

Committee on Earth Observation Satellites
23rd Plenary Meeting
Phuket, Thailand.

Martha Maiden
WGISS Chair / NASA
CEOS ref: ?
Document No. ?
Agenda item: WG Report
4 November, 2009

WGISS 5-Year Plan

SUMMARY AND PURPOSE

This document details the objectives, structure, representatives, and working procedures of the CEOS Working Group on Information Systems and Services (WGISS). This version has undergone a major revision in 2009 to greatly simplify the content and to reflect the new role CEOS Plenary has given Working Groups. The changes are consistent with the existing Terms of References for WGISS.

The main changes are:

- Simplification of the document structure – merged Themes into Workplan.
- Re-allocated Interest Groups and Projects to Subgroups to better reflect related interests.
- Revised names of Subgroups to better reflect component Interest Groups and Projects.
- New and proposed Interest Groups & Projects referenced.
- Added Section to present Views and Priorities of Current Chair.

ACTION PROPOSED

The 23rd CEOS Plenary is invited to note and accept the information contained in the revised WGISS 5-Year Plan.

Blank page.

WGISS DOCUMENT

CEOS Working Group on Information Systems and Services

5-Year Plan (Draft)



WGISS 26, Boulder, USA. September 2008

Prepared by: WGISS Members

Issue Date: October 2009

Version: 12.0 (draft)

List of Contents

WGISS 5-Year Plan	i
List of Contents	2
Executive summary	3
1. Introduction	5
1.1 General	5
1.2 Overview and contents	5
1.3 References	6
2. Aims, Objectives & Scope of WGISS	7
2.1 CEOS Aims	7
2.2 WGISS Objectives	7
2.3 Scope	8
3. WGISS Work Plan	10
3.1 Support for CEOS Plenary and GEOSS	10
3.2 Data and information management	10
3.3 User services and Applications Support	10
3.4 Information Exchange	11
3.4.1 WGISS Information Services	11
3.4.2 Liaison activities	11
3.4.3 Promotion	12
4. WGISS Organization	13
4.1 Organization Overview	13
4.2 WGISS Roles	14
4.3 WGISS Subgroups	15
4.4 Technology Subgroup	15
4.5 Applications Subgroup	16
4.6 Interest Group and Project Procedures	17
5. Management	19
5.1 General	19
5.2 WGISS Exec	19
5.3 WGISS Meetings	19
5.4 Subgroup Meetings	19
5.6 Reporting	20
5.7 Resourcing	20
5.8 WGISS Document Approval Process	21
5.9 Nomination of WGISS Officials	21
6. Views and Priorities of Current Chair	23
7. Acronyms and abbreviations	24
Annex A - WGISS Terms of Reference	25
Annex B - WGISS Chair, Vice-Chair, and User Vice-Chairs Terms of References	27
Annex B.1 WGISS Chair Terms of Reference	28
Annex B.2 WGISS Vice-Chair Terms of Reference	29
Annex B.3 WGISS User Vice-Chair Terms of Reference	29
Annex C - Subgroup terms of reference	30
Annex D - Subgroup Chair/Vice-Chair Terms of Reference	31
Annex E - Interest Group/Project Leader Terms of Reference	31
Annex F - List of Current and Completed Interest Groups and Projects	32
Annex G - Directory of Office Holders & WGISS Representatives	34
G.1 Office holders	34
G.2 Representative List	35

Executive summary

This document presents the five-year plan of the Working Group on Information Systems and Services (WGISS) of the Committee on Earth Observation Satellites (CEOS). It provides a statement of the aims and objectives of the working group and gives an overview of the activities which WGISS undertakes in support of the Earth observation satellite missions and the related projects of CEOS members and associates. In particular, the WGISS activities include support for the CEOS Implementation Plan for Space-based Observations for GEOSS. The document will provide a current and visible record for communicating the activities of the working group, both within and beyond the CEOS community.

The high level goals for WGISS (taken from its Terms of Reference) are:

- Enable Earth observation data and information best practices and services to be more accessible and usable to data providers and data users world-wide through international coordination;
- Enhance the complementarity, interoperability and standardization of Earth observation data and information management and services with other types of geospatial data such as in-situ data;
- Foster easier exchange of Earth observation and related data and information to meet the requirements of users and data providers; and
- Foster the development of information best practices and services that use spaceborne Earth observation data.

To achieve these goals and other objectives identified in its Terms of Reference, WGISS has identified four main themes for its activities:

- Support for CEOS Plenary and GEOSS
- Data and Information Management
- User Services and Applications Support
- Information Exchange (including Information Services, Liaison and Promotion).

Much of the detailed technical work of WGISS is carried out Interest Groups and Projects managed under a Subgroup structure. There are currently two Subgroups:

- Technology Subgroup: with an emphasis on internal management of EO data, the creation and improvement of information systems and information technologies, and the delivery of interoperable services.
- Applications Subgroup: with an emphasis on the support of specific applications, working with outside organizations to understand their requirements and help them exploit the tools and services available through WGISS and its members and associates.

The Interest Groups aim to foster information exchange, discuss best practice and develop ideas for prototyping and demonstrations. Projects are more targeted activities with specific goals and a schedule for delivery.

The Plan also describes the WGISS management process, including the schedule for its meetings, its reporting mechanisms, the WGISS document approval process and the process for the nomination of WGISS officials.

Blank page.

WGISS Five-Year Plan V12.0 (Draft)

1. Introduction

1.1 General

This document presents the five-year plan of the Working Group on Information Systems and Services (WGISS) of the Committee on Earth Observation Satellites (CEOS) [1]. It provides a statement of the aims and objectives of the working group and gives an overview of the activities which WGISS undertakes in support of the Earth observation satellite missions and the related projects of CEOS members and associates.

New activities and initiatives occur regularly in the Earth remote sensing community, and both WGISS and its parent organization, CEOS, have extremely flexible structures which allow for rapid response. In particular, WGISS wishes to support GEO [2] and, in particular, the CEOS Implementation Plan for Space Based Observations for GEOSS [3]. Direct support to GEO Tasks [4] is also provided when possible.

The WGISS Five Year Plan will be updated annually to incorporate new activities and reflect changes to personnel, with a more comprehensive review every two years to correspond with the change of WGISS Chair. The document will provide a current and visible record for communicating the activities of the working group, both within and beyond the CEOS community. WGISS members thus consider this plan to be a *living document*.

1.2 Overview and contents

On the basis of the Mission Statement contained in the WGISS Terms of Reference (ToR) (Annex A), Section 2 of the document states the aims, objectives and scope for WGISS.

The general workplan developed to achieve these aims and objectives is outlined in section 3.

To ensure that work proceeds and is reported with maximum efficiency, an organizational structure has been developed. This is described in Section 4 followed by a description of the management structures and procedures required for WGISS to monitor and control its activities.

The final section provides a statement of the current Chair reflecting their view and priorities on WGISS activities.

The annexes contain:

- A - Terms of Reference for WGISS
- B - Terms of References for the WGISS Chair, Vice-Chair and User Vice-Chairs
- C - Terms of Reference for the Subgroups
- D - Terms of Reference for the Subgroup Chairs/Vice-Chairs
- E - Terms of Reference for Interest Group and Project Leaders
- F - List of Current and Completed Projects
- G - Directory of Office Holders and WGISS Representatives

A list of the completed and current Interest Groups & Project are given in Annex F and further details are contained in the companion *Interest Group and Project Register* document (available from the WGISS website [7]).

1.3 References

1. CEOS Website: <http://www.ceos.org/>
2. GEO Website: <http://www.earthobservations.org/>
3. CEOS Implementation Plan for Space Based Observations for GEOSS. 2007.
http://www.ceos.org/images/PDFs/ceos_ipdraft_nov2007.pdf
4. GEO Workplan 2009-2011:
http://www.earthobservations.org/documents/work%20plan/geo_wp0911_rev1_090113.pdf
5. LSI Portal: <http://wgiss.ceos.org/lcip/lpic.shtml>
6. CEOP: <http://www.ceop.net/>
7. WGISS website: <http://wgiss.ceos.org/>
8. WGEdu website: http://www.acrors.ait.ac.th/ceos/home1_e.html
9. WGCV website: <http://wgcv.ceos.org/>

2. Aims, Objectives & Scope of WGISS

This section outlines the overall aims and objectives of WGISS and describes the scope for its work, expanding upon the Terms of Reference defined in Annex A.

