

# **Certification and the GMES Services Element**

**Gordon Campbell**  
**Science and Applications Department**  
**Directorate of EO Programmes**  
**ESA**

# Background

- **Overall objective identified during consolidation**
  - ◆ User feedback
  - ◆ Colocation 3 (May 2004)
- **Scope agreed with MS:**
  - ◆ Achieve coherent overall definition and application of validation procedures, quality norms and standards
  - ◆ Put in place certification processes for GMES products and services where possible
  - ◆ Executed by independent third party in close cooperation with GSE consortia
  - ◆ 36 month contract of 1-2 M€
- **Parallel identification of need for industry certification (EOMD):**
  - ◆ Customer perception that they take all the risk – no comeback for errors in the information products and services
  - ◆ Where compliance with accepted standards and working practices is necessary, no scope to integrate EO based information
  - ◆ Bulk of product validation effort falls on customers
  - ◆ Majority of services are ad-hoc, heavily tailored - no accepted standards

# Main activities identified for GMES QB

- ❑ **Conducting audits of sampled service providers quality processes**
  - ◆ Visit to service providers premises
  - ◆ Analysis of service provision chain configuration and records
  - ◆ Analysis of user feedback reports and providers responses
  - ◆ Analysis of product validation reports and status of problem reports
  - ◆ Analysis of handling of user complaints
- ❑ **Definition of an overall roadmap for progressive implementation of validation, standards and certification processes**
- ❑ **Definition of generic quality metrics for all GMES services & supply chains**
- ❑ **Independent review of GMES product standards developed by providers**
- ❑ **Verification & harmonisation of specifications and reference data generated by service providers as basis for open GMES service standards & protocols.**
- ❑ **Evaluating alternative approaches to setting up a certification process for GMES services:**
  - ◆ appropriate for different user segments (eg marine authorities, forestry agencies)
  - ◆ taking account of existing user bodies (eg EC technical working groups, technical advisory groups to international environments conventions, established international working groups ).
- ❑ **Regularly informing all GMES service providers on status of GMES standards, certification, results of quality audits, major recommendations from individual audits**

# Scope of EO Industry study

## □ Questions to answer

- ◆ To what extent can certification be set up to put industry on a more credible footing with downstream partners
- ◆ How can this certification be organised
- ◆ What should this certification address
- ◆ Who should be involved and what should this certification process be
- ◆ What are the costs of setting up this process
- ◆ Can we demonstrate the resulting benefits and do the benefits justify the costs

## □ Objectives to be achieved

- ◆ Define what is and is not covered by certification of EO products and services
- ◆ Elaborate a mechanism by which this certification could be put in place
- ◆ Identify suitably qualified and credible organisations to conduct the certification
- ◆ Assess costs and financing mechanisms
- ◆ Evaluate effectiveness of certification scheme and associated benefits and impact

# Approach for EOMD study

- ❑ Agree range of (non exclusive) options to address
- ❑ Collect feedback from EO service industry representatives and downstream partner representatives
- ❑ Determine approaches for certification, validation and assurance scheme to ensure identified issues are addressed
- ❑ Review with EO service industry Incorporate review comments into structuring of options
- ❑ Construct test version of certification/validation elements and operate this for evaluation period.
- ❑ Assess impact, costs and other issues and construct findings
- ❑ Construct road map for implementation of target certification and validation regime

