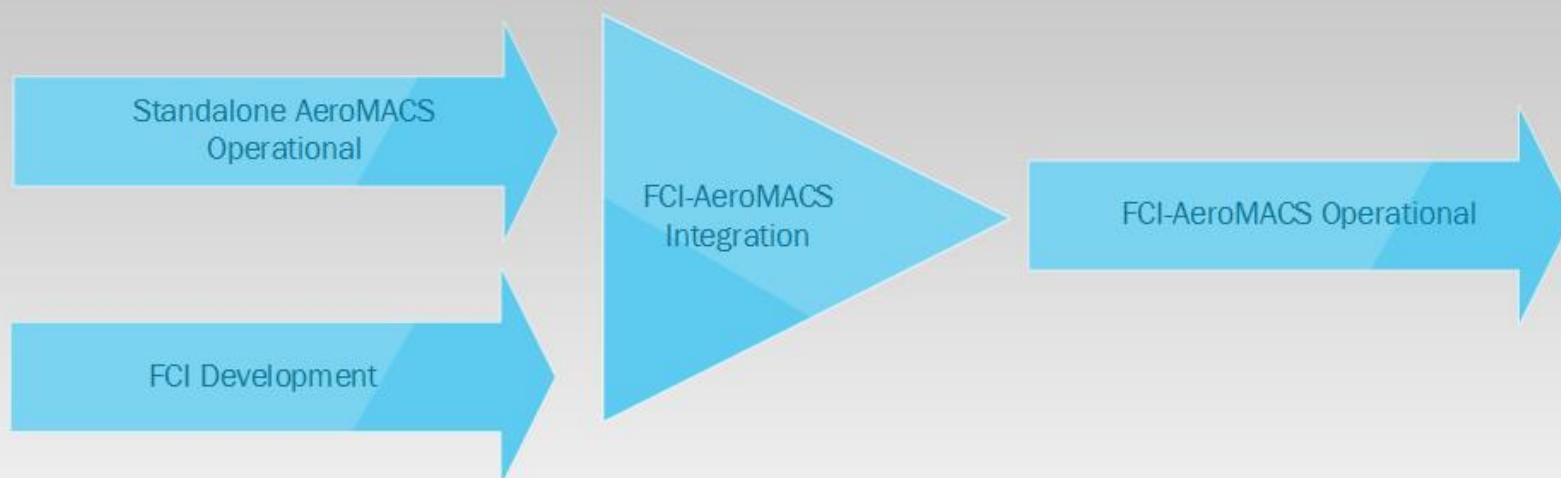
AeroMACS is the most mature of the FCI subnetworks

- Standards are mature (*MOPS, System Profile, MASPS, ICAO TM/SARPs*)
- Ground equipment implemented (based on commercial WiMAX)
- Operational validation proceeding
- Avionics – prototypes in preparation

Initial AeroMACS deployments

- ATN OSI – supporting legacy ATS applications (ATN B2, CM, CPDLC, ADS-C)
- Standalone IP (supporting SWIM and other native IP applications)
- OSI Multilink VDL2/AeroMACS

Deployment Overview



Deployment Specifics

1. AeroMACS can be deployed immediately in standalone setup in the airport domain, supporting
 - ATN B2 (CM, CPDLC, ADS-C, D-TAXI) – reduce load on VDL2
 - SWIM
 - Custom infrastructure applications
 2. Migrate to Integrated FCI Environment
- OPTIONS:
- ☐ AeroMACS integrated natively with FCI (ATN IPS)
 - ☐ Via OSI-IPS Gateway (AeroMACS as a legacy OSI subnetwork)

Next Steps

1. ETSI standard (“Harmonised Standard for Airport Surface Data Link operating in 5091-5150 MHz”) to be developed
2. Avionics – development and certification
3. Non-aircraft mobile stations – development
4. Safety approvals
5. SESAR2020 Wave 2 AeroMACS VLD is TBC



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AeroMACS Open Day

Thank you very much for your attention!



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Founding Members



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