2.1 CEOS Aims

International investment in Earth Observation (EO) satellite platforms and instruments and the associated ground segments is substantial. Since its establishment in 1984, CEOS has provided a key role for coordination of these investments to ensure full realization of this truly international activity, through its primary objectives:

- to optimize the benefits of space-borne Earth observations through cooperation of its members in mission planning and in the development of compatible data products, formats, services, applications, and policies;
- to aid both its members and the international user community by serving as the focal point for international coordination of space-related Earth observation activities, including those related to global change;
- to exchange policy and technical information to encourage complementarity and compatibility among space-borne Earth observation systems currently in service or development, and the data received from them; issues of common interest across the spectrum of Earth observation satellite missions will be addressed.

Dozens of EO missions have been launched since the establishment of CEOS and many more are planned for launch in the coming years. Coordination in planning and policy for these missions is undertaken at the highest level within CEOS by the Plenary. In addition, CEOS has undertaken the development of a CEOS Implementation Plan [3] to address the space component of GEOSS [2].

2.2 WGISS Objectives

(repeated from the WGISS ToR (Annex A))

The overall objective of WGISS is to facilitate data and information management and services for users and data providers in dealing with global, regional and local issues. It will address in particular the description, access, retrieval, archiving, long-term preservation, utilization, and maintenance of spaceborne Earth observation data and supporting ancillary and auxiliary data and information, enabling improved operability and interconnectivity of information systems and services.

Specific goals are to:

- Enable Earth observation data and information best practices and services to be more accessible and usable to data providers and data users world-wide through international coordination;
- Enhance the complementarity, interoperability and standardization of Earth observation data and information management and services with other types of geospatial data such

as in-situ data;

- Foster easier exchange of Earth observation and related data and information to meet the requirements of users and data providers; and
- Foster the development of information best practices and services that use spaceborne Earth observation data.

To achieve these objectives and goals, WGISS will:

1. Synthesize and respond to the needs of users and data providers internationally. WGISS will in particular be responsive to the requirements of the Group on Earth Observation (GEO) and to this end will maintain regular contact with the Chair of CEOS SIT (Strategic Implementation Team) who has the overall responsibility for the day to day contact with GEO and its subsidiary committees and secretariat as delegated by the CEOS Chair.
2. Foster global interconnectivity and interoperability of Earth observation and related data and information systems and services.
3. Identify, influence and recommend best practices and standards for effective data interuse.
4. Support improvements in the quality, reliability and preservation of data, information and supporting systems and services.
5. Monitor and investigate developments of new technologies and encourage their use as appropriate.
6. Develop agreement on common terminology.
7. Foster ongoing effective communications among CEOS agencies, Working Groups and other organizations such as ISO, ISPRS, OGC, CCSDS, ICSU and GSDI to facilitate cooperation and avoid unnecessary duplication of effort.

2.3 Scope

The scope of WGISS is to provide a framework for addressing the needs of both data managers and service providers to better serve the users. As such, WGISS addresses all activities related to the capture, description, processing, access, retrieval, utilization, maintenance, archiving and exchange of space borne Earth Observation data and supporting ancillary data and information, enabling improved interoperability and interconnectivity of Earth observation information systems and services to its user communities, and combining space borne EO data with in-situ data.

To maximize the impact and benefit of WGISS activities, the group will coordinate with other CEOS groups, non-CEOS agencies and organizations, including governmental and non-governmental organizations that have interests, resources and networks supporting EO data development and exchange. This includes support for relevant tasks related to GEO/GEOSS and other pertinent organizations. This broad scope is intended to foster the close interdisciplinary coordination, and the focus and integration, which are necessary for WGISS to act as a forum

that is capable of implementing practical solutions. This type of coordination and interaction is illustrated by the WGISS Land Surface Imaging (LSI) Interest Group and Portal Project conducted at in response to the needs of the LSI Constellation Study Team [5].

The interconnectivity and interoperability of services are key factors in achieving WGISS objectives. WGISS activities will emphasize international coordination amongst CEOS and other relevant agencies in these areas to ensure the provision of accessible Earth observation services to data providers and data users worldwide.

WGISS will provide a forum for worldwide cooperation and management of compatibility of protocols and interfaces, in which technical and administrative issues can be addressed, and where critical interactions between technical implementers can take place.

3. WGISS Work Plan

WGISS is a "best-efforts" organization with no central funding. The emphasis of the work plan is therefore dependent upon defining practical and realistic steps that can be achieved with the resources made available by its members and associates.

Based on the aims and objectives for WGISS, the following 4 main themes have been identified as providing an overall framework for WGISS activities.

3.1 Support for CEOS Plenary and GEOSS

WGISS takes its strategic direction from the CEOS Plenary and the CEOS Strategic Implementation Team (SIT). In recent years, this direction has been towards providing support for the execution of GEO Tasks [4] in support of the development of the Global Earth Observation System of System (GEOSS) [2]. This support has taken the form of support to CEOS for the implementation of the CEOS Implementation Plan Space Based Observations for GEOSS [3]; or more directly in support of specific Geo Tasks [4].

WGISS reports to and obtains feedback on WGISS endeavours from the CEOS Plenary. It endeavours to help shape the work of WGISS towards meeting CEOS Plenary, SIT and Agency requirements.

3.2 Data and information management

WGISS members have a great deal of experience in data and information management issues. WGISS exploits this knowledge for the benefit of all by producing recommendations and guidelines (e.g. the CEOS Interoperability handbook) concerned with all aspects of data and information management. The scope includes the acquisition of data; archive maintenance and purging (utilizing objective appraisal methods); the appropriate use of standards, the auxiliary data and procedures used in product generation; the use of compatible data formats; ensuring data interoperability; the quality aspects of service provision; the use of standard software tools and the use of agreed terminology.

The continuing increase in the possible sources of EO data and the extensive need for interoperability for data from different sources and origins emphasizes further the need for harmony in this aspect of EO. Hence a major objective is to facilitate the use and interoperability of data without complications resulting from its form or origin. This interoperability of data can facilitate the generation of global composites of data from different sources, prototyped by WGISS in collaboration with international scientific programs. Examples include the WGISS activity in support of the Coordinated Energy and Water Cycle Observations Project (CEOP) within GEWEX [6].

3.3 User services and Applications Support

WGISS coordinates the provision of a range of global services and support for EO applications.

WGISS pursues the development of global services for users of Earth observation and related non-satellite data, through coordination of infrastructure development and encouraging the development of services based on international standards. The wider utilization of EO data is supported through:

- wider and easier access for users, assisting users to locate and utilize data and to collaborate with other users;
- coordination in the provision of distributed capabilities to users (e.g. for computing, data search, data caching and temporary storage, and cooperative tools);
- interoperability of user services such as guide, directory, inventory, order, browse;
- support, as appropriate, for GEOSS activities;

Agencies continue to develop their own data and information systems, with particular features and functions determined by their particular needs and schedule. WGISS aims to facilitate the provision of coordinated access to all services available on all systems, providing the user with a seamless global view of all resources that are available for the application in question.

3.4 Information Exchange

An important aspect of the WGISS activities is to ensure that the information it generates is made easily available to interested parties; and to ensure that it receives relevant information from related organisations in a timely and efficient manner. WGISS also needs to ensure that its activities are adequately promoted, not least to its own organisations.

To address these issues, WGISS has established 1) WGISS Information Services, 2) liaisons (points of contact) with related organisations and 3) promotional activities. The following sections provide more detail.

3.4.1 WGISS Information Services

WGISS manages and populates a website [7] dedicated to storing, and providing access to information on all past and current WGISS activities. It contains information on how WGISS is organised and provides access to all WGISS produced documents including most presentations given at WGISS meetings (starting with WGISS 22).

WGISS also provides infrastructure and information services to assist with CEOS internal organization. It provides the information resource for anyone to find out more about CEOS, its activities and its members and associates.

3.4.2 Liaison activities

As the work of WGISS becomes more outward looking collaborative links with organizations working in related fields becomes ever more important.

