Analyst Days

Pascale Sourisse
President & CEO

Cannes - November 16th, 2007
A Unique Combination of Expertise

A Global Offer

European #1 in satellite systems and at the forefront of orbital infrastructure
### 2006 Figures

#### Space Division
- 67% TAS + 33% Telespazio

<table>
<thead>
<tr>
<th>Metric</th>
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<tbody>
<tr>
<td>Sales (M€)</td>
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#### Thales Alenia Space (TAS) 2006 figures

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#### 2007 Trends (TAS)
- + ~10%
An Outstanding European Industrial Footprint

- 7,200 people incl 65% engineers
  - France: 4,200
  - Italy: 2,200
  - Other Europe: 800
- 11 industrial sites in Europe
- 5 Business Units
  - Telecoms
  - Observation Systems & Radar
  - Optical Observation & Science
  - Navigation & Integrated Coms
  - Space Infra & Transportation
- 4 industrial Units
  - Mechanical/Thermal
  - Electronics
  - AIT
  - Ground
A Strong Business Asset

Breakdown per application

Thales Alenia Space 2006 Revenues

Breakdown per market

- Science 10%
- Transp 4%
- Navigation 7%
- Earth Observation 19%
- Telecom 50%
- Others

- Institutional 35%
- Commercial 41%
- Defense 24%
- Others

Earth Observation

- Telecom
- Others
- Science
- Transp
- Navigation
- Earth
© European Leader

- Europe #1 in Satellite systems
- World #1 in commercial payloads
- European #1 for Space Defense
- Outstanding assets in Science & Exploration
- Cornerstone of European Navigation systems
- Advanced technologies for Earth Observation
  - High & very high resolution optical and radar instruments
  - LEO platforms
  - World leader in meteorology and oceanography
- Key player in orbital Infrastructures & Transportation

2007 Contracts to date

**Telecom**
- Yahsat (UAE)
- Palapa D (Indosat)
- THOR 6 (Telenor)
- Arabsat 5A & 5B
- Loutch 5A & 5B for Roskosmos
- Globalstar control network facility

**Observation & Science**
- GMES Sentinel-1
- End-user applications
  - Telecom
  - Broadcasting – HDTV, Mobile TV…
  - Positioning – EGNOS, Galileo

- Sustainable Development
  - GMES/Sentinels

- Defense & security
  - Telecom – Syracuse & Sicral systems
  - Observation – COSMO-SkyMed, Helios

- Science
  - International Space Station
  - Space exploration – Huygens, ExoMars, Herschel Planck..
Agenda

- Market Overview and Positioning
- Strategic Guidelines and Objectives
- Commercial Market
- Institutional & Military Markets
- Cooperations with other Thales and Finmeccanica Units
### Satellite Value Chain

#### Space System Manufacturing
- Study & Design of the Mission
- Satellite, ground, and launch Manufacturing
- Assembling & Integration
- Testing
- End to End system delivery: satellite, ground, launch service and insurance
- In Orbit Testing (IOT)
- TT&CM supply

#### Launch
- Launch System Manufacturing
- Launch System management & Sale
- System Integration (Sat+Launcher)
- Launch

#### Fleet Management & Operations
- Satellite fleet management and control
- Uplink & downlink
- Capacity provisioning
- End to end service

#### Service Provisioning
- Service packaging & development
- Marketing & Sales
- Distribution and management of retail channels
- Building & Customer Care
- In Orbit Positioning
- LEOP (Launch and Early Operation Phase)

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**End User**
World Space Market Structure

Total World Industrial Procurement (B€) - 2007 -

- 49.0
- 12.5
- 9.9
- 12.8
- 1.5
- 12.3

Total World Industrial Procurement
Agency Expenses
US Institutional**
US Military
Launcher Development (excl. US)
TAS Addressable Market

* Addressable Market doesn’t include US (Civil & Military institutional) investments and, for all other countries, the launchers related investments
** Mainly NASA/NOAA

