Kick off meeting - REPORT

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Project acronym: COOPEUS

Project title: Strengthening the cooperation between the US and the EU in the field of environmental research infrastrucktures

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COOPEUS Kick-off meeting

18-20 September 2012

Atlantic Hotel - Campus

Bremen, Germany

Contents

Executive Summary of the COOPEUS Kick-Off Meeting

The Kick-Off meeting held 18-20th September 2012 in Bremen successfully brought all major players of the COOPEUS project together. Having all the leaders of the involved research infrastructures (RI) gather for 3 days in Bremen for the Kick-off meeting proved very fruitful for initiation of the project allowing for a thorough introduction to the scope and structure of the involved RIs, which will be valuable for analyzing and understanding the challenges of the transatlantic collaboration. Furthermore, the kick off meeting allowed for networks to evolve among the COOPEUS partners and promoted an in-depth discussion of the COOPEUS roadmap involving all partners and setting an overall framework for the future research tasks. The discussions were strongly focused on the central issues related to building up a closer cooperation between research infrastructures (RI) on both sides of the Atlantic and a more efficient use by providing immediate access to data and information. It became evident that by defining a common roadmap for the use and future extension of research infrastructures in the environmental field all involved parties will benefit significantly.
The involved RIs all possess particular expertise within their respective fields on both sides of the Atlantic. By combing this complementary expertise synergy between the corresponding RIs will evolve. The meeting clearly demonstrated the involved RIs willingness and readiness for sharing data and information and it was obvious that all infrastructures have reached a maturity level that leads to the logical step of interconnecting the RIs across disciplines and across the Atlantic.

An immediate aim for COOPEUS within the first year will be to learn about the status and facilities of the involved research infrastructures. To enable linkages across countries and disciplines, a common set of core parameters shall be defined to facilitate the sharing of data and subsequently explore the benefits resulting from these linkages. In the first phase of the COOPEUS project, a gap analysis in regard to impediments for data sharing in the different domains will be carried out. The gap analysis will be initiated by a questionnaire investigation collecting information on the data policies of the involved RIs, which will be concluded in Jan 2013.

Case study scenarios will be used in COOPEUS as a powerful tool for demonstrating project progress, which can not only be applied to real events, but may also be based on the simulation of a particular preexisting event from which data has been collected by various RIs. These events could be eruption of a volcano or anticipated changes of current patterns in the oceans due to climate change. At the Kick off meeting, four case scenario-themes were identified, which will promote cross disciplinary collaboration among the RIs in COOPEUS, and people were assigned to the task of finding suitable scenarios within these themes. In the case-scenario approach, COOPEUS will investigate not only what can be observed today but also what shall be added in the future? These questions lead to the establishment of a repository of current observing capabilities and the identification of future observing needs.

At the Kick off meeting, there was a general consensus that COOPEUS shall make full use of the results and experience of GEOSS, in particular in regards to the development of a Wiki. Also the establishments of so-called GEO supersites for intensive data collection within regions where natural hazards are imminent are very attractive concepts for COOPEUS, especially in regards the case-scenarios.

COOPEUS is striving to build on the latest ideas and concepts for data- and cyber-infrastructures and will in this regard collaborate closely with parallel running projects in Europe like ENVRI, iCORDI or ODIP and EarthCube in the US in order to get an overview of the state of the art in the field of connecting research infrastructures. At the COOPEUS kick off meeting, the preparation of a list of parallel running collaborative projects and their contacts was initiated. This list will be concluded by December 2012. Furthermore, ambassadors for the related projects will be appointed to ensure proper information exchange. COOPEUS will also get involved in working groups like DAITF (Data Interoperability Task Force) or suggest own working groups to push particular topics. COOPEUS will lead the initiative to develop the conceptual, basic foundations to enable interoperability and demonstrate the feasibility and the benefits of such an approach.

