




EUGENE

Project Description

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Change log

Issue	Date	Section	Changes
1	17/09/2009	All	Creation of 1st version on basis of the Grant Agreement, Annex I, Description of Work



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1 Purpose

The purpose of this document is describe concept, objectives, scope, methods, tasks, schedule, partners and management of the EUGENE project.

2 Concept and project objectives

The EUGENE project is a FP7 „Support Action“, addressing Call FP7-ENV-2009-1, topic ENV.2009.4.1.2.1 „Further structuring the European approach to Earth Observation”.

2.1 Background


The European Commission, supported by Member States and relevant European Organisations, has been leading the coordination of European GEOSS contributions by various means, such as:

- Acting as European co-chair in GEO and representing Europe in the GEO Executive Committee and all other GEO Committees and several working groups and Task Forces together with other European Members;
- Establishing and organising the EU GEO High Level Working Group (HLWG) as the European GEO coordination and information forum at administrative level;
- Gathering European inputs for the GEO Work Plan and other documents;
- Introducing GEOSS related criteria for EU 7th framework programme (FP7) co-funded projects;
- Starting to organise events, such as the GEO European Project Workshops on September 3rd-4th, 2008 and May 5th, 2009.

The coordination efforts undertaken so far by the European Commission are crucial for the role of Europe in GEO and were successful in starting GEO activities in Europe. The European Commission is the focal point of many of the European GEO Contributions:

- The EC leads, jointly with the European Space Agency, the Global Monitoring for Environment and Security (GMES) initiative, which is seen as Europe’s main contribution to GEOSS;
- The EC has developed the “Infrastructure for Spatial Information in Europe” (INSPIRE) initiative, which has lead to a European directive for the establishment of the European Spatial Data Infrastructure (ESDI), encompassing geo-data standards and data sharing arrangements, which are also essential elements for European GEOSS components;
- The EC implements, within the FP7, a number of GEO dedicated research and development activities.

Whereas the EC-lead and well established frameworks of GMES, INSPIRE and FP7 allow for structured and reliable coordination for European GEO Contributions between the multiple actors within those frameworks, there are numerous other highly GEO relevant European activities and actors existing that lack this level of coordination, both between each other and with the EC-lead GMES, INSPIRE and FP7 activities. There is consensus within the European GEO community that overall impact, visibility and variety of European contributions to GEO at the global level must be improved, especially in comparison with contributions from the USA, China and Japan. Presently, the European GEO component does not fully reflect the excellence and importance that European Earth Observation capabilities have in the international arena. This has been repeatedly recognised at several occasions, e.g. by the EU GEO HLWG, and has triggered the need to come to a more strategic European GEO approach.

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A GEO European Project Workshop on 3-4 September 2008, endorsed by and reported to the EU GEO HLWG, gathered for the first time most of the FP 6/7 GEO relevant projects. This workshop is regarded as an initiating step for a wider strategic process of a pan-European information- and coordination effort that leads to interoperability arrangements and encompasses all GEO relevant activities at European level, with special regard of FP7, GMES and INSPIRE, but also programmes of other European Organisations/Institutions as well as relevant activities of Member States in the field of earth observation.

The Climate example

In order to illustrate the challenge, a good example is the current set of climate monitoring initiatives launched by several European frameworks, all of them highly relevant for a European GEOSS component in the area of Climate:

In the global context, Climate change issues are formally addressed through the United Nations Framework Convention on Climate Change (UNFCCC), the formal international agreement binding signatory states. The Parties to the UNFCCC have in turn placed responsibility for defining and specifying the requirements for observations relevant to climate change with the Global Climate Observing System (GCOS). GCOS has been set up by WMO, UNESCO/IOC, UNEP and ICSU with the mission to ensure the availability of global climate observations for monitoring the climate system. GCOS is regarded as the Climate Component of GEOSS. It has established GCOS Climate Monitoring Principles (GCMP), towards the delivery of global, long-term, high-quality, sustained and reliable climate products and has identified the list of the Essential Climate Variables (ECVs) that are both currently feasible for global implementation and have a high impact on the requirements of the UNFCCC. GCOS has published an Implementation Plan, expressing clear needs, including those for space observations in support to Climate Monitoring. In order to make best use of observations from space to monitor the Climate, the international Committee of Earth Observation Satellites (CEOS) has embarked on an effort to better coordinate and implement satellite observations to support climate research, and formulated the “CEOS Implementation Plan for Space based observations for GEOSS”.


Taking all this into consideration, the European Space Council, gathered in Brussels on 26 September 2008, tasked the European Commission to propose a cross-cutting approach for addressing the contribution of its GMES programme to climate change monitoring, taking stock of its atmosphere, land and marine services. In its Resolution, the Space Council has mandated the European Commission to propose a better organisation of research communities in the field of climate change study, in order to optimise the use of satellite data¹.

The importance of Climate Change in the GMES context was also demonstrated at the GMES event in Lille (France) on 16 – 17 September 2008. In parallel to a dedicated session on Climate, attended by the Vice-Chairman of the IPCC, Climate initiatives in support to GMES were demonstrated as part of the GMES pre-operational Core services. Furthermore, a “GMES Climate Service” is being considered and the European Commission is planning to develop this concept further in the coming months. In the 2009 FP7 call dedicated to GMES, climate monitoring add-on activities for the GMES Core Service projects (mainly GEMS/MACC; GEOLAND1/2, MERSEA/MyOcean) are foreseen and will play an important role in the future sustainable provision of climate change related services in Europe.

The European Space Agency (ESA) has also approved a new and substantial “ESA Global Monitoring of Essential Climate Variables”² programme at its Ministerial Conference of November 2008, as an

¹http://www.ue2008.fr/PFUE/lang/en/accueil/PFUE-09_2008/PFUE-26.09.2008/conseil_espace_bruzelles_26_septembre_2008_12956

² Documents ESA PB EO 72 REV 2 and ESA PB EO 73 REV 2

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ESA contribution to GCOS in the framework of GMES. The objective of this Programme is to realize the full potential of the long-term global Earth Observation archives that ESA together with its Member states have established over the last thirty years, as a significant and timely contribution to the ECV databases required by UNFCCC. The scope of this programme is not to provide climate services, but to undertake the activities necessary to ensure that the existing space assets and data archives, as well as forthcoming satellite missions, can be used in an optimal way in climate modelling and research. It will thus contribute fundamentally to both the basic and applied research that underpins the development of such services. Those activities will be carried out by a multitude of European and national level institutions as contractors to ESA. The development and provision of services (e.g. information products, climate assessments, attribution and predictions) to end users and stake-holders, may later belong within the scope of GMES and other user-oriented servicing programmes.

EUMETSAT, at its 66th Council in December 2008, has agreed on strengthening the contribution of EUMETSAT to major Climate Monitoring initiatives in Europe. This has been agreed taking into account the particularly valuable contribution of long-term series of meteorological satellite data for Climate Monitoring, as well as the contribution of EUMETSAT Satellite Application Facilities (SAF), such as the Climate Monitoring SAF (CM-SAF) and the Ozone and Atmospheric Chemistry SAF (O3M-SAF), but also others.

EUMETNET contributes to climate monitoring with its EUCOS programme which integrates in-situ measurements of European NMHS's. The E-AMDAR programme of EUMETNET collecting civilian aircraft borne measurements also plays a role in this context.


With its information on climate change, the European Environmental Agency (EEA) supports the implementation of the Kyoto Protocol in the EU, the evaluation of EU policies and the development of long-term strategies to mitigate and adapt to climate change. EEA's information (data, indicators, assessments, projections) focuses on greenhouse gas emission trends, policies and measures, and on climate change impacts and adaptation actions in Europe. The EEA will become the European data centre on greenhouse gas emissions and climate change impacts. It works closely with the European Topic Centre on Air and Climate Change (ETC/ACC) and with EEA's member states network (Eionet).

With regard to all of these activities and frameworks, it is obvious that the political momentum in Europe is strong and that these important initiatives, mainly in the EUMETSAT, ECMWF, EUMETNET, EEA, ESA and GMES context, will shape the response of Europe to global Climate monitoring issues using space-based and in-situ information within GEOSS and other international fora. It is also obvious that a pan-European harmonised strategic approach is needed to optimize this European response.

2.2 Objectives

The main objective of the EUGENE project is to foster collaboration between pan-European organisations in the field of earth observation and to strengthen the coordination of national and regional programmes and organisations in their work towards GEO. A process will be started that should eventually lead to GEO oriented (dedicated) collaboration fora and/or mechanisms. The ultimate target of this process is to build a coordinated and sustained European earth observing system component as part of GEOSS, consisting of atmospheric, oceanic and terrestrial sub-components using in-situ, remote and space based observing techniques and related modelling components. Fully applying GEO principles with the future European contributions to GEOSS efforts and promoting the GEOSS data sharing principles form part of the project.

In the short term, the EUGENE project will contribute to a coherent European position for GEO with special attention to the preparation of the GEO 2010 Ministerial summit. The preparation of this Min-

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isterial has been initiated through discussions in recent meetings of the GEO Committees. The GEO Executive Committee, at its 15th meeting (June 1st/2nd, 2009) has decided to create a dedicated Task Force or Working Group to prepare the Summit. EUGENE will contribute to the political and strategic preparation of the summit on the European side. The project will consolidate common European objectives towards this summit and support relevant national and EU preparations. It will also highlight European earth observation activities to be presented as coordinated European GEO achievements to the summit.

On a longer timescale, the EUGENE project, with the coordination process it aims to establish, will be instrumental to concluding a comprehensive European GEO strategy by further developing and consolidating the work that has already been started by the HLWG. EUGENE will propose a structured European GEO approach for the selected GEO Societal Benefit Areas (SBAs) Water, Climate and Disasters. This will also encompass intrinsic cross-cutting issues, such as data sharing, with special attention to the relationship between FP7, GMES, INSPIRE and GEOSS. Pan-European interoperability arrangements will be fostered and GEO concepts of multidisciplinary approaches will be applied.

