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ANNEX 11 and 11-2 to the Tender Specifications

GISC report and related analysis of national in-situ capacities from 17 visited countries



D1.6

Report on progress in negotiation and development of the partnership

October 2013

v.1

Report Insider Cover Page

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Executive summary

Throughout the project there was a continuing process of stakeholder identification, establishment of partnerships and constructive dialogue, with a view to creating a comprehensive cooperation framework for coordination of in-situ capacities.

The stakeholders concerned were international, European, regional (public or private) and national organisations that collect, hold, coordinate and provide the in-situ data needed for the Copernicus services to deliver their products.

The elements of this process were:

- discussions with Copernicus precursor service projects, the current research projects (MACC II and MyOcean2), GIO Emergency management and Land services, and the European Space Agency. The objective was to clarify their needs for in-situ data and, during the second half of the project, to evaluate the GISC outputs and agree on roles and responsibilities for the operational phase of the Copernicus programme.
- Exchanges with and visits to 17 of the EEA 39 countries (15 EU and 2 non-EU countries) (Norway, France, United Kingdom, Italy Czech Republic, Finland, Denmark, Portugal, Austria, Germany, the Netherlands, Spain, Poland, Luxembourg, Sweden, Switzerland and Belgium.) The aim was to clarify the availability of in-situ data, and the role of the member states (MS) in the Copernicus programme. In the light of the country visits, the project conducted an analysis of national in-situ capacities, describing in-situ availability, data policy, access conditions, gaps and constraints, which is annexed to this report. This information can be used by all Copernicus services and serves as information on data access nodes in the 17 countries visited.
- Dialogue with and commitments from different European networks and coordinating bodies and their members, by
 - o signing partnership agreements with EuroGeographics¹ (EG), EuroGeoSurveys² (EGS) and EuroGOOS³;
 - o coordinating the work of the Eionet⁴ NFPs Copernicus working group; and
 - o agreeing on the roadmap for cooperation with EUMETNET⁵.
- examining the position of research-funded infrastructure projects, that had already created an observation infrastructure, had obtained support and partial funding from participating countries and had prospects for Community funding in order to reach to the operational status;

¹ Membership association of the European National Mapping, Land Registry and Cadastral Agencies (NMCAs)

² The Geological Surveys of Europe, represents 33 Member Organizations

³ The European Global Ocean Observing System – non-profit organisation, regrouping 34 members

⁴ European Environment Information and Observation Network

⁵ EIG EUMETNET is a grouping of 29 European National Meteorological Services

- strengthened dialogue with GEOSS (to which Copernicus is a major EU contribution) to better secure the global dimension of GISC's portfolio; and dialogue with global organisations, such as World meteorological Organisation (WMO), Global Runoff Data Centre (GRDC), NATO, Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM).

This current report is **the last report** within deliverable D1.6 of the Work package WP1: "Report on Progress in negotiation and development of the partnership", required every 6 months.

Different meetings provided an opportunity to mobilise important in-situ data players, and to agree on and build ways forward for future cooperation, based on support and regular exchange of information. This included awareness raising meetings/events; the initiation of strategic decision processes; the provision of thematic expertise; creating a legacy of understanding and a knowledge base; and concluding a number of partnership agreements.

The consultation process was important in securing cooperation with partners engaged in the case studies, and supported the implementation of Quick-Wins, which demonstrate practical outcomes for Copernicus services. The success of the Quick-Wins relied on regular exchanges, more intensive coordination of activities, good-will and trust.

The engagement of partners greatly contributed to gaining the knowledge and expertise upon which the GISC analyses and recommended solutions are built ¹ – a springboard to form the knowledge base of the Initial Framework².

The role of the GISC project as broker during the stakeholder consultation process and the value it brought into in-situ coordination, by taking into account diverging views and ensuring continued mutual understanding, was recognised by all partners and was clearly acknowledged at the *Monitoring Matters* event. The EEA was recognised as a credible force in tackling the challenges of delivering the in-situ component.

Through WP1, was clearly demonstrated that;

- EEA is a respected and authoritative interlocutor in this field, able to play a strong facilitating role;
- While the in-situ landscape is diverse and complex, there is wide scope to develop existing networks to manage the in-situ component;
- There are a range of issues relating to the sustained provision of in-situ data that remain to be solved.
- collaboration frameworks and agreements that have been developed (Inter-alia, the quick-wins) can respond to service needs

The collaborations constructed by GISC are not comprehensive, nor sustainable on their own, but provide a foundation for sustainable in-situ data provision and can be built upon to tackle remaining issues.

¹ [D3.2 GISC recommended solutions](#)

² D3.3 – Initial Framework to consult on the GISC website under deliverables

Introduction – Copernicus and GISC

In-situ data are an indispensable part in the Copernicus program. This is underlined by the recent proposal for a regulation establishing the European Earth Observation Programme Copernicus¹. The regulation specifies that alongside the space and service components, the programme shall embody an in-situ component, ensuring observations through airborne, seaborne and ground based installations. In-situ data are for example required to calibrate satellite data, and to create and validate space-based products.

Through the FP7² funded Coordination Action “GMES In-Situ Coordination – GISC”, the European Environment Agency (EEA) in close coordination with the European Commission is entrusted develop an *initial framework for access to in-situ data for the Copernicus services* The coordination action was focused on bridging the gap between the research-led status and the operational status of the Copernicus services with a view to demonstrate methods for sustainable operationalization of the in-situ component..

According to the GISC description of work³ the project objectives were integrated in four interrelated work packages:

- WP1: Cooperating with the users, stakeholders, and service providers, as well as exploring and determining methods to enable networks to provide the required in-situ data for Copernicus;
- WP 2: Documenting the in-situ data needs and data requirements;
- WP 3: Exploring approaches to the integration of in-situ assets and networks into long-term sustainable frameworks for the Copernicus services;
- WP 4: Demonstrate re-use of in-situ data from existing capacities and infrastructures for operational GMES services to show the outcome of the proposed approaches for setting up the initial framework in selected five quick-wins.

The detailed objectives of the WP1 were to:

- Develop a collaboration framework between countries, the Commission, European and intergovernmental bodies, observing networks and other relevant stakeholders to engage in the delivery of the Copernicus in-situ requirements;
- Ensure effective engagement with countries and other categories of stakeholders to achieve agreements necessary to support in situ;
- Provide access to relevant in-situ documentation, data requirements, discussion documents and facilitate open two way communication between stakeholders;
- Provide ad hoc advice to the Copernicus Bureau to support negotiation of the programme.

¹ Proposal for a Regulation of the European Parliament and of the Council on establishing the European Earth Observation Programme (Copernicus)

² FP7 is the 7th research programme of the European Commission which runs from 2007 – 2013.

³ CALL FP7-Adhoc-2007-13 (31/122013) No.249327

This is **the last report** of the WP1: “Report on Progress in negotiation and development of the partnership, which aims to summarise the status on the dialogue with stakeholders and to answer the question: *Why the development and building partnership with the selected stakeholders was needed?*”

The last part of the report sets out findings and draws conclusions. This report is not a detailed account of the discussions with stakeholders between January 2010 and October 2013. Minuted exchanges and documented outcomes can be consulted in the [folder with progress reports](#) delivered every six months throughout the project.

The complete account of all [meetings](#) and the list of other [deliverables](#), to which delivery contributed the stakeholders’ consultation, are documented on the GISC website.

Developing partnerships: stakeholder consultation process

1.1 Process and purpose

Together with Eionet and relevant Commission services, and in coordination with other existing in-situ networks, the EEA invited in-situ data providers to take part in the process of assessment of policy requirements, to support the objectives of the Copernicus programme with particular focus on in-situ.

The purpose of these discussions was to:

- develop a shared understanding of the Copernicus programme and the GISC project;
- exchange views on expectations of the Copernicus programme, especially the services;
- provide an overview of EEA/Copernicus requirements for in-situ data to frame discussion of opportunities and common interests;
- better understand national Copernicus coordination structures and data policies;
- clarify monitoring and in-situ capacities that are already in place; identify gaps in the provision of and access to in-situ data, and propose ways of closing such gaps;
- clarify existing agreements and policy frameworks with a view to establishing a common basis of understanding and to identifying ways of generating mutual benefits;
- if possible, agree on a cooperation framework, leading to an agreement on the sustainable provision of in-situ data.

At the Eionet/NFP meeting 26-27 May 2010, it was agreed that where other national and international coordination structures are in place, EEA should examine the potential to re-use these other capacities for both coordination as well as data access.¹ In order to avoid duplications and better promote coordination and interaction in relation to Copernicus in countries, the GISC project developed a so called dual approach which was to engage the countries through the interface of the international commitments that they have already made to existing European or international networks and coordinating bodies.

On one side (in dialogue with countries), the GISC project aimed to identify the availability of observational assets stressing the re-use and multi-purpose of existing capacities. It also aimed to confirm the mandate from countries given to the coordinating bodies.

On the other side (in dialogue with the coordinating bodies,) the objective was to use their coordination mechanisms and expertise for accessing in-situ data in a sustainable way with the overall goal at concluding partnerships agreements.

¹ [Statement of the meeting](#)

Discussion with stakeholders, and the development of partnerships, took careful account of other initiatives, particularly INSPIRE. The INSPIRE Directive could facilitate the re-use of data and the promotion of sharing principles. The project explored the possible link between Copernicus in-situ requirements and INSPIRE data specifications, and the possibility of using INSPIRE as basis for the initial framework for the sustainable provision of in-situ data. The results of this exercise and recommendations were submitted to the INSPIRE consultation process and followed up during 2012, particularly in relation to the measurements of profiles in the Oceanographic geographical features data specification. For more information, please consult the Annex 1 of the report.

To demonstrate how operational in-situ data provision could be implemented, the project developed five “quick wins” exercises - case studies which tested concrete solutions for in-situ data flows in support of Copernicus services. Applying different solutions the quick wins demonstrated the in-situ coordination role in practice and provided a proof of concept for operational in-situ architecture. The quick wins’ success depended on efforts to develop and maintain partnerships with the stakeholders involved. For more information, please consult [the report: Review of Quick-Wins](#)

Stakeholder engagement, and awareness among broader communities was promoted through extensive dialogue via small and large scale events. *Monitoring Matters*, the first in-situ workshop, was organised by the project in Copenhagen on 10-11 April 2013. The event gathered over 100 stakeholders from 20 countries. Representing both provider and user communities, those present considered the results achieved to date through the GISC project, and looked to the future operational Copernicus programme. In addition, the project organised many other meetings, including country visits, bilateral discussions, presenting results at different European and international fora. The *Monitoring Matters* report and more detailed information on other meetings can be found under [the meeting folder](#).

A trimestral newsletter kept the Eionet network and other GISC stakeholders informed about the project’s progress (and the status in the development of partnerships). The newsletter was structured around GISC deliverables, included a country corner, and provided information on Copernicus related processes. The newsletter was always prepared before the Eionet NFPs meetings and sent to a large network of more than 1000 recipients.