Kick off Meeting Attendees:

EU-Participants:

Waldmann, Christoph (MARUM, UNI-HB); Ketil Koop-Jakobsen (UNI-HB) Asmi, Ari (UHEL); Beranzoli, Laura (INGV); Magdalena Brus (UHEL); Diepenbroek, Michael (MARUM, UNI-HB); Favali, Paolo (INGV); Gonzalez, Juan Miguel (CSIC); Grant, Fiona (MI); Häggström, Ingemar (EISCAT); Huber, Rober (MARUM, Uni-HB); Janssen, Felix (MPI-Bremen); Kopf, Achim (MARUM, UNI-HB); Mathieu, Pierre-Phillipe (ESA); Müller, Henrik (MARUM); Paris, Jean Daniel (CEA); Sorvari, Sanna (FMI); Sommer, Angela (AWI); Van Eck, Torild (KNMI); Vierkorn-Rudolph, Beatrix (BMBF, ESFRI)

US-Participants:

Anderson, Greg (NSF), Ahern, Tim (IRIS); Loescher, Hank (NEON); Meertens, Charles (Unavco); Orcutt, John (Scripps); Pearlman, Jay (IEEE); Pearlman, Francoise (IEEE); Van Eyken, Anthony (SRI International); Weller, Robert (WHOI)

COOPEUS Kick-off meeting participants

From left: JM Gonzales (CSIC), G Anderson (NSF), A Van Eyken (SRI Int.), PP Mathieu (ESO), A Ari (UHEL), H Loescher (NEON), J Orcutt (Scripps), R Weller (WHOI), P Favali (INGV), J Pearlman (IEEE), F Pearlman (IEEE), T Ahern (IRIS), Häggström, Ingemar (EISCAT), F Grant (MI), R Huber (Uni-HB), M Diepenbroek (MARUM, UNI-HB), L Beranzoli (INGV), JD Paris (CEA), C Waldmann, (UNI-HB), C Meertens (Unavco), Magdalena Brus (UHEL)

Kick off Meeting Agenda:

DAY 1 - Tuesday, Sep 18

11:30 – 12:30 – Registration
12:30 – 13:30 – Lunch

SESSION 1: General Introduction to the Transatlantic Partnership (Session-chair: Christoph Waldmann)
13:30 Welcoming note by MARUM, University of Bremen (Michael Schulz)
13:40 Introductory note by the EC and NSF (Lorenza Saracco, EC, , Gregory Anderson, NSF)
14:00 COOPEUS background, vision and overall structure (Chr. Waldmann, Ketil Koop-Jakobsen)
14:15 Introduction of the partner institutions (10 minutes for each transatlantic partnership)

SESSION 2: Presentation of the Partnering Research Infrastructure Projects & Initiatives and their aims for the EU-US cooperation (Session-chair: Ketil Koop- Jakobsen)
16:00 Open Access to data and information (Hans Pfeiffenberger)
16:20 EISCAT/AMISR (Ingemar Häggström with input from AMISR)
16:40 ICOS/NEON (Hank Loescher)
17:00 EMSO/OOI (Laura Beranzoli, John Orcutt)
17.20 EPOS/EarthScope (Tim Ahern - IRIS, Chuck Meertens – UNAVCO)
17.40 LifeWatch/DataONE (Juanmi Gonzalez with input from DataONE)

18:00 – 19:30 – Poster-session

DAY 2 - Wednesday, Sep 19

SESSION 3: "Integration into existing frameworks and related projects (Session Chair: Jean-Daniel Paris)
9:00 Global Earth Observation with reference to GEOSS (Jay Pearlman)
9:30 Projects on the US side (Hank Loescher)
9:50 CREATIVE_B (Juan Miguel Gonzalez)
10:10 iCORDI (Robert Huber)

Strategic Cooperation Board
10:45 – 12.15 - Meeting of the Strategic Cooperation Board; Theme: COOPEUS in the larger EU-US cooperation landscape

SESSION 4: Cross-cutting themes: Existing data infrastructures, data policies, data interoperability agreements (20 minutes presentations + 5 minutes discussion) (Session chair: Michael Diepenbroek)
11:00 The OOI cyberinfrastructure architecture (John Orcutt)
11:20 Federated web services and distributed data centers (Tim Ahern - IRIS, Chuck Meertens– UNAVCO)
11:40 Geospace Virtual Observatory (Ingemar Häggstroem)
12:00 Data publishing (Michael Diepenbroek)