EUGENE also has the potential to support the EC and/or future EU Presidencies in organizing and preparing a major European GEOSS Symposium before or after the planned 2010 GEO Ministerial, depending on the progress GEO made until then.

2.3 Scope

This project will start with a limited scope in addressing European activities and actors in three SBAs of the GEO Work Plan, which correspond to European political priorities:

- Climate
- Disasters
- Water


The project work plan is intentionally limited to those 3 areas as a subset to start with and to allow working at a sufficient level of detail. The areas selected are European political priorities and are in line with the resolution of the G8 at the Hokkaido Meeting (2008), which calls on accelerating efforts in priority areas, including Climate Change and Water Resources. Besides the specific issues tackled in these 3 SBAs, EUGENE will inform many generic aspects for a European GEO strategy. During the course of the project possible extensions of the initial scope to other GEO SBAs will be pursued.

The scope of the 3 selected themes is defined by the respective GEO strategic targets. Draft strategic targets have been presented to the last GEO plenary session (GEO-V) in November 2008, who welcomed the approach. The new strategic targets are expected to be formally approved by GEO at the next Plenary session in November 2009. Therefore, they will be as an updated strategic mindset at the start of this project. The activities and actors addressed by the EUGENE project, are those pan-European or significant national organisations or programmes that, at least in part, work towards these GEO strategic targets. The most recent draft (rev. 9, June 15th, 2009) defines these as follows:

Climate

Before 2015, GEO aims to:

8. Achieve effective and sustained operation of the global climate observing system and reliable delivery of the climate information needed for predicting, mitigating and adapting to climate variability and change, including for better understanding of the global carbon cycle.

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This will be demonstrated by³:

- A high level of performance of all the components of GCOS.
- Availability of all Essential Climate Variables needed by the WCRP, the IPCC and the UNFCCC.
- Improved understanding, modelling and prediction of climate.
- Accessibility of all the observational data needed for climate monitoring and services in support of adaptation to climate variability and change.
- Development and facilitation of a comprehensive (atmosphere, ocean, land) global carbon observation and analysis system in support of monitoring based decision-making and related environmental treaty obligations.

This will be achieved through:

- the full implementation of GCOS as the climate observing component of GEOSS, *and especially through strong support for the climate-relevant functions and activities of:*
 - the IOC-WMO-UNEP-ICSU Global Ocean Observing System (GOOS);
 - the FAO-WMO-UNESCO-UNEP-ICSU Global Terrestrial Observing System (GTOS);
 - the WMO Global Observing System (GOS) and Global Atmosphere Watch (GAW);
 - the research observing systems and observing systems research of the WMO-IOC-ICSU World Climate Research Programme (WCRP) and other climate-relevant international programs;
- and their enhancement and supplementation as necessary to ensure the availability of all the climate and climate-related observations needed to support GEOSS;
- promotion of data sharing as well as coordination of data management and exchange systems;
- contributions to major advances in the monitoring and prediction of climate on seasonal, interannual and decadal time scales, including the occurrence of extreme events; and
- strengthened GCOS support for the assessment role of the IPCC and the policy development role of the UNFCCC.

Disasters


Before 2015, GEO aims to:

9. Enable the global coordination of observing and information systems to support all phases of the risk management cycle associated with hazards (mitigation and preparedness, early warning, response, and recovery).

This will be demonstrated by:

- Improved use of observations and related information to inform policies, decisions and actions associated with disaster preparedness and mitigation.
- More effective access to observations and related information to facilitate warning, response and recovery to disasters.

³ Acronyms: FAO-Food and Agriculture Organization; GCOS-Global Climate Observing System; ICSU-International Council for Science; IOC-Intergovernmental Oceanographic Commission; IPCC-Intergovernmental Panel on Climate Change; WCRP-World Climate Research Programme; UNEP-United Nations Environment Programme; UNESCO-United Nations Educational, Scientific and Cultural Organization; UNFCCC-United Nations Framework on Climate Change Convention; WMO-World Meteorological Organization.

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- Increased communication and coordination between national, regional and global communities in support of disaster risk reduction, including clarification of roles and responsibilities and improved resources management.
- Improved national response to natural and man-made disasters through delivery of space-based data, resulting from strengthened International Charter on "Space and Major Disasters."
- Support to the successful implementation of the Hyogo Framework for Action 2005-2015.

This will be achieved through:

- more timely dissemination of information from globally-coordinated systems for monitoring, predicting, risk assessment, early warning, mitigating, and responding to hazards at local, national, regional, and global levels;
- supporting the implementation of the priorities for action identified in the Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters (HFA).

Water

Before 2015, GEO will aim to:


13. Produce comprehensive sets of data, information products and services to support decision-making for efficient management of the world's water resources, based on coordinated, sustained observations of the water cycle on multiple scales.

This will be demonstrated by:

- An operationalized global network of *in-situ* observation sites.
- Increased availability of information products and services for monitoring changes in the water cycle, including clouds and precipitation, appropriate for both research and integrated water resource management.
- Increased availability of data and information, including quantity and quality of both surface and groundwater, to support a prototype water cycle expert decision making system.
- Routine, reliable production of "watershed" and human health indicators from satellite data, surface and subsurface data, and data assimilation capabilities.

This will be achieved through:

- development of a sustained, operational monitoring system for the global water cycle, combining space-based, airborne, and *in-situ* observation networks which will:
 - address water resources in terms of quantitative availability and water quality;
 - include integrated *in-situ* reference sites for monitoring essential variables for water cycle measurement;
 - promote the upgrading of *in-situ* networks in regions where current networks do not meet emerging standards for observations, network enhancements, data systems, planning frameworks and implementation programs;
 - allow for different types of measurements to be planned in a structured way across variables, sensors, platforms and nations and in some cases development of sensor technology;
 - include a broad range of integrated data products that cover many different spatial and temporal scales, combining detailed point *in-situ* measurements with coarser comprehensive coverage provided by satellites;

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- development of widely available, sustained water cycle data sets and related information products, at both global and basin scales, tailored to the near- and long-term needs of stakeholders and end-users, which will:
 - exploit past and current *in-situ* and satellite-based observations as well as fostering their integration into advanced models for integrated water resource management;
 - focus attention on developing local, regional and global hydrological risk (e.g., floods, droughts) assessment, prediction and management systems and expanded applications of integrated water resource management for sustained development;
 - promote the next generation of improved/enhanced products and innovative observations (with special emphasis on observational gaps: e.g., precipitation and run-off at high latitudes and water quality measurements from space), for water resources management.

2.4 Quality and effectiveness of the support mechanisms and associated work plan

Broad and comprehensive participation by the most relevant European organisations and programmes is most important for the success of the EUGENE project as well as the acceptance of its results in the community. Some of the most relevant European organisations have expressed their support and willingness to contribute to the EUGENE project. During all project stages the project will aim at expanding the engagement of relevant institutions. Additional organizations will be invited to contribute to the work of the EUGENE project. Their support and contributions will primarily be through

1. Contributing information on their programmes and strategies as well as their perception of strengths and weaknesses of earth observation in Europe to the reports on the status quo for the three SBAs selected, and
2. Participating and contributing to the discussions at the EUGENE project workshops and inform their recommendations.

To document the willingness of individual organizations to support this effort, the relevant organizations will be invited to sign a letter of support indicating that they will contribute in the above ways. The project coordinator (DLR) will maintain a database of these letters. The expertise, extensive working relations, and strong involvement of the project team in GEO will help to ensure broad support, particularly for the workshops, increasing the expected impact on the European GEO strategy process. Workshop participation of the GEO Secretariat and of members of the European GEO HLWG will be considered, as well as the option of inviting also experts from non-European organisations.

On the satellite data provider side, clearly, the European Space Agency (ESA) is an important actor at European level for all thematic areas addressed by the project. With its numerous activities, such as the ESA Climate Change Initiative, or the support of the International Charter on Space and Major Disasters, to name just two prominent examples, ESA contributes comprehensively to all 3 GEO SBAs under consideration. ESA has indicated its generic support to comprehensively engage in the reinforcement of the European GEO component as addressed by EUGENE.


Special attention within all phases of EUGENE will be given to the “European Meteorological Infrastructure” (EMI), which comprises EUMETSAT as meteorological satellite data provider, the ECMWF with its modelling capabilities and archives, EUMETNET with its joint in-situ observation programmes and the national meteorological services themselves, as example of an already existing and well established comprehensive collaboration mechanism. All of these bodies are either partner to the project or have expressed strong interest to contribute to this work.