[All newsletters](#) are archived on the GISC website.

In general, interactions with stakeholders contributed to:

- Better understanding of in-situ requirements (WP2)
- Refinements to the cost valuation of the in-situ component (WP2)
- Elaboration and validation of approaches (WP3)
- Investigation into quick wins (WP4)
- Building partnerships and engagement in delivery of in-situ (WP1).

1.2 Country visits

The Copernicus Communication and the GIO Regulation, stress the role of Member States (MS) play in the provision of in-situ data capacities. The project has visited 17 of the EEA 39 countries (15 EU countries and 2 non-EU countries)¹ to clarify the availability of national in-situ data, identify gaps and constraints in relation to open data sharing policy. Country visits provided an opportunity to share views, exchange experiences, discuss expectations, and gain knowledge about countries' perspectives on the use of and support to Copernicus.

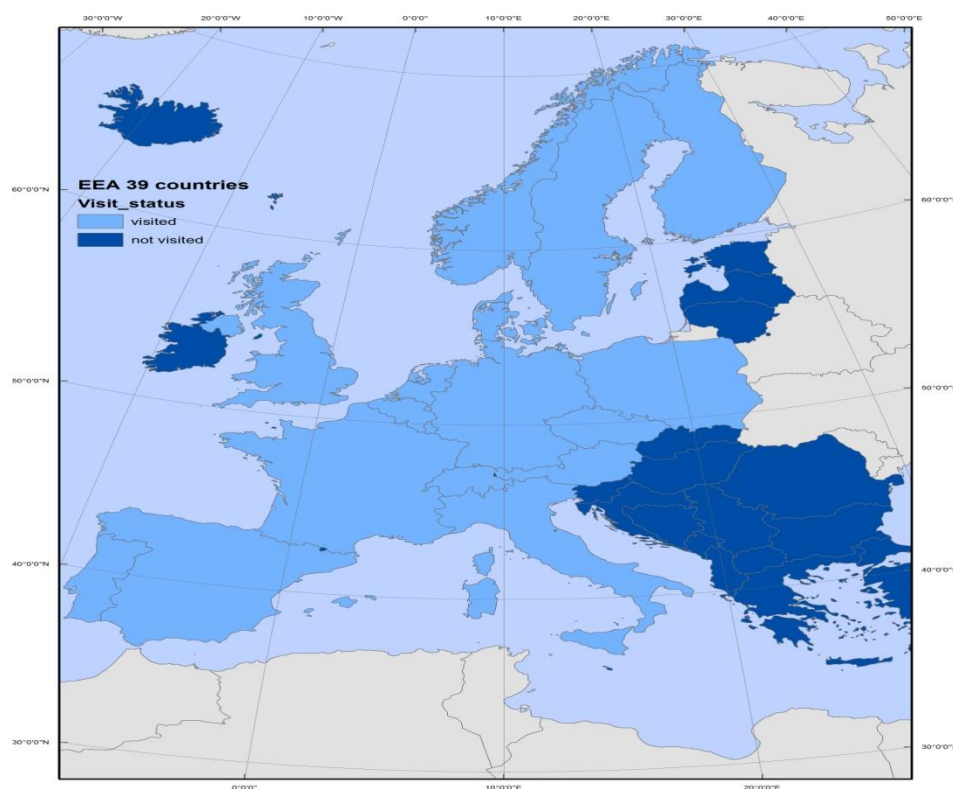


Figure 1 shows the status on country visits as for December 2012. EEA visited 17 countries, marked in light blue.

Countries to be visited were identified in close cooperation with Copernicus committee members and Eionet National Focal Points (NFP), who initiated the discussions and invited GISC to visit their respective countries. Selection criteria included countries' national interest in the Copernicus programme and their role as EU presidencies. Despite several requests to visit all EU countries, the scope to do so was limited by time and resource constraints.

The purpose of the discussions with countries was to:

- Exchange views on expectations of the Copernicus programme, especially the Copernicus services;
- Better understand national Copernicus coordination structures and data policies;
- Clarify the monitoring and in-situ capacities already in place; and identify gaps and constraints;
- Agree on a roadmap and timeline for possible commitments.

¹ Norway, France, United Kingdom, Italy, Czech Republic, Finland, Denmark, Portugal, Austria, Germany, the Netherlands, Spain, Poland, Luxembourg, Sweden, Switzerland and Belgium

The discussion process with countries, during which the project acted as facilitator, was characterised by:

- Early involvement of Eionet NFP and/or Copernicus committee The identification of the bodies to be consulted in countries;
- Focus on international data access nodes;
- The follow up of points raised in earlier meetings or exchanges;
- Linking to relevant use cases;
- Acknowledging existing business models and data policy constraints.

A synthesis of in-situ requirements, derived from the in-situ requirements report (D2.1), was used to identify each country's key in-situ capacities and link them to the requirements of all four Copernicus services.

Before each country visit, and to facilitate discussions on in-situ capacities, the participants representing national in-situ authorities were asked to prepare their interventions around following questions:

- i. Is access to the required in-situ data free and open e.g. can in-situ data be freely searched, viewed, downloaded?
- ii. Is access to the required in-situ data free, but with certain limitations e.g. limited to defined user groups or subject to a formal data request/ agreement or on-line registration?
- iii. Is payment required?
- iv. Are the required in-situ data available only commercially?

In some instances, national authorities have already undertaken to make the required data available or to fund the observational capacity sustainably, in which case the commitment related only to providing the data for Copernicus purposes.

The initial goal of the exchanges was to gain commitment, through framework agreement, from national authorities to provide national in-situ data needed for the Copernicus services¹, covering monitoring infrastructure, data access and quality assurance for existing activities undertaken in respective countries. At the request of some countries, the EEA prepared a draft framework agreement which was discussed with France, Italy, Czech Republic, Denmark, Norway and Spain. The text of the draft agreement can be found annexed to the progress report [July-December 2011](#).

However the final negotiation of agreements was stalled, possibly attributable to the uncertainties around the future of the Copernicus programme during the course of 2011 and 2012², and as well as the foreseen follow-up Copernicus regulation, which might have handled in-situ in a different manner from the GIO regulation.

To cater for this uncertainty, the target was changed, to conducting an analysis and presenting an overview of the in-situ landscape in the visited countries, at the end of the project. The overview, annexed as a separate document to the report, provides summary of exchanges, availability of in-situ data, main data policy issues and data

¹ Atmosphere monitoring, emergency management, land monitoring and marine environment monitoring

² For more information, please consult the folder with previous progress reports

access constraints in 17 visited countries. The acquired information is considered as a **repository of the in-situ data access nodes on national level. This repository can be used by all Copernicus services to access national in-situ data as well as a basis for agreements to secure engagement from countries.**

The analysis of the results of the country visits was also:

- used in the implementation of the GIO Land Quick-Win, which aimed to investigate to what degree in-situ data provided by the Member States can be used for other Copernicus services, and to assess the scope to use grant agreements to secure buy-in by Member States¹;
- cross-checked with the reference data access (RDA) exercise² results;
- a tool for national authorities to improve performance and influence national decisions;
- a vehicle to put practical arrangements in place to access data from national institutes, which act as data nodes for different in-situ data providers³.

1.3 Dialogue with the Copernicus services and the European Space Agency

One of the GISC objectives was to build an information base, as a foundation for further decisions and actions. **The Copernicus services, the originators of in-situ data requirements played a role in contributing to this knowledge basis.**

During the first year of the GISC project, the dialogue with the Copernicus services was enhanced to clarify their data needs and requirements, the prerequisite for further progress of the project. The consultation process involved the GMES precursor service projects, the current FP7 implementing projects (MACC II and MyOcean 2) and GIO Emergency and Land services coordinators. This consultation process led to the development of a comprehensive catalogue and database of the in-situ requirements of the services to deliver their product portfolio.

Taking into consideration the evolution of the services and emerging needs, such as the update of reference data requirements for GIO Land and Emergency services, this catalogue was reviewed and updated throughout the project. For more information, please consult the [catalogue](#) of in-situ requirements, withdrawn from the in-situ requirements database in July 2013.

The same consultation phase provided a sound factual basis for the selection of key in-situ data providers and initiation of dialogue with them. An overview of in-situ data providers can be found in the [List of stakeholders](#).

The expertise of the services was embedded in determining priority in-situ data sources where funding could be used to create added value, and by thus reflected in the [priorities report](#).

¹ For more information on the results, please consult [the report: Review of Quick-Wins](#), p.24.

² For more information, please consult [Progress-report Jul-Dec 2012](#), p.60

³ For more information, consult [Progress report Jan-June 2012](#), p.54 – Dialogue with NILU

The dialogue with services also contributed in assessing the value of in-situ data and in reviewing the GISC cost estimates. For more information, please consult: [Report on cost valuation](#)

During 2012 the project prioritised a reinforced dialogue with the Copernicus services, with the aim of discussing and agreeing the design and operation of the in-situ data infrastructure to ensure the operational in-situ data provision to Copernicus services.. This round of consultations aimed at agreeing the distribution¹ of roles and responsibilities between services, the space component and in-situ coordination.

Dialogue with the European Space Agency (ESA) was reinforced, in order to explore synergies between the space, services and in-situ components of Copernicus. **These exchanges led to the conclusion that there is a clear overlap between the Copernicus services and requirements for the calibration/ validation of satellite data like from the Sentinels.** Both parties agreed that there was a clear need for cross-cutting coordination to avoid duplication of effort, reduce costs, and ensure that in situ data and access arrangements are available across the Copernicus components.

The EEA and ESA cooperation has a long history and both sides are currently working on finalising and implementing the ESA-EEA partnership agreement covering both shared in situ data needs And other elements

The exchanges with services and ESA in 2013 focused mainly on the implementation and review of Quick-Wins² and the preparation of the *Monitoring Matters* event³, where a specific session on the links and synergies with the in-situ coordination was organised.

1.4 Securing commitment from the European coordinating bodies

One of the priorities of the GISC description of work was the establishment of channels for effective involvement of existing networks, notably European mandated, thematic coordinating bodies, such as EuroGeoSurveys (geology), EuroGeographics (geospatial reference data), EUMETNET (meteorology), EuroGOOS (oceanography) and Eionet (environmental data)⁴.

These bodies have large communities of partners, strong thematic knowledge of in-situ data, well established coordination and data collecting mechanisms and expertise in a facilitation role. They were therefore a valuable channel for **collective representation**

¹ Deliverable 3.2 : [Recommended solutions](#)

² For more information on the results, please consult [the report: Review of Quick-Wins](#)

³ For more information please consult [workshop report](#) p.10-14

⁴ For more information on the mandate and role of each of the organisation, please consult previous progress reports

to enable better and effective exploitation of national capacities. The results of the negotiation in gaining commitment from the coordinating networks are as follows:

[EuroGeoSurveys – access to geological data](#)

A partnership agreement on access to interoperable geological data on bedrock composition and superficial deposits, at the scale of 1:1 000 000 was signed in November 2010. These data are also available on-line through the [OneGeology-Europe](#) portal, the first pan-European dynamic digital geological map.

