GEO-V

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Report on GEOSS Common Infrastructure

Document 5

As accepted at GEO-V

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1   GEOSS COMMON INFRASTRUCTURE - HISTORY OVERVIEW

The process for launching the Initial Operating Capability (IOC) of the GEOSS Common Infrastructure (GCI) was agreed at the 12th Executive Committee meeting in March 2008. The process included the creation of a Task Force (named IOC TF), which would assess multiple aspects of the GCI during the IOC phase and make recommendations to the Executive Committee. In addition, the IOC TF will contribute to leveraging existing work in this area and ensuring that the GEOSS Common Infrastructure properly recognizes information systems that already exist.

The Secretariat then sent a letter in May 2008 to all providers of GCI components (Compusult, ESA, ESRI, FAO, USA/George Mason University, and IEEE) thanking them for their commitment and requesting their continued contribution to the IOC phase. At the same time, the Secretariat asked all four Committees to submit names for membership in the Task Force. The membership of the IOC TF was reviewed by the C4 on 18 June, and the Task force held its first teleconference on 1 July to agree on its terms of reference.

On 2 June the Secretariat sent a letter (which had been reviewed by the ADC) to the GEO community announcing the start of the IOC. This initial operations period will last for up to 12 months. The main purpose of the IOC is to give the GEO community an opportunity to use and comment on the potential functionalities of the GCI and to assess the several solutions for the GEO Web Portal and Clearinghouse, which are essential infrastructure for leveraging the registered GEOSS components being contributed by GEO Members and Participating Organizations.

The Secretariat also announced the IOC via the home page of the GEO web site. The home page also features links to the GEO Web Portals to encourage users to access and assess them. It also highlights the Components and Services Registry, the Standards and Interoperability Registry and the Best Practices Wiki to facilitate contributions and use by GEO Members and Participating Organizations. A User Feed Back page has been posted to collect remarks and recommendations from the user community; user responses will be collated by the Secretariat and made available to the IOC Task Force and to the GCI component providers. In addition, the Portal providers have been requested to provide any statistics they capture on Portal use and users.

2   IOC TF STATUS

The IOC TF is comprised of representatives from the four GEO Committees and the Co-Chairs of the C4, with the aim of ensuring a balanced representation of Members and Participating Organizations and a skills base from all GEO regions. It should be noted that the Architecture and Data Committee continues to be responsible for supervising ongoing tasks dealing with architectural issues related to the GEOSS Common Infrastructure.

The following is the schedule for the IOC TF:

1. Establish IOC Task Force: June 2008;

2. IOC kick-off: June 2008;

3. Draft Concept of Operations Plan: September & October 2008;

4. Report to the GEO-V Plenary: November 2008;

5. Draft Evaluation of GCI Components: through to March 2009;

6. Draft Recommendations for Long-term GCI Operations: through to April 2009;

7. Review IOC and define the final implementation framework: Summer 2009;

8. Full operation of the GCI to start as soon as possible after the review and to be formally adopted at GEO-VI.

Following discussions with the GEO Web Portal Providers, the IOC-TF has agreed on the following approach to taking forward the work with the three current Portal Providers:

1. There are weekly teleconferences involving the IOC TF, the Architecture Implementation Pilots leads, the Portal Providers and the GEO Secretariat;

2. The entry point to the GCI for the Web Interface user will be via the GEO website (www.earthobservations.org), from where the user may access any of the three GEO Web Portals;

3. The GCI will support multiple GEO Web Portals; and

4. A GEO Web Portal will provide access to all GEOSS resources, including all SBAs.

In addition, the IOC TF has offered to identify groups of experts for all 9 SBAs. Each GEO Web Portal Provider, in coordination with the other GEO Web Portal providers, will select at least three SBAs from the nine and provide expanded coverage of them. Experts identified by the IOC TF will support the providers in their respective selected SBAs. (This will ensure that, at a minimum, all 9 SBAs will be covered in this process.) In this way, the IOC TF expects that early progress can be made on fully exercising the capability of the GEOSS and the GEO Web Portals across all SBAs, whilst helping to demonstrate the development of applications and services linked to each of the SBAs.