Organisations that will be approached and invited to become involved with EUGENE are:

Alfred-Wegener-Institut für Polar- und Meeresforschung (AWI)	Water, Climate
Bundesanstalt für Seeschifffahrt und Hydrographie (BSH)	Water

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Centre National de Recherches Météorologique (CNRM - Meteo France)	Climate
Danish Meteorological Institute – Centre for Ocean and Ice (DMI)	Water
Deutscher Wetterdienst (DWD)	Climate
DG-ENV (European Commission)	Climate, Water
Directorate General for Maritime Affairs and Fisheries (DG MARE)	Water
European Centre for Information on Marine Science and Technology (EuroOcean)	Water
European Centre for Medium-Range Weather Forecasts (ECMWF)	Climate
European Commission External Relations (RELEX)	Disasters
European Commission Humanitarian Aid (ECHO)	Disasters
European Commission Monitoring and Information Centre (MIC)	Disasters
European Environmental Agency (EEA)	Climate, Water, Disasters
European Global Ocean Observing System (EuroGOOS)	Water
European Maritime Safety Agency (EMSA)	Water
European Network of Freshwater Research Organisations (EurAqua)	Water
European Space Agency (ESA)	Climate, Water, Disasters
Finnish Environment Institute (SYKE)	Water
GMES Bureau (European Commission, DG-ENT)	Climate, Water, Disasters
GKSS Research Center (Climate Service Center, Institute for coastal research)	Climate, Water
Ifremer (French Research Institute for Exploitation of the Sea)	Water
Joint Research Center (JRC)	Climate, Water, Disasters
Leibniz Institute of Marine Sciences (IfM-GEOMAR)	Water
Max Planck Institute for Meteorology (Hamburg)	Climate
Nansen Environmental and Remote Sensing Center (NERSC, Norway)	Water
National Center for Earth Observations (NCEO, UK National Research Council)	Climate
Network of European Meteorological Services (EUMETNET)	Climate
Potsdam Institute for Climate Impact Research (PIC)	Climate
Secretariat of the Global Climate Observing System (GCOS)	Climate
Swedish Meteorological and Hydrological Institute (SMHI)	Water
UN International Oceanographic Commission (IOC)	Water
UNESCO - International Hydrological Programme (IHP)	Water
UK Centre for Ecology & Hydrology (CEH)	Water


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UK Met Office (Hadley Centre)	Climate
World Meteorological Organization – World Climate Research Program (WMO-WCRP, Geneva)	Climate
WMO Global Runoff Data Centre (GRDC)	Water
WMO Hydrology and Water Resources Programme (HWRP)	Water

The success of the project will to a large extent depend on how successful European institutions active in the domain of Earth Observation and their projects can be involved in the preparation of the reports and the workshops. Three major institutions have been approached prior to the submission of the project proposal and have expressed their support to this project and their willingness to contribute through letters of support:

- EUMETNET
- EuroGOOS
- ECMWF

Approaching and involving these and other relevant institutions as listed above will be an important element of the work in WPs 2000, 3000 and 4000. EUGENE will aim to prepare some form of MoU, or equivalent mechanism, (by exchange of letters) with the targeted institutions, which can be annexed to the EUGENE Consortium Agreement.

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3 S/T methodology and associated work plan

3.1 Overall strategy and general description

The following figure summarizes the project tasks and logic:

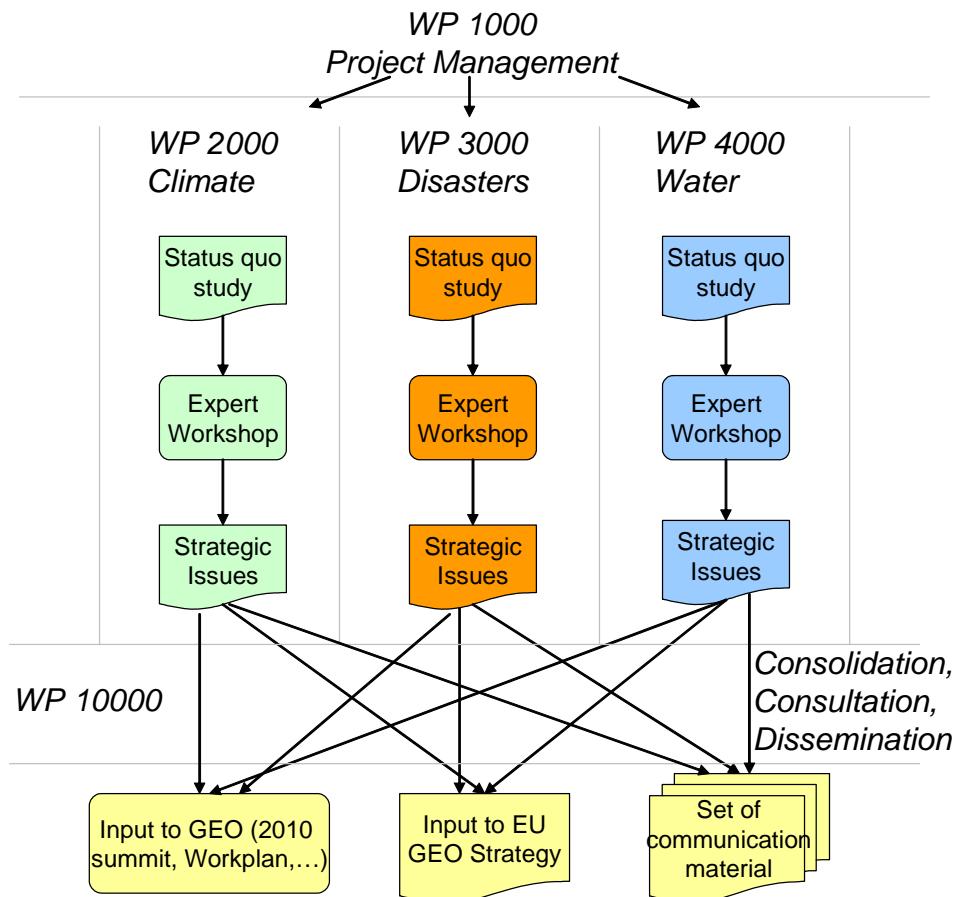



Figure 1: Project logic

3.1.1 Study of European status quo

As a basis for the work within this project, and to inform other (e.g. the Commission's) activities in structuring the European contributions to GEO, the project will create a consolidated view on the status quo in European earth observations. The first task will be to take stock of the relevant European activities within the scope of the project. This will include an overview of current activities (who does what), with a focus on the pan-European organisations/programmes (see below for a description of some of the most relevant ones), but also encompassing significant activities at European Member States level. It will also be important to take stock of strategies and future plans of the involved European organisations in earth observation, and their relevance to GEO.

The output of this work will be **three reports on the status quo** and future plans – one for each of the 3 SBAs under consideration in EUGENE. These reports will relate these European activities to the strategic targets of GEO and the current GEO Workplan (2009-2011), indicating where European initiatives are already contributing or may be offered as contributions to GEO.

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These studies will be conducted by the consortium partners, who are experienced and well-connected in the three SBAs. Importantly, they will require substantial input from relevant European organisations and programmes that are not directly part of the EUGENE consortium. EUMETNET, EuroGOOS and ECMWF have expressed their support in letters submitted along with the original project proposal. Several other organisations, such as ESA, expressed generic interest and support in the objectives EUGENE is addressing. An important element of the study will therefore be to engage with the relevant European actors and solicit their input to the study. The institutions that will be invited to contribute to the study for the three reports are listed in section B1.2 above. The following paragraphs include some explanations of their relevance for the three SBAs.

For the Climate SBA many of the relevant institutions and programmes are described in section B1.1.1 (“The Climate example”) above. The relevant actors and activities at the European level will be surveyed in the project. Climate monitoring does not rely solely on the analysis of data collected from space, but is heavily dependent on long series of in-situ observations, which together with space data are assimilated in climate models. Therefore, when performing its analysis, the team will not only focus on satellite information, but will try to integrate the contributions of all actors, representing also the community in charge of in-situ observations and the community operating climate models (see list under B1.2).

For the Disasters SBA several European projects and initiatives are ongoing that are aiming at the preparation and implementation of an operational GMES Emergency Response Core Service (ERCS). An overview is given in Figure 1. The initial phase started with the consolidation and implementation of the ESA funded GMES Service Element (GSE) projects. The main thematic focus was on flooding and forest fire services (GSE Risk-EOS) as well as services supporting humanitarian relief and disaster reduction (GSE RESPOND). Furthermore, in the framework of EU FP6 the Integrated Project PREVIEW developed further services in several thematic areas of natural disasters. The EU Network of Excellence GMOSS focussed on various aspects of security and the contributions of Earth observation. Moreover, the Integrated Projects LIMES and BOSS4GMES contribute with R&D activities to these goals. For a pre-operational implementation of the GMES ERCS the EC is funding the FP7 project SAFER, which encompasses a consortium of more than 50 key partners in Europe.

Moreover, the Commission has set up the “preparatory action” LinkER in order to prepare the main ERCS user organisations (e.g. national civil protection units, European organisations, etc) for the integration of ERCS products and services into their working environment.

DLR, leading the EUGENE Work Package on the Disasters SBA, will engage the important players in these initiatives. Also, important representatives of the users e.g. at European level, like the EC Monitoring and Information Centre (MIC), the Red Cross or the relevant UN Programmes will be involved.

Links with international (beyond Europe) initiatives will also be made. Of particular relevance with respect to GEOSS are the “International Charter Space and Major Disasters” and the UN SPIDER programme.

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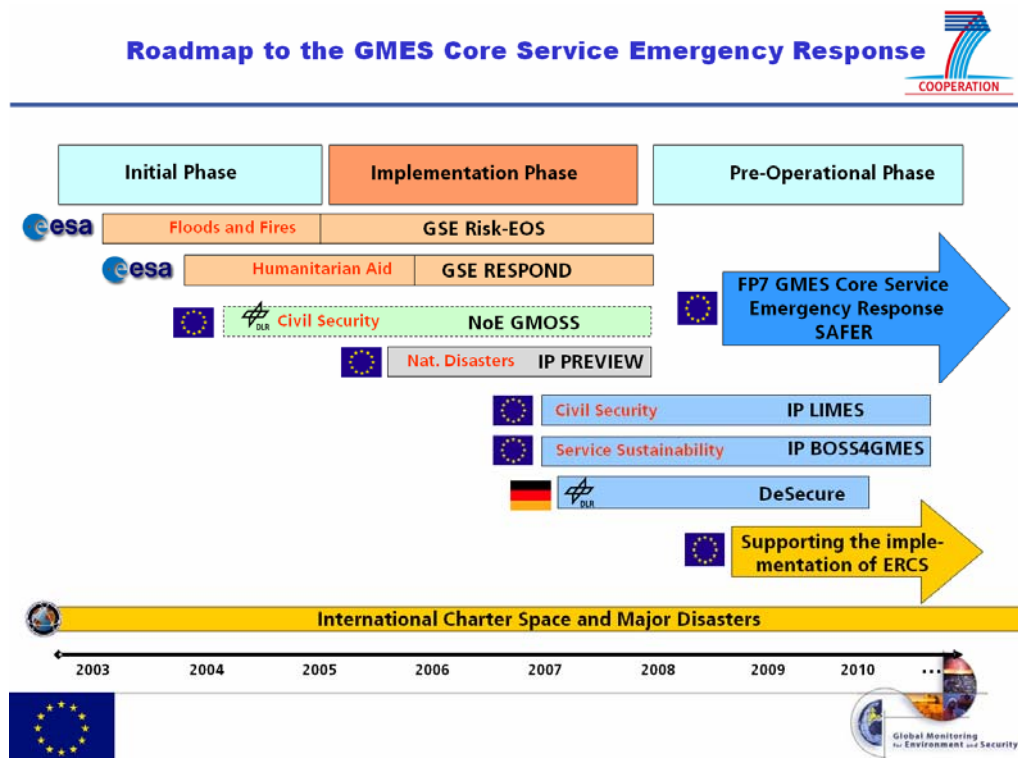



