



DID YOU **KNOW** ?

Alcatel Space
N°3 in the world
and N°1 in Europe
for satellites



Alcatel Space : N°3 in the world and N°1 in Europe for satellites

- > Telecommunication
- > Earth Observation
- > Meteorology
- > Oceanography
- > Science



7 satellites, 7 payloads, launched in 2002

- > Satellites: Stellat 5 - Hot Bird 6 - MSG 1
Hispasat 1D - Eutelsat W5 - Astra 1K - Stentor
- > Payloads : MERIS/ASAR - Vegetation 2
Intelsat 904-903-905-906 - Express A1R



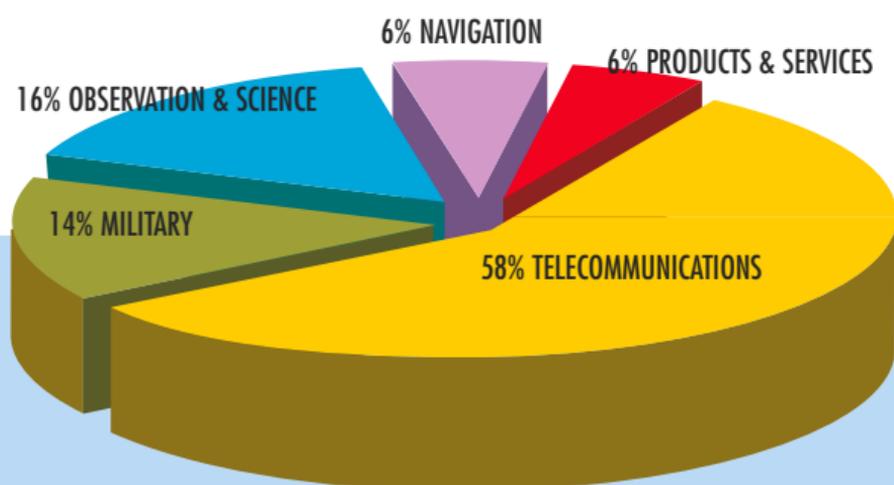
EUROPE FOR SATELLITES

A European based Company



- > 13 industrial sites in Europe
- > The main partner of the Guiana Space Port
- > Industrial partners all over the world

2001 Key Figures



SALES FOR 2001: €1.4 BILLION - STAFF 6,500
(DECEMBER 2001)

TELECOMMUNICATIONS

N°1 in Europe for spaceborne telecommunications systems

4 complete systems :

- > Worldspace : Digital Audio Broadcasting
- > Syracuse : military telecommunications
- > Europe*Star : civil telecommunications
- > Egnos : navigation

N°1 Space provider of French DoD (Department of Defence)

Prime Contractor for Syracuse III

- > Based on Spacebus
- > Encrypted Telecommand and Telemetry
- > Robust anti-jamming system
- > Dynamic pattern active antenna



Spacebus : A complete range of telecommunication satellites

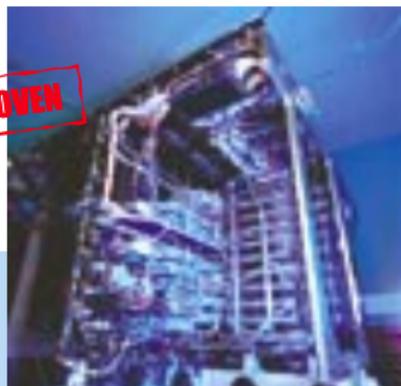
- > In Continuous evolution and industrial improvement
- > Full range up to 20kW satellites
- > All bands L, C, X, Ku, Ka payloads
- > Multiple fixed and steerable antennas



**46 SPACEBUS
ALREADY ORDERED**

World leader in telecom payloads (25 to 30% of the global market)

FLIGHT PROVEN



**MORE THAN
130 TELECOMMUNICATION
PAYLOADS ALREADY ORDERED
(INCLUDING 64 GLOBALSTAR)**

XM Radio Payload

EARTH OBSERVATION

N°1 in Europe for high-precision imaging instruments

- > From IR to visible
- > From environment to defense
- > Optic and radar high resolution
- > A complete range of instruments for image acquisition (imagers, spectro-imagers, interferometers, lidars, intelligent optics)



MERIS FIRST IMAGE



ASAR FIRST IMAGE

19 OBSERVATION PAYLOADS ALREADY ORDERED

DID YOU KNOW ?

