



European Space Launchers Launch Services: Expectations from a Satellite Manufacturer

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ThalesAlenia
A Thales / Finmeccanica Company
Space

A Joint Venture between Thales & Finmeccanica

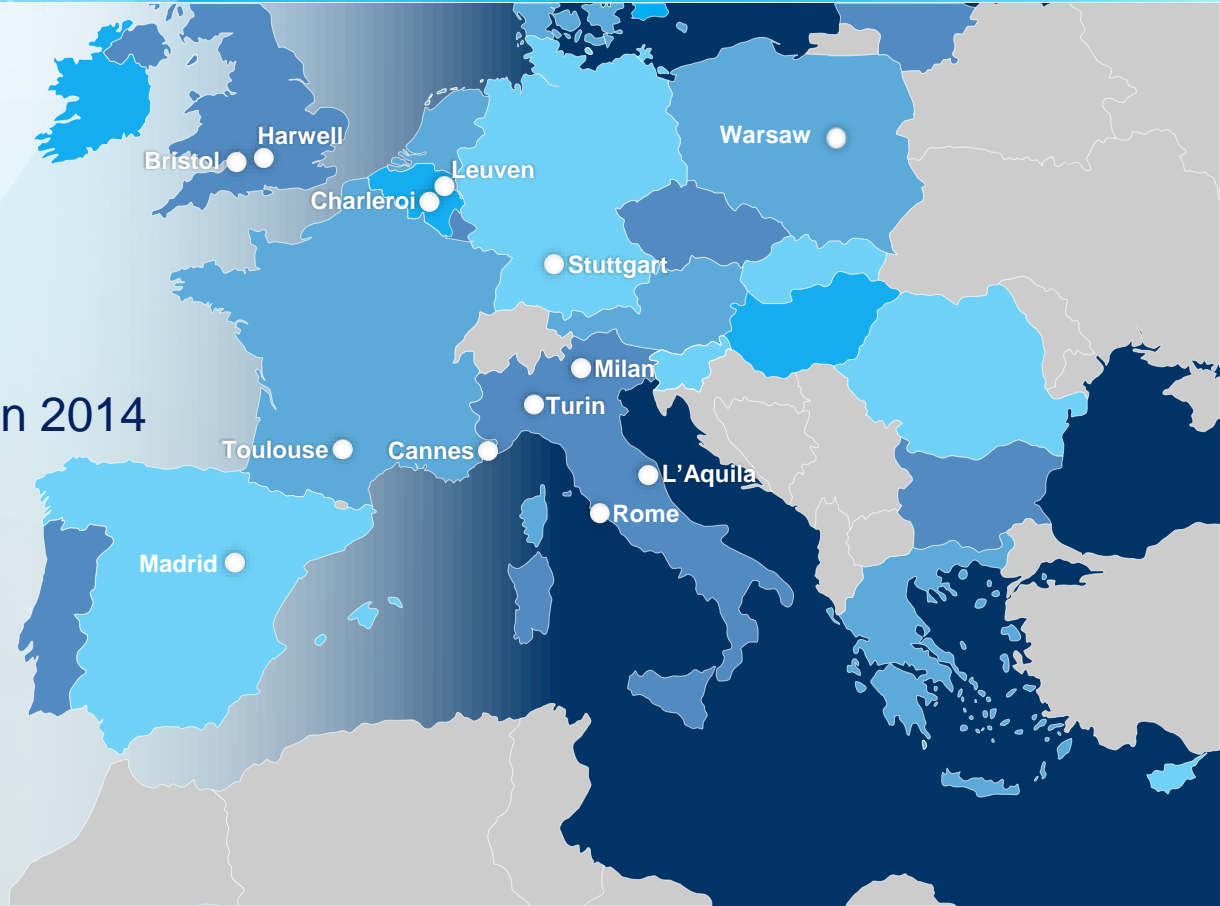


7 500 employees

12 sites in 7 countries

More than 2 Bn€ Sales in 2014

**European
Satellite
Leader**



A committed partner to deliver cutting-edge solutions

Telecommunications



Fixed / Mobile
Broadband
Dual / Military
Secured

Observation



Climate Change
Meteorology
Oceanography
Intelligence
Surveillance

Navigation



Localization
Aeronautical
Communications
Data collect

Exploration/Science



Planetology
Fundamental physics
Astronomy
Human spaceflights
Space transportation
systems