Figure 2: Towards a GMES Emergency Response Core Service

For the Water SBA, including the observation and monitoring of the global water cycle, water resources assessment and management, the Global Runoff Data Centre (GRDC) at the German Federal Institute of Hydrology (BfG) is one of the starting points in the work of the project. The GRDC operates under the auspices of the World Meteorological Organization (WMO) and is funded by the Federal Government of Germany. The GRDC is participating in numerous international coordination initiatives in the field of hydrology, such as UN programmes and organisations (WMO, WCRP, GCOS, UNEP, UNESCO, ICSU, GTOS and UNFCCC), research groups, National Hydrological and Meteorological Services (NHS / NMS) and partner data centres. The GRDC with its different (specialised) databases represents an important contribution to GEOSS and aims at maintaining a close cooperation with GEO. Through different projects under participation of the GRDC, contacts will be established to relevant organisations and programmes on a European level. The European Terrestrial Network of Hydrology (ETN-H) is a contribution of GRDC to the European Flood Alert System (EFAS) and is funded by the Joint Research Centre (JRC) of the European Commission. It is anticipated that the contacts to different European member states, which have been established in the framework of ETN-H, will facilitate the identification of significant activities at European member state level. Further, the secretariat of the International Hydrological Programme (IHP) of UNESCO and the Hydrology and Water Resources Programme (HWRP) of WMO, which is located at the BfG will be involved to identify further European activities and initiatives on a global level with relevance to Europe. In addition, relevant scientific programmes, such as the International Association of Hydrological Sciences (IAHS) or the Earth System Science Partnership (ESSP) and its sub-programmes will be considered.

For the oceanographic dimension of the Water SBA, representatives of European programmes and organisations, including research institutes and alliances as well as the national maritime organisations will be invited to contribute to the study of the status quo. In particular, EuroGOOS – the European regional alliance under the Global Ocean Observation System (GOOS) – will play an important role to

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identify relevant actors and activities of operational oceanography on a European level. With regards to GMES, a number of dedicated oceanographic and maritime projects will be considered and analysed concerning existing Earth observation capabilities, observation gaps, user requirements and evolution potential. In this context, the European Maritime Safety Agency (EMSA), representing both a service provider and a user of GMES services on a European level, will be invited to contribute to the project. Further, regional cooperations, programmes and bodies in the fields of marine environment protection and coastal zone management, such as the Helsinki Commission (HELCOM) or the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) will be approached to contribute with their expertise. Finally, oceanographic research institutions such as the National Oceanography Centre Southampton (NOCS, UK), the French Research Institute for Exploitation of the Sea (Ifremer), the Leibniz Institute for Marine Sciences (IFM-GEOMAR) or the Alfred Wegener Institute for Polar and Marine Research (AWI) and relevant research alliances will be addressed as important stakeholders in the field of Earth observation of the oceans.

3.1.2 Workshops for elaboration of strategic issues

The consultatively elaborated reports will be used as a basis for preparing three specific workshops, one for each of the SBA areas addressed by the project. These workshops are both a key element of the project's work plan and a potential nucleus for the establishment of the processes the EUGENE project is aiming at. The workshops will gather the relevant actors in the referring themes, as named in the previous sections, but also encompassing additional ones, depending on the outcome of the status quo studies.

The workshops will be targeted at developing concrete recommendations, within the three selected SBAs, on

- What European activities in Earth Observation could benefit the GEOSS or benefit from GEOSS and how they might be linked more effectively with GEO,
- what European activities in Earth Observation should be better coordinated, and
- what processes might help to accomplish this coordination and an adequate linking to GEOSS.

In organizing the workshops, specific attention will be paid to attracting the important players in the respective fields. This will then serve to strengthen the recommendations both in content and in their ability to impact the relevant institutions afterwards.


For each workshop, a workshop report will be prepared that presents the main conclusions and explains them. These conclusions will be disseminated both broadly and very targeted to the actors concerned.

3.1.3 Consultation and Consolidation into European GEO strategy

Based on these three workshop reports, the project will prepare a strategy paper that will propose actions to be taken to implement a European strategy to a consolidated European contribution to the GEOSS in the three SBAs. This paper will be prepared in close cooperation with the actors concerned, the workshop participants as appropriate, and the EU High-Level Working Group on GEO. This strategy paper will be the main output of this proposal.

3.1.4 Dissemination

In the context of this project, dissemination are not merely a means of communicating the project's objectives and results to an interested public, but are in fact a central instrument of achieving the project's objectives. Explaining the project objectives to pan-European institutions that are actors in the European earth observation activities is a prerequisite for gaining their support and securing their con-

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tributions to the project studies and workshops. Disseminating and promoting the project results, particularly the recommendations and strategic directions, will be the primary avenue available to achieving their implementation across Europe.

The instruments for dissemination will be the reports prepared during this project (the status quo reports, the workshop reports, and the Strategy Document), presentations made to stakeholder meetings, including the GEO HLWG. These activities will be supported by dedicated communication material to be developed during the project. This material will include a project web site, leaflets presenting an overview of the European EO activities in the selected SBAs, and three short videos highlighting examples of these activities in the context of GEOSS. All dissemination material prepared during the project will be available publicly through the project website.

The insights gained through the study on the status quo will be injected into the GEO process for preparing the GEO ministerial summit planned for November 2010. Primarily this relates to an adequate representation of European activities among the “showcase” examples currently planned for GEO achievements to be presented to ministers. The results will also be a useful basis for preparing an expected exhibition element from Europe, as may some of the material produced during this project. This will be pursued by engagement of the Coordinator (Mr. Gärtner) of WP 10000 with the relevant GEO 2010 preparation working groups.

Another means of disseminating the project results will be regular consultations of the European GEO HLWG, convening the European GEO Principals. These consultations will serve the dual function of helping to enter a broader perspective into the work of the project, but also communicating the project findings and results into the European GEO context. Thus, these consultations will support the buy-in of European GEO members into the strategy developed inside EUGENE.

Past meetings of the GEO HLWG have discussed preparing an EU GEO Summit to enhance political awareness of GEO and strengthen the commitment of political decision-makers towards investing into the process. Should such a Summit be realized during the duration of the project, the project will support the EC and/or future EU presidencies by providing input to the objective and agenda.

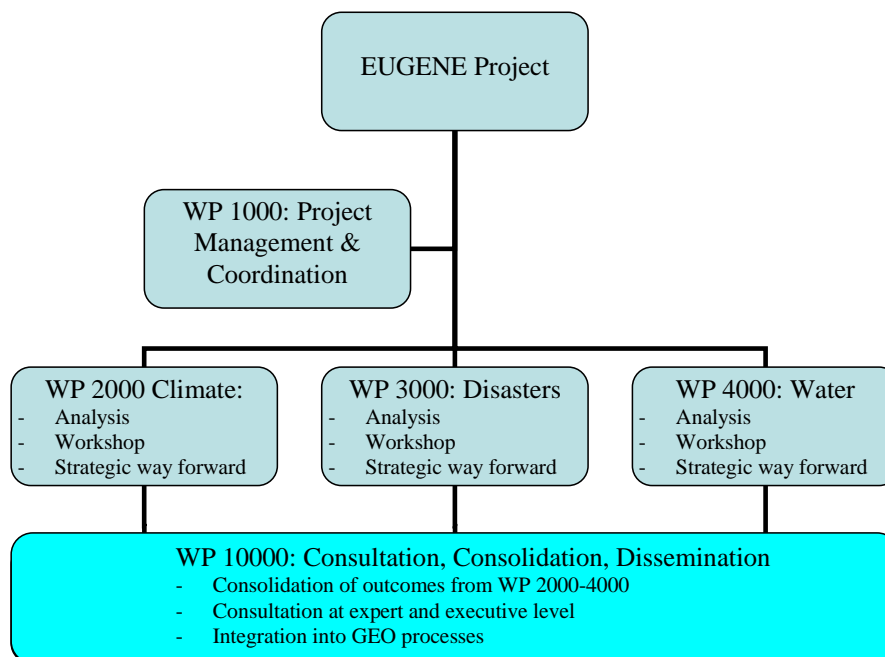



Figure 3: Graphical representation of Work packages and interdependencies

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3.2 Timing of work packages and their components