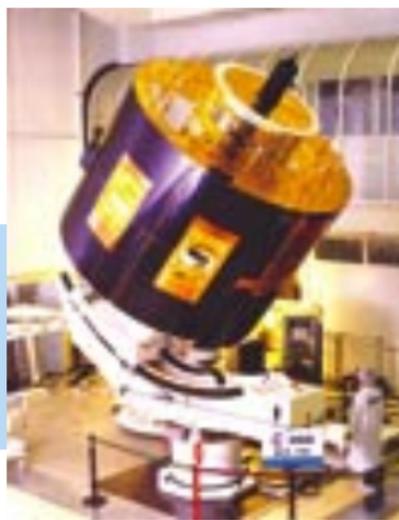
METEOROLOGY & CLIMATOLOGY

N°1 in Europe for spaceborne meteorological systems

> Prime contractor for Meteosat first & second generation

7 FIRST GENERATION
METEOSAT SATELLITES

3 SECOND GENERATION
METEOSAT SATELLITES



N°1 in the World in space altimetry

Poseidon 2 radar altimeter on board Jason-1 in orbit

- > Delivered data deemed remarkable by scientists around the world
- > A minute ahead of Topex-Poseidon with Poseidon 1 still operational

JASON 1 OPERATIONAL

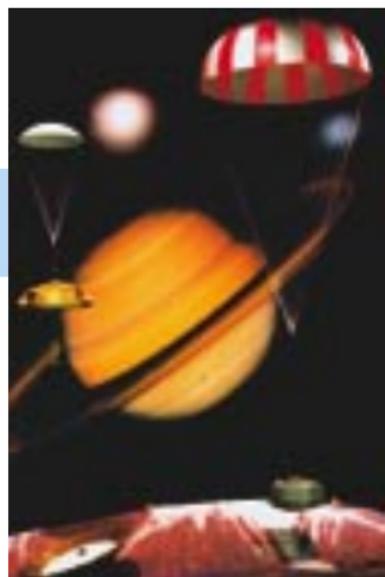


Alcatel Space Prime Contractor of major scientific programs

- > Infrared astronomic exploration
- > Interplanetary probes
- > Star study and exoplanets detection
- > Prime Contractor for Herschel and Planck space satellites, the largest ESA's space science project

FLIGHT PROVEN

**ISO: INFRARED
SPACE
OBSERVATORY**



**HUYGENS: ON THE WAY
TO TITAN**

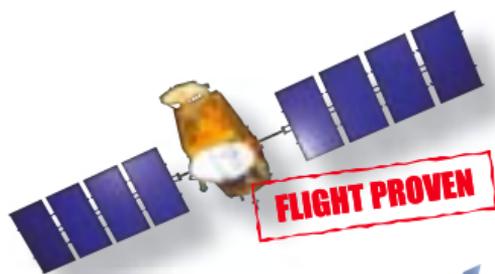
**HERSCHEL & PLANCK
2 SATELLITES FOR ASTRONOMY
IN FAR INFRA-RED DOMAIN**



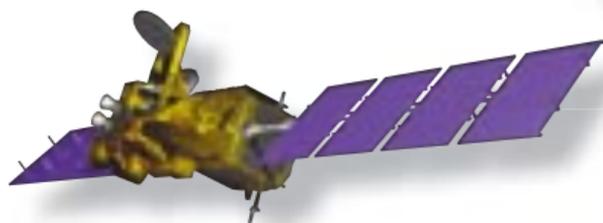
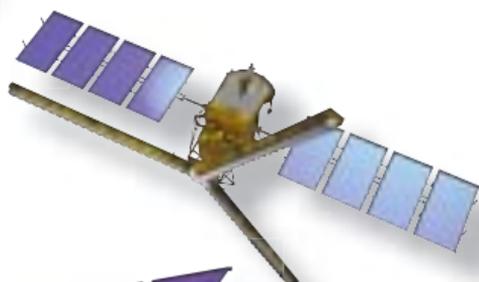
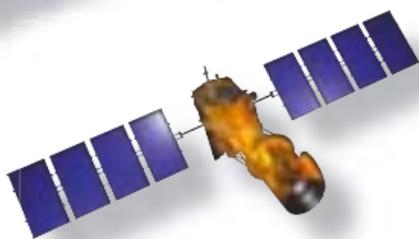
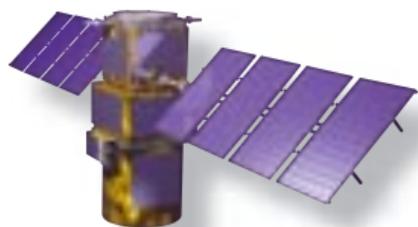
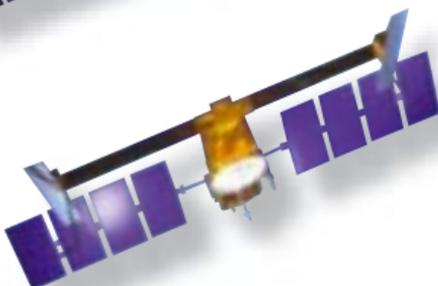
PROTEUS FAMILY

PROTEUS: the multimission LEO platform

> For all fields of application : Science, Earth observation, Navigation, Telecommunication, Environment...