SESSION 5: Cross-cutting themes (Session Chair: Bob Weller)

13:30-15:00 - Discussion on existing data infrastructures, data policies, data interoperability agreements, exemplary implementation that may serve as testbeds, legal framework, workflows

SESSION 6: Synergies across disciplines and regions and with related emerging (EU/US - funded) projects (Session Chair: Fiona Grant)

16:00-17:30 Interfaces to other running projects on both sides of the Atlantic, Establishing a matrix for these interfaces and identifying persons that will be the points of contact

Networking Dinner

18:30 – 22:30 Networking Dinner - Himmelssaal, Hilton Hotel, Bremen

DAY 3 - Thursday, Sep 20

SESSION 7: Work package/task descriptions of the individual projects on the US and the EU side (Session-chair: Robert Huber)

9:00 WP 1 task and structure including Consortium and/or Cooperation Agreement (Ketil Koop-Jakobsen)
9:30 WP 2 task and structure (Ingrid Mann)
9:50 WP 3 task and structure (Jean-Daniel Paris)
10:20 WP 4 Task and structure (Laura Beranzoli)

SESSION 8: Work package/task descriptions of the individual projects on the US and the EU side continued (Session-chair: Ketil Koop-Jakobsen)
11:00 WP 6 Task and structure (NN)
11:10 WP 7 tasks and structure (Robert Huber)
11:30 WP 8 tasks and structure (Sanna Sorvari, Fiona Grant)
11:50 WP 5 Task and structure (Torild van Eck, Tim Ahern, 40 minutes)

SESSION 9: Conclusions, Adoption of date for next meeting and plan for first year (Christoph Waldmann)

13:30 Status quo of the NSF cluster proposal (Hank Loescher)
14:00 Conclusions

Steering Committee Meeting
14:30 – 16:00 – Steering Committee meeting (only Coopeus WP leader)

Kick off Meeting Minutes:

Day 1:

Session 1: welcoming and introduction to the host-institution, introductory remarks from EC and NSF representatives

Michael Schultz (MARUM) was welcoming the participants to the COOPEUS Kickoff meeting and gave a brief introduction of the host-institution; MARUM/Uni-HB emphasizing MARUMs focus on research infrastructures; hosting the data-publisher Pangaea as well as the IODP Bremen Core Repository and involvement in development and operation of marine technology.

Greg Anderson (NSF) highlighted NSF's interest in the enforcement of a transatlantic cooperation between research infrastructures and emphasized that NSF is committed to work with COOPEUS US-parties in their effort to seek funding for COOPEUS activities.
Lorenza Saracco (EC) was unable to attend the meeting. Christoph Waldmann presented a statement from Lorenza Saracco highlighting that the EC recognizes the importance in finding ways of collaboration among research infrastructures and emphasizing that global research infrastructures have strategic relevance within the future EU plans.

Christoph Waldmann (Uni-HB) presented the overall scope of the COOPEUS pointing out that COOPEUS must take leadership in setting the framework for international collaboration on research infrastructures regarding data sharing policies and standards as well as providing an ambitious roadmap for future international research infrastructure collaboration. Koop-Jakobsen gave an overview of the structure of the consortium.

Session 2 - Talks: Presenting the research infrastructures involved in COOPEUS

Hans Pfeiffenberger (AWI, Bremerhaven) gave a talk entitled “Open Access to Data and Information” giving an overview of the obstacles associated with sharing of data emphasizing that without the infrastructure that helps scientists manage their data in a convenient and efficient way, no culture of data sharing will evolve.

Ingemar Häggström (EISCAT)) presented EISCAT; a multi-site research infrastructure in northern Scandinavia carrying out observations with high flexibility of upper atmosphere and geospace with multi-static phased array radars and advanced digital processing supporting observations and e–infrastructures. EISCAT is currently leading the preparatory phase for constructing roadmaps to organize future efforts and exploit collaboration in hardware and software development in order to maximize the return on current and future investments, as well as the global development of observational and monitoring requirements and facilities.