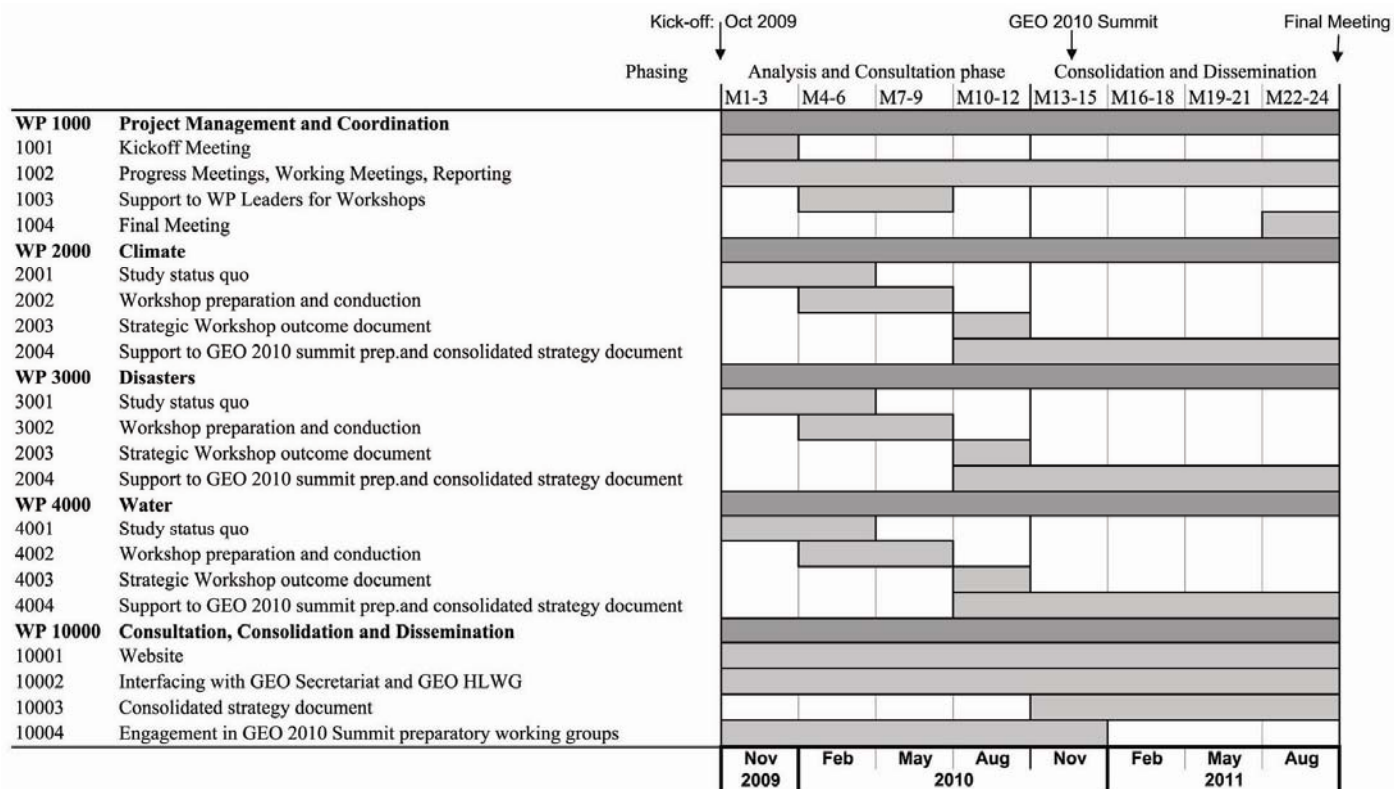


Figure 4 Timing of the project (Gantt Chart).

The project schedule has some relationship to the international GEO calendar. The timing of the project assumes a Kick-Off in October 2009.

3.3 Work package list / overview

Table 3.3: Work package list

Work package No	Work package title	Type of activity ⁴	Lead participant No	Lead participant short name	Start month	End month
1000	Project Management and Coordination	MGT	1	DLR	1	24
2000	Climate	SUPP	2	EUMETSAT	1	24
3000	Disasters	SUPP	1	DLR	1	24

⁴ SUPP = Support activities; MGT = Management of the consortium

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4000	Water	SUPP	4	Uni Bonn	1	24
10000	Consultation, Consolidation and Dissemination	SUPP	1	DLR	1	24

3.4 Deliverables list

Table 3.4: Deliverables List


Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature ⁵	Dissemination level ⁶	Delivery date ⁷
D1000.1	Kick-off Report	1000	DLR	R	RE	M2
D10000.1	Project Website	10000	DLR	O	PU	M3
D2000.1	Report on status quo of European GEO climate contributions	2000	EUMETSAT	R	PU	M6
D3000.1	Report on status quo of European GEO disasters contribution	3000	DLR	R	PU	M6
D4000.1	Report on status quo of European GEO water contribution	4000	Uni Bonn	R	PU	M6
D1000.2	6 months interim report	1000	DLR	R	RE	M6
D10000.2	Full workshop planning	10000	DLR	O	RE	M9
D10000.3	Initial set of communication material (short videos, leaflets)	10000	DLR	O	PU	M12
D2000.2	Report of workshop on European GEO climate contributions	2000	EUMETSAT	R	PU	M12

⁵ Nature of the deliverable coded as: **R** = Report, **O** = Other


⁶ Dissemination level coded as:

PU = Public, **RE** = Restricted to a group specified by the consortium (including the Commission Services).

⁷ Measured in months from the project start date (month 1).

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D3000.2	Report of workshop on European GEO disasters contribution	3000	DLR	R	PU	M12
D4000.2	Report of workshop on European GEO water contribution	4000	Uni Bonn	R	PU	M12
D1000.3	12 months periodic report	1000	DLR	R	RE	M12
D2000.3	Draft strategic paper drawn from climate workshop outcome	2000	EUMETSAT	O	PU	M15
D3000.3	Draft strategic paper drawn from disasters workshop outcome	3000	DLR	O	PU	M15
D4000.3	Draft strategic paper drawn from water workshop outcome	4000	Uni Bonn	O	PU	M15
D10000.4	First draft consolidated strategic document	10000	DLR	R	PU	M15
D10000.5	Report on project elements integrated into GEO 2010 Summit documentation	10000	DLR	R	RE	M16
D1000.4	18 months interim report	1000	DLR	R	RE	M18
D10000.6	Final consolidated strategic document	10000	DLR	O	RE	M24
D10000.7	Final set of communication material (leaflets, results-based website)	10000	DLR	O	PU	M24
D1000.5	Final Report	1000	DLR	R	RE	M24

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3.5 Work package descriptions

WP 1000

Work package number	1000	Start date or starting event:			Kick-off
Work package title	Project Management and Coordination				
Activity Type⁸	MGT				
Participant number	1	2	3	4	
Participant short name	DLR	EUMETSAT	BfG	Uni Bonn	

Objectives

To ensure proper project functioning, partner interfacing and information flow within the consortium
To report progress towards the EC
To plan for progress and working meetings
To carry out the administrative work

Description of work


The Overall Responsible for this Work Package is DLR (D-GEO Office). All other WP Leaders provide input in the form of WP reports and others. The tasks within this WP can be grouped as follows:

- 1001: Carry out Kick-off Meeting (M1): Bring all partners together, propose project plan, meetings schedules, milestones and timelines, reporting structure and other responsibilities
- 1002: Monitor and document progress: Carry out progress meetings and working meetings, reporting (M1-24): plan and conduct working and progress meetings as appropriate, report to EC on work progress on a 6 monthly basis, collect input reports from WP Leaders, maintain action item list
- 1003: Support to Workshops (M3-9): Provide support as appropriate for the Workshops conducted in WP2000-4000
- 1004: Carry out Final Meeting (M24): prepare and conduct final meeting to prepare final report.

Deliverables (brief description and month of delivery)


D1 Kick-off Report (M2): Will report on decisions taken at kick-off with regard to fine-tuning of project action scheduling, content and deliverables
D6 6 months interim report (M6): Will report briefly on work progress made after 6 months
D12: 12 months periodic report (M12): Will report in more detail on work progress made after 12 months
D18: 18 months interim report (M18): Will report briefly on work progress made after 18 months
D21: Final report (M24): Will report on work carried out and results achieved during the project as well as on awareness and wider societal implications. A plan for the further use and dissemination of results achieved will be included

⁸ Main activity of the work package: SUPP = Support activities); MGT = Management of the consortium; OTHER = Other specific activities, if applicable.

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WP 2000

Work package number	2000	Start date or starting event:				Kick-off
Work package title	Climate					
Participant short name	DLR	EUMETSAT	Uni Bonn			
<p>Objectives</p> <p>The activities undertaken in this Work Package will aim at analysing the contribution of different actors active in the field of Climate Monitoring and related issues in Europe, within the scope defined in section B1.1.3.</p> <p>It will bring together all relevant European actors and programmes, analyse their current plans and contributions, and discuss the way forward for a more effective, visible, sustained and structured European GEO contribution to the SBA on Climate.</p> <p>In order to prepare for this discussion, the Work Package leader, EUMETSAT, will conduct a study of the Status Quo of relevant European activities in the field of climate monitoring and present this in a report. Based on this work and report, EUMETSAT will conduct a workshop to organize a discussion among the relevant actors. All major relevant European stakeholders in will be invited to this workshop. As a result of the interactions with the different European actors and following the workshop, the WP leader will draft a strategic document drawn from the above action line. This strategic document will outline a proposed European approach towards a coordinated contribution to GEO, and be, where relevant, included in the European position for the GEO Summit 2010 and its documentation.</p>						
<p>Description of work: The Overall Responsible for this Work Package is EUMETSAT. DLR provides support to the organisation and streamlining of the workshop. The tasks within this WP can be grouped as follows:</p> <ul style="list-style-type: none"> ▪ 2001: Study status quo (M1-6): Conduct a study of the situation in Europe concerning climate monitoring and related activities. Present the findings in a report that describes and assesses the relevant programmes and actors, identifies strengths and weaknesses, structures and programmes, actors and gaps as well as known contributions to GEO tasks. ▪ 2002: Prepare and conduct a specific workshop gathering relevant European programmes and actors, targeting recommendations on the way forward (M4-9) ▪ 2003: Strategic Workshop outcome document (M10-12): Draft SBA-specific strategic document encompassing European climate related objectives. ▪ 2004: Support to GEO 2010 preparation and to consolidated strategy document (M10-24): Contribute to overall strategic document and activities towards GEO HLWG and GEO by feeding into WP 10000. This may involve organizing additional small meetings/workshops on specific issues. 						
<p>Deliverables</p> <p>D3 Report on Status quo of European GEO Climate contributions (M6)</p> <p>D9 Report on Workshop on European GEO Climate contributions (M12)</p> <p>D13 Draft strategic document drawn from European GEO Climate workshop (M15)</p>						

