DEFENCE AND SPACE

[ Airbus Amber ]

# International Low Earth Orbit Cube and Small Satellite Conference and Seminar – Ankara – December, 14th 2023

## Airbus small sats constellation product and solution
## Heritage Oneweb


DEFENCE AND SPACE

Guy Limouzin – Airbus defence and Space Sales


AIRBUS

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# Fast Facts

[ Airbus Amber ]

**50/50**
Joint Venture Airbus and OneWeb

**19**
Successful Launches

**630**
Satellites in Orbit

**3** Years
Since FL Inauguration

**142,000** sq ft
Factory in FL

**300**
Dedicated Employees

**8**
Spoken Languages

**10**
Time Zones

**40**
Tier 1 Suppliers

**2**
Satellites Per Day

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# Fun Facts

**10,000**
Slices of Pizza

**90,000**
Cups of Coffee

**145,000**
Hairnets Worn

**189,000**
Shoe Coverings

**1,426**
Screws in Each Satellite

**199,185**
Supplier Parts

# Less Fun Ones

**1**
Global Pandemic

**1**
Major Geopolitical Crisis

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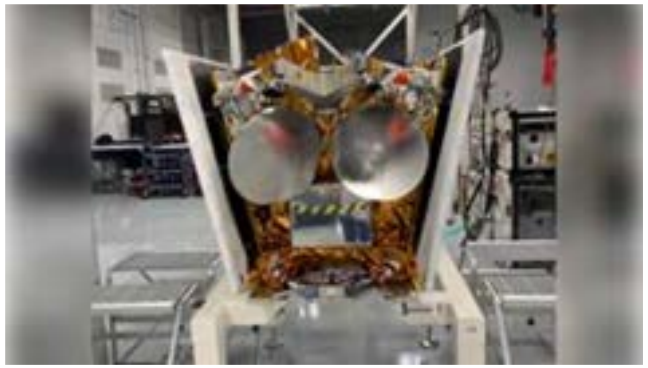
# Toulouse: Engineering



- Toulouse facility established as a precursor project in Feb 2016
- Development of the production processes, of the assembly line were developped in Toulouse
- Assembly, integration and tests of the first 10 satellites of the GEN1 satellites was done on the site in Toulouse
- The activities of the Toulouse site continue with engineering activities for GEN1 and other programs, supply chain and in-orbit operations

# Two Sites

ONE TEAM

# Florida : Production

FAL opened in 2019

In Florida, FAL is located on the Merritt Island, next to the Kennedy Space Center.

FAL installed in cooperation with Space Florida, in charge of the Space Industry development in Florida.

# OneWeb Gen1 Satellite Production

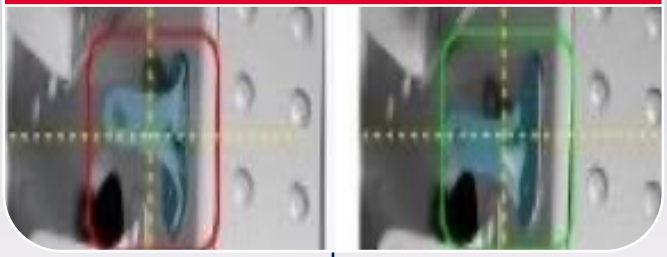
- Factory is configured to output a fully assembled and tested satellite every eight-hour shift
  - Design life greater than 5 years
  - Production time: significantly less than other in-class satellites
  - Cost : a portion of other satellites
  - Integrated engineering, manufacturing and supply chain for production-tuned design
  - Supply chain partner processes and infrastructure focused on high-rate satellite assembly

# Smart Automation to Ensure Industrial Efficiency

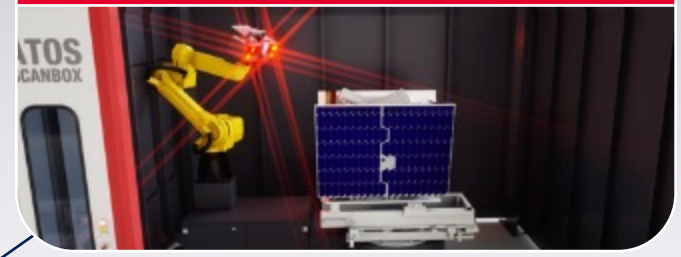
## Automation Processes: Leading-Edge Technologies

