Clustering Italian Industry for Large Astrophysical Projects

Fostering and supporting the Italian Industry right involvement into large Mega-Science Projects: the case of the E-ELT

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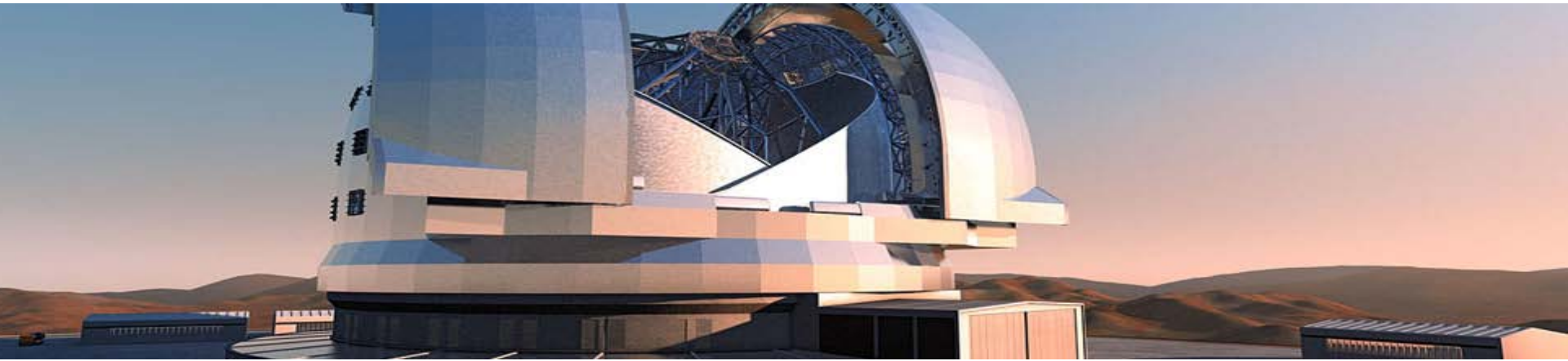


ESO Industry Event – Dome & Main Structure

Presseclub at the Allianz Arena: 16-17 October 2012

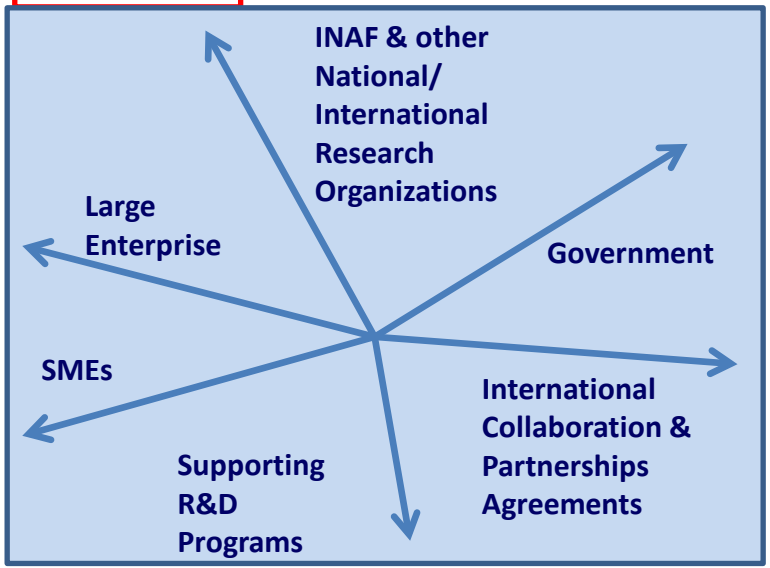
Clustering Italian Industry for Large Astrophysics Project

ESO INDUSTRY EVENT
E-ELT DOME & MAIN STRUCTURE
16–17 OCTOBER 2012
ALLIANZ ARENA, MUNICH

- The program has been started in 2008 to enhance **SMEs capacity to get involvement into large astrophysical projects** through clusterization and leveraging on **advanced skills** and expertise coming from traditional involvement into **high-tech industry**, particularly aerospace.
- **Link** with the national agencies as well as relevant national and/or international organizations is a **key factor**.
- **Role of large enterprise** in providing contribution and, more important, financial stability and reliability
- **Qualification of industry**, particularly SMEs, from the technical and industrial point of view.