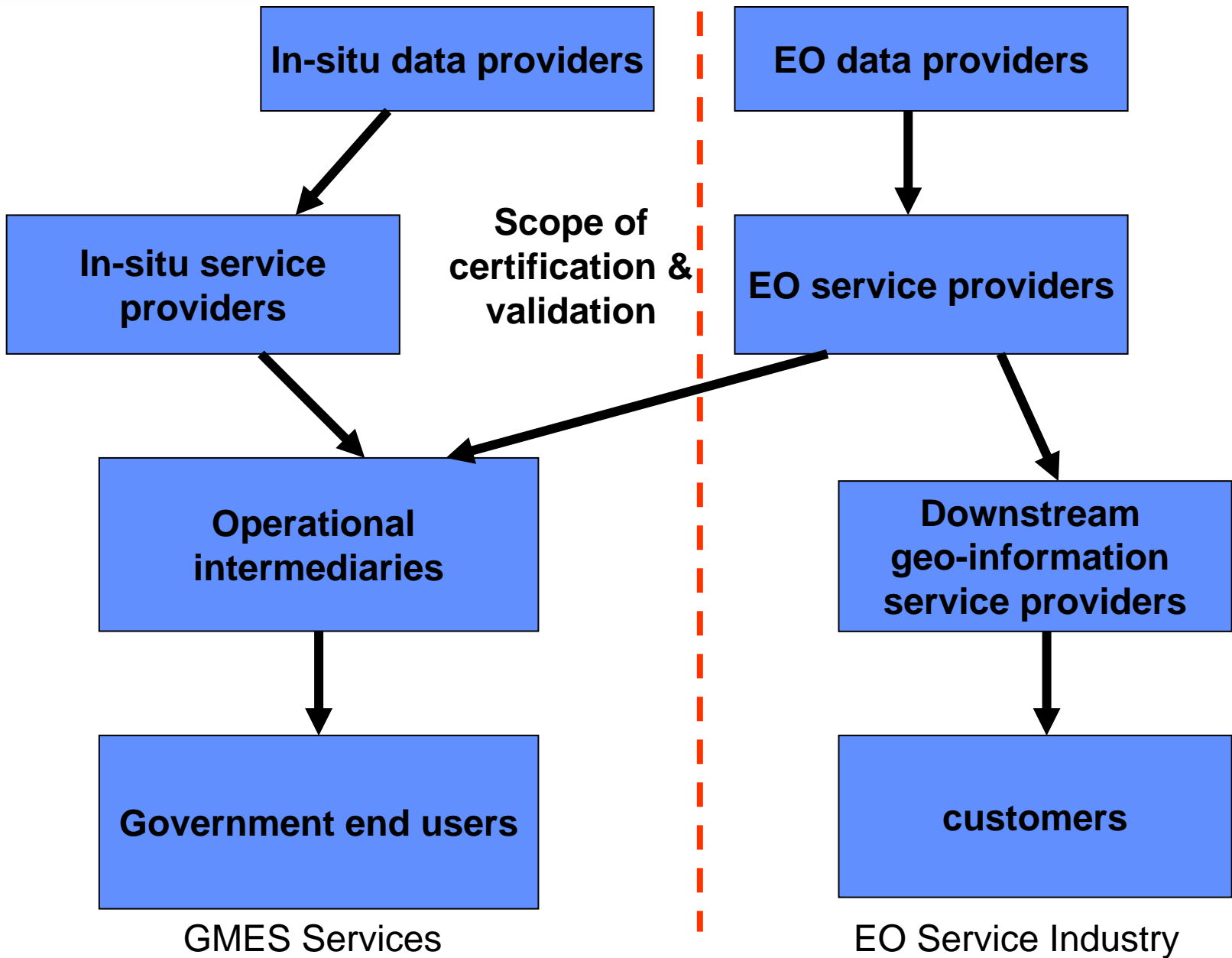
# Getting started

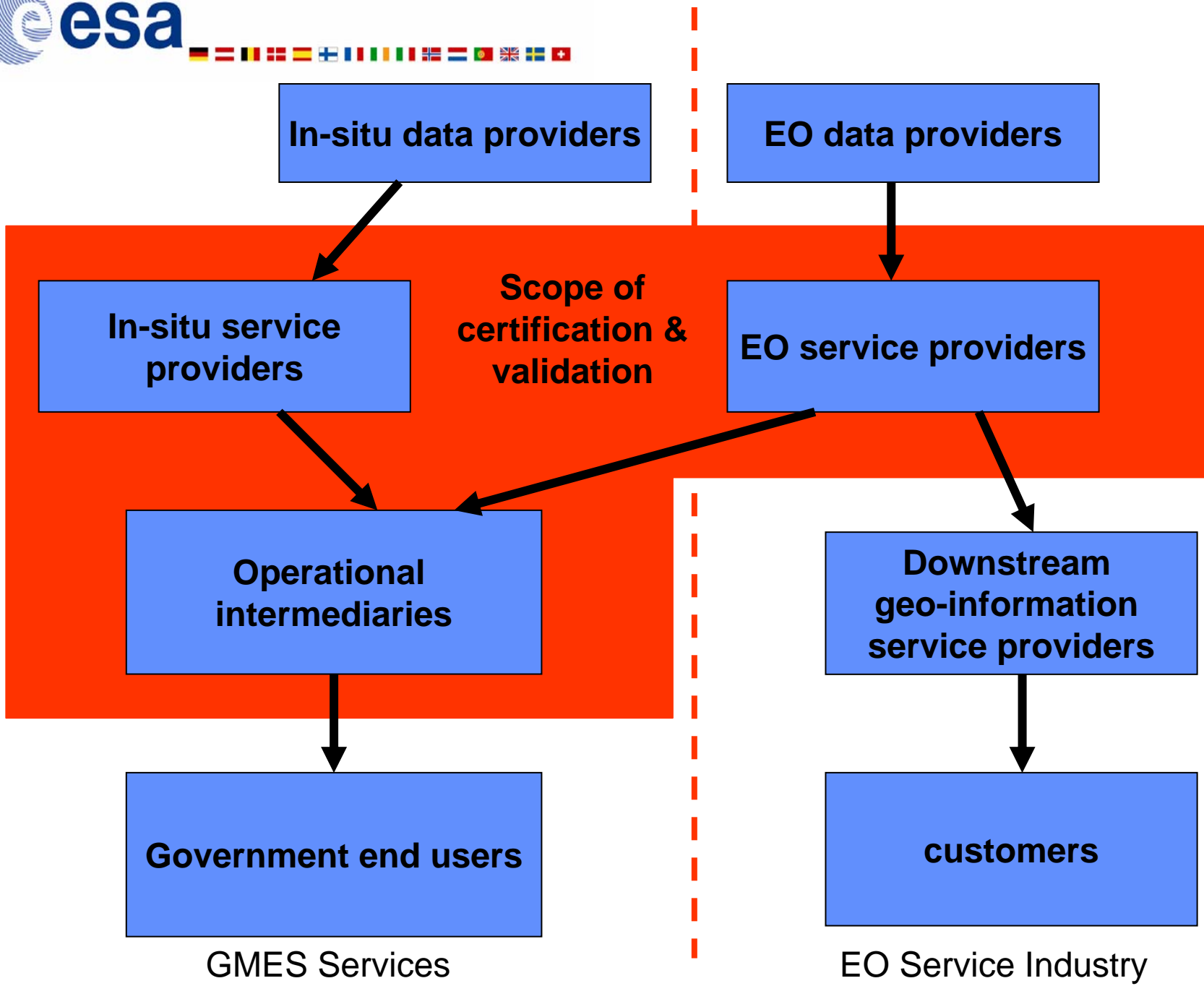
# Initial approach

- **Initiate EOMD Industry certification study**
  - ◆ Agree scope and approach with EO Service Industry
  - ◆ Conduct initial road tests
  - ◆ Elaborate road map for full implementation
- **Include preliminary work on GMES QB:**
  - ◆ Potential approaches
  - ◆ Potential partners
  - ◆ Scope of independent GMES QB (eg interaction with service network quality systems, audit approach, sectors addressed etc)

# Issues related to scope

- **Not just EO Service providers:**
  - ◆ Implications for institutional partners
  - ◆ Implications on non-EO service providers, modelling etc
- **Consequences for data providers:**
  - ◆ Requirements on EO data operators
  - ◆ Requirements on in-situ data operators
- **Continuous interaction between certification entity and service providers is critical for what the certification should be:**
  - ◆ No certification theory in a vacuum
  - ◆ Demonstrable positive impact on acceptance of EO and GMES services





## Objectives of current contract

- A. Define certification & validation regime that supports an improvement in perceived credibility & reliability of European EO Service Industry
- B. Extend certification & validation approach to cover quality control and compliance with user domain standards, working practices and legislative requirements for the portfolios provided by GMES Service Networks

# For Objective A – EO Service Industry

- ❑ Define the scope of the certification of EO products and services, including:
  - ◆ What activities within the information supply chain are addressed
  - ◆ Information products and services addressed and not addressed