### Smart Tools

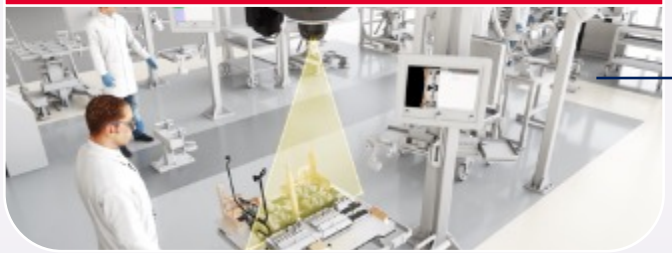

### Automatic Optical Inspection



### Big Data: Analysis & Predictive Analytics



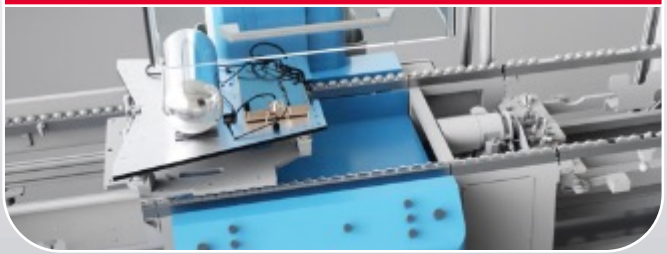
### Augmented Reality for Inspection



### Automatic Coupling

### Auto Guided Vehicle

### Automated Test Sequences



### Cobots: Assisting Critical Activities

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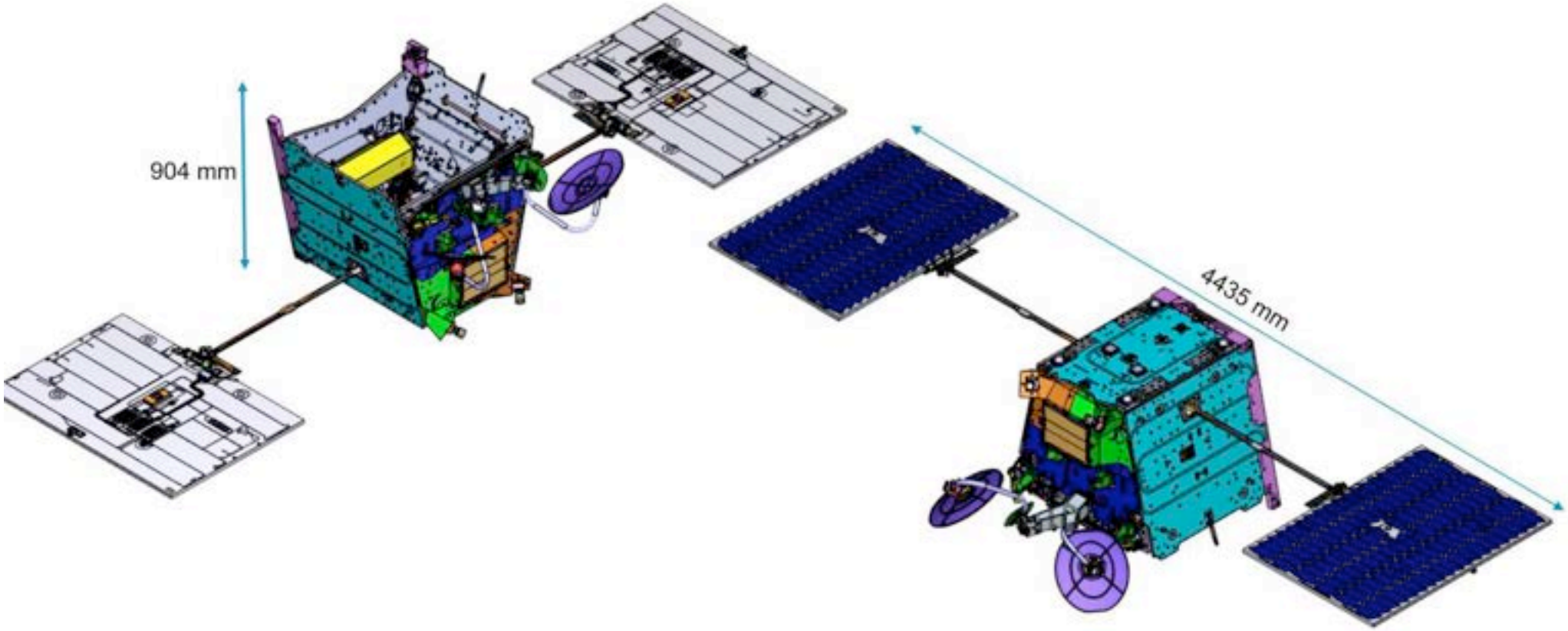
# Questions?



# From GEN1 to Arrow: an innovative approach for standardizing access to space

- The ARROW Bus is an off-the-shelf/low-cost platform adaptable to multiple payloads, providing adequate interfaces, in a single unit or constellation mode




- Bus is capable of operating on different Low-Earth Orbit altitudes and inclination

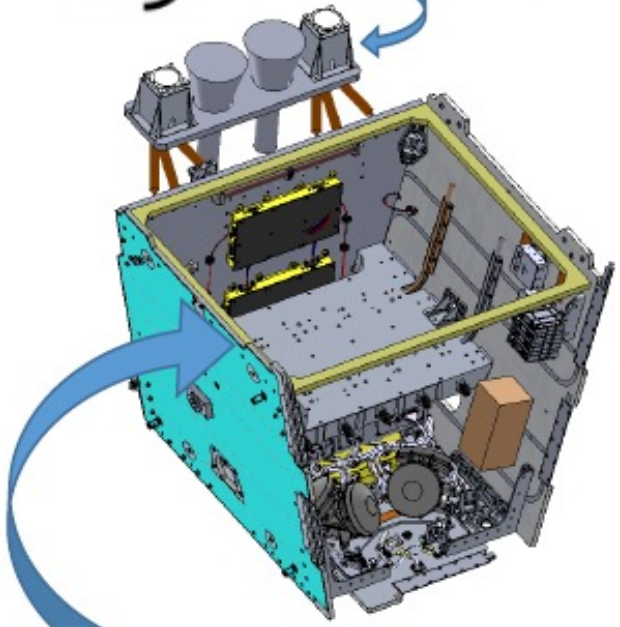
# Enhanced version: first launch: end 2024

