

**“Innovation means growth:
excellence networks
for space projects”**

Moncrivello (VC), 1.4.2006

Carlo Gavazzi Space S.p.A. Overview

Turnover: **40 M€**

Employees: **200**

Research: **> 15% Turnover**

In Space Business since **1981**

ISO-9001 Certified

Core Business:

Satellites, Orbital Infrastructures
Scientific Payloads,
Earth Observation



Headquarters: *Via Gallarate 150 – 20151 Milano, Italy*
tel. +39.02.380481 – www.cgspace.it - cgs@cgspace.it



Locations

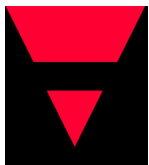
Milano – Headquarters

Benevento – Research Lab & Telematics

S. Giorgio del Sannio (BN) – Aerospace

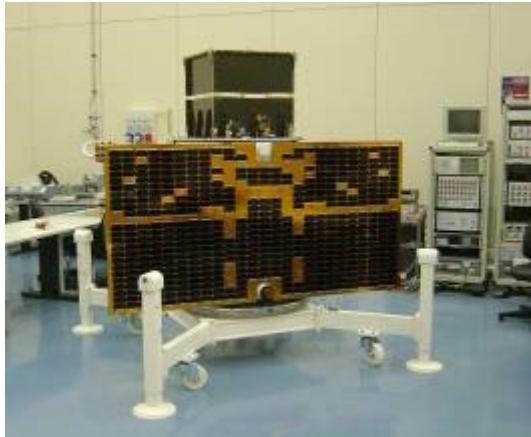
Rivalta Scrivia (AL) – Satellite Integration

Bologna – Enabling Technology. Environmental Monitoring, Earth Observation



Carlo Gavazzi Space S.p.A.

Main current projects



Satellites: Agile Gamma
Ray Light Detector



**USV Unmanned
Space Vehicles**



**Ground Segment:
Vega**



Planetary Exploration

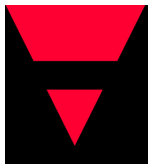


Scientific Payloads:

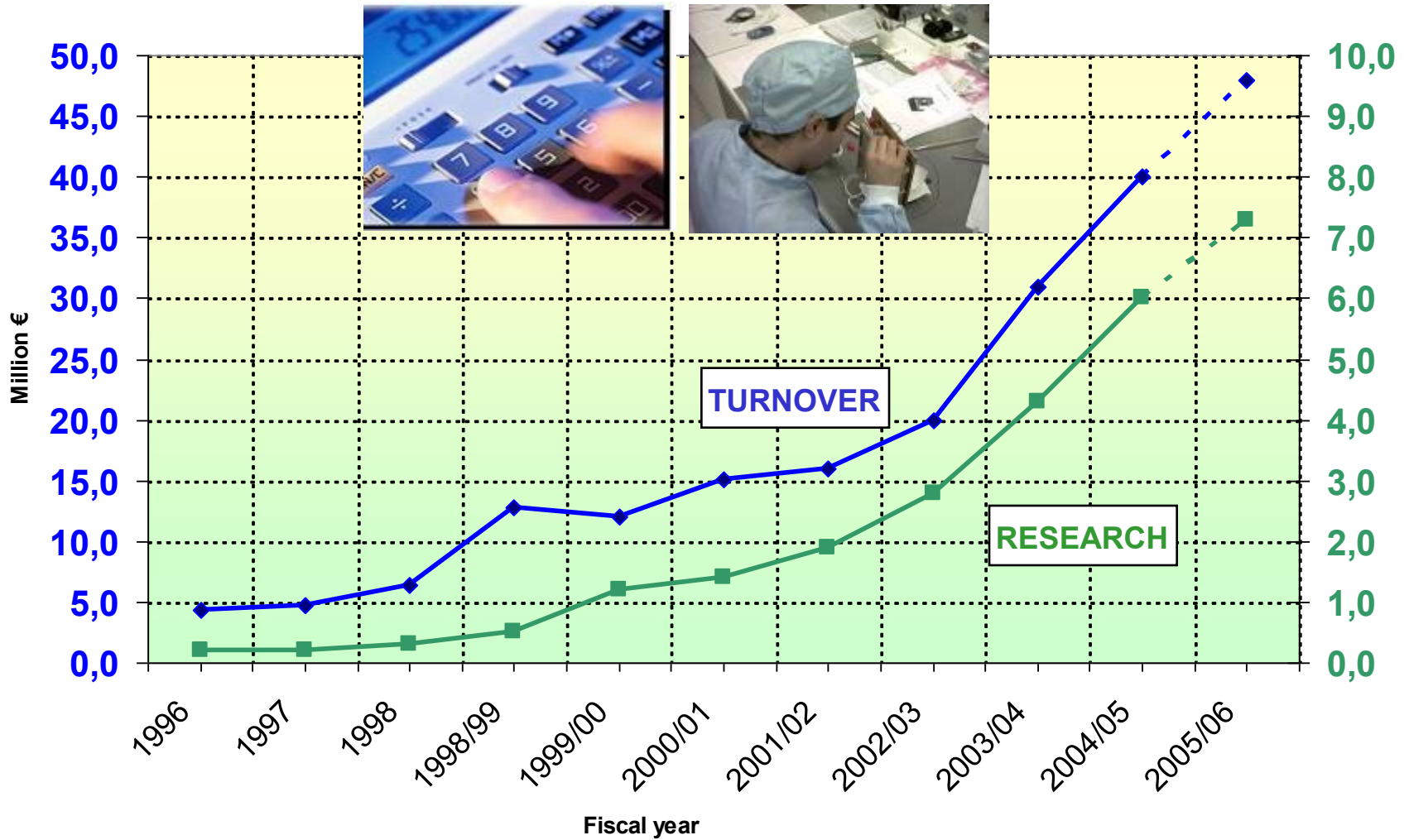
LISA Laser Interferometer
Space Antenna



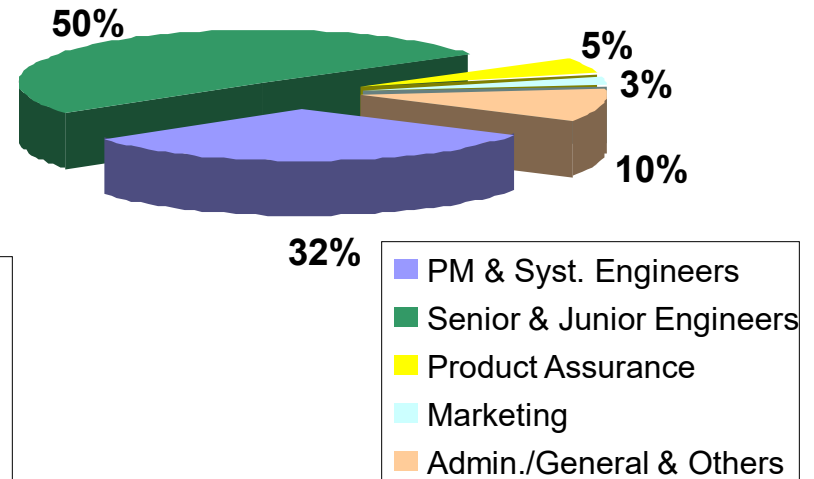
