LESAF

LESAF PROJECT

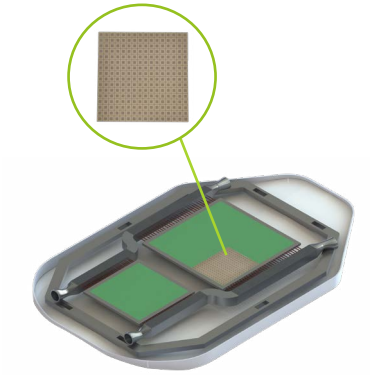
The aim of **LESAF project** is to propose low-profile and highly efficient electronically steerable antenna solutions for the next generation of **In-Flight Connectivity** services in the 2020 decade.

OBJECTIVE

Propose low-profile and highly efficient electronically steerable antenna solutions for the next generation of In-Flight Connectivity services in the horizon 2030 via satellite communications in LEO/MEO/GEO scenarios

KEY CHARACTERISTICS

- Electronically Steered Antenna, K/Ka Band
- Low Profile, High Efficiency, High Reliability
- Separated TX/RX Apertures
- Reconfigurable, Scalable
- Multi-beam Capability
- Seamless Handovers
- ARINC-792 2018, FCC 25.218



IN-FLIGHT TERMINAL

Infographic

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WWW.H2020-LESAF.EU

PROJECT COORDINATOR

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The project leading to this application has received funding from the Clean Sky 2 Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 887197

Horizon 2020
European Union Funding
for Research & Innovation

Clean Sky 2

Ver. 042023

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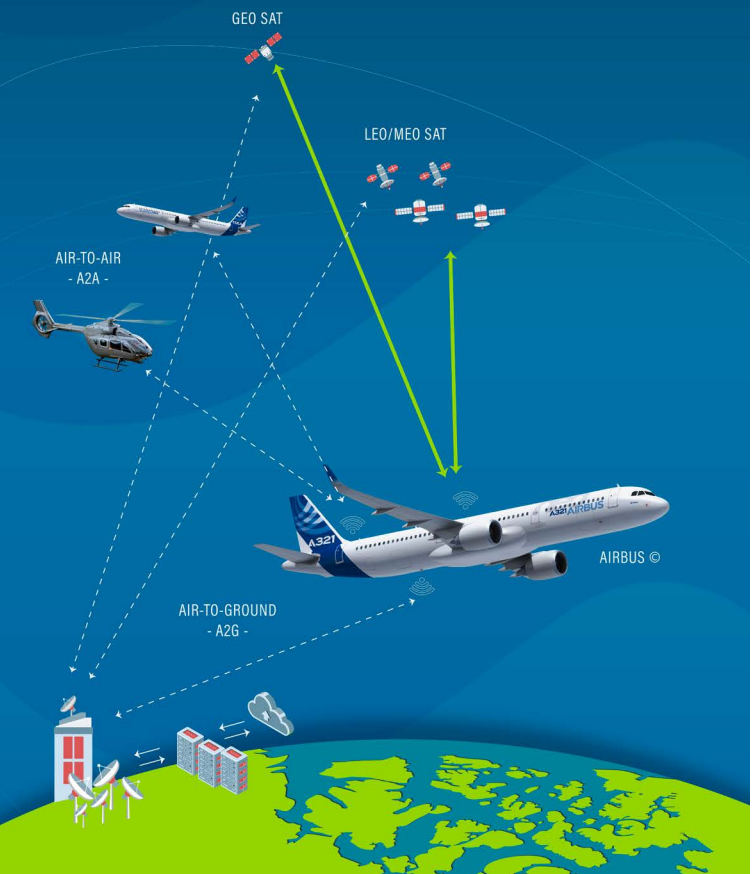
LOW-PROFILE/DRAG ELECTRONICALLY STEERABLE ANTENNAS FOR IN-FLIGHT CONNECTIVITY

LOW-PROFILE/DRAG ELECTRONICALLY STEERABLE ANTENNAS FOR IN-FLIGHT CONNECTIVITY

Clean Sky 2 – Innovation Action, Topic Manager: Thales UK

Coordinator: TTI, Partner: Celestia UK

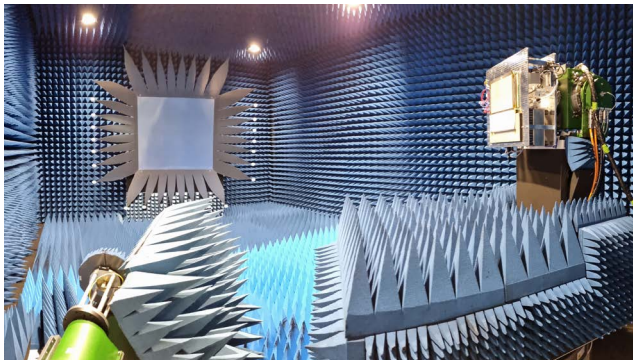
Project Coordinator: Manuel J GONZALEZ (mjgonzalez@ttinorte.es)



TX DEMONSTRATOR

32 x 48 Radiating Elements

- Ka-band frequency range: 27.5-30.0 GHz
- Channel bandwidth: 100 MHz
- Power consumption at BO = 6 dB and P1dB: < 200 W and < 255 W
- EIRP at 28.75 GHz and BO = 6 dB: 38.6 dBW at 0º scan, 37.6 dBW at 30º scan and 31.7 dBW at 70º scan
- EIRP at 28.75 GHz and P1dB: 44.6 dBW at 0º scan, 43.6 dBW at 30º scan and 37.7 dBW at 70º scan
- Directivity at 28.75 GHz: 34 dBi at 0º scan, 33 dBi at 30º scan and 27 dBi at 70º scan
- Radiating patterns: High matching to simulations
- High flexibility to reconfigure the radiating elements activation pattern
- High speed steering: 25 micro-seconds
- Optimization of the antenna beamwidth against scan and skew angles



RX DEMONSTRATOR

32 x 64 Radiating Elements

- K-band frequency range: 17.7-20.2 GHz
- Channel bandwidth: 500 MHz
- Power consumption: < 300 W
- G/T at 18.95 GHz: 13.4 dB/K at 0º scan, 12.1 dB/K at 30º scan and 7.9 dB/K at 70º scan
- Directivity at 18.95 GHz: 37.3 dBi at 0º scan, 36.0 dBi at 30º scan and 31.8 dBi at 70º scan
- Radiating patterns: High matching to simulations
- High flexibility to reconfigure the radiating elements activation pattern
- High speed steering: 25 micro-seconds
- Multibeam capable (two independent beams) based on two physical apertures
- Soft Handover ready based on two physical apertures