PL mass up to 100kg

Lifetime extension & flight domain for orbits at 500km

Falcon 9 compatibility

TTC S-Band



Mezzanine/Top Floor Payload interface

Payload communication via SpW

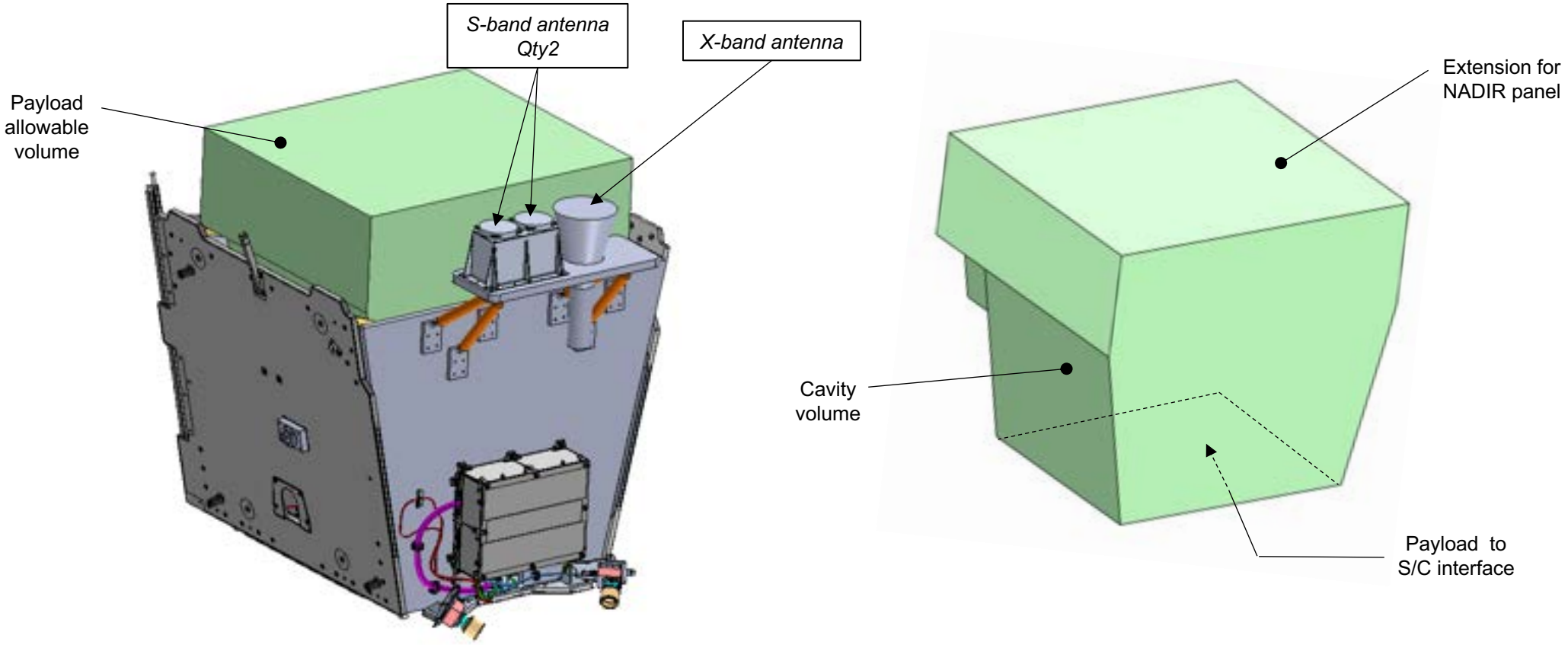
Pointing Performances :

Jitter control : Dampers under Reaction wheels

# Mezzanine/Top floor payload interface



- Payload allowable volume has been defined in order to optimize the satellite cavity.
- S- & X-band antennas are mounted on a secondary panel on PX side.




*Iso Views of Payload volume*
*Within / out of satellite*

# Market achievements

- Concept was sold and adopted by key market players in the Newspace world
- Principle: to provide Customers with a simple approach to space:
  - Either relying on Airbus to provide the entire system
  - Or limiting the demand to platforms delivered with a standard interface, with minor adaptations
- Various missions can be envisaged and are studied, with different orbits
  - Earth Observation
  - Telecom
  - SSA
  - Science, …
- A total of about 50 satellites have been so far ordered with different Customers around the world
- First launch planned Q4 24

# Thank You and enjoy the Cubesat Vision Conference

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