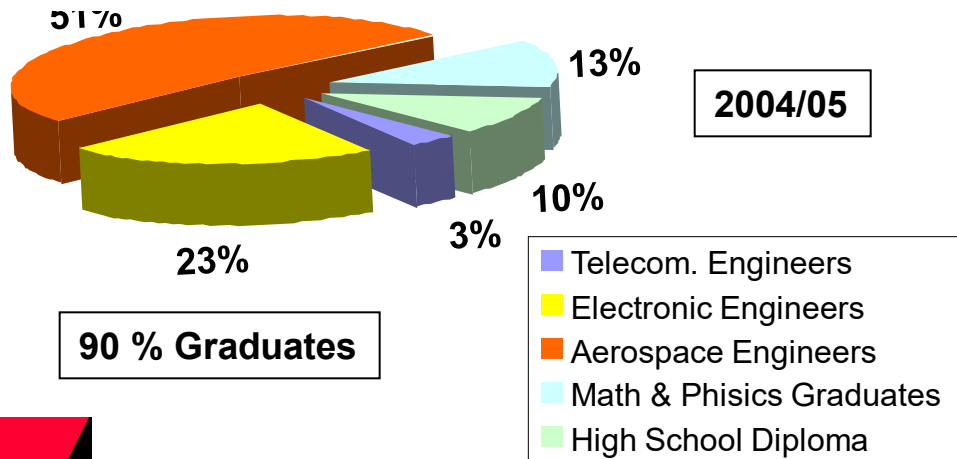
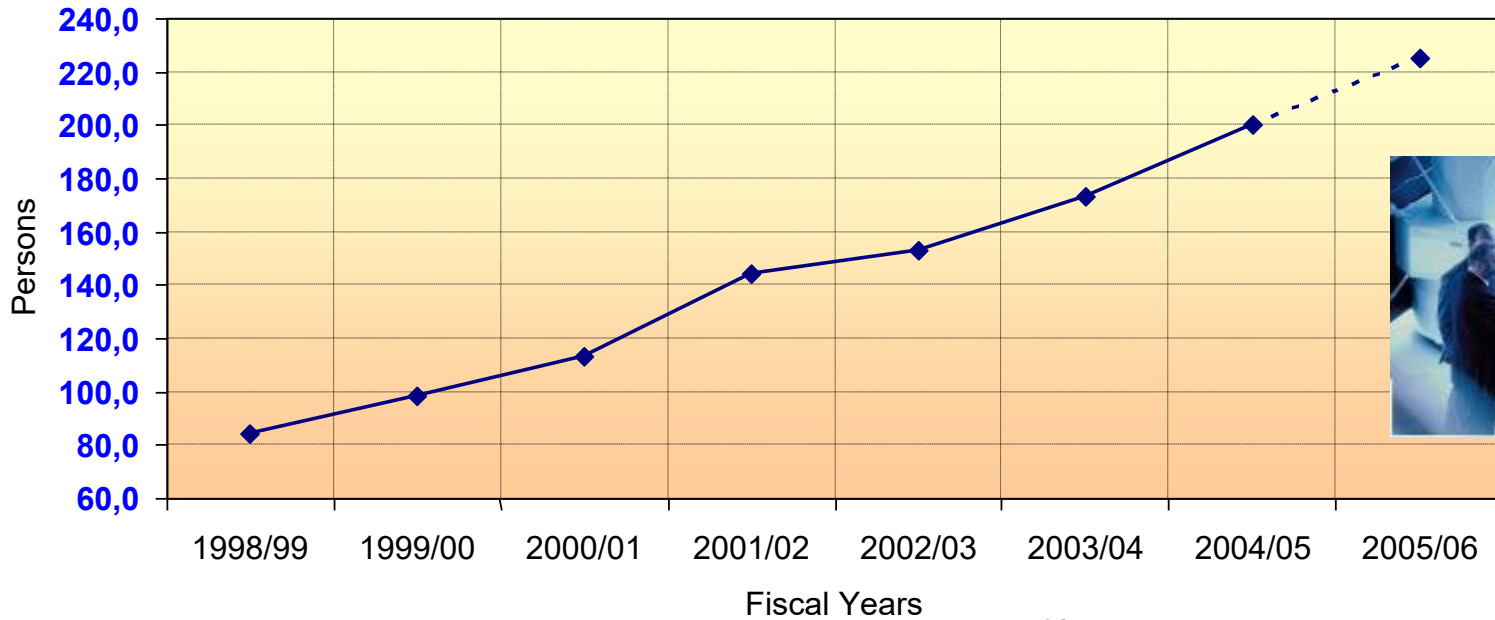
Earth Observation