Sources: Agencies Data; Thales Alenia Space
World Space Market Structure

Total World Industrial Procurement (B€) - 2007 -

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<th>Region</th>
<th>Value (B€)</th>
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<td>9.9</td>
</tr>
<tr>
<td>RoW Military</td>
<td>12.8</td>
</tr>
<tr>
<td>Commercial</td>
<td>12.3</td>
</tr>
<tr>
<td>Other</td>
<td>1.5</td>
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Total World Industrial Procurement: 49.0 B€

Addressable* Markets by Region

* Addressable Market doesn’t include US (Civil & Military institutional) investments and, for all other countries, the launchers related investments

** Mainly NASA/NOAA

Sources: Agencies Data; Thales Alenia Space

Analyst Days – Cannes – Nov. 2007
**World Space Market Structure**

**Total World Industrial Procurement (B€) - 2007 -**

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<td>TAS Addressable Market</td>
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**World Addressable* Market by Business Line**

- **Telecom**: 45%
- **Navigation**: 5%
- **Earth Obs.**: 16%
- **Infra & Transport.**: 8%
- **Science & Tech**: 10%
- **Others**: 16%

* Addressable Market doesn’t include US (Civil & Military institutional) investments and, for all other countries, the launchers related investments

** Mainly NASA/NOAA

**Sources:** Agencies Data; Thales Alenia Space

Analyst Days – Cannes – Nov. 2007
Market Trends 1996 - 2016

Space Market Value 20 Years Evolution

Completed

Trend

Institutional Market (Civil)*

Defense Market

Commercial Market

$ exchange rate amplifies growth

New priorities of US Defense policy

Recovery to pre-2000 level

CAGR 2006-2016

- Growth driven by:
  - US exploration program
  - Higher ESA/EU contribution
  - China, Russia, India and Japan ambitious space programs

4.5 – 5.0%

- Growth driven by:
  - US space dominance policy
  - New European programs
  - Other countries policy

4 – 4.5%

- Stable trend:
  - Replacement of existing satellites
  - HDTV capacity increase
  - Mobility applications
  - Development of sat. TV in fast developing countries (i.e. China)

0.5 – 1.5%

* Including Space Station and Space Shuttle

Sources: Euroconsult

Analyst Days – Cannes – Nov. 2007
Space Manufacturing Positioning

- Large System Prime
  - Players with capabilities to design, engineer and integrate large satellite systems including ground segment and launch services
  - Vertically integrated along the value chain from the system design to payloads and sub-systems up to equipment production
  - Large portfolio of satellite platforms

- Small Prime
  - Players with capabilities to design, engineer and integrate small/micro satellite systems
  - Less vertically integrated, often payloads and sub-systems procured outside
  - Small and micro platforms

- Sub-system & Equipment Providers
  - Provider of sub-systems or equipment to small and large prime
  - Either small players with niche technologies/capabilities…
  - …or large companies with key expertise applied across various industries

Satellite Systems Ranking by Revenues - 2006 -

- Lockheed Martin: 4.0
- Northrop Grumman: 2.6
- Boeing: 2.1
- Thales Alenia Space: 1.6
- Astrium: 1.3
- Melco: 0.7
- SS/L: 0.5
- Ball: 0.5
- OSC: 0.4
- OHB: 0.07
- SSTL: 0.03

Sources: Company Annual reports

Players with capabilities to design, engineer and integrate large satellite systems including ground segment and launch services

Vertically integrated along the value chain from the system design to payloads and sub-systems up to equipment production

Large portfolio of satellite platforms

Players with capabilities to design, engineer and integrate small/micro satellite systems

Less vertically integrated, often payloads and sub-systems procured outside

Small and micro platforms

Provider of sub-systems or equipment to small and large prime

Either small players with niche technologies/capabilities…

…or large companies with key expertise applied across various industries

Sources: Company Annual reports
Market Overview and Positioning

- Strategic Guidelines and Objectives

Commercial Market

- Institutional & Military Markets

- Cooperations with other Thales and Finmeccanica Units
European Institutional Civil and Defense

Export Defense

Services with Telespazio

Systems of Systems

New Applications

Competitiveness Integration

Growth

Profitability

Strategic Vision
Agenda

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World Geostationary Telecom Satellites Market
2004 – 2010

