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Subject	Architecture and Infrastructure for the Pre-operational Network Services				
Prepared by	Stephan Meissl (revised by Erwin Goor)			25-05-2009	

Participants

Name	Company
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Stephan MEISSL	EOX, geoland2 SDI task
Marek TINZ	Infoterra, geoland2 SDI task
Gedas VAITKUS	AGI, geoland2 SDI task
Yves COENE	SPACEBEL, geoland2 SDI task, GIGAS, HMA
Jiri KVAPIL	CENIA, Czech Environmental Agency, SDI, Water
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Pietro Alessandro BRIVIO	CNR-IREA, Global Component
Etienne BARTOLOME	JRC, NARMA
Walter SIMONAZZI	ETC/LUSI, LUDC Prototype within SEIS
Pier Giorgio MARCHETTI	ESA/ESRIN, GIGAS
Andrea BIANCHALANA	ESA/ESRIN, GIGAS
Alessandra TASSA	ESA, GSCDA, Data Portfolio
Jolyon MARTIN	ESA/ESRIN, HMA, Interoperability for GMES etc
Maria GORZYNSKA	SRC, SATChMo
Sergio PROIETTI	Telespazio, g-Mosaic Project Manager
Filippo DAFFINA	Telespazio, g-Mosaic Technical Expert
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Distribution

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Berlin g2-forum
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Geoland2 SDI task members Geoland2 taskmanagers Geoland2 project coordination	
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1.WELCOME NOTES

Welcome by Erwin Goor to the workshop named "Architecture and Infrastructures for the Pre-operational Network Services".

Participants introduced themselves in a tour de table (see list of participants).

2.SCOPE AND OBJECTIVE OF THE WORKSHOP

First presentation by G. Triebnig highlighting the scope and goal of the day to achieve a common understanding of:

- geoland network services architecture
- geoland interfaces to surrounding services
- Roles and responsibilities for implementation and integration
- Integration plan

Development of a common picture of the geoland2 SDI and its embedding in the overall picture of architectures and services including space (GSC-DA) and in-situ data starting from the INSPIRE view of an abstract model of service types (see PowerPoint slides).

Interoperability is a management issue at first and a technical at second.

Specifically the workshop objectives should be:

- Actively involve CMSs and CISs into SDI approach (geoportal, OWS, workflows, etc.).
- Harmonize among g-Mosaic, geoland2, and GIGAS request from reviewers → agree on how to establish relationship.
- geoland2 needs to access space and in-situ data → relationship on a technical level and operation procedures.

Discussion:

Tassa: Is the SDI team the interface for ESA to geoland2?

Triebnig: We have to decide internally in geoland2 but yes it should be and we feel to be the primary interface for coordinating, etc.

Bartolome: Attention, there are already operational services with established processes. SDI has bright ideas but is only considered useful if it facilitates the work. Avoid slowing down processes (EumetCast is used).

Marchetti: Discussion also on data provider side. Focus of today should be: common architecture between g-Mosaic and geoland2; use cases and critical problems etc.

Brivio: Are there any processing services provided by the SDI like WPS?

Triebnig: No, but could be connected via a workflow.

3. GEOLAND2, LAND CORE SERVICES, SDI ARCHITECTURE AND INTERFACES

First part about the SDI objectives and the time-line presented by Erwin Goor (see PowerPoint slides):

Main objective is to provide tools for the discovery of all geoland2 products, data, and services via a unique access point.

Other objectives are to support the CMS and CIS in their implementations and to coordinate to process to come to a common understanding e.g. via the issued ICD.

The time-line is as follows:

- SDI baseline available in June based on questionnaire
- user requirements by October based on baseline SDI
- enhanced SDI version in April 2010 based on updated user requirements

Second part about the technical details presented by Yves Coene (see PowerPoint slides):

The SDI actual implementation is hosted by VITO.

There is still a decision to be made about a metadata profile. The question is if it is possible to have one single geoland2 profile or not.

The discovery service is not fully compliant to INSPIRE because of available OpenSource implementations (extensions only compliant to OGC 07-045).

geoland2 is considering to use the order service OGC 06-141 but this has to be evaluated and agreed.

Discussion:

Marchetti: How to define keywords and keywords type compliant to INSPIRE?

Coene: geoland2 is not at that level yet but it clearly is important for the future. Look for example what was done by BOSS4GMES. Possible usage of GMET thesaurus for translations.

Simonazzi: Is it a requirement to use OpenSource software?

Coene: Not directly but because of the budget.

Simonazzi: What about data quality?

Coene: Should be part of production chains in CMS and CIS not of SDI.