In the implementation phase of the agreement, GISC facilitated improved cooperation between the EEA experts and EGS in the areas of freshwater, ecosystems and marine and coastal issues.

[EuroGeographics- access to national reference data](#)

National reference data are essential for the GIO Emergency Management Service (GIO EMS). To facilitate access to national reference data by the GIO EMS during emergency situations in Europe, the EEA and EG signed an agreement in November 2011. This agreement also made available free of charge to the GIO EMS the harmonised pan-European EG products (EuroGlobalMap, EuroRegionalMap, EuroBoundaryMap and EuroDEM).

During the implementation phase of the agreement, the project proposed a solution to overcome obstacles related to licensing of the authoritative geospatial data in a number of countries. The project, with the support of EG, has initiated negotiations with NMCAs to make their data available for GIO EMS. Further progress in implementing the project's approach to accessing national reference data¹ was secured within the framework of the implementation of the Quick-Wins².

[EUMETNET– access to meteorological data](#)

All Copernicus services use meteorological observations and products, so a dialogue with EUMETNET was very important. The dialogue was initiated in early 2010 to ensure continuous and reliable access to meteorological observations and products.

The project has drafted a proposal for the partnership agreement, which includes provisions for licensing; data access and service level arrangements, and also specifies roles and responsibilities regarding coordination activities involving EUMETNET, the World Meteorological Organization (WMO), and Copernicus. The solution builds on existing systems already used by meteorological services and aims to ensure proper coordination and exchange of information between the meteorological community and Copernicus. Signature of the agreement was delayed by uncertainty about future Copernicus governance.

¹ Only some type of reference data are covered by the arrangement put in place by GISC and don't cover all reference data needed by EMS.

² For more information on the results, please consult [the report: Review of Quick-Wins](#), p.19

The negotiation of the partnership agreement and dialogue with EUMETNET was selected by GISC to showcase the approaches for the operational access to in-situ data. Detailed progression of the partnership is disclosed in the Quick-Wins report¹.

EuroGOOS - Oceanographic data

The Copernicus Marine Service requires access to oceanographic data (physical and biogeochemical parameters), provided by different providers, many of which are organised within the European arm of the United Nation's Global Ocean Observing System (EuroGOOS). The data themselves are held by the Regional Ocean Observing System (ROOS), a series of national institutions within the EU Member States, and made available through data portals. Since 2010, the EEA has been discussing with EuroGOOS the development of an efficient communication channel and decision making forum with a view to facilitating access to and sharing of, these data.

In April 2013 a partnership agreement was signed between EEA and EuroGOOS, according to which EuroGOOS acts as the interface between the EEA and the ROOS to enable access to in-situ data for the Copernicus Marine Service. This agreement follows the principle that marine in-situ data are considered a public good and as such will be made available free of charge.

Consensus was also reached on the agreement acting as an umbrella for coordination between EuroGOOS and EEA, whereas special level agreements (SLAs) will be needed to define the access to oceanographic data from the regional seas. GISC has drafted a proposal for SLAs and exchanged views with EuroGOOS on the objectives integrated in such SLAs. This is not being pursued further due to the imminent end of the project.

Eionet – access to environmental data

The project proposed a number of approaches to facilitate the use by Copernicus of national data provided to Eionet in the framework of reporting obligations;;

(i) Simplification of the delivery of air quality observations

The Copernicus atmosphere service has been managing bilateral agreements for provision of near real-time air quality observations and related technical interfaces with 18 countries. In cooperation with EEA thematic staff, Eionet air quality communities and MACC II, GISC has proposed a solution that demonstrates how an existing data flow can be adapted to meet Copernicus needs via cooperation with EEA members and cooperating countries and the Eionet, and how existing capacities and data can be reused in accordance with the SEIS principles. The proposed solution is a Quick-Win² of the GISC project and is considered as a success story.

(ii) Use of MyOcean 2 outputs and link to the Marine Strategy Framework Directive (MSFD)

Together with the Group for Marine Environment in the EEA, GISC organised several exchanges to examine how the Copernicus Marine service could be used to support the needs of the MSFD, which is considered as a key driver of needs for marine

¹ For more information on the results, please consult [the report: Review of Quick-Wins](#), p.16

² For more information on the results, please consult [the report: Review of Quick-Wins](#), p.10

environmental reporting. A consolidated paper as input to the evaluation of the Marine service was submitted to the European Commission. Relevant aspects of this paper will be used as input to the consultation of the Green paper on Marine Knowledge 2020.

(iii) Enhanced cooperation on Land

On request and when needed, GISC provided necessary input on in-situ to the annual meetings of NRC land cover. The cooperation with Eionet on land was mainly done by thematic colleagues responsible for the technical coordination of the Copernicus Land service.

The GISC project was also tasked to provide technical support to the Eionet NFPs GMES working group (WG), established in September 2010 on the request of NFPs. The purpose of the working group was to support communication and coordination in relation to Copernicus. The WG held meetings three times a year, usually back-to-back with regular NFPs meetings. At the last meeting the decision was taken to continue the work of the group, despite the end of the GISC project. The EEA now need to decide on further technical support to the WG.

1.5 Role of research Infrastructures

Research infrastructures (RIs)¹ play a crucial role in sustaining the availability and delivering essential in-situ data. Relevant communities were invited to identify their contribution and tackle issues related to sustainability. The two major risks related to sustainability are: 1) the majority of RIs build on national capacities; and 2) their persistence is not guaranteed.

In the framework of the Quick-Wins implementation, the project acted as facilitator between the consortium of the RI Euro-Argo and DG for Research and Innovation and DG for Maritime Affairs and Fisheries to develop a cross-cutting and multi-purpose strategy to sustain Euro-Argo operations.² This solution could be the basis of further approaches for the sustainability of other RIs.

In some cases, when in-situ data are not available, there is a need to develop mechanisms to leverage the outcomes of research infrastructures in order to meet the requirements of operational Copernicus services. Thus research and development activities can help to close observation gaps. The project has provided its expertise, contributing to the definition of new RIs, such as IGAS and ICOS-INWIRE.

The project has also considered public/ private partnership as a way to implement multi-source funding approaches. For that purpose the project approached the cruise shipping company Carnival to investigate how the company could cooperate with GISC and the Norwegian Water Institute (NIVA) to set up a project to run the FerryBox equipment on the ships of the company³. Unfortunately, due to the uncertainties

¹ F.ex. Euro-Argo, IAGOS, ICOS, Ferryboxes, EuroSites, GEOmon, ACTRIS, InGOS

² For more information on the results, please consult [the report: Review of Quick-Wins](#), p. 30

³ Details on the dialogue, please consult July-December 2011 progress report

around the future of Copernicus, the shipping company didn't pursue the cooperation further.

Annex 2 of this report gives an overview of research-funded projects identified by GISC as essential for Copernicus. It should be underlined that the list contains both the RIs which are presently delivering essential in-situ data to Copernicus, and those which are not presently used to great extent, but which are perceived by the Marine and Atmosphere services as needed for the development of their service portfolios.

1.6 Global angle: discussions with international organisations

The existence of similar activities at European and global level led to 2 strands of activity; (i) as Copernicus is a major EU contribution to the Global Earth Observation System of Systems (GEOSS), one of the priority areas for GISC was to strengthen the dialogue with GEOSS to explore ways of meeting global requirements for Copernicus information; and (ii) GISC has also engaged in dialogue with global in-situ data organisations, such as World meteorological Organisation (WMO), Global Runoff Data Centre (GRDC), NATO, Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) in order to facilitate access to in-situ data from global data providers.

GEOSS

A stronger engagement with GEOSS to better secure the global dimension of Copernicus in-situ interests was a priority. EEA's contribution was widely appreciated and the importance of EEA work on assessments, data access, and networking is well recognised.

EEA was identified as a lead of the "in-situ component" of the Group on Earth Observations (GEO) Work Plan.

EEA's contribution and role are seen as:

- Improving the availability and use of Copernicus capacities in global context;
- Improving the availability and use of global capacities in Copernicus;
- Responding to the need expressed by the GEO Secretariat for action to focus on the "in-situ gap" in GEO (conceptually as well as securing infrastructure/data).

Currently, the EEA is participating in a range of exchanges in order to strengthen the relationship between the two organisations, and to identify priority actions in areas of mutual interest. EEA will also participate in the GEO ministerial meeting in January 2014.

WMO – access to meteorological data (global coverage)

GISC held two meetings with WMO to discuss access to meteorological data beyond EU-27 coverage, and data on atmospheric chemistry (aerosol and ozone data) provided by Global Atmosphere Watch (GAW) data centres.

As a result of these discussions, WMO facilitated interactions with a range of activities. It was concluded that the existing Memorandum of Understanding (MoU) between the EC and WMO is sufficient basis for enhanced cooperation. In relation to access aerosol data from GAW, the solution discussed with the secretariat proposes to extend the current access via the global aerosol data centre. WMO's general position is that Copernicus, considered as an EU contribution to GEOSS, can have access to WMO Integrated Global Observing System (WIGOS).

During these meetings, WMO confirmed its position as regards access to European data and suggested that GISC should pursue dialogue with EUMETNET to agree on access conditions to meteorological data and Global Runoff Data Centre (GRDC) for hydrological data.

GRDC – access to hydrological data

Through the dialogue with WMO, and in cooperation with the EEA in-house colleagues, the project has approached GRDC in order to agree on access conditions to data holdings of European countries both for EEA reporting purposes and for the European Flood Awareness System (EFAS) as part of the GIO EMS.

At the meeting in June 2013 between WMO, EEA, JRC, DG Environment and GRDC it was decided to create a working group to discuss the conceptual and practical aspects of data exchange between GRDC and EEA. The first meeting of the working group took place in August 2013 to agree on needs and overall scope of the partnership. It was agreed to proceed stepwise - first, to conduct metadata and gap-filling analysis and second, if considered necessary, to evaluate data flows and access within the scope of the agreement. The project will prepare the draft text of the agreement for further discussion in fall 2013.

JCOMM – international coordination of oceanographic and marine meteorological observing, data management and services

The cooperation with a European link of JCOMM (JCOMM OPS and relevant Expert Groups) was established to explore international coordination issues such as:

- Ensuring that current and future in situ data requirements for the Copernicus marine service are recognised by and coherent with appropriate ocean observations programs and processes at international/global level
- Ensuring access for Copernicus marine service to datasets collected by non-European operators
- Information exchange on the European contribution to international observation capacities

The relevance of the relationship between GISC and JCOMM is being explored with the support of a member of the MyOcean Board and a member of the EEA Scientific Committee. In May 2012, JCOMM recommended the exploration of further collaboration, including the possibility of establishing formal relations.