No. of Satellites ordered

<table>
<thead>
<tr>
<th>Year</th>
<th>Open to Competition</th>
<th>Captive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>2005</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>2007</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>2008-2010</td>
<td>23-26</td>
<td></td>
</tr>
</tbody>
</table>

Source: TAS Analysis on the basis of satellite fleets and operators data
4 major contracts already won

- Yahsat, a large dual use system composed of 2 satellites + ground segment shared with Astrium
- Arabsat, a 2 satellites contract shared with Astrium
- 2 new clients Telenor and Indosat

Number of GEO Telecom satellites awarded or to be ordered in 2007

TAS Market Share on 2007 awarded contracts

- TAS Market Share 25%
- Others 75%
- Capture a share of the very dynamic commercial market
- Leverage synergies between commercial & military markets (dual technologies and products)

Key challenges: very competitive and $ based

Need to purchase in US $

Develop partnership with Low Cost Countries (e.g. Russia, China)
Continue competitiveness programs
Agenda

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- Cooperations with other Thales and Finmeccanica Units
• Thales and Finmeccanica are major partners in Galileo
• Thales Alenia Space deeply involved in Galileo
  - Initial design of the system
  - End-to-end system integration
  - Prime contractor for the ground segment
  - A key partner for the space segment
    - Satellite integration
    - Subsystems: power, thermal, structure
    - Critical equipments
• Thales Alenia Space is the prime contractor of EGNOS
  - Successfully commissioned in July 2005
  - Certification on the way
• Thales Alenia Space built its position on strong experience both in satellites & ground segments

- Prime contractor for Sentinel 1 and 3
- Meteorology (1st & 2nd Generation Meteosat, IASI, ground data infrastructure)
- Environment monitoring (Topex/Poseidon, Jason 1/2, CryoSat/SIRAL, SMOS, Calipso)
- Earth observation (COSMO-SkyMed, Pleiades, SPOT/Vegetation, Helios, Envisat): satellite, instrument and ground segment experience

• GMES (Global Monitoring for Environment and Security)
• Thales Alenia Space is Prime Contractor for the ExoMars mission
  - European premiere for landing on Mars
  - ExoMars: sending a science lander with a robot rover in order to find traces of past and present life
  - Part of ESA Aurora exploration program
Space Technology at the Heart of European Defense and Security

Earth Observation
- Meteo forecast
- Cartography
- Damage assessment

Telecommunications
- Data collect
- Alert and localisation
- Topography survey

Positioning and navigation
- Emergency Communication
- Guidance
- Positioning
- Alert and localisation
- Emergency Communication
Communications
- Inter-operability
- Mobility
- FlexibilitY
- Broadband
- Secure

Syracuse (France + NATO)
Sicral (Italy + NATO)
Satcom BW (Germany)

Intelligence & reconnaissance
- Extra-territorial
- High resolution
- All weather
- Inter-operability
- Data sharing

COSMO-SkyMed (Italy)
Helios (France)
Sar Lupe (Germany)
Spirale (France)

Navigation
- Global
- Accuracy
- Integrity

EGNOS
Galileo
Many contracts already won
Dual use applications

- Telecommunications
  - Star One (Brazil)
  - Koreasat 5 (Korea)
  - Yahsat (United Arab Emirates)
- Intelligence / Earth Observation
  - Kompsat 5 (Korea)
Major Programs Driving TAS Revenues

Military/ Institutional

- Telecom: Athena FIDUS, …
- Observation: COSMO-SkyMed; Sentinels, …
- Science: Exomars, Bepi Colombo, SimbolX
- Navigation: Galileo, EGNOS
- Infrastructure & Transportation

European Institutional and Military Core Markets
2007-2010

Market CAGR 6.1%

TAS Positioning on Core Markets

- TAS Market share 28 %
- TAS Revenue growth > 10 %
On Satellite Systems, Thales Alenia Space addresses 50% of total ESA market

ESA Industrial Procurement by Country
Satellite Systems + Launchers + Infrastructures
2007-2009 Average

