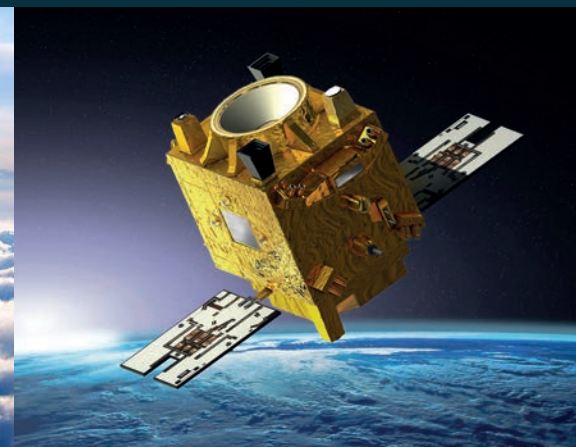


aIRSTAR

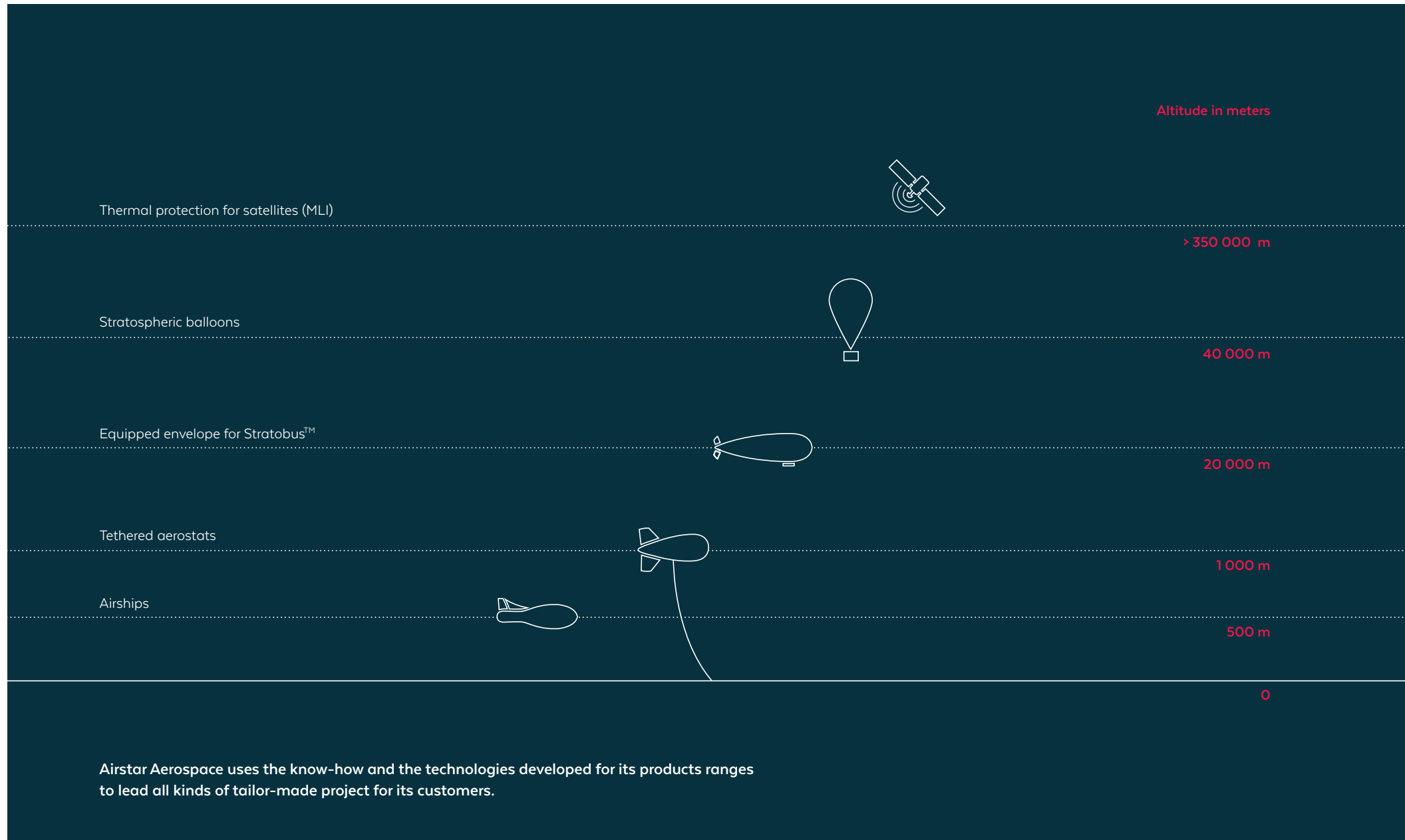
AEROSPACE



tethered aerostats | stratospheric balloons | equipped envelope for Stratobus™ | airships | thermal protections for satellites

.....
RELIABLE. PERSISTENT. MULTIPURPOSE. ADAPTABLE.