Hank Loescher (NEON) presented “COOPEUS - NEON/ICOS/LIFEWATCH” a talk about “How to get from data to knowledge?” emphasizing NEONs involvement in finding solutions for data-sharing including the issues associated with data access and preservation, data integration and interoperability and data

standardization and quality control, and data tools and services for scientists and managers. NEONs experience will be important for the COOPEUS Work packages 1, 3, 6, 7 and 8

John Orcutt (OOI) and Bob Weller (WHOI) presented ocean research infrastructures as part of the Ocean Observatories Initiative (OOI); A long-term, NSF-funded program to provide 25-30 years of sustained ocean measurements to study climate variability, ocean circulation and ecosystem dynamics, air-sea exchange, seafloor processes, and plate-scale geodynamics. The Integrated Ocean Network, consisting of multiple research infrastructures (Global Scale and Coastal Nodes) with installation of complex instrumentation such as cabled systems, moorings, gliders, AUVs, facilitates near-real time access to ocean and climate data sets. OOI emphasizes open access to data (no proprietary periods) and links the marine infrastructures to users via Interactive networks (w. closed-loop processing & control) and connections to scientific , educational and social networks.

Laura Beranzoli (INGV) presented "EMSO European Multidisciplinary Seafloor and water-column Observatory". EMSO (European Multidisciplinary Seafloor and water-column Observatory) is the European network of fixed seafloor and water column observatories constituting a distributed infrastructure for long-term monitoring of environmental processes. EMSO provides data for an improved understanding of climate change, anthropogenic impacts, and geo-hazard warning, investigating interactions between atmosphere, ocean, and earth processes. EMSO is strongly engaged in sustaining operation of comprehensive and coordinated Earth observation networks in support of informed decision making; Addressing the need for timely, global and open data sharing across borders and disciplines; implementing interoperability of infrastructures and evaluating the practicability and in implementing data standards.

Tim Ahern (IRIS) "The Organizations EPOS & EarthScope Projects". EPOS is a long-term integrated research infrastructure plan for Europe to facilitate a better understanding of the physical processes controlling earthquakes, volcanic eruptions, unrest episodes and tsunamis as well as those driving tectonics and Earth surface dynamics. EPOS plans to integrate the currently scattered highly advanced European research facilities and observation networks thus facilitating multidisciplinary comprehensive analysis of solid earth data.
The EarthScope scientific community in the US conducts multidisciplinary research across the Earth sciences utilizing freely available data from instruments that measure motions of the Earth's surface, record seismic waves, and recover rock samples from depths at which earthquakes originate. EarthScope's scientific mission is to explore the structure and evolution of the North American continent and the physical properties that control earthquakes and volcanoes.

Juan Miguel Gonzalez (CSIC) presented LifeWatch and DataONE. Lifewatch is a European research infrastructure for biodiversity and ecosystem research providing integrated access to a variety of data, analytical and modeling tools served by a variety of collaborating initiatives. DataONE (Data Observation Network for Earth) aims to enable new science and knowledge creation through universal access to data about life on earth and the environment that sustains it. For LIFEWATCH/DATAONE, the main objective within the COOPEUS project is to identify how DataONE and LifeWatch services together may contribute

to new and efficient approaches in biodiversity research. Expected key outcomes will be improved strategies for the sharing of and access to data and knowledge tools and an action plan with identified stakeholders and possible actors.

Poster session:

For the poster session the research infrastructures involved in COOPEUS was requested to send posters presenting each individual research infrastructure. The following Posters were received and presented:

UNAVCO: "*Facilitating Geodesy Data Sharing: UNAVCO Participation in the Joint European Union –United States COOPEUS Project*"; Chuck Meertens, Fran Boler, and Stuart Wier

EISCAT: "*EISCAT_3D: Our Window to the Geospace Environment*"; Anders Tjulin, Ingrid Mann and Esa Turunen

EMSO: "*EMSO The European Multidisciplinary Seafloor Observatory*" Paolo Favali, and EMSO-Preparatory Phase Partnership

ICOS: "*ICOS – integrated carbon observation system, a European infrastructure dedicated to high precision monitoring of greenhouse gases*", http://www.icos-infrastructure.eu/

