





# SineQuaNet OBJECTIVES & STATUS OVERVIEW

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# ESA Facts & Figures

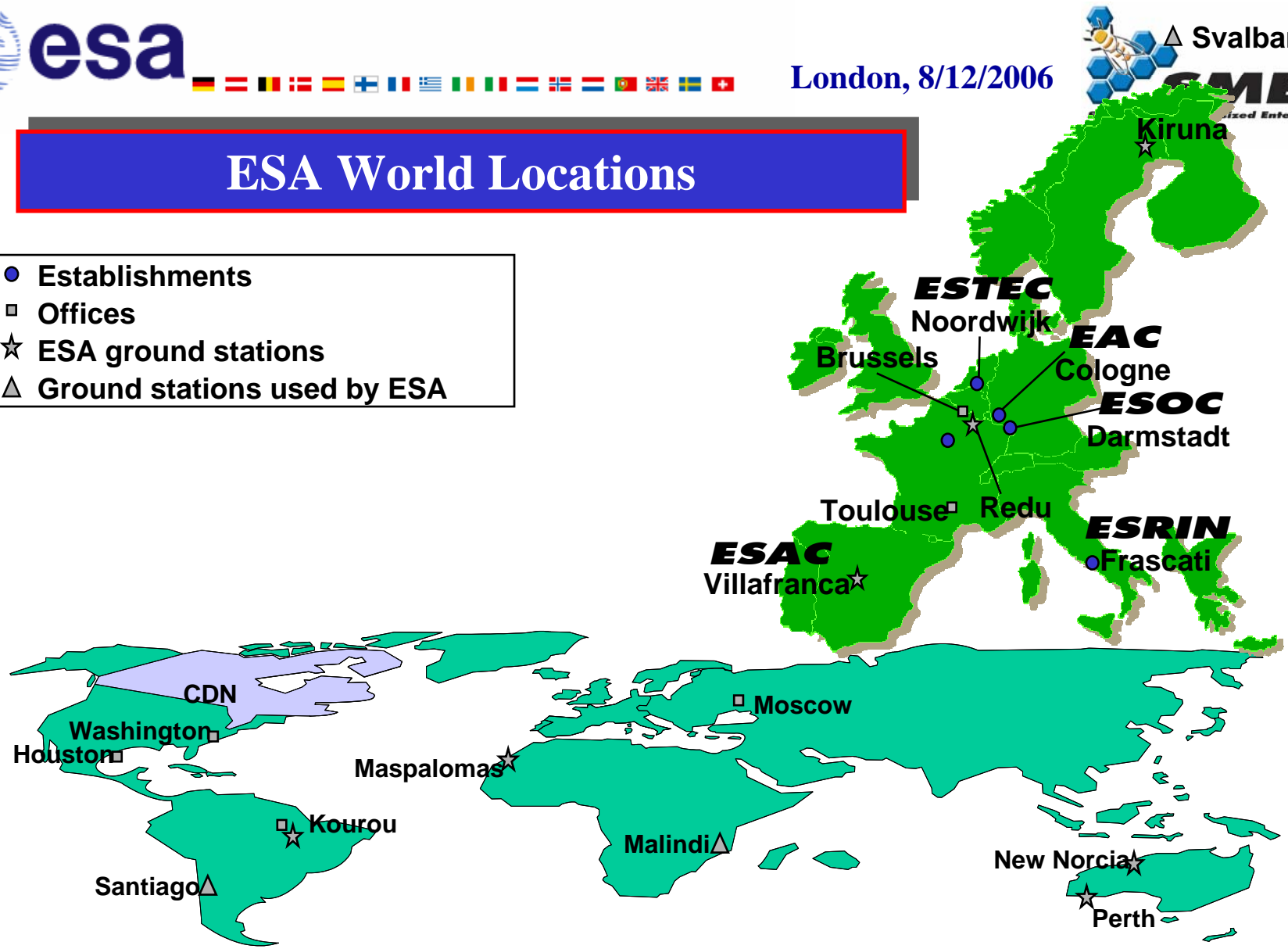
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Austria
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Belgium
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Denmark
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Finland
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France
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Germany
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Ireland
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Greece

- More than 30 Years of experience
- 17 Member states
- 5 Establishments
- About 2000 staff
- 2.97 Billion €budget in 2005
- 60 Satellites developed
- 15 Scientific satellites in operation
- 5 Launchers developed
- 168 Launches performed

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Italy
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Luxembourg
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Netherlands
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Norway
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Portugal
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Spain
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Sweden
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Switzerland
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United Kingdom

# ESA World Locations

- Establishments
- Offices
- ★ ESA ground stations
- △ Ground stations used by ESA



## The European Space Research & Technology Centre



The 1<sup>st</sup> ATV flight model (Jules Verne being moved into the Maxwell electromagnetic radiation chamber)

- Technical heart of ESA and the cradle of almost all its projects,
- Site of sophisticated Test & Simulation facilities used to validate the technologies needed to make future space missions possible
- Hosts more than 2000 experts working on technology and dozens of space projects, guiding them, in close cooperation with industry, through their various development phases.
- With 30 years experience, ESTEC has the expertise in house for its wide-ranging task.

## ROLE OF SMEs IN SUPPLY CHAINES

- SMEs are valuable contributors to any supply chain, including the space sector where they contribute at different levels:
  - ✓ Those with a science/engineering expertise contribute directly through ESA;
  - ✓ Those with a manufacturing expertise contribute to space and/or the commercial market through ESA prime contractors
  
- Thanks to their flexibility, their dynamism and their innovation capacity, SMEs are recognised as playing a significant role in underpinning European competitiveness and industrial productivity in general.
  