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WP 3000

Work package number	3000	Start date or starting event:	Kick-off			
Work package title	Disasters					
Participant short name	DLR	Uni Bonn				
<p>Objectives</p> <p>Carry out a study to analyse the European Earth Observation activities in support of Disaster Management and related issues, within the scope defined in section B1.1.3. Pay special attention to pan-European Programmes and Organisations.</p> <p>Bring together all relevant European actors and programmes to discuss the way forward for a more effective, visible, sustained and structured European GEO contribution for the Disasters SBA.</p> <p>Prepare a strategic document drawn from the above line of action.</p> <p>Contribute Disasters related aspects to European position for the GEO Summit 2010 and its documentation.</p>						
<p>Description of work: The Overall Responsible for this Work Package is DLR (DFD). DLR (D-GEO Office) provides support to the organisation and streamlining of the workshop. The tasks within this WP can be grouped as follows:</p> <ul style="list-style-type: none"> ▪ 3001: Study status quo (M1-6): Conduct a study of the situation in Europe concerning EO support to Disaster Management and related activities. Present the findings in a report that describes and assesses the relevant programmes and actors, identifies strengths and weaknesses, structures and programmes, actors and gaps as well as known contributions to GEO tasks. ▪ 3002: Prepare and conduct a specific workshop gathering relevant European programmes and actors, targeting recommendation on the way forward (M4-9) ▪ 3003: Strategic Workshop outcome document (M10-12): Draft SBA-specific strategic document encompassing European disaster related objectives. ▪ 3004: Support to GEO 2010 preparation and to consolidated strategy document (M10-24): Contribute to overall strategic document and activities towards GEO HLWG and GEO by feeding into WP 10000. This may involve organizing additional small meetings/workshops on specific issues. 						
<p>Deliverables</p> <p>D4 Report on Status quo of European GEO Disaster contributions (M6)</p> <p>D10 Report on Workshop on European GEO Disaster contributions (M12)</p> <p>D14 Draft strategic document drawn from European GEO Disasters workshop (M15)</p>						

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WP 4000

Work package number	4000	Start date or starting event:			Kick-off
Work package title	Water				
Participant short name	DLR	BfG	Uni Bonn		
<p>Objectives</p> <p>Carry out a study to analyse the European Earth Observation activities in support of the understanding of the water cycle and water management, within the scope defined in section B1.1.3. Pay special attention to pan-European Programmes and Organisations.</p> <p>Bring together all relevant European actors and programmes to discuss the way forward for a more effective, visible, sustained and structured European GEO contribution for the Water SBA.</p> <p>Prepare a strategic document drawn from the above line of action.</p> <p>Contribute Disasters related aspects to European position for the GEO Summit 2010 and its documentation.</p>					
<p>Description of work: The Overall Responsible for this Work Package is the University of Bonn. It will engage closely with BfG, building on existing close cooperation on national contributions to GEO in the field of water. DLR provides support to the organisation and streamlining of the workshop. The tasks within this WP can be grouped as follows:</p> <ul style="list-style-type: none"> ▪ 4001: Study status quo (M1-6): Conduct a study of the situation in Europe concerning Earth Observation of water and related activities. Present the findings in a report that describes and assesses the relevant programmes and actors, identifies strengths and weaknesses, structures and programmes, actors and gaps as well as known contributions to GEO tasks. ▪ 4002: Prepare and conduct a specific workshop gathering relevant European programmes and actors, targeting recommendation on the way forward (M4-9) ▪ 4003: Strategic Workshop outcome document (M10-12): Draft SBA-specific strategic document encompassing European disaster related objectives. ▪ 4004: Support to GEO 2010 preparation and to consolidated strategy document (M10-24): Contribute to overall strategic document and activities towards GEO HLWG and GEO by feeding into WP 10000. This may involve organizing additional small meetings/workshops on specific issues. 					
<p>Deliverables</p> <p>D5 Report on Status quo of European GEO Water contributions (M6)</p> <p>D11 Report on Workshop on European GEO Water contributions (M12)</p> <p>D15 Draft strategic document drawn from European GEO Water workshop (M15)</p>					

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WP 10000

Work package number	10000	Start date or starting event:	Kick-off
Work package title	Consultation, consolidation and dissemination		
Participant short name	DLR	EUMETSAT	BfG Uni Bonn

Objectives

Interface with GEO at European (GEO HLWG) and international level (GEO Secretariat and Working Groups)

Achieve visibility of project results in the GEO 2010 Summit documentation

Support any European high level GEO event

Propose a consolidated draft European GEO Strategy

Prepare effective communication material (Website, leaflets, video animation, illustrations)

Communicate project objectives and results to relevant stakeholders and public at large

Ensure consistency and relevance of project work with European initiatives, including the INSPIRE Directive, the proposed Shared Environmental Information System (SEIS), and the proposed EU Programme “Global Monitoring for Environment and Security” (GMES).


Description of work

The Overall Responsible for this Work Package is DLR (Udo Gärtner), supported by the D-GEO Office. There will be close coordination with the other WP leaders and input from those WPs will be crucial. On the other hand, there will be input to WP’s 2000-4000 (workshops) in the form of streamlining and harmonising the process. The main tasks within this WP can be grouped as follows:

- 10001: Communication material (M1-24): A project website will be created and maintained throughout the project. This site will serve as main tool for information exchange and outreach to the community and public. Material for outreach and dissemination will be prepared both during the first half of the project, primarily to support the workshops and the GEO Summit 2010, and near the end of the project to support dissemination of the results. At a minimum, this material will include
 - three leaflets showcasing the status quo on European EO activities (one for each of the selected SBAs)
 - three short stand-alone videos showcasing the status quo on European EO activities (one for each of the selected SBAs)
 - one set of leaflets or a brochure presenting the main findings and recommendations at the end of the project
 - illustrations for use in presentations and exhibition displays

The preparation of SBA-specific material will be the responsibility of the respective WP leaders. DLR-DFD (Division Marketing and Media) will provide support to these activities, and in particular, produce the three videos, based on input from the WP leaders.

- 10002: Interfacing with GEO Secretariat and GEO HLWG (M1-24): This task will run throughout the project on periodic basis. Project work progress will be presented to the GEO HLWG as appropriate. At these occasions, guidance will be sought from HLWG. A regular exchange of information will be maintained with the GEO Secretariat, both on the SBA specific level and a more general level.

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- 10003: Consolidated strategy document (M12-24): The outcome of the thematic workshops will be consolidated. An intensive consultation process will be initiated with the communities that took part in the workshops, the EC and the relevant stakeholder organisations involved on administrative level. The outcome of this process is a major target of the project overall.
- 10004: Engagement in GEO 2010 Summit preparatory working groups (M1-13): The WP 10000 leader will participate in the working group(s) preparing the GEO Summit. Three lines of activities can be foreseen: the preparation of a political declaration, the preparation of a report of achievements and dealing with PR, and the preparation of a “Mid-term assessment” of the GEO activities and achievements as a whole.

Deliverables

D2: Project Website

D7: Full Workshop planning (M9): In consultation of the WP Leaders 2000-4000, who are responsible for the workshops, WP 10000 will produce a harmonised and full Workshop sequence for the project.

D8: Initial set of communication material (short videos, leaflets)

D16: First draft strategic document (M15): As direct consequence of the workshop outputs, a consolidated version will be produced as first draft that will be iterated and further discussed with all stakeholders until the end of the project.


D17: Report on project elements integrated into GEO 2010 Summit documentation (M16): After the GEO 2010 Summit, a report will be produced showing, what was achieved in the attempt to integrate results of this project into the GEO 2010 Summit documentation.

D19: Final consolidated strategic document (M24): This Document will be a major outcome of the project. It will constitute a significant element of the European GEO Strategy.

3.6 List of milestones and planning of reviews

The following milestones have been identified for the project.

1. The **Kick-Off meeting** marks the beginning of the project. At this point the grant agreement has been agreed and this description of work along with it. The Consortium Agreement will be signed at or around this date. The Kick-Off marks the beginning of work along the work plan presented here.
2. The **Status quo report availability** marks the end of the Sub-WPs 2001, 3001, and 4001, i.e. the researching of the status quo of activities and arrangements in the three selected SBAs. The availability of these reports (deliverables 2000.1, 3000.1, and 4000.1) is a prerequisite for holding the thematic workshops. The preparation of the discussions at the workshops will be based on these reports.
3. The **workshop readiness review** marks a check by the Coordinator if the preparations of the three workshops organized in WPs 2000, 3000, and 4000 are on track and if all the major preparation elements are in place. The workshops must provide vital input to the consolidation phase in the second half of the project. Hence, it is important that there are no more than minimal delays in the workshop timing.
4. The **workshop results** (deliverables 2000.2, 3000.2, and 4000.2) **availability** marks the end of WPs 2003, 3003, and 4003. At the same time, this marks the end of the first half of the project, its analysis and consultation phase.
5. The **European position to the GEO Summit** marks the end of the project elements supporting the preparation of the 2010 GEO Summit, including participation in GEO Working Groups and Task Forces.


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6. The **contribution to the European GEO strategy** marks the availability of deliverable 10000.6, the final consolidated strategic document.
7. The **Final Meeting** marks the end of the project.

List and schedule of milestones					
Milestone no.	Milestone name	WPs no's.	Lead beneficiary	Delivery date from Annex I ⁹	<i>Comments</i>
M1	Kick-off	All	DLR	M1	Tentative Project start: October 01, 2009
M2	Status quo report availability	2000, 3000, 4000	All	M6	
M3	Workshops readiness review	2000, 3000, 4000	All	M9	
M4	Workshop results availability	2000, 3000, 4000	All	M12	
M5	European position to GEO 2010 Summit	All	DLR	M12	
M6	Contribution to European Strategy	All	DLR	M24	Strategic Paper covering all results of the project
M7	Final Meeting	All	DLR	M24	

Tentative schedule of project reviews			
Review no.	Tentative timing, i.e. after month X = end of a reporting period	<i>planned venue of review</i>	<i>Comments, if any</i>

⁹ Month in which the milestone will be achieved. Month 1 marking the start date of the project, and all delivery dates being relative to this start date.