NATO

The one meeting organised between GISC and different NATO agencies¹ was intended to identify areas of common interest in the area of civil protection and the role NATO plays in collecting geospatial mapping data outside Europe.

GISC was particularly interested in the use of the Multinational Geospatial Co-production Program (MGCP)² data available to NATO, including Africa, the Gulf and Russia, as well as use of geospatial data that NATO has created from operation areas, such as Afghanistan, Pakistan and Balkans.

It was agreed not to pursue the dialogue, as it had limited added value for the parties involved.

1.7 European Commission and its services, as well as other EU institutions

In 2006, the EC established the GMES Bureau³ with a mandate to create an implementing strategy for Copernicus, which included ensuring that in-situ data are available to meet the services' requirements. In support to the GMES Bureau, the EEA was entrusted the in-situ coordination and the GISC project was set up as key element to provide ad hoc advice to the Bureau⁴. The GISC project has established a close link to the Copernicus Unit through regular exchange of information via different communication channels and also via EEA secondments to the Copernicus Unit. The purpose of these exchanges was to update the Unit on the progress, get guidelines for the delivery of the GISC outputs, adopt new strategies and give advice on in-situ discussions. To support the Commission, the GISC project was also asked to report on expectations, progress and issues in the GMES Committee and User Forum.

GISC project also had exchanges with other EC services. The EEA contribution to GEOSS processes and role of RIS was discussed with DG Research and Innovation. Potential sources of funding for some research infrastructures, responding to the needs beyond Copernicus, were discussed with DG Maritime Affairs and Fisheries. DG Environment and DG Climate were also consulted.

Contacts with JRC aimed at getting a better understanding of the centre's activities in INSPIRE, the GIO Global Land Component, LPIS and EFAS. The dialogue with JRC was also intensified within the framework of the Quick-Win implementation process. GISC had various exchanges to agree on operational procedures in accessing national reference data, and served as facilitator between JRC, EG and national authorities⁵.

¹ Agencies, which deal with earth-observation, maps and integrated data relevant for monitoring and forecasting of natural disasters and coordination of disaster response.

² Programme is producing and sharing High Resolution Vector Data (HRVD) with global coverage by cooperation of participating nations -not necessarily being member of NATO-. 32 countries take part in the program.

³ Renamed as Copernicus Unit in 2013

⁴ GISC DoW, p.4

⁵ For more information on the results, please consult [the report: Review of Quick-Wins](#), p.19

Dialogue was also initiated (followed) with Eurostat in relation to access of LUCAS field data.

Finally, the project has initiated exchanges with the European Maritime Safety Agency to share views on potential co-operation, including access to vessel traffic patterns relevant for marine environmental monitoring; and a contribution to EEA indicator development based on MyOcean and EMSA maritime information systems CleanSeaNet (for oil spill detection statistics).

Findings and conclusions

At the start of the GISC project, the in-situ component was an unknown: no one knew what was needed, how it might be delivered, what the benefits might be, who could do it, and what is expected of them.

Since 2009 the GMES/Copernicus landscape has changed significantly. The GISC project has responded to the evolving environment, explored the emerged questions with stakeholders and built as well as communicated a credible set of approaches to find acceptable answers to these questions.

The coordination action has bridged the gap between the research-led status and foreseen operational status of the Copernicus services with a view to demonstrate methods for sustainable operationalization of the in-situ component.

Throughout the project, there has been an extensive programme of discussion with the appropriate stakeholders, which has led to much improved understanding of the in-situ landscape in Europe and the issues are that need to be tackled. In some cases, elements have emerged which could contribute to sustainable collaboration frameworks, such as the agreements with coordinating bodies and the relationship with GEOSS. But there is also strong evidence that a comprehensive sustained collaboration framework is not yet fully in place and that further work needs to be done (WP1 Objective 1).

The absence of a comprehensive collaboration framework indicates that sustainable support needed for an operational regime (even restricted to the 4 service areas covered) are not yet in place. Besides some success stories in the implementation of Quick-Wins, this report provides strong evidence that the agreements are not yet in place in key areas – notably with member state authorities (WP1 Objective2).

Engagement with stakeholders with the objective of gaining commitment to provide in-situ data was a priority throughout the project. The activities conducted by the project were appreciated by stakeholders for enabling direct contacts, and engaging them in decisions related to in-situ, thereby clarifying their potential roles and their expectations about the provision of in-situ data. The discussion around roles has been productive, although not all have yet taken the necessary commitments, and few have yet started the process of scaling up capacities to respond to Copernicus operational requirements (WP1 Objective 3).

EEA offered a lot of ad-hoc advice which contributed to many of the Copernicus Unit's approaches, e.g. in Comitology discussions and negotiations (WP1 Objective 4).

At an early stage in the project, it became clear that dialogue through international coordinating bodies alone would not be sufficient to provide in-situ for Copernicus services, momentum and engagement needed to also be built within countries. Exchanges with countries helped to better clarify their needs, expectations, roles and

responsibilities, as well as risks and gaps related to data access conditions, sustainability and non-availability of data. Country visits provided an excellent opportunity to demonstrate countries' efforts in establishing in-situ coordination structures and gaining a better understanding of existing in-situ capacities.

The national Copernicus coordinators played an important role in mobilising national in-situ data providers and engaging them in Copernicus processes. But in the majority of countries, there was a lack of resources for national coordination activities and lack of awareness of the potential benefits of engagement, of the Copernicus regulation, of roles and responsibilities between different involved actors.

Later in the project it became clear that a single agreement process to secure commitment for all in-situ capacities in countries was not viable without stronger national coordination. A multiple agreement processes with each country was also not viable from a European coordination perspective. Furthermore, uncertainties around the future of Copernicus programme and regulatory framework caused some delays. Whilst some agreement processes could have been concluded at a ministerial level, it was seen as preferable within the project framework to have a broader exchange and overview of more countries rather than pursuing final agreement with a few.

GISC was able to present an overview of national in-situ capacities in the 17 visited countries, which can serve as a knowledge base for services and in-situ coordinators as well as serve as mechanism to secure agreement for in-situ data access. Further exchanges and visits to other European countries would enable the completion of the picture of the European in-situ landscape, however this picture is continuously evolving, and processing this information is not the end in its own right.

The exchange of information with countries also emphasised the importance of reusing existing capacities through European coordinating bodies, which have a huge potential to facilitate access to in-situ data. European coordinating bodies are interested in a wider exploitation of their members' data and they are potentially able to take up significant coordination responsibilities targeting Copernicus needs for in-situ data.

The coordinating bodies, with which the EEA has concluded partnership agreements, have been recognised as important players in the Copernicus governance by facilitating access to geospatial and environmental data. The GISC dialogue contributed to initiating discussion on cooperation between networks, promoting targeted cooperation in different thematic areas and involving the networks in wider Copernicus processes. Clear definition of responsibilities and role that the coordinating bodies could play in the Copernicus governance is a prerequisite for ensuring the continuity of their commitment to the Copernicus programme.

The Eionet network, through its members' participation in various Copernicus fora, was engaged in the important EU decision making processes. It was recognised as an important thematic network by the EU institutions and other European and global actors¹. NFPs made a key contribution to the success of country visits, creating

¹ Reference to Eionet in EU legislation on Copernicus

stronger links with national Copernicus representatives (often from different thematic communities) and ensuring better information flows. Eionet involvement in Copernicus was an element in the development of the EEA data policy.

The dialogue with Research Infrastructures was a necessary step in crystalizing the role they play in providing some of the essential data for Copernicus. The exchanges raised the issue of sustainability and the need to reflect on forward looking solutions. The Euro-Argo Quick-Win is a tangible approach to put in place long-term and multi-purpose strategies, which can be re-employed to support the longevity of RIs.

The interactions with global actors led to a conclusion that coordination activities are needed to streamline similar endeavours. The dialogue with international organisations via individual contacts or via GEOSS activities have to be further explored to synergise the cooperation and seal partnerships.

The development of partnerships, as the in-situ data landscape itself, involves a huge diversity of stakeholders having multitude of diverging interests and operating in the context of changing and growing demands. The process in development of partnerships in the context of in-situ takes time and requires a well-structured approach, with some degree of continuity assured and a dedicated body to fulfil the coordination tasks to create sustainable comprehensive frameworks needed for operational services.

List of acronyms

DG	Directorate General
ECMWF	European Centre for Medium Weather Forecast
EEA	European Environment Agency
EFAS	European Flood Awareness System
EIG	Economic Interest Group
EIONET	European Environmental Information and Observation Network
EMEP	European Monitoring and Evaluation Programme
EMS	Emergency Management service (GIO phase)
EMSA	European Maritime and Safety Agency
ERI	European Research Infrastructure
ESA	European Space Agency
ESDIN	European Spatial Data Infrastructure Network
ESFRI	European Strategy Forum on Research Infrastructures
EU	European Union
EUMETNET	European Meteorological Network
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EMODnet	European Marine Observation and Data Network
Euro-Argo	The European component of a worldwide in situ global ocean observing system
EuroGeographics	European National Mapping and Cadastral Agencies Network (EG)
EuroGeoSurveys	European Network of geological services (EGS)
EuroGOOS	European Global Ocean Observing System
EuroSITES	European Ocean Observatory Network
EUROSTAT	European Statistics
Ferrybox	Automated instrument packages on ships of opportunities
FP	Framework Programme
GAW	Global Atmosphere Watch
GEO	Group on Earth Observations
Geoland2	Implementation project for Copernicus Land Core Service
GEOmon	Global Earth Observation and Monitoring of the Atmosphere, EU project contributing to GEOSS
GEOSS	Global Earth Observation System of Systems
GIO	Copernicus Initial Operations
GISC	GMES/Copernicus In-Situ Coordination project
GRDC	Global Runoff Data Centre
GMES	Global Monitoring for Environment and Security – renamed to Copernicus
IAGOS	Integration of Routine Aircraft Measurements into a Global Observing System
ICOS	Integrated Carbon Observation System
ICOS - INWIRE	ICOS Improved sensors, NetWork and Interoperability for GMES
IGAS	
InGOS	IAGOS for the GMES Atmospheric Service
INSPIRE	Integrated non-CO ₂ greenhouse gas Observing System
INS-TAC	Infrastructure for Spatial Information in Europe
JCOMM	In-situ Thematic Assembly Center in MyOcean
	Joint technical Commission for Oceanography and Marine

	Meteorology
JRC	Joint Research Centre
LPIS	Land Parcel Information System
LUCAS	Land cover/use statistics
MACC	Monitoring Atmospheric Composition and Climate – Implementation project for Atmosphere and Climate Core Service
MGCP	Multinational Geospatial Co-production Program
MoU	Memorandum of Understanding
MSFD	Marine Strategy Framework Directive
MyOcean	Implementation project of the Copernicus Marine Core Service
NATO	North Atlantic Treaty Organisation
NEREUS	Network of European regions using space technologies
NFP	National Focal Point
NILU	Norwegian Institute for Air research
NIVA	Norwegian Institute for water Research
NMCA	National Mapping and Cadastre Agency
NRC	National Reference Centre
RDA	Reference Data access
REA	Research Executive Agency
ROOS	Region Ocean Observatory System
SeaDataNet	Pan-European infrastructure for Ocean & Marine data Management
SLA	Service Level Agreement
WDCA	World Data Centre for Aerosols
WIGOS	WMO Integrated Global Observing System
WMO	World Meteorological Organisation
WG	Working Group
WP	Work Package

Annexes

Annex 1: Briefing note - Links between Copernicus in-situ data requirements and Inspire data specifications

Purpose of the note

This note is an update of the note prepared by the GISC project in October 2011 on the results of the exercise, organized by the GISC project earlier in 2011 and aiming at examining links between Copernicus in-situ data requirements and Inspire spatial data themes.