Organisations of particular interest include:

- Consultative Committee for Space Data Systems (CCSDS) (part of ISO TC20/SC13).
- Open Geospatial Consortium (OGC).
- International Society for Photogrammetry and Remote Sensing (ISPRS).
- International Standards Organization (ISO)

- International Council on Scientific Unions (ICSU)
- Committee on Data (ICSU/CODATA)
- GSDI

Points of contact within WGISS for each of these organisations have been identified and the liaison activities of these PoCs includes reporting on recent developments at WGISS meetings; and, if necessary, attending meetings of the liaison organizations to report on WGISS activities to glean information on the latest developments.

3.4.3 Promotion

WGISS aims to ensure that the standards and initiatives recommended by WGISS are employed by the EO community. To this end, it reports on its achievements to the CEOS Plenary and through CEOS publications including annual reports, yearbooks, list servers, and web sites.

The objective of promotion is also to provide an integrating function, allowing the achievements of the various objectives to be presented in context, thus providing a system view of WGISS recommendations and guidelines for Earth Observation.

To increase the impact and benefit of WGISS activities, promotion extends to non-CEOS countries and organizations, non-governmental organizations, commercial enterprises, and data users and providers in developing countries.

WGISS works to promote its activities to a wide audience through:

- 1) the production and distribution of publicity material,
- 2) production and presentation of papers at conferences, seminars and workshops,
- 3) the creation of highly visible demonstrations projects in support of, for example, GEO Tasks and presentations to CEOS Plenary.

WGISS also recognises the need to promote the output of its work within its own agencies and organisations in order to ensure the adoption of results and recommendations; and to ensure continued funding WGISS activities.

WGISS also works with the CEOS Working group on Education and Capacity Building (WG-Edu) [8] to assist in education and capacity building activities.

4. WGISS Organization

4.1 Organization Overview

The following figure illustrates the current structure of WGISS and its associated Subgroups.

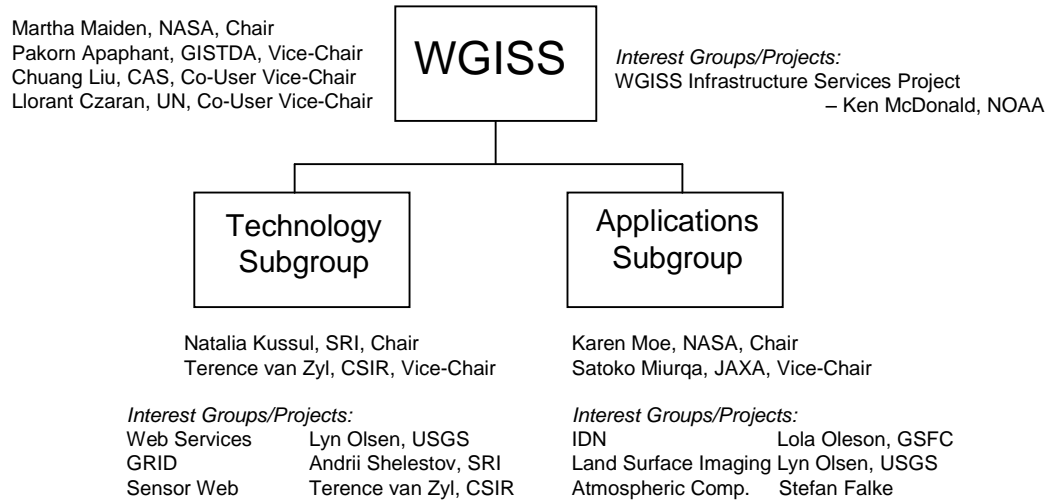


Figure 4-1. WGISS organization

WGISS delegates will tend to focus on strategic and monitoring issues while most of the detailed technical work of WGISS is carried out within specific Interest Groups and Projects (IG/P). Most of the Interest Groups and Projects operate under, and report to, the WGISS Subgroups, but there can be WGISS-level Interest Groups or Projects. These are activities that are broad enough, or of sufficient interest, to merit tracking at the Working Group level. In all other ways, they operate in the same manner as IG/P under the Subgroups.

Projects may be set up and managed under the auspices of Interest Group or may exist in their own right.

Terms of Reference for the Subgroups are provided in Annex D; and IG/P processes are described below in Section 4.5.

This structure has been designed to ensure that WGISS activities are coordinated in line with the directions and requirements of the Plenary. The structure facilitates "top-down" strategic planning and coordination as well as "bottom-up" dissemination of project results and discussion of future projects and requirements.

4.2 WGISS Roles

WGISS receives strategic direction and specific requests for work from CEOS Plenary. Much of this input concerns providing support for the implementation of the CEOS Implementation Plan for GEOSS [3]. In return, WGISS provides reports on progress in achieving its objectives and also provides recommendations to CEOS Plenary to help guide them in their strategic decision making.

WGISS also receives request for information and support from its liaison and other organisations, including requests to support the implementation of GEO Tasks. In some cases, WGISS has been requested to lead certain GEO Tasks.

WGISS meetings focus on agreeing on how WGISS should respond to the various tasking and requests for support, balancing this call on its resources with the need to co-ordinate the activities of its own member agencies and organisations. This might include providing recommendations to the Subgroups to create new Interest Groups or projects. The WGISS meetings also carry out monitoring, tracking, documenting, reviewing and providing feedback to ongoing Subgroup activities.

Agency reports on their activities are also presented to help assist with overall WGISS co-ordination.

WGISS is coordinated under the direction of a Chair supported by a Secretariat provided by the Chair's organization. The Chair is responsible for organizing meetings of the WGISS, producing minutes or notes of those meetings, monitoring actions and reporting to CEOS Plenary and to the CEOS SIT.

It is the responsibility of the Chair to take account of the direction and requirements of the Plenary and SIT, to introduce appropriate external partner agendas (e.g. CEOS Virtual Constellation Study Teams) relevant to WGISS work, to hear from Subgroup Chairs the recommendations of technical strategic direction and progress of technical implementations and demonstrations, to plan and coordinate appropriately, and to provide "top-down" guidance of WGISS activities. The Chair is supported by a Vice-Chair and one or more User Vice-Chairs. The Vice-Chair becomes the Chair after two years.

The Vice-Chair role is to assess the extent to which provider agency needs are being addressed by WGISS and the extent to which their requirements are being met. The WGISS Vice-Chair will serve in an ad-hoc WGISS membership role, seeking to involve all CEOS members and associates in WGISS activities. The Vice-Chair will also coordinate the establishment of future WGISS meetings and serve as Chair at functions that the WGISS Chair is unable to attend.

The Vice-Chair also takes on the role of internal coordinator for WGISS GEO activities.

The role of the User Vice-Chairs is to assess the extent to which user needs are being addressed by WGISS and the extent to which their requirements are being met. This includes reporting the findings to WGISS, and this contributes to the Chair report to the Plenary. The WGISS User Vice-Chairs monitor, coordinate, and report to the WGISS Chair and Vice-Chair on the overall effectiveness of the WGISS application-orientated Projects.

The scope of WGISS activities includes convening workshops, authoring papers, developing information technology infrastructure that increases the interconnectivity and reuse of key

information software and services in use across the broad spectrum of EO communities. This can include the co-ordination of the development of global dataset products.

Current external organizations with specific overlapping interests to WGISS include GEO, the International Society for Photogrammetry and Remote Sensing (ISPRS), the International Geoscience and Remote Sensing Symposium (IGARSS), International Council for Science (ICSU), and the Open geospatial Consortium.

List of WGISS-level Interest Groups & Projects

- WGISS Infrastructure Services Project Ken McDonald, NOAA

4.3 WGISS Subgroups

Subgroups (SGs) are established to coordinate and report the specialized work of WGISS performed by related Interest Groups and Projects. Currently there are two such Subgroups. Each Subgroup is led by a Chair, appointed by WGISS for a period of 2 years, based on nominations from the Subgroups. The Subgroup Chair is supported by a Subgroup Vice-Chair, who will normally take on the role of Subgroup Chair when that term of office comes to an end.

The Subgroup Chairs usually change in alternate years in order to provide some continuity to the overall management.

4.4 Technology Subgroup

The emphasis in the Technology Subgroup is on internal management of EO data, the creation and improvement of information systems and information technologies, and the delivery of interoperable services. The interests of the Subgroup span the full range of the information processing chain from the initial ingestion of satellite data into archives through to the incorporation of derived information into end-user applications. The creation and standardization of metadata to support the discovery of, access to, and use and reuse of EO data is an important aspect of this work.