  - ◆ Uses of the information that are addressed and the extent to which alternative uses are covered by the certification scheme
  - ◆ User domain standards covered
  - ◆ Type of validation and certification (probabilistic, guaranteed extent of accuracy, other)
- ❑ Elaborate a mechanism by which this certification could be put in place
- ❑ Identify suitably qualified and credible organisations to conduct the certification
- ❑ Assess costs and financing mechanisms
- ❑ Evaluate the effectiveness of the proposed certification scheme and assess associated benefits and impact

## For Objective B – GSE networks

- ❑ Characterise the user domain standards, working practices and legislative requirements to be addressed by a GMES Quality Bureau
- ❑ Define the scope of responsibility of a GMES Quality Bureau including:
  - ◆ Information products and services addressed and not addressed
  - ◆ Uses of the information that are addressed and the extent to which alternative uses are covered by the certification scheme
  - ◆ User domain standards, working practices and legislative requirements addressed and not addressed
  - ◆ Identification of key factors affecting compliance with user standards for certification and validation approaches implemented within each GMES service network
  - ◆ Definition of the interface between individual GMES Service Network Quality Control/Product Assurance systems and the GMES Quality Bureau
  - ◆ Identification of the type of validation and certification mechanisms to be used by the GMES Quality Bureau
- ❑ Elaborate a mechanism by which this certification could be put in place
- ❑ Identify suitably qualified and credible organisations to conduct the certification
- ❑ Assess costs and financing mechanisms
- ❑ Evaluate effectiveness of the proposed certification and assess associated benefits and impact