The purpose of this note is, taking into consideration important changes in some of the relevant Inspire spatial data specifications, which was the result of the public consultation process for Inspire Annexes II and III, to provide updated information on links between Copernicus in-situ data requirements and Inspire spatial data themes.

Background information

EEA has been asked by the European Commission to coordinate the Copernicus in-situ component with the aim of ensuring the sustainable delivery of in-situ data to the Copernicus services (Atmosphere, Emergency, Land and Marine). This task is undertaken through the GISC project.

Copernicus in-situ data are non-space data, i.e. measurements, data products such as geospatial data etc. which are needed for the creation of Copernicus services. The list of Copernicus in-situ data requirements gathered from four Copernicus services as well as references to Copernicus products which use these in-situ data is available on the website of the GISC project (<http://gisc.ew.eea.europa.eu/>).

Potential links between in-situ data required by Copernicus services and Inspire spatial data themes have been identified already in the early phase of the GISC project. These links needed to be examined in more detail from an Inspire perspective by Inspire thematic experts. It was particularly applicable to Inspire Annexes II and III as the public consultation process for Annex II and III data specifications gave the GISC project opportunity to report findings to Inspire thematic working groups and request changes ensuring that Copernicus in-situ data requirements are covered as much as possible by Inspire spatial data themes.

The whole exercise aimed at facilitating re-use of data and overall utility of Inspire data specifications by exploring the possibility to use Inspire as basis for the initial framework for sustainable provision of in-situ data for Copernicus services.

Thematic experts from EEA, European Topic Centres and members of different Inspire thematic working groups were asked by the GISC project to check Copernicus in-situ data requirements against Inspire data specifications. All feedbacks provided by the invited experts were analysed. The results of the exercise confirmed strong links between Copernicus in-situ data requirements and Inspire data specifications for all Copernicus services except for Copernicus Marine service where about 50% of the in-situ data (profile measurements of temperature, salinity and biogeochemical parameters), required by Copernicus Marine service, were by thematic Inspire experts excluded of the scope of the Oceanographic geographical features data specification.

GISC project submitted proposal to the on-going Inspire consultation for Annex II and III to include measurements of profiles in the Oceanographic geographical features data specification. After internal consultations in the Oceanographic geographical features thematic working group and in the European Commission the new draft version (v. 3.0.0) of the Oceanographic geographical features data specification was published on the 2nd July 2012 on the official Inspire website (<http://inspire.jrc.ec.europa.eu/index.cfm>). This draft version of the data specification now covers profile measurements:

“Besides point and gridded data, other more complex observations are extremely common in oceanography, such as vertical profiles through the ocean depths or trajectories along the ocean surface. While these types of observation are not likely to be used in a legislative reporting context they are key oceanographic data types therefore they are included in this specification on an informative basis.”

Links between Copernicus in-situ data requirements and Inspire data specifications

Although the above mentioned change proposed in the new draft version of the Oceanographic geographical features data specification affects statistical representation of links between Copernicus in-situ data requirements and Inspire data specifications, the main limitations pointed out by thematic Inspire experts remain and are as follows:

- 1) Inspire doesn't require or suggest member states creating new datasets or collecting new data;
- 2) Inspire is limited to EU27, however in most cases EEA39 or global coverage is required by Copernicus services;
- 3) Inspire is not putting obligation on members states to produce datasets of specific (very large) scale;
- 4) Timeframe of Inspire and Copernicus is different.

The updated statistics on links between Copernicus in-situ data requirements and Inspire data specifications is presented in the table below:

Copernicus services	High match identified¹	No match	Cannot be assessed
Land	72%	6%	22%
Emergency Response	81%	7%	11%
Atmosphere	100%	0%	0%
Marine	98%	0%	2%
All Copernicus services	90%	3%	7%

¹ This is the percentage of positive answers to one of the questions the experts for each in-situ data requirement were asked:

1) Inspire data specification(s) support the Copernicus in-situ data requirement(s), high matching of spatial object types and properties

2) Very likely that Inspire data specifications can be used for some spatial objects types and properties

3) Inspire data specification support in general the Copernicus in-situ data requirement, detailed evaluation is not possible

Annex 2: Research infrastructures and research projects providing essential in-situ data for GMES (July 2012)

The following table gives an overview of research infrastructures and research projects which provide essential in situ data for the Marine and Atmosphere GMES services. The table is based on the analyses and conclusions of the “Report on criteria to determine priorities for support” (GISC deliverable 2.2 & 2.4). Only essential data providers are listed in the table. It should be noted that as the GMES service portfolios are constantly evolving, the range of in-situ data providers will also change continuously.

The ‘status’ of the RIs and projects in relation to the GMES services differ: Some RIs are providing data which are essential for the operations of a service. Other RIs/projects are providing data upon which a service is not operationally dependent yet, but it is still important to the service. And then there are projects which are geared more towards data management and coordination, some of which are already included in a service data flow (for instance SeaDataNet).

RESEARCH INFRASTRUCTURE/PROJECT	GMES SERVICE	GMES RELEVANCE	LIFETIME AND FUNDING MECHANISM
<p>ICOS Integrated carbon observing system.</p> <p>Objective: Quantifying and understanding the greenhouse balance of the European continent and of adjacent regions.</p> <p>http://www.icos-infrastructure.eu/</p>	Atmosphere and land	<p>Greenhouse gasses (concentration and flux))</p> <p>Observations are used by the GMES Land (Global component) and Atmosphere services. May potentially be used by the Marine service in the future.</p>	<p>FP7 funding start: 1/4 2008 FP7 funding end: 1/4 2012 Amount: 4.3 Meuro</p> <p>Included in the ESFRI Roadmap versions 2006/2008/2010. Coordinated by France</p>
<p>InGOS Integrated non-CO2 greenhouse gas observing system.</p> <p>Objective: Improving and extending the European observation capacity for non-CO₂</p>	Atmosphere	<p>Greenhouse gasses (surface observations)</p> <p>Observations will be used by the GMES Atmosphere service.</p>	<p>FP7 funding start: 1/10 2011 FP7 funding end: 1/10 2015 Amount: 8.0 Meuro</p>

greenhouse gases. http://www.ingos-infrastructure.eu/			
NORS Demonstration network of ground based remote sensing observations in support of the GMES Atmosphere Service. Objective: To improve the quality and validation of the products delivered by the GMES Atmospheric Service.	Atmosphere	The project is closely coordinated with the GMES Atmosphere service to make more timely observations available.	FP7 funding start: 1/11 2011 FP7 funding end: 31/7 2014
EUSAAR European Supersites for Atmospheric Aerosol Research. Objective: Development of a near-real-time data collection and dissemination infrastructure for advanced ground-based aerosol observations.	Atmosphere	Data are used by the GMES Atmosphere service.	FP6 funded. Funding ended April 2011. The service has been adopted and extended by the WMO GAW programme. EUSAAR is now part of the ACTRIS project.
IAGOS-ERI In-service aircraft for at global observing system. Objective: To establish and operate a distributed infrastructure for long-term observations of atmospheric composition, aerosol and cloud particles on a global scale from a fleet of initially 10-20 long-range in-service aircraft of internationally	Atmosphere	Data are used by the GMES Atmosphere service.	FP7 funding start: 1/7 2008 FP7 funding end: 1/7 2012 Amount: 3.3 Meuro Included in the ESFRI Roadmap versions 2006/2008/2010. Coordinated by Germany.

operating airlines.			
<p>ACTRIS Aerosols, clouds and trace gases research infrastructure network. (partly a continuation of Earlinet and EUSAAR).</p> <p>Objective: To integrate European ground-based stations equipped with advanced atmospheric probing instrumentation for aerosols, clouds, and short-lived gas-phase species.</p>	Atmosphere	Observations are used by the GMES Atmosphere service	FP7 funding start: 1/4 2011 FP7 funding end: 1/4 2015 Amount: 7.8 Meuro
<p>EURO-ARGO Global ocean observing infrastructure.</p> <p>Objective: Delivers critical data for assimilation in ocean forecasting models, climate monitoring and seasonal to decadal forecasting.</p> <p>http://www.euro-argo.eu/</p>	Marine	EuroArgo	FP7 funding start: 1/1 2008 FP7 funding end: 30/6 2010 Included in the ESFRI Roadmap versions 2006/2008/2010. Coordinated by France
<p>EMSO European multidisciplinary seafloor observatory.</p> <p>Objective: The European large-scale infrastructure composed of seafloor observatories for long-term monitoring of environmental processes related to</p>	Marine	Open ocean	FP7 funding start: 1/4 2008 FP7 funding end: 1/4 2012 Amount: 3.9 Meuro Included in the ESFRI Roadmap versions 2006/2008/2010. Coordinated by Italy.