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1	After project month: 6	DLR, Bonn	
2	After project month: 12	DLR, Bonn	
3	After project month: 18	DLR, Bonn	
4	After project month: 24	DLR, Bonn	Final Meeting

4 Management structure and procedures

4.1 Reference documents

The project management will follow the agreements of the Grant Agreement with the European Commission and the Consortium Agreement. The Consortium Agreement between the four project partners will be put in place at the beginning of the project and validated at the kick-off meeting. It will define the internal management rules of the consortium: responsibility/commitment of each participant, roles of the Coordination Board and Project Manager, confidentiality, access rights to the ownership and results exploitation conditions, including declarations of participants on pre-existing related know-how.

4.2 Coordinator

The Support Action co-ordinator, DLR, is responsible for the application of the rules agreed on in the grant agreements and the Consortium Agreement. The coordinator is in charge of redistributing the grant from the Commission, the consolidation of the technical and financial results at the end of each period of one year and the preparation of reports to be sent to the European Commission, including the results of the financial audit. For these purposes a similar model of financial reporting will be proposed to each participant.

The coordinator will also be the project manager, responsible for the overall project implementation. In particular, the coordinator is in charge of preparing progress meetings, minutes of the meetings and enforcing deadlines for reporting and deliverables. The project manager maintains regular contact with all WP leaders during the project and all other key personnel involved.


4.3 Coordination Board

A coordination board is led by the Project Manager and composed of the WP leaders. The board coordinates the work in between the different WPs. These activities are included in WP1000. The Coordination Board make high-level decisions concerning all aspects of the project: technical, financial scheduled partnership, disseminations, intellectual property rights, exploitation and innovation-related issues. The Coordination Board will meet twice a year on an ordinary basis and shall typically precede or follow specific milestones, either for preparation or for concluding, according to the milestone considered. Extraordinary meetings will be called for, should the need arise.

4.4 Work Package Leaders (WPLs)

A WPL is nominated among the partners involved in each Work Package (see Figure 3). All WPLs will meet at technical coordination meetings, arranged adequately (frequency and attendees) according to the real needs. Each WPL represents the Project Coordinator at WP level and acts as a sub-project coordinator, responsible for:

- coordinating the WP activities and continuously monitoring the progress,

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- reporting tasks activity to the whole consortium in a quarterly Progress Reporting Form,
- contributing to regular project dissemination and communication activities
- ensuring that milestones and deliverables of the WP tasks are fulfilled,
- scheduling, if needed, special meetings to determine suitable measures to be taken.

Table: WP's leaders

WPL 1000		WPL 2000		WPL 3000		WPL 4000		WPL 10000	
Helmut	Stauden-	Paul	Counet	Günter	Strunz	Michael	Nyenhuis	Udo Gärtner	(DLR)
rausch (DLR)		(EUMETSAT)		(DLR)		(Uni Bonn)			

4.5 Methods for monitoring and reporting progress

Each partner and work-package leader will report in written form to the co-ordinator, on a periodic basis (5 reports for the projects' period) within the "Coordinating & reporting activity" tasks. Information shall cover the technical advancement of active tasks, difficulties encountered, current percentage of task completion, the problems met, how they were solved, the next steps to be done, the expected problems and how they shall be treated. In case of a problem, the project officer should be immediately informed, especially about the dates of achievement of the tasks and of the deliverables. The global time schedule of the projects, with its critical paths will be analysed by the co-ordinator. The project manager will edit a synthesis of these progress reports (M6, M12, M18, M24), as well as meeting reports, and will guarantee their distribution within the consortium. The information will be used to produce activity and financial reports that will be communicated, at the end of each reporting period, to the commission for reviewing and approval. Each WP is led by a WP leader who coordinates the activity within the WP and reports to the project manager about the way the WP work is performed

4.6 Stakeholder consultation, Steering Board


Project progress will be reported to the European GEO High Level Working Group (GEO HLWG) and guidance for the work ahead will be sought from this group. In this way, the HLWG will act as a steering board to the project. The GEO HLWG meets about 3 times a year, usually at the occasions of preparing or reporting from GEO Executive Committee meetings. It assembles GEO representatives of all EU FP7 member states, as well representatives at decision making level of all GEO relevant EU agencies and European intergovernmental organisations.

Close coordination will also be undertaken with GEO Secretariat, in order to timely integrate project progress into the GEO work.

5 Partners

5.1 DLR

DLR is Germany's national research centre for aeronautics and space. Its extensive research and development work in aeronautics, space, transportation and energy is integrated into national and international cooperative ventures. As Germany's Space Agency, the German federal government has given DLR responsibility for the forward planning and implementation of the German space programme as well as international representation of Germany's interests. DLR has approx. 5800 employees and is highly experienced in international project management. DLR has two distinct roles in the project, as explained below:

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DLR Space Agency (RD)

DLR Space Agency (RD) plans and implements the German national space programme, of which numerous activities including highly relevant missions, such as SCIAMACHY on ENVISAT, TerraSAR-X, Rapid-Eye, ENMAP and TanDEM-X contribute to international Earth Observations. DLR Space Agency also manages the German contribution to ESA, which, in its Earth Observation programmes, represents the highest share of all ESA member states.

DLR Space Agency also runs the German National GEO Secretariat (D-GEO Office) on behalf of the Ministry of Transport, Building and Urban Affairs, the ministry responsible for GEO, GMES, ECMWF and EUMETSAT in Germany. DLR supports the BMVBS in all programmatic and technical matters of GEO, GMES and EUMETSAT.

Role in the project:

DLR Space Agency will lead WP 1000 (project management and coordination). This includes all administrative and management tasks. It will also lead WP 10000 (Consultation, Consolidation and Dissemination). It will also contribute to the thematic WP's 2000-4000 in the form of support to the workshops sequence.

Key personnel involved:

Udo Gärtner: is former president of the German Meteorological Service (DWD). Until the end of 2008 he served as German GEO Principal and member of the GEO Executive Committee and has been one of the most prominent actors of GEO overall. He has been active in numerous GEO Working Groups and Task Forces. Udo Gärtner also served as Co-chair of the GEO S&T committee. Since 2007 he has been advising the D-GEO Office at DLR on national GEO implementation.

N.N.: DLR Space Agency is currently looking to hire one additional person to support this work. The final division of responsibilities between this new hire and the other persons named here will depend on that new person's experience and capacities.


Dr. Helmut Staudenrausch heads the D-GEO Office at DLR. He has been a member of the German GEO delegation since the beginning of GEO activities in 2003 and active in all relevant GEO bodies. He is also responsible for the overall management of the support by DLR Space Agency to the German federal ministry responsible for GMES, GEO and EUMETSAT.

Dr. Jörn Hoffmann is the DLR programme manager for GMES. He also supports the D-GEO Office and participates in several GEO bodies, including representing Germany as Co-Chair in the GEO S&T Committee.

DLR German Remote Sensing Data Centre (DFD)

DLR's German Remote Sensing Data Center (DFD) is engaged in research, product development and providing services based on earth observation data from aircraft and satellite platforms. A multi-mission ground segment developed at DFD integrates reception, processing, archiving and distribution of data from national, international and commercial earth observation satellites.

DLR is partner in the ESA GSE projects RESPOND and RISK-EOS, the FP7 project Safer and the GMES Preparatory Action LinkER. It also coordinates the EU Network of Excellence "Global Monitoring for Stability and Security (GMOSS)". DLR operates the "Center for Satellite Based Crisis Information" (ZKI). Its function is the rapid acquisition, processing and analysis of satellite data and the provision of satellite-based information products on natural and environmental disasters, for humanitarian relief activities, and for civil security. DLR supports and participates in the International Charter "Space and Major Disasters" and coordinates the acquisition and analysis of satellite imagery as Charter project manager.

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DLR-DFD's GeoVisualizationCenter (GeoVIS) specializes in visualizing geoscientific data and projects, focussing on remote sensing data. It produces complex computer visualizations of science activities and thereby facilitates the transfer of research results to political decision makers, users and the public at large.

Role in the project:

DLR DFD leads Work Package 3000 (disasters). It also contributes to WP 1000 by delivering reports and other information, and to WP 10000 by contributions to the strategic documents and the GEO 2010 summit preparation process. DFD will also play an important role in supporting the production of material for communicating the project's objectives and results to the public at large. In particular, DFD will produce the videos for the three SBAs.

Key personnel involved:

Prof. Dr. Günter Strunz is head of the research team on Early Warning Systems and Risk Modelling at DFD. He received the diploma in geodesy in 1984 and the Ph.D. in remote sensing in 1992 both from the Technical University Munich and joined DFD in 1993. He is university lecturer at the Technical University Munich for Remote Sensing and GIS.

Gunter Schreier is head of Business Development at DFD responsible for international relations as well as the coordinator for GMES matters. He graduated in geophysics at University Munich in 1983 and joined DLR in 1985. He was national detached expert at the Joint Research Center from 1994-96 and from 2000-2003 he was Vice President of Definiens Imaging GmbH.


Dr. Stefan Voigt is leading a research team on Crisis Information and Rapid Mapping at DFD. He received the M.Sc. in physical geography, physics, remote sensing at the University Munich in 1997 and the Ph.D. from Berne University in 2000. He is in charge of the scientific and operational coordination of DLR's Center for satellite based crisis information (ZKI).

Nils Sparwasser is head of the Geovisualization Center and heads the division "Science Communication and Visualization" at DFD. He holds a Masters degree in geography, zoology and botany. His scientific background is complemented by an on the job training as PR consultant. For the past 10 years he has worked on different projects in the field of scientific visualization of remote sensing data. Together with his team he realized hundreds of animations and films, several exhibitions and three internationally sold high quality books – Planet Earth, Mountains from Space and Global Change – to impart scientific knowledge to a broader public. Nils Sparwasser lectures on Remote Sensing at Catholic University Eichstätt-Ingolstadt.