Airstar Aerospace products ranges



tethered aerostats



Airstar Aerospace's tethered aerostats are used to take onboard payloads dedicated to surveillance and communication needs.

Strengths

- > Complementary solution compared to standard aircrafts
- > Persistence - long term use 24/7
- > Low operational costs
- > Versatile - flight altitude and flexible payloads
- > Easy to deploy and transport

Usages - examples

- > Surveillance of sensitive sites
- > Border surveillance and control
- > Electronic warfare
- > Event security
- > Prevention of piracy
- > Telecommunication relay
- > Situational diagnosis and rescue organization

Markets - examples

- > Security
- > Defence
- > Maritime
- > Rescue
- > Telecommunication
- > Environment

stratospheric balloons



Stratospheric balloons are used by the scientific community to study the atmosphere, its chemistry and its dynamics.

They are also valuable tools for astronomers and biologists, or for demonstrating technologies.

Airstar Aerospace has acquired a strong experience in textile design and manufacturing of stratospheric balloons. Our balloons lift anything from a few kilograms to several tons and are able to operate at an altitude as high as 45 km.

Since 1971, Airstar Aerospace has designed and successfully tested millions of m² of balloons for European space agencies.

Pressurized stratospheric balloons

They are hermetic and they benefit from a very high level of tightness and from a strong reliability. Thus, long-term flights above inhabited continents are possible.

Open stratospheric balloons

They are gas-filled balloons (helium). They have one or several openings at their base. Those openings enable the balance between the atmospheric pressure and the gas inside the balloon.