ecosystems, climate change, and geo-hazards. http://www.emso-eu.org/management/			
EuroSITES European Ocean Observatory Network. Objective: Integrating and enhancing the 9 deep-ocean (water depth >1000m) observatories into a coherent network.	Marine	Open ocean	FP7 funding start: 1/4 2008 FP7 funding end: 2011
SeaDataNet-II Pan-european infrastructure for ocean and marine data management. Objective: To construct a standardized system for managing the large and diverse data sets collected by the oceanographic fleets and the new automatic observation systems. http://www.seadatanet.org/	Marine		FP7 funding start: 1/10 2011 FP7 funding end: 1/10 2015 Amount: 6.0 Meuro
JERICO Joint European research infrastructure network for coastal observatories. Objective: To increase the coherence and the sustainability of the dispersed coastal observatories by addressing their future within a shared pan-European framework.	Marine	Coastal and shelf seas	FP7 funding start: 1/5 2011 FP7 funding end: 1/5 2015 Amount: 6.5 Meuro

http://www.jerico-fp7.eu/			
<p>FerryBox</p> <p>Objective: Ocean biogeochemical analyses, temperature, salinity.</p> <p>http://www.ferrybox.com/why/index.html.en</p>	Marine	Coastal and shelf seas. Ferrybox data mainly integrated by NIVA.	<p>FP5 funded 2002 – 2005</p> <p>Continued with funding from institutional partners. Operated by NIVA with funding from Norway and ESA. IFREMER funds the operation of two lines. (& UK, D).</p>
<p>EuroFleets</p> <p>An alliance of European research fleets.</p> <p>Objective: Aiming at bringing together the European research fleets to enhance their coordination and promote the cost effective use of their facilities.</p> <p>http://www.eurofleets.eu/np4/home.html</p>	Marine	Temperature, salinity, currents, oxygen, chlorophyll, biochemical measurements. Provided by GOSUD: www.gosud.org	<p>FP7 funding start: 1/9 2009</p> <p>FP7 funding end: 1/9 2013</p> <p>Amount: 7.2 Meuro</p>
<p>GROOM</p> <p>Gliders for research, ocean observation and management.</p> <p>Objective: To design a new European Research Infrastructure that uses underwater gliders for collecting oceanographic data</p> <p>http://www.ego-network.org/groom/doku.php</p>	Marine	Temperature and salinity (chlorophyll, oxygen, nutrients) when gliders are at sea. Provided by the European Gliders Organisation.	<p>FP7 funding start: 1/10 2011</p> <p>FP7 funding end: 1/10 2014</p> <p>Amount: 3.5 Meuro</p>

D1.6

Report on progress in negotiation and development of the partnership

Annex 3: Final analysis of national in-situ capacities from 17 visited countries:

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Sweden, Switzerland and United Kingdom

October 2013

Country: AUSTRIA
National GMES focal point (contact details) Andreas Littkopf Umweltbundesamt GmbH Spittelauer Lände 5, 1090 Wien andreas.littkopf@umweltbundesamt.at Tel: +43-(0)1-313 04/3371
Meetings held 10 th May 2012, Status of the meeting - GISC/EEA country visit with the purpose of getting an overview of the in-situ landscape in Austria.
Individual agreements on access to data signed with specific stakeholders yes/no: Provision of international data to WMO and EUMETNET (free according WMO data policy, provide according WMO resolution nr 40) is notified for Meteorological in-situ observations. Agreements between BEV and EuroGeographics is specified for Hydrographical information, Administrative boundaries (scale 1:100 000 only), Built-up area/ settlement information, Settlement locations and toponyms, Digital Elevation Models.
Key points of data access policy Free data policies are set for grassland, wetlands and forest inventories, Transport network data are free but on request. All data linked with EMS requirements are under the responsibility of the cadastre and mapping agency and so subject to licencing agreements, therefore don't fall under the category of full, free and open access. Emission inventories and air quality measurements fall under international conventions and can be accessed freely.
Status of RDA (Reference Data Access) survey No reply or table received
Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data Agreement not signed. At the 2nd EG EM KEN meeting on 28 February - 1 March informed that can't accept terms of the data supply referring to licencing of data (G.Schennach).
Status of GIO Land grant agreement Agreement signed in November 2012 by the managing Director of the Umweltbundesamt.

In-situ data with free* access to all GMES services (or non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water levels – NRT data about seasonal variations; only for disaster affected areas)	Hydrographic Service Office (EHYD) Ministry of Life	http://ehyd.gv.at/	Client application with access to NRT hydrographical measurements.
Wetlands inventory scale 1:25 000	Umweltbundesamt	Client application http://gis.umweltbundesamt.at/austria/natur/feuchtgebiete/Map.faces	
Grasslands inventory scale 1: 5 000 – 1: 25 000	Umweltbundesamt	Client application http://gis.umweltbundesamt.at/austria/Default.faces	
Forest inventory (forest species), 1: 5 000 – 1: 25 000	Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft	http://bfw.ac.at/	Statistical aggregations are freely available (currently at forestry district level, in future planned at NUTS 3). Updates are every 5-10 years
City maps (> 100 000 inhabitants or the largest city in the region), 1: 5 000	Stadtpläne	http://www.wien.gv.at/stadtplan/en/	free access to raster data formats, fees for vector data formats (except environment statistics)
Critical infrastructures: power plants, transmission networks, water treatment plants, pipelines, bridges, hospitals, schools, fire brigade locations (positional accuracy: 20 m of true position)	Umweltbundesamt	http://gis.umweltbundesamt.at/austria/Default.faces	ePRTR installations map (yearly updates)
Orthophotos, scale 0.2 m	Österreichische Bundesländer Kooperation	www.geoimage.at	Free ortho-imagery for non-commercial purposes

Meteorological in-situ observations	Zentralanstalt für Meteorologie und Geodynamik	http://www.zamg.ac.at/ Other meteorological data producers are military and aviation weather services (internationally shared)	Free provision of International data to WMO and EUMETNET (based on WMO standards)
Surface air quality measurements (validated data and NRT data)	Umweltbundesamt	http://www.umweltbundesamt.at/	Provision of air quality measurements to EEA
Vegetation variables	Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft	http://www.lebensministerium.at/geo-informationen.html	
Soil moisture	Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft	Client applications http://www.hora.gv.at/ http://gis.lebensministerium.at/eBOD/frame/index.php?&146=true&gui_id=eBOD	soil map free in connection with hydraulic conductivity, no real moisture
<i>Desirable/useful data ref GISC priorities report</i>			
Field data (LUCAS project principles): land cover, land use, landscape photos, 1 km grid	EUROSTAT	http://epp.eurostat.ec.europa.eu/portal/page/portal/lucas/introduction	
Land use data 1:25000 – 1:50000	Umweltbundesamt	Data provided by EEA	
Conservation and protected areas, scale 1: 50 000	Länder Governments	www.geoland.at	Geoland Joint Information Platform of the Länder
Forestry maps: forest type, resolution 1: 50 000	Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft	http://bfw.ac.at/ www.waldinventur.at	
Agriculture statistics	Statistik Austria	http://www.statistik.at/web_de/interaktive_karten/041141.html	

In-situ data with license issues or un-clarified data access conditions

In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information water bodies 1:25000, 1:50000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,1570442&_dad=portal&_schema=PORTAL http://www.bev.gv.at/portal/page?_pageid=713,2155735&_dad=portal&_schema=PORTAL	Water bodies 1:50,000 as layer of Digital cartographic model 1:50 000 raster Digital landscape model, Object range Hydrography (vector information)
Administrative boundaries, >1: 25 000, 1:50 000, 1: 100 000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,2156957&_dad=portal&_schema=PORTAL	1:100 000 Scale under EuroGeographics license, 1:50.000, 1:250.000 scales under different specifics licenses.
Built-up areas/settlements locations buildings 1:10000	Stadtpläne	http://data.wien.gv.at/katalog/	Partially available as open data
Settlement locations and toponyms, >1:50 000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,1574580&_dad=portal&_schema=PORTAL	Agreement between BEV and EuroGeographics
Digital Elevation Model (low resolution 90 m)	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,2155737&_dad=portal&_schema=PORTAL	Agreement between BEV and EuroGeographics
Transport networks: airports-ports (international airport, regional, recreational), >1: 50 000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,1574089&_dad=portal&_schema=PORTAL	The data integration platform is under development and it will be available in 2014
Large scale population information at administration level 3 or higher	Statistik Austria	http://www.statistik.at/web_de/services/geodaten/index.html	License fees based on scales, some grid vector formats free of charge.
Orthophotos, scale 0.2 m	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,1573980&_dad=portal&_schema=PORTAL	Digital orthophoto – compressed quality, 0,25 m GSD (ground sample distance)

		AL	Orthophotos also available through the Laender.
Transport networks: roads-railways, >1:25 000, 1: 50 000, 1: 100 000	BMVIT	No web access	Data with free access but available only on request. The data integration platform is under development and it will be available in 2014. For roads: <ul style="list-style-type: none"> • Road category (highway, dual carriage, national...) • Road name • Number of lanes • Surface type For Railways: <ul style="list-style-type: none"> • Number of tracks • Power specification (electrified, diesel)
<i>Desirable/useful data ref GISC priorities report</i>			
Digital topographic maps (standard topographic maps in digital format compatible with national feature sets), >1: 25 000, 1: 100 000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,1570442&_dad=portal&_schema=PORTAL	1:50000, Different resolutions (254 dpi:, 508 dpi, 1016 dpi:) and qualities (separated layers; colour image data)
Aerial photography (post-disaster information)	BMI		
Forestry maps: forest type, resolution 1: 50 000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,1573736&_dad=portal&_schema=PORTAL	Digital cartographic model 1:50 000 vector (Forests/woodlands)
Soil information (scale 1: 100 000)	Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und	http://bfw.ac.at/	Agricultural soil data 1:25000

	<p>Landschaft</p> <p>BORIS Soil Information System at Umweltbundesamt</p> <p>BEV on behalf of Ministry of Finance</p>	<p>http://www.umweltbundesamt.at/umweltsituation/boden/boris/</p> <p>http://www.bev.gv.at/portal/page?_pageid=713,1573736&_dad=portal&_schema=PORTAL</p>	<p>Providing data on behalf of the Länder, difficult access policies</p> <p>Soil evaluation map of Austria, different scales depending on cadastre scale 1:1000 – 1:5000 (specific license agreement)</p>
Geological maps (1:100 000)	Geologische Bundesanstalt	http://www.geologie.ac.at/	Agreement through EuroGeoSurvey
Cadastral data: for cities with more than 100 000 inhabitants or the largest city in the region, 1: 1 000, 1: 5 000	Bundesamt für Eich und Vermessungswesen	http://www.bev.gv.at/portal/page?_pageid=713,2157056&_dad=portal&_schema=PORTAL	Vector and raster data present at different scales with different specific licenses.
Land parcel information system (LPIS) (reference parcel with land use/ land cover information)	INVEKOS registry (what land parcel is used for which agricultural purpose)		
Emission inventory	Umweltbundesamt GHG/UNFCCC (GHG Monitoring Mechanisms) and Air/Pollutants for CLRTAP (NEC)	http://prtr.ec.europa.eu/Home.aspx	ePRTR emission data reported/published by industry, available through EEA
UV radiation: UV index, erythemal UV, spectral UV	Zentralanstalt für Meteorologie und Geodynamik	http://www.zamg.ac.at/	Measured at some stations for some reference measurements (Available on request).
Fire data	Bundesministerium für	http://www.bmi.gv.at	

	Inneres		
Total column greenhouse gases: CO2, CH4 <i>(Annex III: Atmospheric conditions)</i>	Umweltbundesamt		EIONET Greenhouse gas inventories (EU)

Not resolved issues/identified gaps: fire data, Land parcel information system

Conclusions:

Many datasets are available under open data policies. However, reference data from Bundesamt für Eich und Vermessungswesen underlies licensing and related costs. Situation and availability of data in the Bundeslaender is unclear.