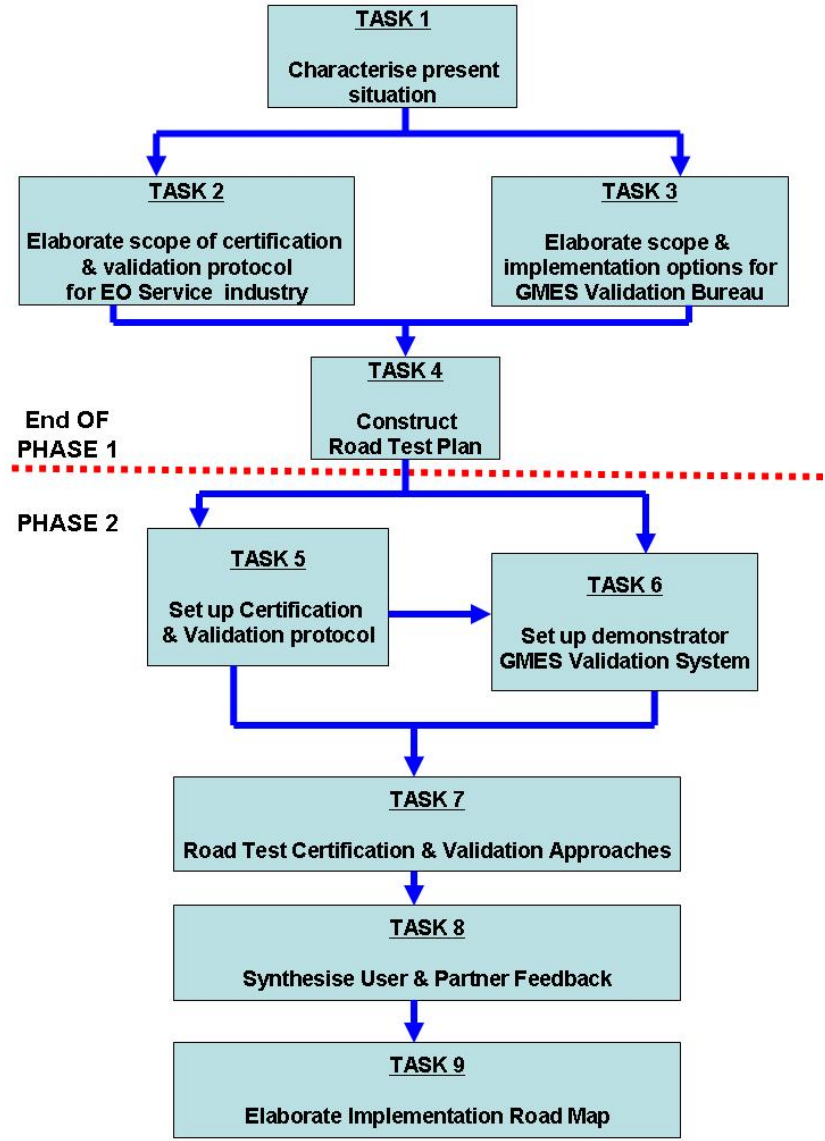
# Tasks to be Executed

- Task 1** Characterise present situation for certification & validation
- Task 2** Elaborate scope of EOSI certification and validation protocol
- Task 3** Identify priorities and define EOSI implementation approach
- Task 4** Elaborate scope & implementation options for GMES Quality Bureau
- Task 5** Organise review workshop & integrate findings
- Task 6** Set up prototype EOSI certification and validation protocol
- Task 7** Set up demonstrator for operation of the GMES Quality Bureau
- Task 8** Road test proposed certification & validation approaches
- Task 9** Synthesise findings from users and partners & construct implementation road map

# Tasks to be Executed

- Task 1** Characterise present situation for certification & validation
- Task 2** Elaborate scope of EOSI certification and validation protocol
- Task 3** Identify priorities and define EOSI implementation approach
- Task 4** Elaborate scope & implementation options for GMES Quality Bureau
- Task 5** Organise review workshop & integrate findings
- Task 6** Set up prototype EOSI certification and validation protocol
- Task 7** Set up demonstrator for operation of the GMES Quality Bureau
- Task 8** Road test proposed certification & validation approaches
- Task 9** Synthesise findings from users and partners & construct implementation road map

# Implementation logic



## Phasing and teaming

- ❑ Overall contract length is 18 months – expected start in January 2006
- ❑ Two phase approach - no work on phase 2 until findings of phase 1 are agreed and accepted
- ❑ Representation by key players critical to success of this activity:
  - ◆ EO Service providers
  - ◆ Downstream partners
  - ◆ GSE Network Participants
- ❑ Interaction with GSE Service Network Quality System also sensitive and must be managed
- ❑ This is only the initial investigation – much more will be required