The IOC TF fully recognises that each GEO Web Portal Provider will also work with additional SBAs beyond the three linked to the associated experts to ensure that all GEO Web Portals provide access to all GEOSS resources across all SBAs.

It should be noted that there was consensus at the Executive Committee that the Clearinghouse should be searchable by multiple portals. As a consequence, the Clearinghouse interfaces should remain fully accessible and based on the open standard interfaces and architecture principles given in the GEOSS 10-Year Implementation Plan and Reference Document. This specific aspect of the GCI will be addressed during the IOC.

3   ISSUES

The registration of components and services in the GEOSS Registries is the major outstanding issue. In September, the Secretariat sent a further letter to the GEO Community encouraging GEO Members and Participating Organisations to register components and services, as well as to evaluate the GCI components.

In parallel, the IOC home page on the GEO web site was redesigned, so that it regularly updates the number of GEOSS components and services that have been registered. It is imperative that the number of components and services registered be significantly increased, as this will assure sufficient content for stimulating recurring user interest and for testing the Clearinghouse and Portal solutions. The public visibility and outreach for the GCI and its operational capabilities must be broader and more pervasive.

There have been suggestions from the user community for simplifying and clarifying the registration and search process. Steps are being taken to improve this process by referring to GEOSS "resources", rather than requiring a user to differentiate between components and services. This process should also include the improved interoperability of the component/services registry and the standards and interoperability registry.

Other key issues to be addressed by the Task Force during the IOC phase include:

- long-term cost implications and possible related contractual requirements;

- systems operations and maintenance (hardware, telecommunications, and software);

- proprietary vs. open-source software impacts;

- the use of multiple Portals and Clearinghouses;

- access procedures, user interface conventions and user community requirements; and

- transition criteria and planning for cases where portal or segment providers may terminate their contributions to the GCI.

In addition, a set of criteria needs to be developed with regard to deciding when a Portal can be accepted as a "GEO Community Portal" and the criteria for differentiating a GEO Community Portal from the GEO Web Portal.

ANNEX 1

GEOSS Common Infrastructure (GCI)
Initial Operating Capability (IOC) Task Force

Terms of Reference

1   PURPOSE

The GEOSS Common Infrastructure (GCI) Initial Operating Capability (IOC) Task Force (hereafter referenced as "IOCTF") will support the Group on Earth Observation (GEO) in the coordination, implementation and sustainability of the GEOSS Common Infrastructure.

2   OBJECTIVES

The IOCTF is convened to report to the GEO Executive Committee in support of GEOSS:

- to define and recommend a Concept of Operations plan for the GCI components including aspects of operational requirements, responsibilities, and interaction,

- to evaluate the existing GCI components and their sustained operation in light of known and emerging provider and user requirements, reliability, suitability, sustainability, and quality of service, and

- to provide administrative recommendations regarding models of GCI operational solutions addressing sustainability, maintenance, enhancements, access control and security, and software licensing and ownership (intellectual property rights).

3   APPROACH AND FUNCTIONS

1. The IOCTF shall be composed of individuals recommended by the GEO Committees and the C4 chair, with administrative support provided by the GEO Secretariat. This will help encourage exchange of information between the Task Force, the Committees, and the GEO Tasks they support. [1]

2. Chairmanship or co-chairmanship of the IOCTF shall be decided by the Task Force in the initial meeting.

3. Tasking of specific research or investigations to sub-teams of individual experts will be made by the IOCTF to address identified issues at the appropriate level of detail and professional expertise.

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[1] [1] Regional representation may be addressed by:

(i) Co-opting particular individuals to the IOCTF;

and / or

(ii) Indentifying particular experts from given regions to participate in the process

4. Work will be conducted primarily using teleconference facilities and electronic mail, although occasional face-to-face meetings may be scheduled as needed– ideally to coincide with existing GEO activities.