- Germany: 23%
- UK: 6%
- France: 29%
- Italy: 16%
- Spain: 6%
- Belgium: 6%
- Other: 11%
- Canada: 1%

2.4 B€

ESA Industrial Procurement by Country
Satellite Systems Only
2007-2009 Average

- Germany: 23%
- UK: 14%
- Italy: 16%
- France: 22%
- Spain: 7%
- Belgium: 6%

1.5 B€

TAS ESA Markets Footprint

Source: ESA data
Agenda

- Market Overview and Positioning
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- Aeronautical communications → SESAR …

- Civil surveillance, homeland security and disaster recovery → SEASAME…

- Intelligence & Information processing solutions → UAV, MUSIS…

- Mobile Multimedia → Mobile TV…

- E-government (environment, health, transportation) → GMES…
• New challenges in Air Traffic Management by 2020 in Europe and worldwide:
  ■ Traffic capacity up to 3 times
  ■ Cost down to ½
  ■ Increase safety by factor of 10
  ■ Reduce environment impact to 10%

• New operational concepts to be put in place: the SESAR program

• Satellite-based aeronautical communications and navigation will contribute to SESAR
• Need for an efficient system for maritime surveillance highlighted worldwide
• New European Union policy to come
• Thales Alenia Space participates in the design and promotion of a global system, the SEASAME initiative, led by Thales and Finmeccanica at European level
Cooperation with Finmeccanica

Thales / Finmeccanica Space Alliance

Telespazio, from technology to services
- Satellite operations (launch, control and exploitation)
- Network and connectivity
- Networking, value-added services, multimedia, Earth observation, navigation

Projects to be developed in synergy with Telespazio
- Info-mobility applications and services
- E-government (environment, health, transportation)
- Commercial imagery solutions
• Yahsat: dual use telecommunication system for United Arab Emirates
• Palapa D: telecommunication satellite for Indonesian operator Indosat
• Thor 6: telecommunication satellite for Norwegian operator Telenor
• Arabsat 5A/5B: telecommunication satellites for Arabsat Organisation
• Loutch 5A/5B: telecommunication payload for Russian operator
• GMES Sentinel 1: radar observation satellite for ESA
• Syracuse: French military telecom system (2 satellites Syracuse 3A and 3B)
• Sicral: Italian military telecom system (2 satellites Sicral 1A and 1B)
• Cosmo-SkyMed: dual use radar observation system for Italian Ministry of Defense and Italian Space Agency (ASI) (4 satellites)
• Helios: optical observation system for the French MOD (4 satellites: Helios 1A/1B, 2A/2B)
• Huygens: interplanetary probe landed in Titan in 2005 (NASA/ESA mission)
• Herschel/Planck: astronomical observatory for scientific application (ESA mission)
• EGNOS (European Global Navigation Overlay System)
• GMES Sentinel 3: oceanographic satellite for ESA
• IASI (Infrared Atmospheric Sounder Interferometer) on-board METOP meteorological ESA satellite
• TOPEX-Poseidon: Oceanographic altimetry (CNES/NASA cooperation) followed by Jason 1 and 2
• CryoSat/SIRAL: Interferometric altimeter for ice measurement (ESA mission)
• SMOS (Soil Moisture and Ocean Salinity): radiometer for climatology (ESA/CNES mission)
• CALIPSO: lidar for clouds measurement (CNES/NASA climatology mission)
• Pleiades: french dual use optical observation system (2 satellites) (CNES mission)
• Envisat: environmental ESA satellite (MERIS instrument and ground segment provided by TAS)
• Satcom BW: military telecom satellite for German MOD (2 satellites)
• SAR Lupe: military radar observation system for German MOD (4 satellites)
• SPIRALE: demonstrator for early warning system (2 satellites)
• Kompasat 5: radar observation instrument for Korea
• Athena-Fidus: dual use Ka-band system for France and Italy
• MUSIS: new generation intelligence system for 6 European nations
• BEPI Colombo: interplanetary mission to Mercury (ESA program)
• SYMBOL-X: X-ray space observatory for France and Italy (2 satellites)