5.2 EUMETSAT

EUMETSAT is the European operational satellite agency for monitoring weather, climate and the environment. EUMETSAT operates a system of meteorological satellites monitoring the atmosphere and ocean and land surfaces which deliver weather and climate-related satellite data, images and products – 24 hours a day, 365 days a year. This information is supplied to the National Meteorological Services of the organisation's 22 Member and 8 Cooperating States in Europe, as well as other users worldwide.

EUMETSAT is uniquely equipped to contribute to the global effort to address the global climate challenge. Its fleet of satellites already provides a wealth of environmental and climate data and products generated by EUMETSAT, together with its Satellite Application Facilities (SAFs), that are distributed rapidly to the global user community 24 hours a day, 365 days a year. And equally importantly, the organisation already possesses a unique archive of relevant long-term satellite data dating back to 1981, the year the second Meteosat weather satellite was launched.

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As the challenges of climate change require access to continuous, high-quality observational data sets that span decades, EUMETSAT is ideally positioned to contribute to the global response that is being coordinated to meet the challenges of climate change and to secure the existence of humankind on our planet through its operational mandate, relevant experience and expertise, operational partnerships, long-term data archives and extensive infrastructure for observing and disseminating data, feedback mechanisms with the global user community and well-proven development cooperation with the European Space Agency

EUMETSAT, together with other partners in the Coordination Group for Meteorological Satellites (CGMS) and the World Meteorological Organization's (WMO) space programme, is also spearheading the overall effort to define a comprehensive global design of a space-based climate monitoring system and resulting products. Through this, EUMETSAT can fulfil its mission statement: "to contribute to the operational monitoring of the climate and the detection of global climate changes".

In addition, EUMETSAT participates in two interconnected global initiatives to improve the generation of, and access to, timely and high-quality climate information; the Global Space-based Inter-Calibration System (GSICS) initiative and the Regional/Specialised Satellite Centres for Climate Monitoring (R/SSC-CM) initiative, which are both integrated within the WMO and CGMS. The goal of the GSICS initiative is to ensure that measurements from different satellite systems are inter-calibrated so that all the related observations and products can be fully exploited at a global level over long time series. The R/SSC-CM initiative aims to ensure the continuous and sustained provision of high-quality ECV global satellite products.

Role in the project

EUMETSAT will take over the lead of Work Package 2000 (Climate). It will also contribute to WP 1000 by delivering reports and other information and to WP 10000 by contributions to the strategic documents and the GEO 2010 summit preparation process and providing material for preparing communication material.

Key personnel


Mr Paul Counet, Head of Strategy and International Relations in EUMETSAT is responsible within EUMETSAT of coordinating a corporate strategy aiming at promoting the contribution of the organisation to Climate Monitoring activities in Europe and more globally.

Dr. Robert Husband is supporting EUMETSAT in climate-related activities since 2004. He is particularly taking care of the coordination with the CEOS and GEO activities.

5.3 BfG

The German Federal Institute of Hydrology (Bundesanstalt für Gewässerkunde - BfG) is a federal agency within the portfolio of the German Ministry of Transport, Building and Urban Affairs (BMVBS). As such the BfG is the federal government's scientific institution for research, assessment and consulting in matters related to waterways in the fields of hydrology, water resources management, ecology and conservation of waters. The assignment of the BfG is to act as a research-based advisory service to the federal ministries and the Federal Waterways and Shipping Administration in the fields of qualitative, quantitative and ecological hydrology. The BfG participates in a wide range of international cooperations. Among others it hosts the Global Runoff Data Center under the auspices of WMO, and the secretariat of the International Hydrological Programme (IHP) of UNESCO and the Hydrology and Water Resources Programme (HWRP) of WMO. BfG has also expertise in oceanographic issues, e.g. demonstrated in the Oceanides and GMES MarCoast projects.

Role in the project:

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The BfG will contribute to WP 4000 by providing inputs to the preparation of the status quo reports and other information. BfG will support the coordinator of WP 4000 with extensive networks in the area of water and the preparation of the specific workshop for water, which will be organized at the BfG. BfG will further contribute to WP 10000 by contributions to the strategic documents and the GEO 2010 Summit preparation process and by providing material for communication material.

Key personnel involved

Dr. Ralf Busskamp (BfG) is the head of the Department of Geoinformation and Remote Sensing, including GRDC. He coordinates all GEO related activities of the BfG.

5.4 University of Bonn

The University of Bonn is a research university, which cooperates with a number of different universities and research organisations worldwide. The different departments within Earth sciences conduct research on Global Change issues with a focus on observation, evolution and change of geosystems on different spatial and temporal scales as well as in the context of risk research. In the framework of interdisciplinary co-operations and scientific approaches, emphasis is put on the evolution of and interactions between the deep Earth, lithosphere and pedosphere, hydrosphere, biosphere and atmosphere as well as parts of the cryosphere. A further characteristic of the Earth sciences in Bonn is research conducted on the interactions between natural and social systems.

The work for this project is conducted at the Department of Geography, which is actively participating in the research foci described above. The Department of Geography further participates in a development concept for the Earth Sciences in the region ABC/J (Aachen, Bonn, Cologne and Jülich) – a collaborative effort of different universities and the Helmholtz Forschungszentrum Jülich (FZJ). Once established, the structurally interconnected Geoscience network (Geoverbund ABC/J) will provide extended possibilities to deepen international scientific collaborations.

Remote sensing and geoinformation are important components of the research conducted at the Department of Geography. Remote sensing facilities of several institutions have been centralized at the Center for Remote Sensing of Land Surfaces (ZFL), which has been established as an interdisciplinary research and teaching center for remote sensing at the University of Bonn. Thereby, a high degree of scientific exchange with the Department of Geography is guaranteed.


Currently, the Department of Geography conducts a collaborative project with the BfG in the framework of GEOSS. The work is focused on user needs and user requirement analyses in the GEO societal benefit areas ‘weather’ and ‘water’. This project also aims at a stronger involvement and consideration of scientific communities with regard to the GEOSS initiative.

Role in the project:

Uni Bonn will lead WP 4000 (Water) including all administrative and management tasks. Uni Bonn will also contribute to WP 1000 by delivering reports and other information, and to WP 10000 by contributions to the strategic documents and the GEO 2010 summit preparation process. WP 2000 and WP 3000 will be supported by Uni Bonn, as necessary. It will draw on resources (information, networks) of BfG, where necessary.

Key personnel involved

Dr. Michael Nyenhuis is commissioned by the BfG to support the BfG for GEO related activities. He is a member of the German GEO delegation and the German GEO working group (D-GEO). He represents the German user community in the User Interface Committee (UIC) and actively supports the current efforts of the UIC to define critical earth observation priorities with regards to the societal

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benefit areas of GEOSS. He has been work package leader at the BfG for the User Federation and the Validation Bureau ‘Oil Spill’ of the GMES Service Element MarCoast.


5.5 Consortium as a whole

All participants of the consortium have central roles in the themes of the project in terms of existing partnerships in numerous projects, programmes and structures, or in central positions and networks in the relevant communities of practice. Therefore, they will be accepted by their partners and capable of bringing the relevant communities together. The D-GEO office is one of the best established national GEO structures in Europe. It can bring in very good relationships with the GEO secretariat and the EC. Udo Gärtner as lead of WP 10000 is a highly experienced, well accepted and very active player in GEO and as such will be able to make use of his good working relations with GEO Members, the GEO Executive Committee, the GEO Committees and the GEO Secretariat.

In conclusion, the Consortium as a whole collectively expects to be capable of achieving the project objectives, namely to integrate relevant European players in the issues addressed by GEO, to start a European strategy process in the field of earth observation, and to transfer the outcomes of these processes into the work of GEO in building GEOSS at European and international level.

6 Acronyms

AWI	Alfred Wegener Institute for Polar and Marine Research
BfG	Bundesanstalt für Gewässerkunde (German Federal Institute of Hydrology)
CEOS	Committee for Earth Observing Satellites
DFD	DLR German Remote Sensing Data Center
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)
EC	European Commission
ECV	Essential Climate Variable
ECMWF	European Centre for Medium-range Weather Forecasts
EFAS	European Flood Alert System
EMI	European Meteorological Infrastructure
EMSA	European Maritime Safety Agency
ERCS	GMES Emergency Response Core Service
ESA	European Space Agency
ESDI	European Spatial Data Infrastructure
ESSP	Earth System Science Partnership
ETN-H	European Terrestrial Network – Hydrology
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EuroGOOS	European regional alliance under the Global Ocean Observing System (GOOS)
GCOS	Global Climate Observing System
GEO	Group on Earth Observations

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GEOSS	Global Earth Observation System of Systems
GMES	Global Monitoring for Environment and Security, also dubbed Kopernikus
GOOS	Global Ocean Observing System
GRDC	Global Runoff Data Centre
GTOS	Global Terrestrial Observing System
HFA	Hyogo Framework for Action
HLWG	High-Level Working Group
HWRP	Hydrology and Water Resources Programme of WMO
IAHS	International Association of Hydrological Sciences
ICSU	International Council of Science
IFM-GEOMAR	Leibniz Institute for Marine Sciences
Ifremer	French Research Institute for Exploitation of the Sea
IHP	International Hydrological Programme of UNESCO
IPCC	Intergovernmental Panel on Climate Change
JRC	Joint Research Centre of the European Commission
MIC	Monitoring and Information Centre of the European Commission
MPI	Max-Planck-Institute
NHS	National Hydrological Service
NMS	National Meteorological Service
NOCS	National Oceanography Centre Southampton
PIK	Potsdam Institute for Climate Impact Research
SAF	EUMETSAT Satellite Application Facility
SBA	Societal Benefit Area
UNEP	UN Environmental Programme
UNESCO	UN Educational, Scientific and Cultural Organisation
UNESCO/IOC	UNESCO - Intergovernmental Oceanographic Commission
UNFCCC	UN Framework Convention on Climate Change
WCRP	World Climate Research Programme
WMO	World Meteorological Organisation
WP	Work Package
ZKI	Center for Satellite-based Crisis Information of DLR-DFD