5. Work milestones will be identified in the initial work sessions and tracked through delivery of reports and recommendations to the Executive Committee.

6. The IOCTF will provide status reports to the Executive Committee during their meetings as well as more detailed reporting in response to the task force objectives.

7. The period of performance of the IOCTF shall be one year, beginning 1 July 2008 and ending 30 June 2009. In the period immediately following the end of the performance period of the IOCTF and terminating at the GEO VI Plenary, the IOCTF will assist the Executive Committee in reporting to the GEO VI Plenary on the outcome of the GCI IOC phase.

8. If a member of the IOCTF believes he has a potential conflict of interest (CoI), then it is his sole responsibility to bring this to the attention of the other members of the IOCTF. The other members of the IOCTF should then monitor this potential CoI.

GEOSS Common Infrastructure (GCI)
Initial Operating Capability (IOC) Task Force
Work Plan

Three deliverables are currently foreseen, although updates to the Work Plan may be made as the work of the IOCTF progresses.

1   CONCEPT OF OPERATIONS PLAN

Building on the existing GEOSS Common Infrastructure (GCI) description and diagram as proposed in the *GEOSS Common Infrastructure Establishment Process* document [*website address to be inserted*], a high-level common operational view shall be developed. This will be prepared along with narrative descriptions of the participation of GEO service offerors, the general administrative workflow of the GCI, and interaction of end-users with GEOSS. This Concept of Operations Plan will help identify and demonstrate the logical interactions within the system-of-systems and their operational requirements or constraints. The documented perspective shall be from the enterprise perspective rather than the technical point of view and will complement the GEOSS Strategic Guidance document.

Proposed milestone: A draft document will be due by 21 September 2008.

2   EVALUATION OF GCI COMPONENTS

The actual solutions offered for the GCI will be evaluated against the logical design of the Concept of Operations Plan, documentation from the Architecture Implementation Pilot Phase I, Interoperability Process Pilot Project (IP3) results, nominated component information systems and their services, and user requirements from Communities of Practice and Societal Benefit Areas (SBAs). Evaluation will be in terms of capabilities and functionality defined by actual requirements by offered components and services for GCI service performance, quality, availability, scalability, sustainability, and suitability. The documentation and review will be conducted with input from and collaboration with the ongoing AIP Phase II activity that will be also testing and documenting the GCI based on additional SBA support areas and offered components and services. The deliverable will be a structured synopsis of requirements for each offered GCI solution instance with reference to the activity/component(s) source of the requirement or capability. The audience will be the architects and implementers of the GCI systems, with an overview suitable for managerial understanding.

Proposed milestone: A draft document will be due in March 2009.

3   RECOMMENDATIONS FOR LONG-TERM GCI OPERATIONS

In the context of all GCI operational component services and capabilities, document the alternatives and options to provide the highest level of capability for access to GEOSS resources. Key logistical items to be addressed by the IOCTF may include:

- Long-term cost implications of voluntary, contributed, or contracted operations for each/all components,

- Accountability and responsibility for operations by service provider

- Presenting issues and alternatives for GCI service operations, maintenance (hardware/software and telecom), and extensibility

- Software ownership and intellectual property issues regarding long-term operations (Proprietary versus open source concerns)

- Operation and maintenance of single versus multiple GCI service instances (e.g. Web portals, Clearinghouses, and Registries)

- Access control and security policies on GCI services

- User interface policies in support of human and software clients, SBAs, communities of practice, and the general GEO community

- Process for incorporating user community requirements into GCI

- Other issues when and if appropriate

Deliverable will be a document with alternatives, discussion, and references to support understanding of potential budgetary and operational commitments by the GEO Executive Committee in long-term operations of the Common GEOSS Infrastructure.

Proposed milestone: A draft document will be due in April 2009.