EARTHSCOPE: *"EarthScope and Its Influence at the IRIS DMC"* Johnson, P.A., Sharer, G., Hutko, A., Bahavar, M., Benson, R.B., and Ahern, T.K. IRIS Data Management Center, Seattle, WA

OOI: "*Disruptive technologies and impact on oceanography in 2030*" John A. Orcutt Frank L. Vernon, UCSD, La Jolla, USA

EPOS: "*EPOS- A long term integration plan of research infrastructures for solid earth science in Europe",* www.epos-eu.org

NEON: "NEON Climate and climate-related ecological impacts" Loescher H., Taylor J., Ayres E., Lou H

NEON:"Multi-scalar strategy for connecting science to policy and resource management" Wee B, Taylor J.

Day 2:

Sessions 3 - Talks: ***Integration into existing frameworks and related projects***

Jay Pearlman (IEEE) "Synergies of GEOSS Resources". The talk highlighted the GEOSS (The Global Earth Observation System of Systems) experience in serving information to science and decision makers. COOPEUS can especially draw on GEOSS substantial experience with regards to multidisciplinary research infrastructures, interoperability, standards and best practices, data policies discovery and access, and brokering approaches. Furthermore, GEOSS can be of assistance in the development of the COOPEUS "best practices"-wiki and of testbeds for cross disciplinary data access. In particular the GEOSS supersites might be of relevance for COOPEUS.

Hank Loescher (NEON) gave an overview over US-based and international NEON-related emergent research and infrastructures. There are many emergent bottom-up networks building large networks based on smaller already existing networks as well as other international networks (apart from GEO GEOSS, ICOS Lifewatch) which COOPEUS should be aware of .

Juan Miguel Gonzalez (CSIC) presented Creative B; an FP7 project supporting the collaboration between Research Infrastructures on Biodiversity and Ecosystems Research worldwide through cooperation in construction, exchange of expertise, development of governance and management aspects and organization of workshops. Creative B has international supporting initiatives all over the world.

Robert Huber (MARUM) presented iCORDI. iCORDI's prime objective is to establish a coordination platform between Europe and the USA to discuss and improve the interoperability of today's and tomorrow's scientific data infrastructures on both continents and to extend this to the global level. In particular the Data Access and Interoperability Task Force initiative (DAITF, http://www.daitf.org/) shall be supported through iCORDI. iCORDI has 13 partners from 10 countries including national data centers, technology providers and research communities. iCORDI will collaborate closely with COOPEUS and iCORDI meetings will also be available to COOPEUS. iCORDI also addresses human and social science infrastructures.

Session 4 - talks: Cross-cutting themes: Existing data infrastructures, data policies, data interoperability agreements

John Orcutt (OOI) presented the architecture of the OOInet and its interconnections to NEPTUNE, NWAVE and GLIF. OOI will enable researchers to freely and openly access near real-time data, -to collaborate with others in virtual labs, -to analyze and model data, -to test ideas and modify the observatory Interaction remotely with observatory sensors and platforms and to add or reconfigure sensors on the network with ease. The OOI cyberinfrastructure is designed to compile a multiscalar collection of multidisciplinary or heterogeneous sensors into a Network. The cyberinfrastructure represents the operating system for the NSF Ocean Observatories Initiative

Chuck Meertens (UNAVCO) presented UNAVCO , a non-profit university-governed consortium facilitating geoscience research and education using geodesy. UNAVCO receives data information from 2,300 Continuous GNSS Stations and 8,800 GPS Campaign Sites. The UNAVCO Archive holds: *5 million GPS/GNSS files*, *65 thousand product files* and*16 Tb GNSS Data.*
Web based GUI provides a rich set of information to aid in data and product selection and download. A number of European networks are providing data for ground-based GNSS. EPOS will likely be working with these groups to bring data and products (tropospheric delay products) into EPOS and COOPEUS. UNAVCO will also work with EPOS to assess the applicability for EPOS and COOPEUS.
Meertens raised the issue of real time data access where the current reality is that the delayed data are made available free of charge while real time data might only be accessed by paying a fee.

