





INTRODUCTION

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ESA Facts & Figures

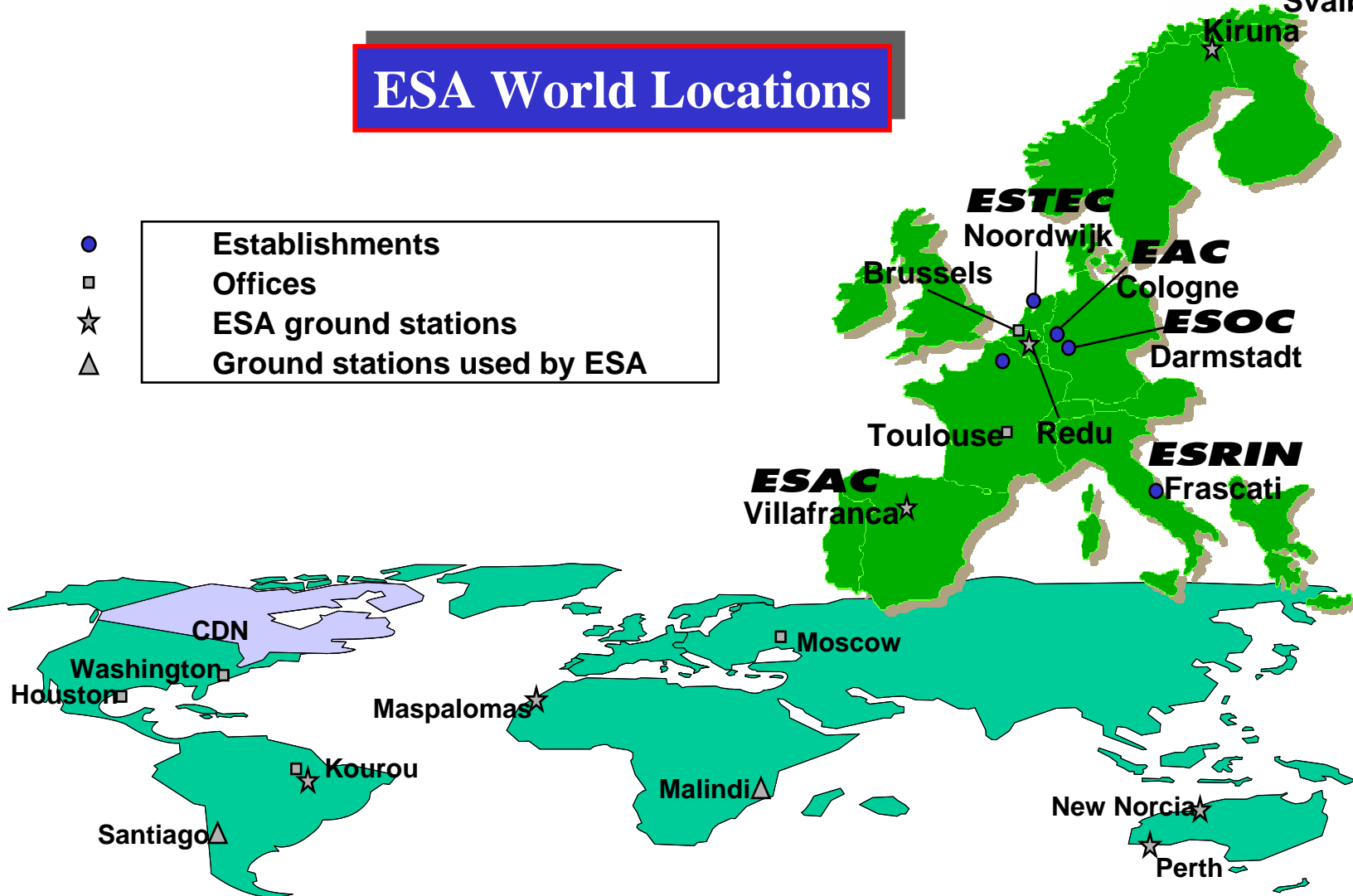
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Austria
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Belgium
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Denmark
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Finland
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France
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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
- 
Luxembourg
- 
Netherlands
- 
Norway
- 
Portugal
- 
Spain
- 
Sweden
- 
Switzerland
- 
United Kingdom

ESA World Locations

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



ESA- Darmstadt *ESOC, the European Space Operations Centre*

Ensures the smooth working of spacecraft in orbit.

Principal functions:

- ❑ Operation of spacecraft
- ❑ Satellite control & payload operations
- ❑ Design & operation of ground facilities

Operations Control Centre:

- ❑ Main control room
- ❑ Spacecraft dedicated control rooms
- ❑ Computer & engineering facilities
- ❑ Ground stations



Role of SMEs in supply Chains

- SMEs are valuable contributors to any supply chain, including in 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**

ESA SME Policy

- 1. The 1997 M-Council** called upon ESA to set aside a special place for SMEs with balanced access to its technology activities by:
 - Making firm provision to involve SMEs in technology work plans;
 - Offering SMEs technical support from experts and laboratories.
 - Tailoring the rules on co-financing to the size of enterprises;
- 2. SME Initiative Approved by IPC on 4.3.98.**
- 3. Ministerial Council of May 1999 Put it on a permanent footing** , and asked ESA to further develop the action taking into account the experience gained during the trial period.
- 4. The November 2001 M-Council resolution CONFIRMS** *the important role played by SMEs in creating a dynamic of growth and employment in Europe in all areas, and in particular in developing downstream services, products and technology derived from European space programmes, INVITES the Director General to reinforce the action taken by the Agency in this respect, and STRESSES the need to exploit the synergies with the European Union and national agencies.*

The ESA SME Initiative content

The SME Initiative consists in a variety of measures, ranging from funding of technology actions to delivery of Training. Typically:

1. Dedicated technology programme encouraging Spin-in (LET-SME)
2. Help to SMEs' activity Diversification (Technology Transfer, etc,)
3. Provision of Training and technical support to SMEs
4. Provision of better information and Networking Possibilities
5. Simplification and Streamlining of Procedures for Small Contracts
6. Facilitating Access to ESA Technical Facilities and Experts

Last action not sufficiently covered: ESA staff workload too high.



SineQuaNet

SineQuaNet objectives

SineQuaNet will not solve all SMEs' entry barriers, but will help

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

What is SineQuaNet ?

- A network of human resources and enabling tools to support SMEs.
- **SineQuaNet** (**S**pace **I**ntelligence, **E**ngineering, and **Q**UAality **NET**work), will be focused on engineering processes. Its members will give either hands-on support services or training to SMEs. Typically:
 - ✓ 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, optimising the use of its technical infrastructure, thus improving its Rol.

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 are under definition within the present Phase-A, but hypothesis:

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