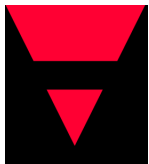
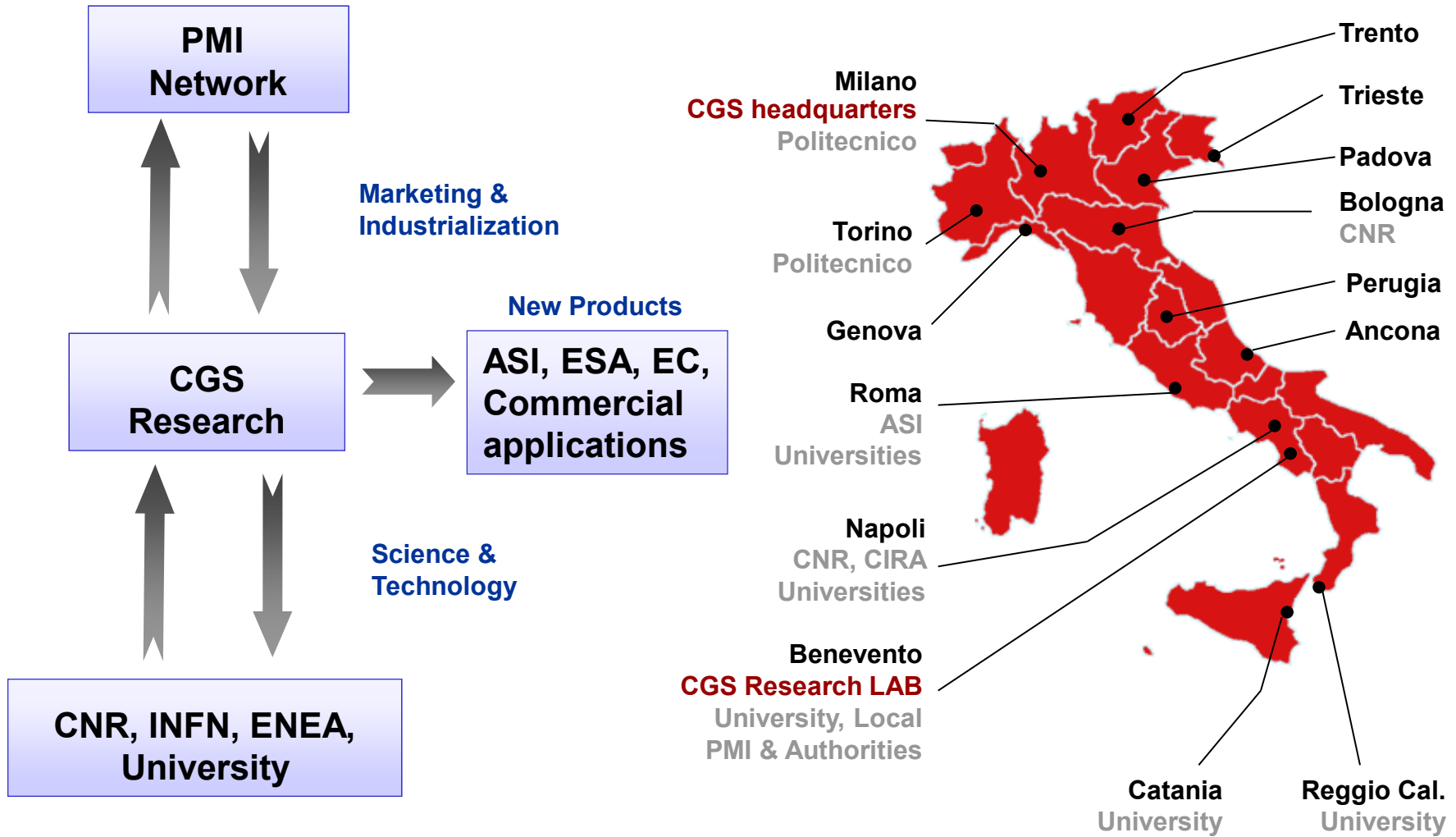
Financial Facts & Figures



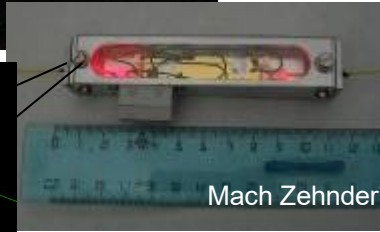
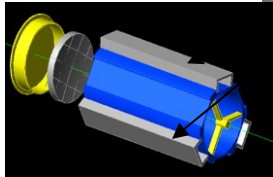
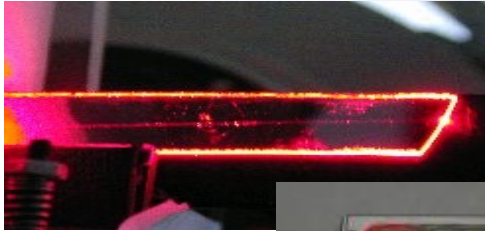
Staff