Country: GERMANY		
National GMES focal point (contact details)		
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Meetings held		
<ul style="list-style-type: none"> 12th June 2012 with German GMES representatives from different agencies: BMVBS: Carsten Dettmann, DLR: Jörn Hoffmann, BBK: Michael Judex, DWD: Tobias Fuchs, BKG: Bernd Richter, Andreas Busch, Stephan Arnold, Sonja Werhahn, Reiner Retzek, Andreas Illert, UBA: Christina Pykonen, Thomas Schultz-Krutisch, BfG: Björn Baschek, BSH: Johannes Melles 		
Individual agreements on access to data signed with specific stakeholders yes/no: no		
Key points of data access policy		
<ul style="list-style-type: none"> Germany is implementing an open data policy (national Inspire implementation)(Geodatenzugangsgesetz). I.e. that all data which is collected and owned by governmental agencies and organisations will be available free of charge. However, several datasets (especially those with large scale) are owned by the German Laender. The 16 Laender follow different data policy approaches. While several Laender will follow the open data policy, others are expected to provide their data against license fees only. BKG is the distributor of topographic data of the Laender if two or more Laender are covered by the requested area. General encouragement to access met & marine data via existing networks. 		

Status of GIO Land grant agreement

- Letter signed on April 2013

In-situ data with open access to all GMES services (non-commercial use)

In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Settlement locations and toponyms Large scale 1:5 000 - 1:500 000	Bundesamt für Kartographie und Geodäsie	Download and view URL at http://www.geodatenzentrum.de/geodaten/gdz?l=down_gn250 WMS http://sg.geodatenzentrum.de/wms_gn250?service=WMS&request=GetCapabilities	
Topographic maps: Administrative units, transport networks, hydrography, geographical names, urban areas, etc) Scale: 1: 100 000, 1:25 000, 1: 10 000		Download and view services URL available at http://www.geodatenzentrum.de/geodaten/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt_zeile=5&gdz_anz_zeile=0&gdz_user_id=0 (1,200,000 maps) http://www.geodatenzentrum.de/geodaten/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt_zeile=5&gdz_anz_zeile=1&gdz_unt_zeile=5&gdz_user_id=0	Maps available at 1:200.000, 1:500.000 and 1:1.000.000.
Surface air quality measurements	Umweltbundesamt http://www.umweltbundesamt.de/	Deutscher Wetterdienst http://www.dwd.de/	EIONET has priority on data flow and they are available through EEA (AQ1: EoI Data). There are no

	Deutscher Wetterdienst http://www.dwd.de/		limitations to use data for GMES services.
Vertical atmosphere profiles: aircrafts, sondes, ground based remote sensing (incl. radar and lidar)	Deutscher Wetterdienst http://www.dwd.de/		
Daily temperature, salinity, current, chlorophyll and oxygen measurements from German Monitoring Networks (Global ocean, German Bight, Western Baltic)	Das Bundesamt für Seeschifffahrt und Hydrographie http://www.bsh.de/de/index.jsp Leibniz-Institut für Meereswissenschaften an der Universität Kiel http://www.ifm-geomar.de/ Helmholtz-Zentrum Geesthacht Zentrum für Materialforschung und Küstenforschung http://www.hzg.de/ Stiftung Alfred-Wegener-Institut für Polar und Meeresforschung http://www.awi.de/		Data are freely available within EuroArgo, through the Euro-Argo Data Centres http://www.euro-argo.eu/Activities/Data-Processing/Euro-Argo-Data-Centres
<i>Desirable/useful data ref GISC priorities report</i>			
Land use information CORINE; accuracy 0.1 km ² (100 m x100 m, X, Y CE90: 20 m)	Umweltbundesamt http://www.umweltbundesamt.de/		Freely available as CORINE data from the EEA website.
Conservation and protected areas (Scale 1: 50.000)	Bundesamt für Naturschutz http://www.bfn.de/	Client application for Natura 2000 http://www.bfn.de/geoinfo/gvo/ http://www.bfn.de/geoinfo/landschaften/	

		<p>Client application – protected areas in Germany http://www.geodienste.bfn.de/schutzgebiete/</p> <p>EEA: http://www.eea.europa.eu/data-and-maps/data/nationally-designated-areas-national-cdda-7</p>	
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Not resolved: biomass, vegetation variables, land parcel information system LPIS, zoning maps, fire data, thematic maps

In-situ data with licenses issues

In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water bodies – information on water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits; scale 1: 25 000)	<p>Bundesanstalt für Gewässerkunde</p> <p>The Federal Agency for Nature Conservation</p> <p>Federal Institute of Hydrology - Bundesanstalt für Gewässerkunde</p>	<p>http://www.bafg.de/</p> <p>client application consuming floodplains WM Services http://www.geodienste.bfn.de/flussauen</p> <p>Surface water bodies (WMS access) http://geoportal.bafg.de/wmsproxy/OWK</p>	<p>See also:</p> <p>ATKIS Basis-DLM WFS download services http://www.geodatenzentrum.de/xml/wfs_bdlm.xml</p> <p>View service http://www.geodatenzentrum.de/xml/wms_bdlm.xml</p> <p>For DLM250 WFS download service http://www.geodatenzentrum.de/</p>

		WRRL?	xml/wfs_dlm250.xml
Hydrographical information (water levels – NRT data about seasonal variations; only for disaster affected areas)	www.pegelonline.wsv.de Wasser- und Schifffahrtsverwaltung des Bundes (German Federal Waterways and Shipping Administration) (http://www.wsv.de/)	WFS Services http://www.pegelonline.wsv.de/webservice/wfsAktuell;jsessionid=E2BEC93C52F488576B25511A09600DA8 http page with information on Services http://www.geoportal.de/SharedDocs/Karten/EN/Themenkarte_Hochwasser_EN.html http://www.pegelonline.wsv.de/gast/start client application http://www.geoportal.de/DE/Geoportal/Karten/karten.html?lang=de&lang=en&wmcid=61	This portal distributes data under the authority of the Waterways Authority - Wasser- und Schifffahrtsverwaltung des Bundes (WSV) GRDC is hosted in Germany but a WMO data centre. Data provided to GRDC for specific purposes. Data provided by countries. In most cases, data are subjected to Länder specific licenses.
Field data (LUCAS project principles): land cover, land use, landscape photos, 1 km grid	Ministries of agriculture of the different federal states Federal Agency of Nature Conservation		Federal agency of nature conservation has aggregated data. Some Länders have such data. Licence conditions vary upon Länders.
Wetlands inventory			Not available at federal level. Federal agency of nature conservation has only inventory of wetlands of international importance under Ramsar convention. Data comes from

			Länder.
Forest inventory Forest species, scale 1: 5 000 – 1: 25 000	Länder Ministries of Agriculture & Forestry	Inventory online database http://www.bundeswaldinventur.de	This data is sampling data only at federal level. Every few years update and then interpolated for whole country. At Länder level will probably have maps with very detailed info. To be clarified.
City maps (> 100 000 inhabitants or the largest city in the region) Scale 1: 50 000	Surveying Authorities of the different federal states. Bundesamt für Kartographie und Geodäsie http://www.bkg.bund.de/ http://www.geodatenzentrum.de	http://www.adv-online.de download data page http://www.adv-online.de/icc/extdeu/broker.jsp?uMen=ab9708a8-6975-7011-3bbc-251ec0023010 http://www.geodatenzentrum.de/geodate/n/gdz_rahmen.gdz_div	Largest scale of topographic maps is 1:10,000 for new Länder and 1:25,000 for old Länder.
Critical infrastructures: Power plants, transmission networks, water treatment plants, pipelines, bridges, hospitals, schools, fire brigade locations (positional accuracy: 20 m of true position)	Federal Agency for Cartography and Geodesy (BKG) is the main possible data owner / distributor http://www.bkg.bund.de/	http://www.geodatenzentrum.de http://www.geodatenzentrum.de/geodate/n/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt_zeile=2&gdz_anz_zeile=1&gdz_user_id=0&gdz_para1=1	Some features are available on the free market (e.g. schools, hospitals) but data distributed by BKG is only provided to selected and authorised users
Administrative boundaries Scale: 1: 5 000 – 1: 25 000, 1: 100 000	Bundesamt für Kartographie und Geodäsie	Administrative regions (1:250.000) available at http://www.geodatenzentrum.de/geodate/n/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt_zeile=5&gdz_anz_zeile=0&gdz_user_id=0 WMS administrative boundaries - other http://www.geoportal.rlp.de/mapbender/	Larger scale available at Länder

<p>Marine administrative boundaries</p>	<p>Bundesamt für Seeschifffahrt und Hydrographie (BSH)</p>	<p>http://www.geoportal.rlp.de/mapbender/php/wms.php?inspire=1&layer_id=36407&REQUEST=GetCapabilities&SERVICE=WMS</p> <p>WMS administrative boundaries – level 5 - 8</p> <p>http://www.geoportal.rlp.de/mapbender/php/wms.php?inspire=1&layer_id=36444&REQUEST=GetCapabilities&SERVICE=WMS</p> <p>WMS administrative boundaries – level 0 - 4</p> <p>http://www.geoportal.rlp.de/mapbender/php/wms.php?inspire=1&layer_id=36443&REQUEST=GetCapabilities&SERVICE=WMS</p> <p>All WMServices' URL available at http://gdiwiki.bsh.de/wiki/index.php/Kategorie:Dienste main web site www.geoseaportal.de</p>	<p>Publicly available, but there are interface issues with neighbouring countries. Download function not yet ready, but can be implemented. Requires funding resources.</p>
<p>Built-up areas/settlements Scale 1: 25 000</p>	<p>Surveying Authorities of the different federal states</p> <p>Bundesamt für Kartographie und Geodäsie</p>	<p>http://www.adv-online.de</p> <p>http://www.bkg.bund.de/</p>	
<p>Digital Elevation Model high resolution: 1 m2 - 25 m2</p> <p>Digital Elevation Model Medium resolution 30 m: 900 m2 (30 m x 30 m), X, Y CE90: 5 m, Z: 4 m</p> <p>Digital Elevation Model</p>	<p>Bundesamt für Kartographie und Geodäsie</p>	<p>Download and view services URL are available at http://www.geodatenzentrum.de/geodate/n/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt_zeile=5&gdz_anz_zeile=1&gdz_unt_zeile=3&gdz_user_id=0</p>	<p>Only available at 200 m and 1000 m. High resolution DEM available through the Länder</p>