Simonazzi: Superimpose images → need for harmonization and interoperability.

Coene: Second level but not foreseen in SDI plan.

Marchetti: geoland2 should expand on this. Styled Layer Descriptors (SLD) are an implicit quality assurance means. Looking at Humboldt project I disagree with their approach. There is the need to find a compromise.

Break

4.G-MOSAIC, SECURITY RELATED CORE SERVICES, PLANS FOR SERVICE AND INTERFACE IMPLEMENTATION

Presentation by Sergio Proietti (see PowerPoint slides):

The project with 36 partners runs from 2009 till 2011 and has just started. The project type is different than the one of geoland2 since it is a "pilot".

The objective is to support intelligence and early warning and support crisis management operations.

Supports specific service cases (e.g. monitoring of nuclear facilities) via service chains for one concrete user whereas special products are not in the scope of the project.

Second part of presentation by Filippo Daffinà about technical aspects of Service Network and Common Portal.

The objectives are to study and develop service chains and to develop a service network including profiles and access rights.

There are more than 57 proprietary building blocks in 7 different service chains. Data requests have to come from one of the service chain leaders (TPZ, EUSC, DLR, INDRA, JRC, GMV, ITD). Space data is delivered by ESA via DAP.

Building blocks:

- Service platform tool to collect data and metadata in repository and provide via common portal (Infoterra UK).
- Performance monitoring system (SISTEMATICA)
- Web GIS System (TPZ)
- Data mining system (TCF)
- Security system (TAS-I/PLK)

Discussion:

Cauchy: What is the difference to Safer?

Daffinà: Safer is more for crisis response whereas g-Mosaic more for monitoring.

Lunch

5.ESA GSC-DA, EO DATA, PLANS FOR SERVICE AND INTERFACE IMPLEMENTATION

Presentation by Jolyon Martin (see PowerPoint slides) about:

- Overview HMA/DAIL
- Overview GSC-DA/CDS
- HMA implementation at ESA
- HMA implementation at GCMs
- GSP I/Fs

Specifications originating from HMA:

- Metadata schema for EO
- Catalogue (eBRIM) service for EO
- Ordering service (used internal for GSC-DA and external to GSPs)
- Programming (feasibility analysis) (possibly used for GSC-DA for emergency orders)
- Online access (WMS + profile, WCS + profile development start soon) issues: no order parameters; authorization because URL in plain text
- User management
- Discovery (CIM) collection level and service metadata (quite active now)

HMA is the long term strategy GSC-DA is a short term implementation. The architecture results from several scenarios e.g. global systematic missions, regional monitoring, emergency rush satellite tasking, etc.

Important document: "Top Level ICD for GSPs", OSME-GSCDA-SEDA-IS-08-0017 from 20090316

The EO DAIL is the component mainly responsible for the control flow of HM Services i.e. the routing, splitting, and joining of discovery, security, orchestration, etc.

A lot of activities kicked-off to support HMA specifications e.g. an advertisement portal.

The integration procedures, etc. have to be discussed with geoland2.

Feedback expected for suitability of services.

More information:

- <http://gmesdata.esa.int>
- <http://earth.esa.int/hma>
- <http://wiki.services.eoportal.org/tiki-index.php?page=HMA%20Wiki>

Discussion:

Triebnig: Are you aware of the geoland2 ICD?

Coene: There are no surprises in it. It is quite the same as the interfaces used for the DAIL with some minor differences e.g. in the usage of metadata and CSW AP (see ICD).

Martin: Review comments for GSC-DA ICDs are expected until end of next week (22nd of May). Erwin Goor and Alexander Kaptein are invited to the GSC-DA PDR.

Triebnig: Raises again the question from the morning about interfaces: Is the SDI team the interface to ESA?

Tinz: SDI team should be the interface and steer process internally in geoland2.

Coene: The original scope of SDI was only to publish geoland2 products but not to provide the interface to GSC-DA.

Tinz: It should be both on a conceptual level but on an implementation level you are right. We are still a R&D project. We should steer the process on a conceptual level (requirements, communicate ESAs topics).

Triebnig: There is a new requirement: End users of geoland2 need access to space data for validation purposes of geoland2 products.

Coene: The usual process would have been to first formalize user requirements. Then look at implementation. However, geoland2 takes a different approach it shows a baseline implementation first and then asks users about needs for improvements and additional functionality.

Tassa: Take formally captured requirements to synchronize systems.

Triebnig: Our tasks: Review GSC-DA PDR documents and specify workflows which rely on the GSC-DA interfaces.