Ingemar Haggström (EISCAT) presented ESPAS (Near earth space data infrastructure for e science) ESPAS aims to establish the platform to integrate heterogeneous data from earth's thermosphere, ionosphere, plasmasphere and magnetosphere and support the systematic exploration of multipoint measurements from the near-Earth space through homogenized access to multi-instrument data. Furthermore, the goal is to enhance our capability to develop advanced models of the geospace environment, to support data assimilation techniques and provide tools for improved search and retrieval of data, tools for validation of models.

Michael Diepenbrook (Uni-HB) presented "PANGAEA® - Research Data enters Scholarly Communication", specifying the prerequisites for data publication and the development of an infrastructure involving reception, processing, archiving and dissemination of data. PANGAEA is heavily involved in the promotion and use of DOIs (Digital Object Identifiers) that make data traceable to the groups that produced the data and to defined quality standards. Persistent identifiers will be of central importance to be considered within COOPEUS project. Pangaea is an Information system for long-term archiving and publication of data from earth & environmental science

Session 5 – Discussion: ***Cross-cutting themes (Session Chair: Bob Weller)***

Session 5 was arranged as a discussion of existing data infrastructures, data policies, data interoperability agreements and exemplary implementations that may serve as testbeds, legal framework, workflows for the COOPEUS project. The discussion was chaired by Bob Weller (WHOI) who initiated the discussion with an introduction presenting the following agenda:

1) Identification of challenges
2) Building of functional cooperation
3) Action items (also includes session 6)

Identification of challenges:

Identifying challenges associated with the development of an infrastructure and international collaboration among existing research infrastructures allowing cross disciplinary data sets to be collected, processed, archived and made available for scientists with the purpose of building new science

Data policies:
Open data policies from funding agencies, scientific institutions and policy maker are a necessity for getting access to data material. Generally, funding agencies are moving towards more openness and more sharing. NSF endorses more openness, however, in some programs exclusiveness can be applied for. In general, EU-data policies are going towards open access, but it is heavily debated and open data policies are highly dependent on the intended purpose of use. Currently, EU projects have no general data availability obligations and consequently the idea of open data policies is more a philosophical exercise than reality.

QA/QC:
To assure reliability and long-term durability of data, implementation of QA/QC is necessary.
The QC/QA implementation begins with instrumentation by standardizing protocols, sharing calibration procedures and clarifying uncertainty budgets. COOPEUS will come up with requirements for minimum standards to assure coherency, but it is suggested that we keep the bar low allowing everyone to participate.

Especially with regards to real-time or near real-time data, quality control is an important topic. At this moment real time data coming from research infrastructures are mostly not quality checked. In some cases, QA/QC methods are differing significantly. It is highlighted that the level of quality control and parameters implemented as controlling mechanisms must be available to the data user.

Commercial interest:
Data having commercial interests or data generated by commercial or semi-commercial entities have different openness criteria. COOPEUS must define best practice for collaboration with commercial entities and the implementation of commercial data in research infrastructures

Building of functional cooperation

It is emphasized that one of the overall goals of COOPEUS is finding common strategies for data collection and promoting data accessibility, and in this regard make suggestions for common data policies in EU and US. In order to achieve this, it is necessary to identify common grounds for sharing data across countries and recommend guidelines in a document of best practice. Overall COOPEUS will define a framework for the best practice in data management and dissemination of data from research infrastructure starting with defining the **minimum requirements** for the entire process; from instrumentation protocols to end-user data formats. This may not be possible for all parameters, and consequently core parameters that shall be defined during the course of COOPEUS. The outcome of this exercise should be regarded as “a recommendation” to existing and evolving infrastructures, as we do not intend to gain control over individual research infrastructure policies. However, within the each work package, it will be possible to negotiate common regulations for a given number of research infrastructures associated with the same research topic

Before making recommendations for others, we must investigate where we stand initially in the COOPEUS consortium with regards to sharing data and technology. Hence, an investigation of each consortium member's data and technology sharing policies will be initiated. A questionnaire previously used in ENVRI will form the base for this purpose. *Sana Sorvari (FMI) will lead this activity and provide of first draft of the contents. Before sending around the questionnaire WP leaders shall be consulted.* Initially, it will be necessary to clarify and standardize the research infrastructure and data management-terminology (Lingo) (eg. cyber- or e-infrastructure) in order to assure the quality in the EU-US communication.