The primary topical areas include:

Data and Information Management

Issues addressed relate to the management of archives, data formats, auxiliary data requirements, and data packaging. The CEOS Superstructure Format was an early attempt to standardize the format of EO data products. The more recent emphasis is towards exploiting the Internet related developments in markup languages (such as XML) to describe data in a machine-readable way, rather than attempt to squeeze data into a pre-defined format. Defining the semantic content of data products is also a focus of consideration.

Close contact is maintained with the activities of the Consultative Committee on Space Data Systems (CCSDS) Missions Operations and Information Management Services (MOIMS) Area (concerned with information interchange over space and time). CCSDS is a part of the International Standards Organization (ISO) and WGISS is able to both influence their recommendations and exploit the resulting international standards.

Interoperable Information Services

This aspect of WGISS activity is primarily internet related. Specific issues include data discovery, inventory search, data retrieval, data processing and visualization. The scope includes information exchange protocols in addition to metadata standards and formatting.

Close contact is maintained with ISO TC211 (Geographic Information) and the Open Geospatial Consortium (OGC) who work on the test-bed prototype activities to help formulate the requirements for standards. Again WGISS is able to participate in the prototyping activities and influence the standards making process.

Emerging Data Services Technologies

WGISS constantly follows and evaluates new technologies that may prove applicable to EO endeavours. Grid technologies, web services, semantic web, sensor web and ontologies are a few of the emerging technologies that could prove useful to CEOS EO needs.

List of Interest Groups and Projects

Current:

- Web Services Interest Group Lyn Olsen, USGS
- GRID Interest Group Andrii Shelestov, SRI Ukraine
includes GRID Flood Monitoring Project
- Sensor Web Interest Group Terence vanZyl, CSIR
includes Sensor Web Flood Project

Under discussion:

- Data, metadata and product harmonisation Ken McDonald, NOAA
- Data Management Interest Group Lyn Olsen, USGS

4.5 Applications Subgroup

The emphasis in the Applications Subgroup is on the support of specific applications, working with outside organizations to understand their requirements and help them exploit the tools and services available through WGISS and its members and associates.

The various individual demonstrations and prototypes are created and monitored under the Applications Subgroup. Other projects with a strong external interaction are also included in this Subgroup.

List of Interest Groups and Projects

Current:

- International Directory Network (IDN) Lola Olsen, GSFC
- Land Surface Imaging (LSI) Interest G Lyn Oleson, USGS

with LSI Constellation Portal project

- Atmospheric Composition Interest Group Stefan Falke
- Global Datasets Interest Group Lorant Czaran

includes Global DEM Interoperability GEO Task support activity

Proposed:

- Sensor Web Modelling Application? Terence van Zyl
- Disaster Management Interest Group Lorant Czaran

4.6 Interest Group and Project Procedures

To ensure that the purpose of a WGISS Interest Group or Project (IG/P) is clear, that the work being carried out in each is adequately monitored and the results widely disseminated, a series of simple procedures are used:

- proposal initiated through completing a profile template;
- subsequent adoption to be agreed at WGISS meeting;
- set-up and documentation, including an Interest Group or Project plan as needed;
- reporting and on-going review;
- completion review with a final report and updated profile.

These procedures apply to all WGISS IG/P whether reporting directly to the Working Group or reporting to the relevant Subgroup. Each WGISS IG/P Profile will include a description of how the IG/P aligns with the WGISS vision and will advance WGISS objectives as well as the strategy for success.

Proposal and adoption: Before an IG/P is undertaken, it will be presented to WGISS for adoption. When adopted, the appropriate Subgroup will then take responsibility for the set-up and initiation of the activity. A profile template should be completed which outlines the IG/P objectives, a work plan schedule, goals, Project champion for Projects, details of participants and their roles, a list of deliverables, and a rough outline of the required resources. The template will be submitted through the relevant SG Chair who will make the recommendation for creation to WGISS.

If an IG/P is reviewed and is not immediately adopted it will be placed on a candidate list, subject to further development and refinement before subsequent review. All IG/P on the candidate list will be reviewed at each WGISS meeting and adopted for execution, removed or carried forward to the next meeting as appropriate.

The contents of the WGISS home page, the Interest Group/Project Register, the templates, Project plans, if needed, and the Subgroup home pages will be updated as agreed at WGISS meetings and any addition, removal or changes of the status of IG/P will be recorded in the WGISS meeting notes.

Set-up: After adoption of an IG/P as current, the IG/P leader will initiate the various

communication and information systems available in support of the IG/P (e.g. register the IG/P description with the Subgroup home pages, establish e-mail distribution lists, etc.). Each IG/P should make best use of the support available from the information services established by WGISS to assist IG/P management and communications. A Project Plan is required to fully document the expected work of Projects.

Reporting and on-going review: IG/P leaders will report on the progress of IG/P at each Subgroup meeting, and the status and direction of each will be reviewed, and any adjustments that are necessary will be agreed upon. It is the responsibility of the relevant SG Chair (or support Project leader for WGISS level projects) to ensure that templates of IG/Ps are updated on the basis of the status agreed at SG meetings, and that updated descriptions are incorporated into the IG/P Register as appropriate. IG/P Profiles will be reviewed at least annually.

Completion review: Upon completion of each IG/P or major milestone, the IG/P leader will produce a short written assessment summarizing the activity against the original plan, its success against the objective, and whether there are any lessons to be learned for the future. These reviews may be appended to the WGISS report to the Plenary and will be made available on the WGISS Web site.

Closure: Upon the termination of an IG/P due to completing its work, the Profile will be updated to include achievements and the location of any material generated during the course of its work.

5. Management

5.1 General

All activities of the WGISS will be aimed at achieving the objectives defined in this WGISS Five Year Plan. Work at all levels will be the subject of an appropriate plan defining the work to be done and the outputs expected, and the progress of all work will be monitored by reporting against the plan.

5.2 WGISS Exec

General WGISS management issues will be addressed by an executive committee (WGISS Exec) made up of the WGISS Chair and Secretariat, the 2 Vice Chairs, and the Chairs and Vice-Chairs of the two Subgroups. The WGISS Exec hold regular telecons (approximately monthly) to facilitate the smooth operation of WGISS.

5.3 WGISS Meetings

The WGISS currently meet twice per year. WGISS meetings may collocate, but not meet in parallel with, joint Subgroup meetings. WGISS members are defined as representatives from CEOS agencies and associates. Occasionally, typically once every two years or so, WGISS and its Subgroups meet jointly with the CEOS Working group on Calibration and validation (WGCV) [9].

SG Chairs will report on Interest Group recommendations and on the progression of Projects against schedules; and any other highlights. WGISS will also receive reports from members and associates to maintain awareness of relevant developments within their organizations.

5.4 Subgroup Meetings

Subgroups will normally meet twice per year, usually jointly with WGISS meetings. The primary purpose of all Subgroup meetings is to coordinate and expedite the work of the SG and its Interest Groups and Projects. SG Chairs will produce high-level summaries of any major developments or accomplishments reported at their meetings, develop recommendations based on the implications for next steps that this body of work strategically calls for, and will report to WGISS and respond to direction from WGISS.

Subgroups maintain their sections of the Interest Group/Project Register, proposing revisions as needed, taking into account direction from WGISS and the CEOS Plenary and SIT. Subgroup Chairs may organize further meetings as required. Subgroups may identify new activities as candidate Interest Groups/Projects for consideration by WGISS. In such cases, SG Chairs will seek approval from WGISS to undertake a new Interest Group or Project. New Interest Groups and Projects will be responsible for creating a project profiles (and project plan as necessary). All Interest Groups and Projects will carry forward Profiles and keep them up to date.

The exchange of information among members and associates is invited and encouraged at all meetings and a reasonable amount of time will be allowed on the agenda to facilitate this. A recognized set of interest topics may be identified to organize this information exchange in meetings. Informal exchange of information on these topics can take place between Subgroup meetings and might be facilitated by the use of information servers (Web, FTP) and news groups

(for example).

Each Interest Group and Project will report to its designated Subgroup, which will in turn report to WGISS, or the support Project will report directly to WGISS, as appropriate. A list of the current and completed Interest Groups (and earlier pre-2008 activities termed Tasks) is given in Annex F.