equipped envelope for Stratobus™

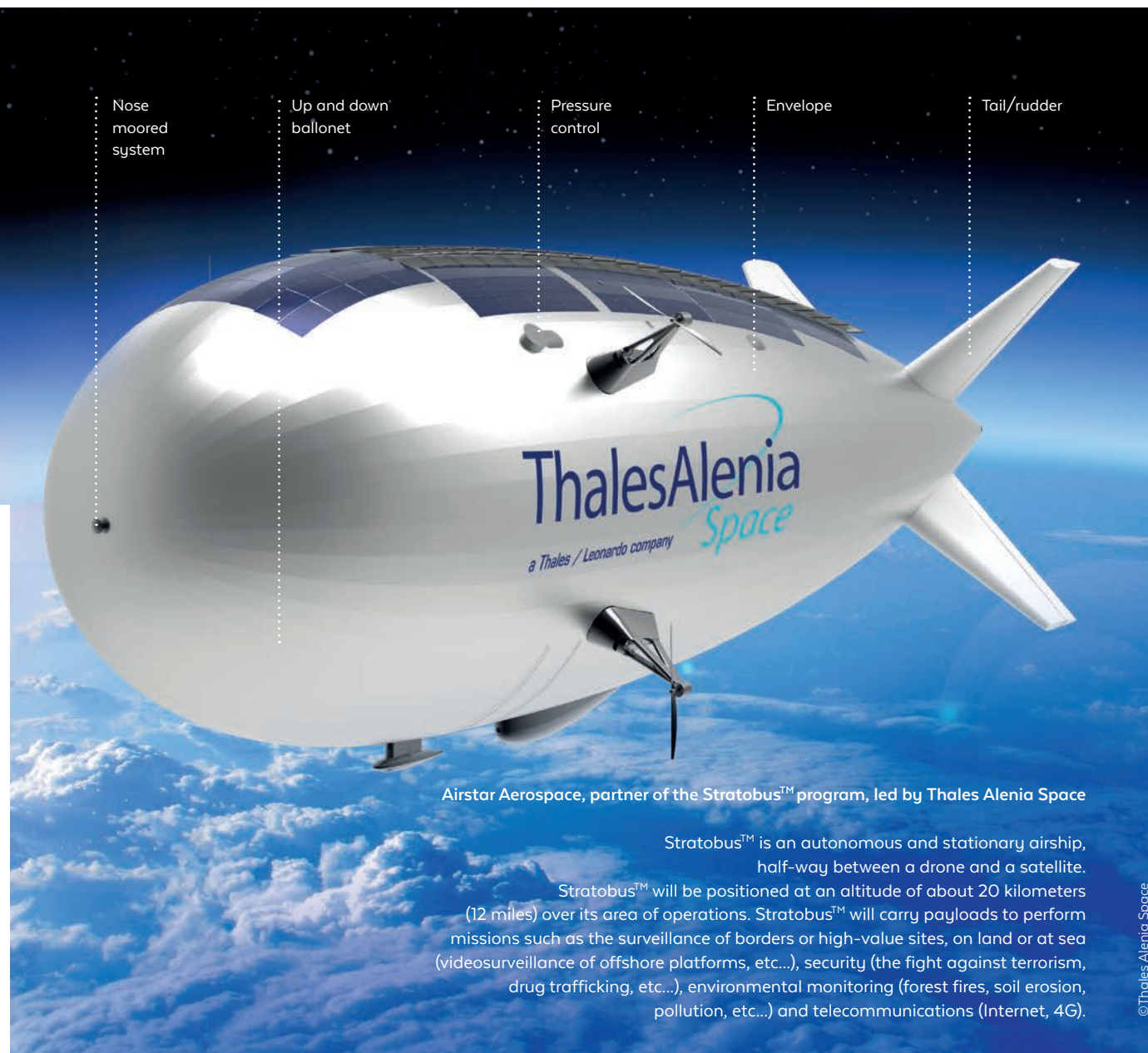
Airstar Aerospace and Stratobus™

For Stratobus™, Airstar Aerospace will use one of the most powerful, lightweight and resistant fabric in the world.

Airstar Aerospace is in charge of designing and manufacturing the fully-equipped envelope of Stratobus™. Thanks to its expertise, Airstar Aerospace will provide the fully-equipped envelope, from the nose moored system to the tail units, but also all the ventilation system and the pressure control system of the balloon.

What about the market?

The new market for high-altitude pseudo satellites, or HAPS, is estimated at one billion dollars from now to 2020, but is awaiting Stratobus™. Stratobus™, offering a coverage among 500 kilometers, is the solution able to win a large share of this market.



Airstar Aerospace, partner of the Stratobus™ program, led by Thales Alenia Space

Stratobus™ is an autonomous and stationary airship, half-way between a drone and a satellite.

Stratobus™ will be positioned at an altitude of about 20 kilometers (12 miles) over its area of operations. Stratobus™ will carry payloads to perform missions such as the surveillance of borders or high-value sites, on land or at sea (videosurveillance of offshore platforms, etc...), security (the fight against terrorism, drug trafficking, etc...), environmental monitoring (forest fires, soil erosion, pollution, etc...) and telecommunications (Internet, 4G).

©Thales Alenia Space

airships



Artist view of Airstar Aerospace's drone airship



Airships

Thanks to its mastery of technical and industrial niche skills in aerostat science, Airstar Aerospace **leads tailor-made airship projects**, suited to its customer's needs.

Concept of the drone airship:

Airstar Aerospace develops a drone airship, dedicated to surveillance and inspection. Strengths of the drone airship are:

- > Automatic flight, following a flight plan
- > Long distance flights
- > Able to do stationary flights.

Applications:

- > Surveillance: sensitive sites, industrial sites, large events, ...
- > Inspection: pipelines, power lines, railways, highways, ...
- > Scientific missions: biodiversity inventory, environmental data, infrared thermography

thermal protection for satellites (MLI)



The thermal protections of satellites are made of multi-layer insulations (MLI). The aim is to protect the satellites' parts from thermal radiations. MLI blankets are manufactured in an ISO 8 standard cleanroom at our Toulouse factory. Our qualified workers are making a real haute-couture work to assemble the MLI. For 25 years, Airstar Aerospace has been benefiting from a unique and recognized know-how in the design and manufacturing of MLI blankets.



Strategically located near
Toulouse, close to many
aerospace French industries

**MADE IN
FRANCE**

Made in
France



High level
production
process tracking



ISO 9001
certified

AIRSTAR

AEROSPACE

Airstar Aerospace designs and manufactures tethered aerostats, stratospheric balloons, airships, thermal protections for satellites and leads tailor-made projects for its customers.

Our know-how is based on:

- innovative **flexible materials engineering**
- high technicality **fabrics and films assembly**
- **mechanical modelling** of large deformations
- **equipped envelopes** and flexible structures design
- **development of aerostat equipments**: embedded electronics and mechatronics, complex wires, mechanical mooring systems, telemetry reception, inflation station...
- **payload integration**: optronics, telecommunication, radar...
- providing and training of **all operating and maintenance services on aerostats**.

Relying on half a century of experience, Airstar Aerospace highly values safety and the respect of the compliance of its systems with aviation regulations.

MADE IN
FRANCE

Made in France



Stakeholder of the future transport program of the “Nouvelle France industrielle” (new industrial France) with Stratobus™



ISO 9001 certification



Supplier of many European space agencies

among our references:

THALES
AIRBUS
CNES
CNRS
OHB
SSC
ZERO 2 INFINITY
METEO FRANCE
CEA
FRENCH MoD (DGA)
ZODIAC

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