Tinz: Global services already have those interfaces but regional services don't have them yet. Proposal: IMAGE2009 production process could be used as a test case.

Tassa: Look what is written in the the GSC-DA documents. In 2010 you could implement and use it.

Tinz: IMAGE2006 was delivered via hard-disk and stored at many sites. This was a very time consuming and tedious process. If this could be relieved it would be very helpful e.g. via online availability.

Martin: There will be no WCS since there is no profile yet available but for products from the archive an ordering service and FTP delivery will be available.

6. GIGAS, ARCHITECTURE METHODOLOGY AND RECOMMENDATIONS

Presentation by Pier Giorgio Marchetti (see PowerPoint slides):

GIGAS is a support action to promote the coherent and interoperable development of the GMES, INSPIRE, and GEOSS initiatives through their conceptual adoption of standards, protocols, and open architectures by:

- analyzing
- highlighting
- consensus process
- shaping
- influencing
- providing an agenda for further strategic research areas

The approach proposed by GIGAS:


- technology watch (based on RM-ODP)
- comparative analysis
- shaping

Templates for viewpoints:

- Enterprise VP: High-level description
- Information VP: describe data and metadata used in projects
- Service VP
- (Engineering VP)
- (Technology VP)

Information and service VPs are the most important for assessment of interoperability. Description are only required of the parts which relate to the interoperable infrastructure.

Discussion:

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Triebnig: In the tables the GMES column should be expanded to include also the GSPs. Biancalana clarifies that "GMES" in the table stands for "GMES DAIL". Spacebel and EOX will build the bridge to the whole geoland2 project to fill the needed tables for GIGAS.

Marchetti: GIGAS doesn't want to be a burden. Only use it for the elements which could be reused in other initiatives (GMES services) and at moments in time when these project approach their own important milestones (good moments for shaping).

Tinz: There are many requirements to fill in such tables but there are two partners in both projects namely Spacebel and EOX who will use GIGAS budget for accomplishment of this task.

Triebnig: Its a benefit also for SDI to learn via analyzing the CMS and CIS for GIGAS.

Dufourmont: Its way more than a learning exercise it is a prerequisite. Political approach → accept consequences.

7.ROUND TABLE DISCUSSION

Dufourmont: LMCS IG group focus on a few core services to be available as soon as possible.

- Good access to satellite imagery is essential. Threshold to access the data should be as low as possible (even free).
- Access to reference data. National agencies.
- Improvement of LC and LU data-sets e.g. timeliness (lower than 3 years), frequency of update, content, resolution, etc.
- Important layers: Aerial information, hydrography, transportation, elevation (needed for orthorectification, spatial analysis and modelling), IMAGE2009 (orthorectified format), river catchment, "digestion system of urban areas", important because 80% of the people live in cities, (EEA)
- Providing the high resolution addition: Soil Sealing, Forest mask, water, complex conservation layer, could all be updated more frequently.

Marchetti: Question to g-Mosaic.

Proietti: We are here to open our view. We are already started to use RM-ODP so should be no problem to provide something to GIGAS. What is the roadmap of GIGAS?

Marchetti: When could you fill in the tables for g-Mosaic? identify critical milestones. In geoland2 before start of phase 2. This is a continuous process (updates, major changes, etc.).

Triebnig: Where can SDI team play a role in aerial data availability?

Dufourmont: Automation is one possibility, the other aspect is the bottom-up approach. Build and maintained at national level and link that all together (LC, etc.). How can we integrate these various services residing at different locations and institutions. Political level ... current approach very cumbersome ... conceptual it is possible easier ...

Different approaches in different countries are no problem in the first phase and agreeing on one approach is virtually impossible. It has to be possible to derive a product for the whole of Europe.



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Triebnig: Invitation to participants who didn't say anything yet.

Osinski: The resolution of space data is far too low or too expensive. INSPIRE realization in Poland: three annexes have to be implemented. The resolution is 1ha → 30% not monitored (up to 12 parcels on 100m); administration vs. agency; missing in SDI presentation: connection with registers.

Triebnig: When should geoland2 contribution be in GIGAS?

Bianchalana: During this summer, probably? When does geoland2 need input from GIGAS? Here I provide some questionnaire and the current recommendations document from GIGAS.

Triebnig: We will start now including the interaction with CMS and CIS. Explained SOSI architecture process looking at GIGAS as good basis for design decisions.

Tassa: Organize dedicated meeting after establishment of SDI baseline in order to elaborate a common interface concept to GSC-DA.

Closing by Erwin Goor: It was a really helpful workshop and I think we all learned a lot. Thank you all for your attention and attending especially to ESA!