5.6 Reporting

The WGISS Chair will be responsible for preparing the annual report to Plenary and reporting to the Chair of SIT as required. The annual report will be circulated to all WGISS members for comment prior to issue. The report will be based on the result of the reports provided by Vice-Chairs, User Vice-Chairs, SG Chairs and Interest Group/Project leaders and the deliberative decisions taken at the previous WGISS meetings. It will make recommendations and report progress against the WGISS Five Year Plan and any significant changes.

The User Vice-Chair(s) will report to WGISS upon the progress of WGISS work towards satisfying the needs of users and the effectiveness of the WGISS demonstrations and projects, while the general Vice-Chair will report on the extent to which the output of WGISS is being used in the implementation of systems and services by the provider members and associates and the status of membership initiatives including future meeting opportunities. These reports will form inputs to the WGISS annual report.

The WGISS Chair will also be responsible for briefing the members of WGISS regarding any inputs from Plenary or other outside bodies. Such inputs will be discussed at WGISS meetings and suitable responses developed. This will include the monitoring of and reporting upon relevant programs performed outside of CEOS (such as GEO, etc.) that may impact upon WGISS work.

The Subgroup Chairs will be responsible for reporting the progress of their activities at each WGISS meeting. Similarly, they will be responsible for informing the members and associates of their Subgroup regarding the outcome of the WGISS or Plenary meetings. Interest Group and Project leaders will report to the relevant Subgroup Chair.

The WGISS and Subgroup Chairs will be responsible for applying the agreed WGISS reporting procedures, ensuring that all minutes or notes, Interest Group and Project templates and project plans, action lists, calls for information, etc., are posted as required on the relevant WGISS information systems in a timely fashion.

5.7 Resourcing

All activities of WGISS and its Interest Groups or Projects are funded by its members and associates. Each participant is responsible for seeking and obtaining support and funding from his or her organization. Each participant then undertakes activities on a “best efforts” basis. Through the set procedures for each activity, WGISS aims to focus the contribution of each participant and to maximize the benefit of the activity to each member or associate involved. Similarly, the review procedures for each activity will provide a record of the benefits to the contributing agencies, thus justifying funding and securing continued participation.

The set procedures aim to communicate clearly to potential participants what the results will be, when they can be expected, and how much resource will be required to achieve them.

Participants in each activity will be asked by the leader to confirm, as far as possible, the level of support that they can contribute to the activity.

5.8 WGISS Document Approval Process

1. Following review by the Subgroup, the document will be sent to the WGISS Chair with a covering note describing the context, which includes a request for a decision.
2. The WGISS Chair will distribute the document and the covering note to WGISS members and associates approximately two months before the decision is expected.
3. If a WGISS member or associate does not support the document, he/she should provide the reason(s) in writing by the due date.
4. If there are no objections, the Chair will inform WGISS that the document has been accepted and that it can be formally issued as a CEOS WGISS document and commended to CEOS members and associates and others for their respective decisions and actions.
5. If there are objections, those with objections will work with the Subgroup Chair (and Interest Group or Project leader if appropriate) to resolve these objections; if not resolved, the issue will be discussed at the next WGISS meeting and a decision made then.

5.9 Nomination of WGISS Officials

The following rules are applied to cover the nomination of a new WGISS Exec member in the event that they leave before the normal conclusion of their term. These rules cover the WGISS Chair & Vice Chair, Subgroup Chair & Vice Chair and Interest Groups/Project Lead. The candidates for WGISS Chair and Vice-Chair are handled at the CEOS level as there are significant budgetary implications to the acceptance of those positions. For other positions CEOS is informed, but formal support is not required. The following rules for nomination in the event of early departure are followed:

In the case of a:

- **departing WGISS Chair or Vice-Chair:** the agency of the member holding the post has the right to propose a replacement for the departing member. The reason for adopting this rule is that in the case of a departing WGISS Chair or Vice-Chair, the agency has agreed to provide significant resources to support the WGISS Chair/Vice-Chair. If there is no agency proposal then the rules used for the “*departing Subgroup Chair, departing Subgroup Vice-Chair and departing Interest Group/Project Leader*” are applied.
- **departing Subgroup Chair:** the Vice-Chair becomes Chair and the process for replacing a departing Subgroup Vice-Chair begins. If the Vice-Chair is unable to become Subgroup Chair, an open discussion within the Subgroup seeks a mutually agreeable candidate coming from within the Subgroup membership. Finally, if no candidate is identified by the Subgroup Chair then the vacant post is open to any candidate;

- **departing Subgroup Vice-Chair:** An open discussion within the Subgroup seeks a mutually agreeable candidate coming from within the Subgroup membership. If no candidate is identified within the Subgroup then the Subgroup Chair will identify a nominee. Finally, if no candidate is identified by the Subgroup Chair then the vacant post is open to any candidate; and
- **departing Interest Group or Project Leader:** An open discussion within the Interest Group or Project seeks to determine a mutually agreeable candidate coming from within the Interest Group/Project membership. If no candidate is identified within the Interest Group/Project then the Subgroup Chair will identify a nominee. Finally, if no candidate is identified by the Subgroup Chair then the vacant post is open to any candidate;

6. Views and Priorities of Current Chair

During NASA's tenure as Chair, WGISS themes for particular attention are:

- * Provide satellite arm of GEO System of Systems: Innovative contributions that will persist, and can be re-used.
- * Work closely with and support Virtual Constellations.
- * Work closely with and collaborate as appropriate with WGCV
- * Support the CEOS Data Democracy initiative.

The WGISS Challenge during this time is for new projects to include plans for sustaining successful prototypes beyond demonstration.

7. Acronyms and abbreviations

CCSDS	Consultative Committee on Space data Systems
CEOP	Co-ordinated Energy and Water Cycle Observation project
CEOS	Committee on Earth Observation Satellites
CODATA	Committee on Data
EO	Earth Observation
GEO	Group on Earth Observations
GEOS	Global Earth Observation System of Systems
GEWEX	Global Energy and Water Cycle Experiment
ICSU	International Council of Scientific Unions
IDN	International Directory Network
ISO	International Standards Organisation
TC20/SC13	Technical Committee 20 / Sub-Committee 13 (of ISO)
ISPRS	International Society for Photogrammetry and Remote Sensing
NOAA	National Oceanic and Atmospheric Administration
NGDC	National Geophysical Data Center
OGC	Open Geospatial Consortium
SG	Subgroup
SIT	Strategic Implementation Team
ToR	Terms of Reference
WGCV	Working Group on Calibration and Validation
WGEdu	Working Group on Training and Education
WGISS	Working Group on Information Systems and Services

Should add all Agency abbreviations from Annex G.

Annex A - WGISS Terms of Reference

Mission Statement

Recognizing the importance of global users, the WGISS will stimulate, coordinate and monitor initiatives, thereby enabling users at a global, regional and local level to exploit more effectively, and benefit from, data generated by Earth observing satellites and other sources.

Membership

Membership is open to all CEOS agencies and associates. Delegations may include experts from non-member organisations who have relevant expertise to contribute to the objectives of the WGISS.

Objectives

The overall objective of WGISS is to facilitate data and information management and services for users and data providers in dealing with global, regional and local issues. It will address in particular the description, access, retrieval, archiving, long-term preservation, utilization, and maintenance of spaceborne Earth observation data and supporting ancillary and auxiliary data and information, enabling improved operability and interconnectivity of information systems and services.

Specific goals are to:

- Enable Earth observation data and information best practices and services to be more accessible and usable to data providers and data users world-wide through international coordination;
- Enhance the complementarity, interoperability and standardization of Earth observation data and information management and services with other types of geospatial data such as in-situ data;
- Foster easier exchange of Earth observation and related data and information to meet the requirements of users and data providers; and
- Foster the development of information best practices and services that use spaceborne Earth observation data.

To achieve these objectives and goals, WGISS will:

1. Synthesize and respond to the needs of users and data providers internationally. WGISS will in particular be responsive to the requirements of the Group on Earth Observation (GEO) and to this end will maintain regular contact with the Chair of CEOS SIT (Strategic Implementation Team) who has the overall responsibility for the day to day contact with GEO and its subsidiary committees and secretariat as delegated by the CEOS Chair.
2. Foster global interconnectivity and interoperability of Earth observation and related data and information systems and services.

3. Identify, influence and recommend best practices and standards for effective data interuse.
4. Support improvements in the quality, reliability and preservation of data, information and supporting systems and services.
5. Monitor and investigate developments of new technologies and encourage their use as appropriate.
6. Develop agreement on common terminology.
7. Foster ongoing effective communications among CEOS agencies, Working Groups and other organizations such as ISO, ISPRS, OGC, CCSDS, ICSU and GSDI to facilitate cooperation and avoid unnecessary duplication of effort.