Plus one: **detect and foster outcome from adopted technologies in order to develop additional business opportunities and help industries finding rationales for their engagement.**

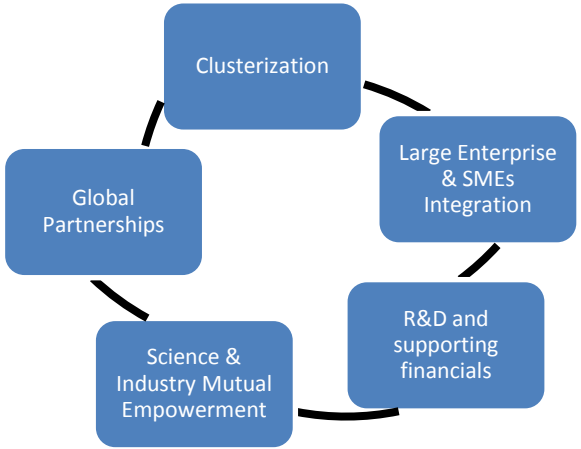
The Context



The Status

- More than 30 companies (SMEs) involved in the program
- Two major proposals already presented for 2 large telescope programs
- 8+ R&D projects proposals presented; some already approved
- More then …
- 4 post-doc programs started

The Method



Clusterization: Complementary of competences and capacities and synergy between companies and research organizations are key.
Large and Small Enterprises Integration: Complexity, financial constraints, technologies and other important factor dictate integration between large and small and medium enterprises.
R&D and Supporting Financials: Industry technologies and capability may need increase which require supporting projects and financials.
Science & Industry Empowerment: Ensure phasing between "science" activities and industry involvement to maximize integration, collaboration and competitive advantage
Global Partnership: Develop effective collaboration and engagements strategies with other countries similar organizations.

The Supporting R&D Program

Project have been developed in the areas of:

- **Control**
- **“Intelligent” Materials**
- **Health Monitoring and Management**
- **Use of Composite Materials**
- **Actuators and others components**

Total effort planned is around 18 M€.

First project started in June ‘12.

Not all of the projects are expected to overcome approval processes also due to overall financial constraints.

Finding collateral funding will remain among the main line of actions.

Italian Astrophysical Cluster Proposed R&D Projects (2011YE)
MASTRI (part of it) – R&D skills development for “Intelligent” Structures and related materials, manufacturing and ICT technologies development
SiHM – Control, Health Monitoring and Management of Mixed Composite-Metal Materials Structures designed to operate with Heavy Loads and into Hostile Environments. Project has started in June ’12. Will end in ’15.
HMCD (part of it) – Demonstrator development for astrophysical application
NASTRO – Joint Research Institutions and Industry initiative to develop technologies for Astronomy

SiHM

The first of such projects is called **SiHM** – ***Control & Health Monitoring and Management of Complex Systems and Mixed Metal-Composites Structures Operating into hostile environments and under Critical Loads***.

The project will have a budget of some 5 M€ and will terminate in June 2015. 1 large enterprise, 6 SMEs and 3 research organizations will take part to the project.

An international panel to define characteristics of a so-called “**astrophysical demonstrator**” will be involved to provide objective guidelines and help establishing competitive specifications.

Collaboration with ESO is mostly welcomed.

The project will be conducted by a team of 11 which comprises:

- A large enterprise
- 7 SMES, 5 as full-participants and 2 as external partners
- 3 research organizations: the Centre of Competences on New Materials from the Federico II University of Naples, the Observatory of Capodimonte of INAF, and TechNapoli.

Project will end by June ’15.

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