RESEARCH ORGANIZATION



MICRO-TECHNOLOGIES

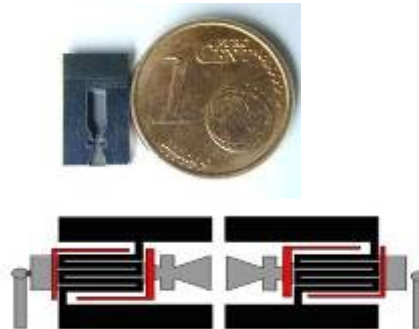
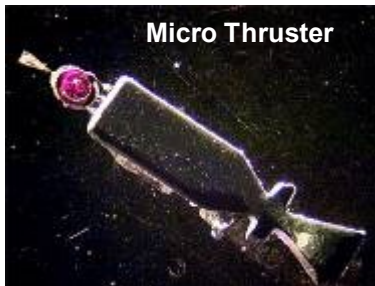


QUANTUM – AURORA

Realization of MEOMS Microinterferometers for gas analysis, based on DOAS (Differential Optical Absorption Spectrometry) method, for **remote sensing** and **planetary exploration**

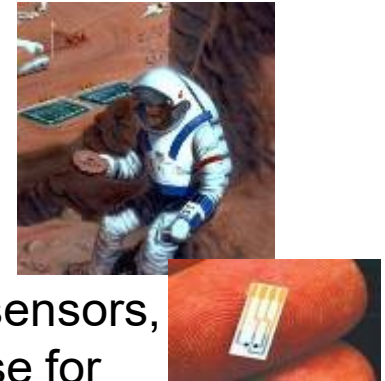
MICROTECH

Miniaturized micro-propulsor on silicon substrate for **satellite** attitude and orbital control

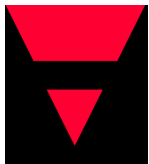


MICRODYASYM

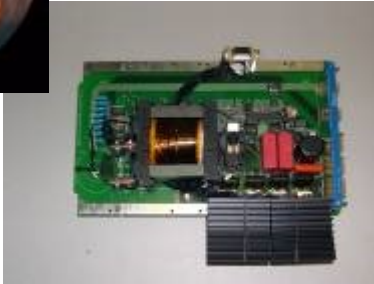
Micro diagnostic system based on innovative electrochemical biosensors, pocket size, monouse for **astronauts** check up



Advantages: smaller and lighter than existing systems, automatics



ENERGETIC SYSTEMS

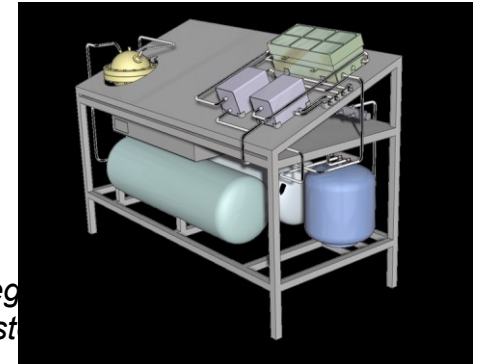


G.A.T. High Voltage Generator

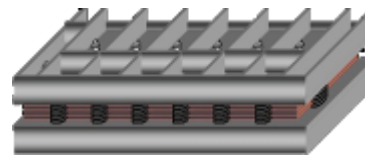
To support FEEP (Field Emission Electric Propulsion) and RIT (Radiofrequency Ion Thruster) systems needs on **satellite** missions

FUEL CELLS

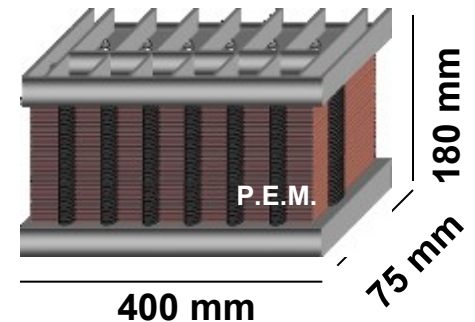
Energetic systems based on PEM (Proton Exchange Membrane) new polymeric electrolytes filled in high pressure for better efficiency. Future utilization on **satellites, stratospheric platforms** and for **planetary exploration**



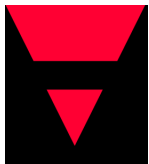
Advantages: lighter, more efficient, long lasting than existing systems