Implementation

Strategies and activities to meet the objectives and goals stated above will be fully defined via a five year plan to be submitted to CEOS Plenary for endorsement, and for subsequent annual updates. WGISS Chair will report to each CEOS Plenary, and to the Chair of CEOS SIT, on its progress and plans for review and guidance- bringing forward recommendations and proposals as appropriate.

Structure and Procedures

The WGISS will normally meet twice per year, rotating the meeting venue among its membership or locations conducive to WGISS goals. At each meeting, the time, place and host for the next meeting will be established.

A WGISS Chair and Vice-Chair will be designated by the CEOS Plenary and will rotate among WGISS members every two years. The designated Vice-Chair will assume the chair after two years, and a replacement Vice-Chair will be designated by Plenary.

In addition WGISS may nominate one or more Users Vice-Chairs, serving for two year periods, charged with facilitating effective interaction with users.

For each meeting the Chair of WGISS will prepare the agenda and distribute notes and actions.

Each CEOS agency is invited to designate a point-of-contact for WGISS correspondence and representation; otherwise correspondence will be addressed to the agency's main point-of-contact with CEOS.

The WGISS will coordinate its work with other CEOS working groups, and in particular with the CEOS SIT who will be invited to send a representative to WGISS meetings to foster the coordination.

Subgroups may be established by consensus of the WGISS, to organise detailed technical work in specific areas.

Each Subgroup Chair will be appointed by the WGISS for two years, based on nominations from the Subgroup or WGISS. The WGISS will approve Terms of reference for each Subgroup. The Chairs of the Subgroups will report at each WGISS meeting on their Subgroup's progress and plans related to current and on-going CEOS and WGISS initiatives.

The WGISS may propose modifications to these Terms of Reference, and such modifications will be submitted to CEOS Plenary for approval.

Annex B - WGISS Chair, Vice-Chair, and User Vice-Chairs Terms of References

The WGISS Officers comprise of the WGISS Chair, Vice-Chair and two User Vice-Chairs.

The WGISS Chair and Vice-Chair change every two years, effective on the date of the CEOS Plenary. The general Vice-Chair becomes the Chair, and a new Vice-Chair is elected. The current

There is no designated term of office for the User Vice-Chairs.

Officers are listed below:

WGISS Chair	Martha Maiden, NASA	(2007-2009)
WGISS Vice-Chair	Pakorn Apaphant, GISTDA	(Chair Elect, 2009-2011)
WGISS User Vice-Chair	Dr. Chuang Liu, NRSU	
WGISS User Vice-Chair	Lorant Czarán, UN	
WGISS Secretary	Michelle Piepgrass	

Annex B.1 WGISS Chair Terms of Reference

- In conjunction with the Vice-Chair, provide general direction (based on CEOS Plenary and SIT priorities) for WGISS.
- Provide the interface to the CEOS Plenary by:
 - preparing and delivering the annual WGISS report at the Plenary meeting;
 - reporting to CEOS SIT when needed;
 - attending both the CEOS Secretariat and the CEOS SIT teleconferences;
 - briefing WGISS on the Plenary meeting and on the Plenary priorities for WGISS as well as on the SIT meetings and teleconferences;
 - preparing WGISS input for the CEOS Newsletter and similar documents.
- Secure and supervise secretariat support for WGISS.
- In conjunction with the Vice-Chair identify a candidate to be recommended to the CEOS Plenary as the next WGISS Vice-Chair.
- In conjunction with the Vice-Chair, the SG chairs and SG vice-chairs identify Subgroup chair and SG Vice-Chair candidates.
- In conjunction with the Vice-Chair, local host and the Subgroup chairs prepare the agenda for the WGISS meetings.
- Chair the WGISS Plenary portions of the WGISS meeting.
- In conjunction with the Vice-Chair and SG chairs prepare papers and other documents in support of WGISS outreach.

Annex B.2 WGISS Vice-Chair Terms of Reference

- In conjunction with the Chair provide general direction (based on Plenary and SIT priorities) for WGISS.
- Assist the chair in the interface with the CEOS Plenary by attending meetings/teleconferences in her/his absence and by providing input for the CEOS Newsletter and related documents.
- Be the overall coordinator and Point of Contact for GEO Issues within WGISS
- In conjunction with the Chair identify a candidate to be recommended to the CEOS Plenary as the next WGISS Vice-Chair.
- In conjunction with the Chair and the SG chairs and identify Subgroup chair and vice-chair candidates.
- In conjunction with WGISS Chair, secure host for future WGISS meetings and utilize these meetings as outreach activities by alternating locations geographically and strategically by including new Agencies or ones that have not been active recently.
- Engage less active Agencies to encourage participation and the development of new projects.
- In conjunction with the Chair and SG chairs prepare papers and other documents in support of WGISS outreach.

Annex B.3 WGISS User Vice-Chair Terms of Reference

- Interact with science and environmental organizations to understand their EO requirements and once those needs are understood, encourage the take up of relevant WGISS systems and services to improve EO capabilities.
- Engage less active Agencies to take up relevant WGISS systems and services and to participate more directly within WGISS forums.
- Coordinate with WGISS non-space organizations and Associates to ensure that their EO requirements are understood and develop strategies allowing those needs to be met.
- Actively pursuing CEOS Agencies to offer better, wider, and more open access to data, information, and software products they hold, to the benefit of the EO user community.
- Liaise with the CEOS Working Group on Education, Training, and Capacity Building (WG-Edu)

Annex C - Subgroup terms of reference

Scope for the Technology and Services Subgroup

The scope for the Technology and Services Subgroup is the preservation of data, creation of information systems and the delivery of interoperable services. The interests of the Subgroup span the full range of the information processing chain from the initial ingestion of satellite data into the archives through to the incorporation of derived information into end-user applications. The creation and standardization of metadata to support the discovery of and access to data are an important aspect to this work.

Scope for the Projects and Applications Subgroup

The scope of the Projects and Applications Subgroup covers the development of specific projects and applications, working with outside organizations to understand their requirements and help them exploit the tools and services available through WGISS and its member Agencies.

Membership

The Subgroup shall be open to all members and associates of CEOS. The Subgroup may invite guest participation from non-CEOS organizations by decision of the Subgroup members.

Subgroup Chair and Vice-Chair

WGISS will appoint a Subgroup Chair for a period of two years. WGISS will take account of any recommendations of the Subgroup regarding the selection of a Chair. The Subgroup may have a Vice-Chair, appointed by WGISS for a period of two years, taking into account any recommendations of the Subgroup. Under normal circumstances the vice-chair will assume the role of chair at the end of their respective terms of office and a new vice-chair will be appointed.

Activities

WGISS will request the Subgroup to undertake activities within the Scope of the Subgroup. These may originate from the Plenary, from within WGISS itself or be proposed by the Subgroup for adoption by WGISS. The Subgroup will consider each such request and advise WGISS of the plan to undertake the project. In the event that an activity cannot be undertaken, the Subgroup chair will advise WGISS accordingly and, if possible, recommend an alternative course of action for WGISS.

The Subgroup will work within the framework defined in the WGISS plan. Particular activities will be as follows:

- The Subgroup will undertake activities, and so form Interest Groups or Projects as appropriate and as agreed with WGISS.
- The Subgroup will consider the needs of users and CEOS participants and propose to WGISS new Interest Groups and Projects as appropriate to achieve the purpose of the Subgroup.
- The Subgroup will facilitate exchange of information and ideas between members and associates.
- The Subgroup will provide information to maintain the WGISS plan and Interest Group/Project Register as defined in the WGISS plan.

Reporting

The Subgroup Chair shall report at each WGISS meeting on Subgroup progress and plans. The Subgroup will take guidance and direction from WGISS.