Test Beds/use cases:
Various test beds/use cases were discussed with Icelandic volcanic ashes being a very prominent candidate for an initial test bed for COOPEUS. Furthermore, a list of potential test bed-themes was created identifying the interest of each work package and persons in charge of initiating test beds within these themes.

Use Case/GEO subjects	**Water and hydrological cycle**	**Nat hazards Eg. Volcanic ash,**	**Carbon**	**extreme climate event**
Persons :	Bob Weller Fiona Grant	Laura Beranzoli Chuck Meertens	Hank Loescher JD Paris	Hank Loescher JD Paris
WP 2		x		
WP 3	x		x	x
WP 4	x	x	x	X
WP 5	X	x		
WP 6	x		x	X
WP 7	x	x	x	X
Research areas: Ecology, Geobiology, Oceanography, Marine Geology, Geochemistry				

SESSION 6 - Discussion: Synergies across disciplines and regions and with related emerging (EU/US - funded) projects (Session Chair: Fiona Grant)

In session 6, a contact list of potential collaborating research infrastructures and organizations was created. *Fiona Grant will finalize the list of contacts.*

	iCORDI (1)	Envri (2)	ENVIRO-FI (3)	Creative - B (4)	Datanet	Earthcube	NASA earth science	GIN (NSF/USGS)	ODIP	EuDAT (5)
Data Policy	**lief.laaksonen@csc.fi**	**Wouter Los UvA**	**jose.lorenzo@atos.net**	**http://creative-b.eu**	**DATA-one Cliff Jacobs** william.michener@gmail.com	Eva Zanzerkia ezanzerk@nsf.gov	Martha Maiden martha.e.maiden@nasa.gov	Lee Allison lee.allison@azgs.az.gov	**TBF**	**www.eudat.eu**
Standards	**WP2, DAITF, peter.wittenburg@mpi.nl**			**WP3**						
Legal frame-works	**WP2**			**WP4**						
Test Beds	**peter.wittenburg@mpi.nl**	**Robert Huber / Laura Beranzoli**	**Environmental enablers (6)**							

1) The premier global forum focused on driving convergence between emerging global data infrastructures and linking EU and US

2) Common Operations of Environmental Research infrastructures

3) The Environmental Observation Web and its Service Applications within the Future Internet

4) Coordination of Research e-Infrastructure Activities toward an international

5) (linked to LW and EPOS)

6) http://www.fi-ppp.eu/ and http://www.envirofi.eu/

Action items as a result of the discussions

- Initiation of an action group investigating and defining the minimum requirements for data management and dissemination including clarification and standardization of the research infrastructure- and data management-terminology (lingo) (eg. cyber- or e-infrastructure) assuring communication quality and coherency in future COOPEUS recommendations on data policy, management and dissemination etc. Interfaces to parallel running projects like EUDAT and iCORDI shall be identified (DAITF initiative) – Robert Hubert (Uni-HB) Chuck Meertens (UNAVCO) ***Until February 13 a recommendations shall be developed on how to interact with the DAITF group.***

- Investigating the internal COOPEUS data and technology sharing policies. A Questionnaire will be distributed to the consortium members. Jean- Daniel Paris will provide the ENVRI questionnaire, which will be used as a template for the COOPEUS investigation of internal sharing policies.

Sanna Sorvari (FMI) will adapt the questionnaire to COOPEUS needs and circulated it until January 13 in collaboration with the COOPEUS management team (Ketil Koop-Jakobsen (uniHB).