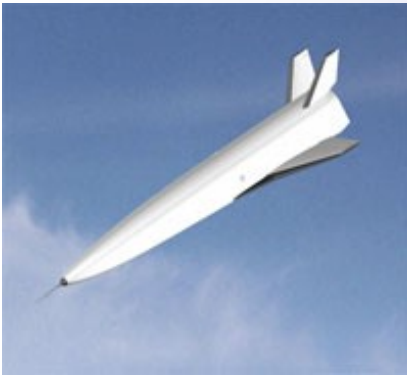
1 kW



7 kW

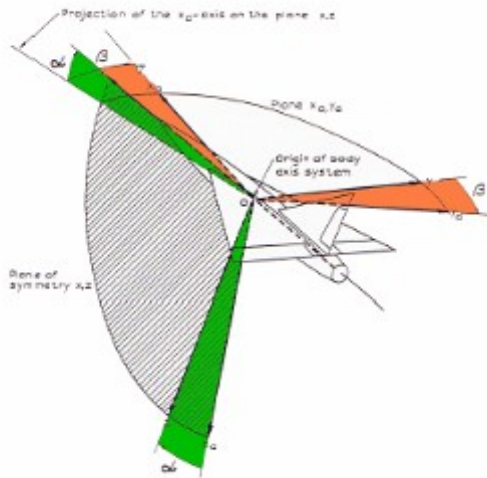
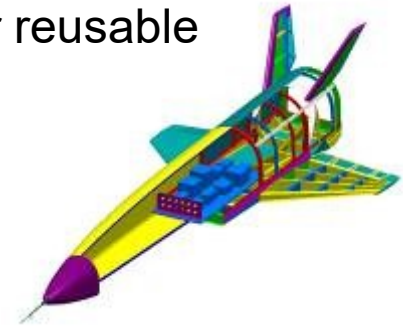


RE-ENTRY VEHICLES



SMITA

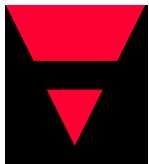
Sensor systems to monitor thermal integrity of aerospace structures for reusable manned and unmanned vehicles



GN&C Guide & Navigation Control Systems

Innovative system for remote guidance of unmanned space and transport vehicles

Advantages: improvement of automatic missions, safer flights, no crew required



TELECOMMUNICATIONS



SOFTWARE RADIO

Reconfigurable transponder using software radio technology for **satellites** and **stratospheric platforms**

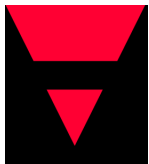


TIME & FREQUENCY DISTRIBUTION

System for real time dissemination of time and frequency by satellite. This system foreseen an unique atomic clock ground-based and spread the signal through satellites to several users. Future use: **scientific and commercial applications**, power lines synchronization and digital telecommunication lines



Advantages: easy, advantageous and reliable reconfigurable systems



SYNTHETIC APERTURE RADAR



SOBIT Single Bit Real-time SAR data processor to generate real-time images from a SAR installed on a plane or satellite. This processor use a new algorithm able to reconstruct the image from raw datas, using only one bit signal, allowing real-time products.

DISMOT

Ground SAR system for local slow ground motions **monitoring** (eg. Landslides, subsidence, etc.) Future use: safer management of dams, bridges, buildings, infrastructures etc.

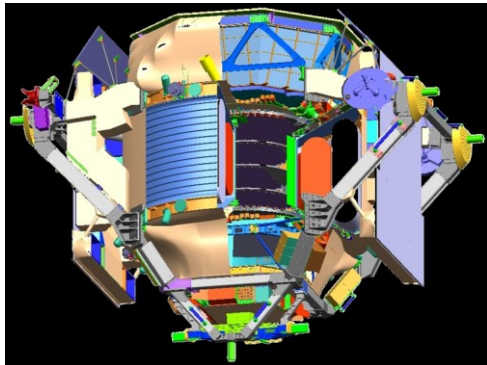


Advantages: reliable and accurate monitoring, efficiency in natural hazards prevention



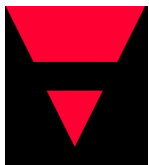
INNOVATIVE STRUCTURES & THERMAL STUDIES

ACOMP Active Composite: ESA research project for innovative materials and structures. New concept of carbon fibre composite material with embedded piezo actuators\sensors and optical fibres developed and applied to the design and manufacturing of smart structures. Future fields of application are: shape and vibration control of large space structures, acoustic control for noise reduction in civilian vehicles, health monitoring and in-site structure identification



Dinamyc interaction: studies on the dynamic behaviour of large panels with inflatable structures for small satellites realisation.