Annex D - Subgroup Chair/Vice-Chair Terms of Reference

- In conjunction with other chair/vice-chairs and local host, organize agenda for Subgroup portion of WGISS meetings.
- Chair the SG portion of the WGISS meetings.
- Collect and provide input to the WGISS Information Infrastructure Support Project concerning mailing lists and web content as well as the relevant documentation produced by the Interest Group/Project (e.g. handouts, technical notes, ..)
- Ensure Interest Group/Project Leaders maintain websites.
- Maintain relevant section of Interest Group/Project Register.
- Report on Subgroup activities at WGISS Meetings.
- Present WGISS requirements to Subgroup participants.
- Maintain overview of themes covered by Interest Groups/Projects and make recommendations to WGISS for:
 - creation and/or closing of Interest Groups/Projects
 - Improvement of the work of the Interest Groups/Projects
- Solicit for new vice-chairs every two years.

Annex E - Interest Group/Project Leader Terms of Reference

- Provide direction and leadership for activities.
- Prepare and maintain Profile and Project plans.
- Contribute to the Subgroup meeting agenda with the Subgroup Chair.
- Prepare Interest Group/Project agenda and speakers for Interest Group/Project session at SG meetings.
- Prepare short meeting report at each SG meeting.
- Convene additional Interest Group/Project meetings and teleconferences as required.
- Maintain Interest Group/Project-specific list server, mailing lists, and website, as appropriate.

Annex F - List of Current and Completed Interest Groups and Projects

(includes previously entitled Tasks and old Subgroup names)

ID	Owner	Status	Name	Leader	Comment
1	WGISS	Closed	1996 Plenary Demo	John Lilleyman, CSIRO	
2	WGISS	Closed	Developing countries CD-ROM	Jeff Kingwell, CSIRO	Superceded by 2a
2a	WGISS	Closed	Developing Countries CD-ROM Extension	Jean-Pierre Antikidis, CNES	
3	WGISS	Closed	Ocean Color	John Withrow, IOC	
4	Data	Closed	AVHRR 1km	Jeffrey Eidenshink, USGS	merged into Global Datasets (32)
5	WGISS	Closed	CEOS InfoSys	Luigi Fusco, ESA	merged into CII (29)
6	Applications	Open	IDN	Lola Olsen, NASA	
7	Access	Closed	CINTEX/CINTOP	Yonsook Enloe, NASA	superceded by CEOS CINTEX (30)
8	Access	Closed	Catalogue Interoperability Protocol Definition	Richard Goebel, EC/JRC	superceded by CEOS CINTEX (30)
9	Access	Closed	Browse	Osamu Ochiai, NASDA	superceded by Guidelines (31)
10	Access	Closed	Catalog Guidelines	Brian Thomas, BNSC/EOC	superceded by Guidelines (31)
11	Access	Closed	Yellow Pages and Information Infrastructure	Shin-ichi Sobue, NASDA	merged into CII (29)
12	Data	Closed	Global Land One Kilometre base Elecation	David Hastings, NOAA	merged into Global Datasets (32)
13	Data	Closed	Auxiliary Data Reference and Guide	Brian Thomas, BNSC/EOC	superceded by Guidelines (31)
14	Data	Closed	Global Mapping and Visualization	Mike Botts, NASA/U. Alabama	superceded by GM Book (39)
15	Data	Closed	Format Guidelines	Wyn Cudlip BNSC/QinetiQ	superceded by Guidelines (31)
16	Data	Closed	Archive	Kengo Aizawa, JAXA	
17	Network	Closed	Network Performance Measurement	Andy Germain, NASA	merged into Networks (37)
18	Access	Closed	WWW	Clive Best, EC/JRC	superceded by Eogeo (38)
19	WGISS	Closed	Hazards and Emergency Response	Lou Walter, NASA	superceded by CEOS ad-hoc WG
20	Network	Closed	Network Architecture	Dieter Sundermann, DLR	merged into Networks (37)
21	Network	Closed	Network Resource Planning & Coordination	Dieter Sundermann, DLR	merged into Networks (37)
22	Network	Closed	Network Security	Dick desJardins, NASA/NREN	merged into Networks (37)
23	WGISS	Closed	WGISS Strategy	Peter Churchill, EC/JRC	
24	WGISS	Closed	Information Locator Service	Thomas Ruwwe, DLR	
25	Data	Closed	Data Interoperability	Wyn Cudlip BNSC/QINETIQ	superceded by Data Services(33)
26	Network	Closed	CEOSnet Next Generation Prototyping	Dick desJardins, NASA	merged into Networks (37)

27	Data	Closed	CEOS/IGBP High Res. Satellite Data Project	Gerard Szejwach, IGBP	
28	Network	Closed	Network Resource Planning & Coordination	Vacant	merged into Networks (37)
29	WGISS	Closed	CEOS Information Infrastructure	Jeff Smith, NASA	
30	Technology & Services	Closed	CEOS Interoperable Catalogue System	Jolyon Martin, ESA	Renamed from CEOS CINTEX Extensions.
31	Data	Closed	Guidelines		superseded by WGISS TE (35)
32	Applications	Open	Global Datasets	Lorant Czarán, UN	
33	Technology & Services	Closed	Data Services	Shinobu Kawahito, JAXA	To be replaced with new Data management Interest Group
34	WGISS	Closed	GOIN Evolution	Takashi Moriyama, NASDA	
35	WGISS	Closed	WGISS Test Environment	Mick Wilson (UNEP)	
36	WGISS	Closed	WGISS GOFC Test Facility	Yonsook Enloe, NASA	
37	Technology & Services	Closed	Network	Jeff Smith (NASA)	
38	Projects & Applications	Closed	EOGEO Workshop	Allan Doyle, EOGEO Clive Best, EC/JRC	
39	Projects & Applications	Closed	Global Mapping Book	Wyn Cudlip, BNSC/QinetiQ	
40	Technology	Open	GRID	Guoqing Li (NRSCC)	
41	Projects & Applications	Closed	WTF CEOP	Satoko Miura, JAXA	
42	Projects & Applications	Closed	WTF Core Test Sites	John Faundeen (USGS) and Lyndon Oleson (USGS)	
43	Projects & Applications	Closed	Oil Spill Drift Prediction Project	Ivan Petiteville, ESA	
44	Projects & Applications	Closed	CEOS EO Data Portal Project	Lorant Czarán, UN & Wyn Cudlip, BNSC/QinetiQ	
45	Projects & Applications	Closed	World Summit on Sustainable Development	Yonsook Enloe	
46	WGISS	Open	WGISS Infrastructure	Ken McDonald	
47	WGISS	Closed	Data Utilisation	Chuang Lui (NRSCC); Lorant Czarán (UN)	Closure announced at 21st CEOS PLenary (Nov. 2007)
48	Applications	Open	Natural Disaster Management Project	Pakorn Apaphant, GISTDA	Under definition.
			Need to add new IG and P		

Owner column indicates whether WGISS or Subgroup level project.
Access, Data, and Network indicates old Subgroup Structure.
 New Subgroup Structure: Technology & Services and Projects & Applications.

Annex G - Directory of Office Holders & WGISS Representatives

G.1 Office holders

WGISS		
Chair 2007-2009	Martha Maiden, NASA	Tel: +1-202-258-1078 Fax: +1-202-358-2770 E-mail: martha.e.maiden@nasa.gov
Vice-Chair (Chair Elect)	Pakorn Apaphant, GISTDA	Tel: 66-2-940-6420 Fax: 66-2-561-3035 E-mail: pakorn@gistda.or.th
User Vice-Chair	Chuang Liu, GCIRC, IGSNRR, CAS	Tel: 64889805 (cell) 64850917 (cell) Fax: E-mail: lchuangbj@igsnr.ac.cn
User Vice-Chair	Lorant Czarán, UN	Tel.: +1 917 367 2467 Fax: +1 212 9630 1040 Mob: +1 646 354 9249 E-mail: czaran@un.org
WGISS Secretary	Michelle Piepgrass	Tel: + 513 465 4932 Fax: E-mail: michelle_piepgrass@ssaihq.com
Technology Subgroup		
Chair (until Oct 2010)	Nataliya Kussul	Tel: +380-44-526-25-53 Fax: +380-44-526-41-24 E-mail: inform@ikd.kiev.ua
Vice-Chair	Terence van Zyl	Tel: Fax: E-mail:
Applications Subgroup		
Chair (until Oct 2009)	Karen Moe, NASA	Tel: Fax: E-mail:
Vice-Chair	Satoko Miura, JAXA	Tel: Fax: E-mail:

G.2 Representative List

(updated following WGISS 26, September 08). **Needs to be updated.**

Agency	Representative	Contact details
ASI Italy	Massimo Calabrese (Centro di Geodesia Spaziale)	Tel: 39 835 377 278 Fax: 39 835 339 005 E-mail: massimo.calabrese@asi.it
BNSC UK	Mark Churchyard	Tel: 44 207 215 0813 Fax: 44 207 821 0804 E-mail: Mark.Churchyard@bns.csi.gov.uk
	Wyn Cudlip (QinetiQ)	Tel: 44 1252 392283 Fax: 44 1252 396310 E-mail: wcudlip@qinetiq.com
CAST China	Qi Faren	Tel: 86 106 837 9439 Fax: 86 106 837 8237 E-mail:
CCRS Canada	Brian McLeod	Tel: 1 613 947 1291 Fax: 1 613 947 2410 E-mail: Brian.Mcleod@geocan.nrcan.gc.ca
CNES France	Jean Pierre Antikidis	Tel: 33 561 27 37 79 Fax: 33 561 27 40 13 E-mail: antikidis@cnes.fr
	Jean-Pierre Gleyzes	Tel : 33 561 27 38 34 Fax : 33 561 27 31 67
	Paul Kopp	Tel: 33 561 28 2293 Fax: 33 561 28 19 20 E-mail: Paul.Kopp@cnes.fr
CONAE Argentina	Hugo Marraco	Tel: 54 11 4331 0074 x314 Fax: 54 11 4331 0074 x460 E-mail: hmarraco@conae.gov.ar
CRI New Zealand	Stella Belliss (Landcare Research)	Tel: 64 3 325 6700 Fax: 64 3 325 2418 E-mail: BellissS@Landcareresearch.co.nz
CSA Canada	Allan Hollinger	Tel: 1 450 926 4616 Fax: 1 450 926 4613 E-mail: allan.hollinger@space.gc.ca
CSIRO Australia	Mike Clarke	Tel: 61 2 62167242 Fax: 61 2 62167222 E-mail: mike.clarke@cbr.dit.csiro.au
DLR Germany	Bernhard Buckl	Tel: 49 8153 281 406 Fax: 49 8153 281 448 E-mail: bernhard.buckl@dlr.de
EC	Alan Belward	Tel: 39 332 78 9298 Fax: 39 332 78 9073

Agency	Representative	Contact details
Europe		E-mail: alan.belward@jrc.it
ESA Europe	Ivan Petiteville (ESRIN)	Tel: 39 06 9418 0567 Fax: 39 06 9418 0512 E-mail: Ivan.Petiteville@esa.int
	Luigi Fusco (ESRIN)	Tel: 39 694 180 530 Fax: 39 694 180 512 E-mail: lfusco@esrin.esa.int
	Stephen Ward (Symbios)	Tel: 61 2 9130 4260 Fax: 61 2 9130 4260 E-mail: mail@stephenward.net
ESCAP UN	Wu Guoxiang	Tel: 66 2 2881456 Fax: 66 2 2883012 E-mail: wugu@un.org
	David A. Hastings	Tel: 66 2 2881457 Fax: 66 2 2883012 E-Mail: hastingsd@un.org.
EUMETSAT Europe	Walter Dillen	Tel: 49 6151 807576 Fax: 49 6151 807555 E-mail: dillen@eumetsat.de
FAO International	Jelle U. Hielkema	Tel: 39 6 570 55589 Fax: 39 6 570 53369 E-mail: jelle.hielkema@fao.org
Federal Office for Scientific, Technical and Cultural Affairs		Tel: Fax: E-mail:
GCOS International	Alan Thomas	Tel: 41 22 730 8275 Fax: 41 22 730 8052 E-mail: Thomas_A@gateway.wmo.ch
GISTDA Thailand	Pakorn Apaphant	Tel: 66-2-940-6420 Fax: 66-2-561-3035 E-mail: pakorn@gistda.or.th
GSDI International	Gabor Remetey	Tel: 36 1 355 6322 Fax: 36 1 356 6794 E-mail: hunagi@hunagi.hu
GTOS International	John S. Latham	Tel: 39 6 522 54026 Fax: 39 6 522 53369 E-mail: john.latham@fao.org
ICSU/WDC International	David Clark	Tel: 1 303 497 6215 Fax: 1 303 497 6386 E-mail: David.M.Clark@noaa.gov
IGBP International		

Agency	Representative	Contact details
INPE Brazil	Jose Luiz Aguirre	Tel: 55 123 456 866 Fax: 55 123 414 410 E-mail: aguirre@iai.inpe.br
IOC/GOOS International	Peter Pissierssens	Tel: 61 2 9359 3139 Fax: 61 2 9359 3120 E-mail: p.pissierssens@unesco.org
ISRO India	Mukund Rao	Tel: 91 80 23417359 Fax: 91 80 23417455 E-mail: mukundr@blr.vsnl.net.in
ISPRS International	Poul Frederiksen	Tel:+45 3587 5050 Fax: +45 3587 5051 E-mail: pof@kms.dl
JAXA Japan	Osamu Ochiai (JAXA/EORC)	Tel: 81 3 6221 9131 Fax: 81 3 6221 9180 E-mail: Ochiai.osamu@jaxa.jp
	Ben Burford (RESTEC)	Tel: 81 3 5561 8409 Fax: 81 3 5561 9344 Email: benb@restec.or.jp
NASA USA	Martha Maiden	Tel: 1 202 358 1078 Fax: 1 301 286 1671 E-mail: martha.e.maiden@nasa.gov
NOAA USA	Howard Diamond	Tel: 1 301 713 1283 Fax: 1 301 713 0819 E-mail: howard.diamond@noaa.gov
	David Clark	Tel: 1 303 497 6215 Fax: 1 303 497 6386 E-mail: David.M.Clark@noaa.gov
	Glenn Rutledge	Tel: 1 828 271 4097 Fax: 1 828 271 4328 E-mail: Glenn.Rutledge@noaa.gov
NOAA USA	Ken McDonald	Tel: 1 301 713 2789 x143 Fax: 1 301 713 3136 E-mail: Kenneth.Mcdonald@noaa.gov
NSC Norway	Per Erik Skrovseth	Tel: 47 225 11825 Fax: 47 225 11801 E-mail: per.erik.skrovseth@spacecentre.no
NRSCC China	Liu Dingsheng (RSGS)	Tel: 86 10 6265 2103 Fax: 86 10 6256 1215 E-mail: dsliu@ne.rsgs,.ac.cn
NSAU Ukraine	Prof. Nataliya Kussul (SRI NASU-NSAU)	Tel: +380-44-526-25-53 Fax: +380-44-526-41-24 E-mail: inform@ikd.kiev.ua
ROSHYDROME T Russia	Alexander B Uspensky (RPA "Planeta")	Tel: 7 095 252 3717 Fax: 7 095 200 4210 E-mail: uspensky@planeta.msk.su

Agency	Representative	Contact details
RSA Russia	Vitaly Nechitailenko (RAS/Geophysics)	Tel: 7 095 930 56 49 Fax: 7 095 930 5509 E-mail: vitaly@wdbc.rssi.ru
SAC/CSIR ?	Helena Bosman	Tel: +27 12 334 5000 Fax: +27 12 334 5001 E-mail: hfbosman@csir.co.za
SCAR ?	Colin Summerhayes	Tel: 44 1223 336542 Fax: 44 1223 336550 E-mail: cps32@cam.ac.uk
SNSB Sweden	Ms. Maria Nilsson	Tel: 46 8 6276 200 Fax: 46 8 987 069 Maria.nilsson@snsb.se
	Stefan Zenker (SSC)	Tel: 46 8 6276 200 Fax: 46 8 987 069 E-mail: sz@ssc.se
UNEP UN	Mick Wilson	Tel: 254 2 623436 Fax: 254 2 624315 E-mail: mick.Wilson@unep.org
UNOOSA UN	Sergio Camacho	Tel: 43 1 26060-4950 Fax: 43 1 26060-5830 E-mail: Sergio.Camacho@unvienna.org
USGS USA	Lyndon Oleson,	Tel: 1 605 594 6555 Fax: 1 605 594 6940 E-mail: oleson@usgs.gov
WCRP International	Sam Benedict	Tel: 41 22 730 8247 Fax: 41 22 734 0357 E-mail: seb@www.wmo.ch
WMO International	Pierre Kerherve	Tel: 41 22 7308218 Fax: 41 22 7308021 E-mail: pkerherve@wmo.intTewl:T