- Based on the discussion on standards for research infrastructure technology. Bob Weller (WHOI) and Christoph Waldmann (UniHB) will expand the details on calibration and quality management procedures with regard to instruments used within research infrastructures. The bases for interoperability - Core standards – formats, protocols, metadata, harvesting versus distributed approach, event feeds versus clients; Common protocols for observations (e.g. sampling rate, depth/height) for planning field work and sharing field resources (e.g. cruises). Core parameters shall be defined **Bob Weller and Christoph Waldmann will prepare some recommendations on traceability, calibration procedures for ocean instruments for the planned workshop at NOC in March 2013.**

- Jay Pearlman (IEEE) will present COOPEUS interests at GEO meeting in Brazil on November 12 and explore the possibility to use GEO as a COOPEUS testbed for instance by setting up a GEO supersite. **The initiation process shall be clarified by Jay Pearlman until December 12.**

- **Fiona Grant will finalize list of contacts to collaborating research infrastructures until December 12.**

- GEOSS can be of assistance in the development of the COOPEUS "best practices"-wiki. **Jay Pearlman will provide a suggestion for a COOPEUS wiki until January 13.**

Day 3:

Session 7 -Talks: *Work package/task descriptions of the individual projects on the US and the EU side*

Jay Pearlman (IEEE) presented EARTHcube, A Cyberinfrastructure for Geosciences. Earthscope aims to transform the conduct of research in geosciences by supporting development of community-guided cyberinfrastructure to integrate data and information for knowledge management across the Geosciences.

Greg Anderson (NSF) gave a summary of the outcome of the Strategic cooperation board (SCB) meeting. Currently, the SCB consists of Tim Ahern (IRIS), Greg Anderson (NSF), Pierre-Philippe Mathieu (ESA/ESIRN) and Beatrix Vierkorn Rudolph (ESFRI BMBF). The SCB plans to expand in the near future to a total of 6 full SCB members; 3 from EU, 3 from US. Some new candidates were identified on EU- as well as US-side. SCB is planning to have annual meetings with COOPEUS meetings and Quarterly SCB teleconferences following Steering Committee meetings.

The SCBs gives the following Guidance to COOPEUS :

- Identify Inventory relevant to EU/US projects
- Strengthen the link to iCORDI
- Focus on selected EU/US links, and do not expand beyond EU/US due to the risk losing focus
- Involve eIRG representative in COOPEUS
- SCB endorse use of natural hazards case

Ketil Koop-Jakobsen (UNI-HB) gave an overview over the tasks, milestones and deliverables for WP 1 as described in Annex 1

Ingemar Häggström (EISCAT) gave an overview over the tasks, milestones and deliverables for WP 2 as described in Annex 1

Jean Daniel Paris (CEA) gave an overview over the tasks, milestones and deliverables for WP 3 as described in Annex 1.

Laura Beranzoli (INGV) gave an overview over the tasks, milestones and deliverables for WP 4 as described in Annex 1

Session 8 -Talks: ***Work package/task descriptions of the individual projects on the US and the EU side continued***

Christoph Waldmann (Uni-HB) on behalf of **Juan Miguel Gonzales (CSIC)** gave an overview over the tasks, milestones and deliverables for WP6 as described in Annex 1.

Robert Huber (Uni-HB) gave an overview over the tasks, milestones and deliverables for WP7 as described in Annex 1

Sanna Sorvari (FMI) gave an overview over the tasks, milestones and deliverables in WP8 as described in Annex 1.

Torild van Eck (KNML) gave an overview over the tasks, milestones and deliverables in WP5 as described in Annex 1

Hank Loescher (NEON) presented the status of the US-parties initiative to seek funds for COOPEUS activities. It was emphasized that a proposal should be submitted in the near future in order to establish a Level of Foundation commitment matching the EU-support funds as fast as possible assuring an equal level of COOPEUS activities on both sides of the Atlantic. The NSF program SAVI is mentioned as a potential funding option. Greg Anderson (NSF) suggests NSF-program Hazards SEES - Interdisciplinary Research in Hazards and Disasters as another opportunity

SESSION 9 - summing up: Conclusions

The outcome kick off meeting was to the satisfaction of the COOPEUS members. Next COOPEUS

meeting will be in association with the AGU conference in San Francisco, USA, On Wednesday December 5, 2012; 2-4PM at the Palomar Hotel (the Zeum room).

Future COOPEUS annual meetings will be hosted by COOPEUS member institutions; Helsinki was mentioned as a potential host for the next meeting. In the planning of annual COOPEUS meetings, it was recommended that they do not coincide with other major event such as AGU and EGU, there as these events will be used for smaller COOPEUS meetings.