THERMAL Studies: Thermo-chemical characterisation of batteries, thermal interface materials performance characterization, automated, thermal mathematical model reduction, techniques for thermal models, stability characterization in the frequency domain.

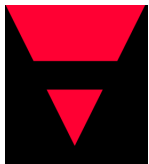
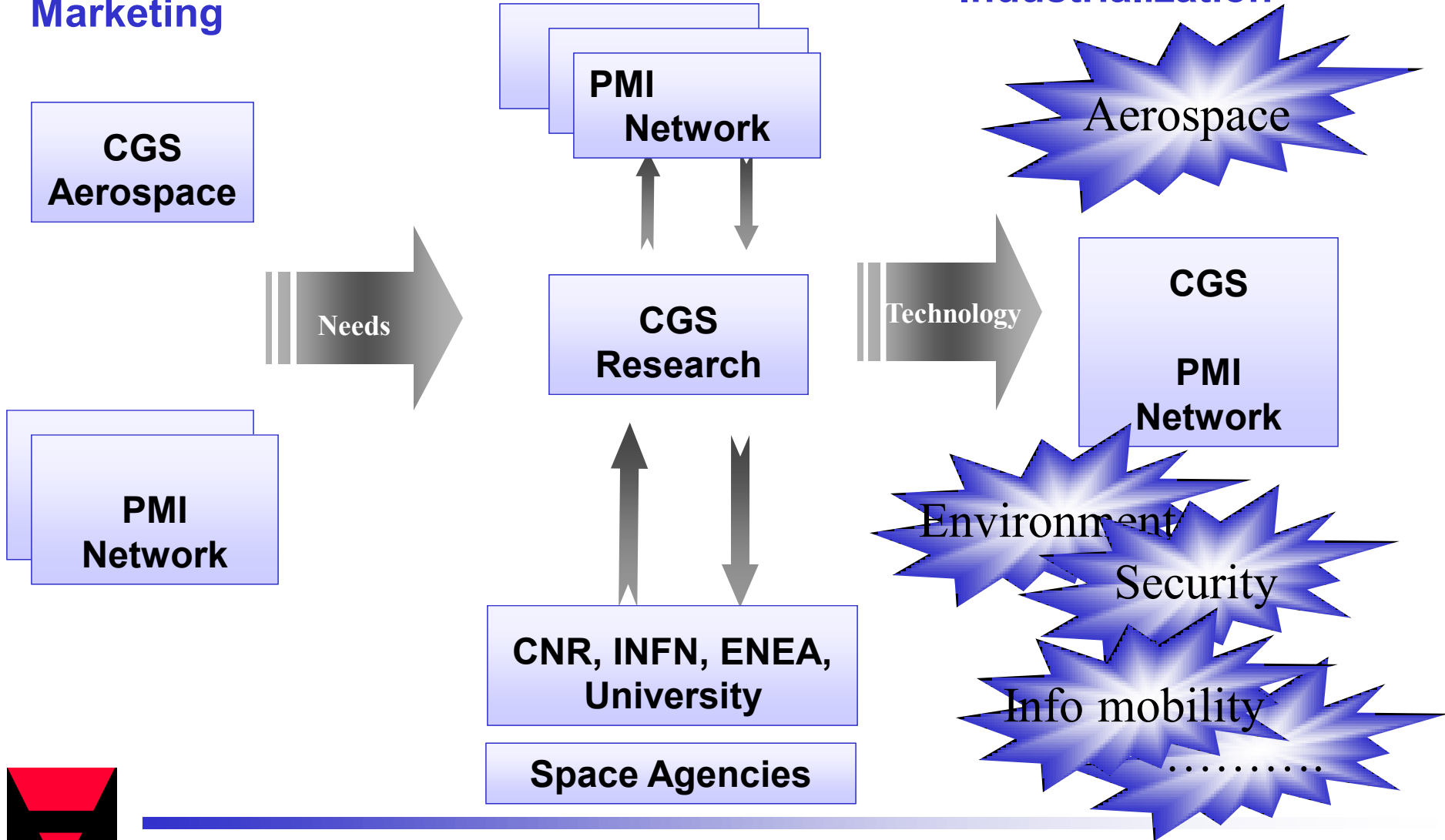


Business Model

Research & Development

Industrialization

Marketing



Technology Transfer Model