JASON 1 OPERATIONAL
JASON 2
COROT
CALIPSO
SMOS
MEGHATROPIQUE



NAVIGATION

N°1 in Europe for navigation systems

- > GNSS1/EGNOS
- > GNSS2/Galileo
- > Japanese program MTSAT
- > Secure Aeronautical Communications (SDLS)

Prime contractor for EGNOS

- > European Geostationary Navigation Overlay System, a complement to GPS
- > EGNOS testbed: the first complete permanent navigation signal --> deployed

FROM EGNOS TO GALILEO



Galileo

- > Alcatel Space co-founder of Galileo Industries SA
- > Architect for Galileo System

GROUND SYSTEMS

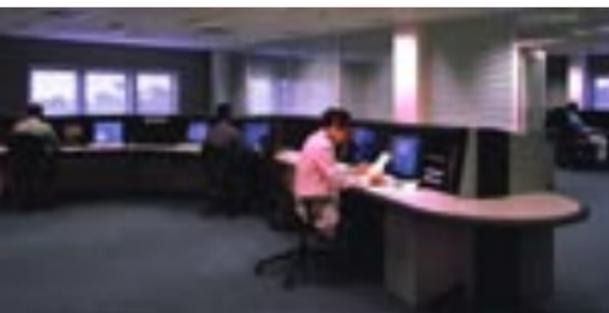
N°1 in Europe for Earth observation, meteorology and navigation ground systems

- > Prime contractor for large-scale ground systems
- > Complete range of products and services



ENVISAT PAYLOAD DATA SYSTEM

**42 M EISCAT ANTENNA
SPITZBERG**



**EUROPE*STAR
CONTROL & MISSION
CENTER - TOULOUSE**

More than 15,000 sq. meters of clean rooms

- > The only integrated manufacturing and test center in Europe: a single class 100,000 facility, spanning 8,700 sq. meters.
- > All environmental tests: thermal, structural - mechanical, radio



Parallel integration of communication module and service module

> Assembly, integration and testing: from components to satellites



A space optics center unrivaled in Europe

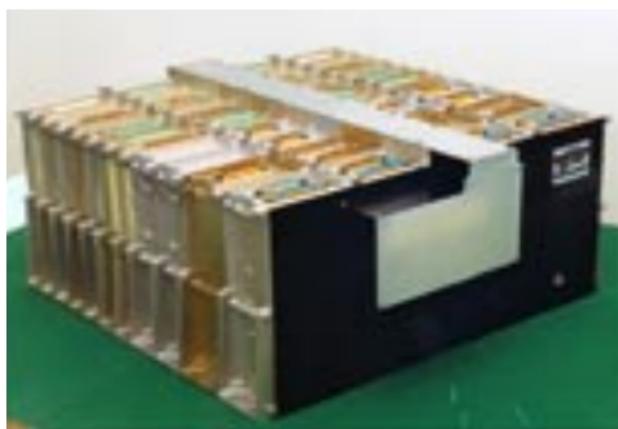
- > 500 sq. meters in class 100
- > The largest optical bench in Europe
- > Specific techniques (collimators, flat mirrors, solar simulators...)



**AND ALSO
CLEAN ROOMS
DEDICATED TO
ELECTRONICAL,
MECHANICAL,
DIGITAL OR
MICROWAVE
EQUIPMENT WITH
ALL THE SPECIFIC
ASSOCIATED
MEANS**

The best-added-value solutions for customer worldwide

- > More than 2500 equipment/year designed and manufactured
- > On-board more than 50 % of in-orbit commercial satellites
- > Substantial portfolio of Long Term Purchase Agreements with major Prime Contractors



Environment and security

- > Alcatel Space: Architect for GMES (Global Monitoring for Environment and Security)

Digital Audio Broadcasting

- > Alcatel Space world leader in satellite Digital Audio Broadcasting: Worldspace's system prime contractor, XM Satellite Radio's payloads provider, RELY system architect



Satellite Broadband Access Solutions

- > Strategic partnerships
- > Based on DVB-RCS standard
- > Digital Multimedia Broadcast applications
- > Tele-activities applications



© Alcatel Space 12/2002 • Photos Alcatel - ESA - PhotoDisc • Réalisation Arts Graphiques Alcatel Cannes • Impression Speed Bordeaux