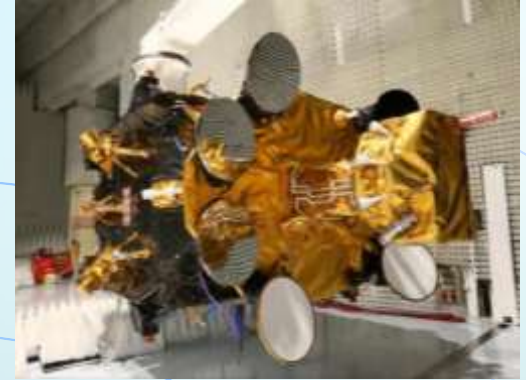
*A world player
in each
of the space
markets*

More than 80 high performance, reliable and flexible GEO satellites delivered for broadcast, broadband and dual-use missions

- From 3t to 6t satellite class
- Key evolution: SPACEBUS NEO modular product line with a fully electric version

Affordable and versatile LEO/MEO ELiTeBUS™ platform for constellations

Increasing request for turnkey solutions with In Orbit Delivery Solutions



SATCOM world is evolving with a key impact on launch service requests

Worldwide leader for constellations

Globalstar



GLOBALSTAR 2
24 Satellites ordered
Orbit: 1 414 km
Prime: TAS

O3b
Networks



O3b Networks
12 Satellites ordered
Orbit: 8 069 km
Prime: TAS

iridium



IRIDIUM Next
81 Satellites ordered
Orbit: 780 km
Prime: TAS

Earth Observation for Intelligence and Environment monitoring

- A growing Export Market
- Small and medium size satellites mainly for LEO
- Turnkey solutions with In Orbit Delivery



Earth Observer Optical



MTG

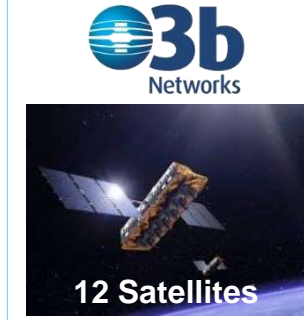


*A growing market for
small and medium
size satellites mainly
in LEO*

A necessity to meet new challenges

TODAY

Dozen of satellites



TOMORROW

Hundreds of satellites



Expectations from Launch Services

- The Basic Issues

Key, Basic, Customer Decision-making Parameters

Price Competitiveness



- Constraints
 - Long March
- New Entrants
 - Space X

- Shift in demand
- Initial Market Price Decrease

Reliability



- Major recent failures
 - Falcon 9
 - Proton
 - Antares
 - Zenit

- Limited Competition Today

Availability (Launch Windows)



- Limitations on Current Launchers
- New Launcher Developments

- Ability to meet market evolutions
- Time-to-market uncertainties

Flexibility (Mass, Size)



Expectations from Launch Services - Near Future Needs

Simultaneously embarking two 4-5 ton electric satellites is key for operators to optimize cost

Multiple launches (> 2 sats/ launch) - an increasing request considering development of LEO & MEO constellations & small 2 ton GEO electric satellite

Innovative, market competitive Access-to-Space solutions for 200kg to 1 ton satellites



Satellite Market Demand in all size categories is essentially constrained today by :

- High Access to Space Costs
- Limited launcher configuration flexibility

Satellite cost will be divided by 10 times, what about European launchers?

Expectations vis à vis the new ASL JV

- **An opportunity to rationalize European launch sector and, thus, decrease launcher cost**
- **A need to ensure, though, a level playing field if Arianespace wants to remain world market leader in the future**
 - An integration of Arianespace in ASL is, first of all, a significant market verticalization move where one of its shareholders, Airbus DS, is also a major satellite manufacturer
 - To ensure Arianespace's future growth potential & market competitiveness, this requires that major anti-trust safeguards be put in place to maintain the customer trust from all satellite manufacturers



Merci de votre attention

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