- However, SMEs' participation in the large European projects in general, (including space) has not yet reached its full potential: these projects present some technical challenges representing significant barriers for those willing to contribute;

## ENTRY BARRIERS FOR SMEs

- **Lack of know-how and of human resources to assimilate and apply**
  - ✓ space engineering requirements
  - ✓ Industrial processes and standards
  - ✓ Management procedures for multi-partner, trans-national projects
- **Insufficient Resources in terms of enabling facilities**
  - ✓ To test & validate their technologies in conformance to space requirements
- **Vertical integration and mergers of space industry**
  - ✓ New R&D “supply chain”, changing the procurement policy of large integrators
- **Large size & complexity of ESA projects, procedures and/or of the EU,**
- **Low investment in R&D in the European SMEs**

SineQuaNet will not solve all these problems..., but can help

## SineQuaNet OBJECTIVES

- To improve SMEs' skills and competences in order to ease their participation to the space programmes.
- To improve their competitiveness in the space market, but also in the non-space market, in order to limit their over dependency on space,
- To encourage and facilitate the emergence of innovative clusters of specialised SMEs, as recommended in the EC Communication on industrial Policy in an enlarged Europe (COMM (2002) 714.)

## HOW ?

- Through the establishment of a network of resources and tools for engineering, industrial processes, quality control, or management, and the sharing of their use.
- **SineQuaNet** (Space **IN**telligence, **E**ngineering, and **QUA**ality **NET**work), will be focused on engineering & processes. Its members will give either hands-on support services or training to SMEs. Typical services:
  - ✓ Help SMEs maturing/validating technologies through guidance, process specification for optimisation, testing, etc.
  - ✓ Help them understanding & fulfilling specific space requirements (vibrations, structures, EMC, PA/QA, materials, etc.);
  - ✓ Help them take benefit of best industry practices to foster their efficiency & productivity

## WHO WILL BE INVOLVED ?

**No duplication, no competition with existing service providers,  
but complementarities and cooperation**

➤ **Experts will be hired wherever available**

- ✓ from SMEs themselves,
- ✓ larger groups,
- ✓ Research Organisations,
- ✓ ESA, other networks, etc.

➤ **A win-win situation.** The service being offered against payment:

- ✓ SMEs will use high experienced engineers and specialists without disturbing their HR policy, and adequate facilities without need for investment;
- ✓ The service provider will maintain an even workload for its staff, alleviating its salary cost, and optimising the use of its technical infrastructure, improving its RoI.

## DEVELOPMENT APPROACH

A phased approach, each of them aiming at reaching a given level of Service capabilities and at preparing the needed tools. Phases and content will be defined during the present Phase-A, but the present way forward is:

**Phase-A:** Establishment of the network baselines, preparation of part of its tools, and testing of few of its functions;

**Phase-B:** Completion of Tools elaboration (Databases, etc.), start of real service organisation and provision;

**Phase-C:** Concept consolidation; Service provision with SMEs paying part of the Cost according to a TBD share to be established

**Phase-D:** SMEs paying a higher share of cost.

Full autonomy and self sustained SineQuaNet, functioning with a minimum number of fixed staff (2/3) for administrative & programmatic functions

## PHASE-A CONTENT & STATUS

### WP1: Management

### WP2: Development of an SME dedicated web Portal:

**Status:** Development completed, web launched: <http://www.esa.int/sme>

### WP3: SineQuaNet Baseline Definition

- 3.1 Refinement of SineQuaNet Role (review existing Networks, establish cooperation contacts, refine scope for SineQuaNet)
- 3.2 SineQuaNet Legal Structure
- 3.3 Business Model & Logistics
- 3.4 Production of Legal Documents & Templates

**Status:** 3.1 completed, 3.2 and 3.3 underway.

Scope for SineQuaNet with distinctive, added value will be presented by (Siemon Smid : later today)

## PHASE-A CONTENT & STATUS, continued

**WP4: Establish SMEs' needs, and compile SineQuaNet Web-based Database for experts & facilities available to give support to SMEs**

**Status:** - An industry survey completed, (N. Bougharouat and G. Duncan will present results, later today).  
- Web based database design underway

**WP5: Regional Workshops:** to inform on SineQuaNet & refine needs

**Status:** The 1st one was held during the ISD (May 2006), this is the 2nd one.

**WP6: Industry Space Days:** Foster partnership between SMEs and other actors, exhibit SMEs' technologies, inform them on market trends & business opportunities, etc.

**Status:** Organised last May in ESTEC, attended by some 700 persons, 46 SME' exhibitions and 6140 meetings took place. 1st evaluation Report available.

## PHASE-A CONTENT & STATUS, continued

### **WP7: Case Study: Support to Leiros (F)**

ESA to validate a software tool of LEIROS, consisting in a Test generator used to improve the software development process through strengthening and automating the test phases. See also dedicated presentation.

**Status:** See dedicated presentation for details

### **WP8: Case Study: Support to HOS Technik(A),**

ESA to help HOS Technik specifying and optimising the production process of their additives and catalysts used to produce high-temperature resins and polyimides for the plastics and rubber industry, and assess the use of the products for space.

**Status:** See dedicated presentation for details

## PHASE-A CONTENT & STATUS, continued

### **WP9: Training to be delivered to some 120 engineers, in may 2007**

**Status:** The subjects that have received the highest scores through the industry survey conducted within WP4 are:

- Writing a good proposal for an ESA Invitation to Tender
- Innovation: from R&D to Business development (including Finance sources)
- Electrical, electronic and electro-mechanical components
- Quality & Product Assurance