Low resolution 90 m: 8100 m2 (90 m x 90 m), X, Y CE90: 15 m, Z: 6 m)		WMS (1:200.000) http://www.geodatenzentrum.de/geodate/n/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt_zeile=5&gdz_anz_zeile=1&gdz_unt_zeile=3&gdz_user_id=0	
Bathymetry 50m grid along coast and 200m offshore.	Bundesamt für Seeschifffahrt und Hydrographie (BSH)		Available from autumn 2013 as WMS/WFS.
Transport networks Roads Scales: large 1:5 000 - 1:25 000 medium 1:25 000 - 1:80 000 small 1:80 000 - 1:250 000	Bundesamt für Kartographie und Geodäsie	WFS feature: 42002 "AX_Strasse" http://www.geodatenzentrum.de/xml/wfs_bdlm.xml	Taken from RDA
Transport networks Railways Scale 1: 50 000	Bundesamt für Kartographie und Geodäsie	WFS feature: Railways 42014 "AX_Bahnstrecke" http://www.geodatenzentrum.de/xml/wfs_bdlm.xml	Taken from RDA
Transport Networks Water Scale 1:50 000 – 1:350 000 Verkehrsnetz der Bundeswasserstraßen (VerkNet- BWaStr)	Bundesamt für Kartographie und Geodäsie Wasser- und Schifffahrtsverwaltung des Bundes (German Federal Waterways and Shipping Administration) http://www.wsv.de/	WFS feature: Waterways 44004 "AX_Gewaesserachse" http://www.geodatenzentrum.de/xml/wfs_bdlm.xml http://www.wsv.de/service/karten_geoinformationen/sonstige_geodaten/index.html	Taken from RDA
Large scale population information At administration level 3 or higher (accuracy 0,01 km2 (100 m x 100 m))	Statistisches Bundesamt Deutschland Federal Statistical Office	http://www.destatis.de/jetspeed/portal/cms/ https://www- genesis.destatis.de/genesis/online/link/tab	Metadata information available at http://www.geoportal.de/

		elleErgebnis/12411-0001	
Orthophotos Scale 0.2 m, 0.5 m	Bundesamt für Kartographie und Geodäsie	WMS http://www.geodatenzentrum.de/xml/wms_dop.xml	Taken from RDA
Aerosol optical depth	Deutscher Wetterdienst http://www.cmsaf.eu/ http://www.dwd.de/	Data portal http://www.dwd.de/luftchemie	CM SAF is part of the EUMETSAT Satellite Application Network and is a joint effort of six European National Meteorological and Hydrological Services, led by Deutscher Wetterdienst.
Meteorological in-situ observations Station-based data and derived gridded data sets): wind (speed), wind (direction), air pressure, humidity, temperature, precipitation, longwave radiation, shortwave radiation; meteorological forecasts: wind speed, wind direction and wind location in real time	Deutscher Wetterdienst http://www.dwd.de/ http://www.dwd.de/cdc	Atmosphere service data are available through the ECMWF	
<i>Desirable data ref GISC priorities report</i>			
Forestry maps Scale: 1: 50k	BMELV - Ministries of agriculture and forestry of the different Länder		
Soil maps Scale 1: 200 000, 1:1 000 000)	Federal Institute for Geosciences and Natural Resources (BGR)	Federal soil map (1.000.000) Client application http://www.bgr.de/app/FISBoBGR_MapServer/OpenLayers/?id=2&pid=9493&lang=de WMS http://www.bgr.de/service/bodenkunde/buek1000_de/v2.0/index.php?	

<p>Geological maps Scale: 1: 200 000, 1:1 000 000</p> <p>Geological maps for marine areas</p>	<p>Federal Institute for Geosciences and Natural Resources (BGR)</p> <p>Bundesamt für Seeschifffahrt und Hydrographie (BSH)</p>	<p>Federal Geological map (1.200.000) Client application http://ims1.bkg.bund.de/navig/basicviewer.jsp?&MAP_NAME=map_one&RESET=true&INITPARAM=true&SERVER WMS http://www.bgr.de/service/geologie/guek200/?REQUEST=GetCapabilities&VERSION=1.1&SERVICE=WMS</p> <p>Federal Geological map (1.000.000) Client application http://ims1.bkg.bund.de/navig/basicviewer.jsp?&MAP_NAME=map_one&RESET=true&INITPARAM=true&SERVER= http://www.bgr.de/Service/geologie/gk1000/</p> <p>http://GDISRV.bsh.de/arcgis/services/SGE/SeabedSediments/MapServer/WMServer</p> <p>http://GDISRV.bsh.de/arcgis/services/SGE/SubsurfaceSediments/MapServer/WMServer</p>	<p>Small scale data available through BGR, Large scale data available through agencies at Länder.</p> <p>Contact list for higher resolution map data: see list of representatives from the federal states) http://www.infogeo.de/ueberuns/geologie/mitglieder</p>
<p>Cadastral data</p>	<p>Surveying Authorities of the different federal states http://www.adv-online.de</p>		
<p>Total column greenhouse gases: CO2, CH4</p>	<p>Umweltbundesamt http://www.umweltbundesamt.de/</p>		<p>EIONET Greenhouse gas inventories (EU)</p>

	Deutscher Wetterdienst http://www.dwd.de		
Emission inventory			EIONET Greenhouse gas inventories (UN)
Land use statistics (land use sampling data)	Statistisches Bundesamt Deutschland http://www.destatis.de/jetspeed/portal/cms/		
Land parcel information system (LPIS) (reference parcel with land use/ land cover information)	Ministries of Agriculture and Forestry at Länder		Partly available in web client applications of Ministries of Agriculture and Forestry at Länder level; download services to be negotiated individually

Not resolved issues/identified gaps:

Forestry maps, cadastral data

Conclusion (status)

Geodatenzugangsgesetz provides free and open access to Inspire related data. However, this is only for data at federal scale medium scale 1:200k). Large scale data is available in the Laender and to a certain degree also in federal agencies. Access to Laender data is not solved yet. Commercial licensing through BKG is one option.

Marine data is available through BSG; several datasets are also provided through EuroGOOS and research networks (e.g. EuroArgo)

Atmosphere data available through Eumetnet and ECMWF.

Version May 2013

Last feedback received on May 2013

Country: LUXEMBOURG
National GMES focal point (contact details) Eric DE BRABANTER Ministère du Développement durable et des Infrastructures Département de l'Environnement 4, place de l'Europe L-2918 LUXEMBOURG Email address: eric.debrabanter@mev.etat.lu Patrick GRIVET Ministère du Développement durable et des Infrastructures Département de l'Environnement 4, place de l'Europe L-2918 LUXEMBOURG Email address: patrick.grivet@mev.etat.lu
Meetings held <ul style="list-style-type: none">The meeting was held on 19th October 2012 with the purpose of getting an overview of the in-situ landscape in Luxembourg and present EEA's responsibilities in GMES.
Individual agreements on access to data signed with specific stakeholders yes/no: no
Key points of data access policy <ul style="list-style-type: none">Luxembourg prefers that the National Mapping Agency is directly contacted for any issue concerned with data distribution and service provision. Meteorological data can be collected through EUMETNET. "Formal data request/agreements needed" reflects the requirements of most national data providers, willing to have a formal data request that should follow case by case data licence agreements and allow a better traceability over

the data distribution.

- Data licenses usually refer to limitation in the data usage (i.e. redistribution not allowed), acceptance of specific usage policies, and disclaimer over the data and acknowledgement of the source. In most cases data license are non-commercial licenses providing access to data via download services free of charge. Licenses usually refer to limitation in the data usage (i.e. redistribution not allowed), acceptance of specific usage policies, disclaimer over the data and acknowledgement of the source. In most cases data license are non-commercial licenses providing access to data via download services free of charge. This, with exception of coordinating organization such as “Administration du Cadastre et de la Topographie” that may apply commercial licenses to products providing fees by surface unit.
- For some particular datasets provided by National Authorities which are also member of Eurogeographics a formal request should be anyway addressed to the national providers and eventually data can be made available through Eurogeographics.
- When the GMES Copernicus service is specified, i.e. “for Emergency response service”, this has to be intended for the emergency service only. If the usage of the data and stakeholder is specified further these could potentially be made available to all GMES services and further arrangements could be taken accordingly.

Status of RDA (Reference Data Access) survey

- Feedback received

Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data

- Luxembourg favours a national level policy with direct data collection and national access to data.

Status of GIO Land grant agreement

- Agreement signed

In-situ data with free* access to all GMES services (or non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5 SO2) (Inspire Annex III: Atmospheric	Ministère du Développement durable et des Infrastructures	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	Near real time measurements available through EIONET reporting.

conditions)			
Surface validated measurements (CH4 (conc.&fluxes), CO, CO2, NMVOC (speciated), NO, NO2, O3, PM spec., PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isopren, PAH) (Inspire Annex III: Atmospheric conditions)	Ministère du Développement durable et des Infrastructures Administration de l'Environnement	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	AQ-1: EoI data (Eionet priority data flow) available through EIONET reporting.
<i>Desirable/useful data ref GISC priorities report</i>			
Conservation and protected areas: 1: 25 000, 1: 50 000 (Inspire Annex I. Protected sites, Annex III. Habitants and biotopes) CDDA-1: Designated areas (Eionet priority data flow)	Ministère du Développement durable et des Infrastructures Département de l'Environnement	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	available through EIONET
Field data (LUCAS project principles): land cover, land use, landscape photos, 2x2 km grid (Inspire Annex II: Land cover)			Available through EUROSTAT
Emission inventory	Ministère du Développement durable et des Infrastructures Administration de l'Environnement	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	Available through EIONET AE-1: LRTAP data (Eionet priority data flow) AE1b: NEC data (Eionet priority data flow) AE-2: UNFCCC data (Eionet priority data flow)

			AE2b: EU GHG data (Eionet priority data flow)
Agriculture statistics: accuracy 2000 – 10 000 km2	Institut national de la statistique (STATEC)	http://www.statistiques.public.lu/fr/index.html	
In-situ data with license issues or un-clarified data access conditions			
In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information – water bodies (water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits): 1: 25 000, 1: 50 000 (Inspire Annex I. Hydrography)	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request.
Hydrographical information (water levels – NRT data; only for disaster affected areas)			See end notes
Wetlands inventory, 1: 25 000 (Inspire Annex II. Land cover)			See end notes
Forest inventory (forest species), scale 1: 5 000 – 1: 25 000 (Inspire Annex II. Land cover)	Ministère du Développement durable et des Infrastructures Administration de la Nature et des Forêts	http://www.environnement.public.lu/forets/dossiers/ifn/	Formal data request/agreement
City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1: 25	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request.

000			
<p>Critical infrastructures (utilities – public services): 1: 50 000</p> <p>(Inspire Annex III. Human health and safety, Inspire Annex III. Utility and governmental services)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Europeographics for Emergency response service only via formal request.
<p>Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex I. Administrative units)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Europeographics for Emergency response service only via formal request.
<p>Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): better than 1: 10 000</p> <p>(Inspire Annex I. Geographical names, Annex III. Buildings)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Europeographics for Emergency response service only via formal request. Data is not detailed
<p>Settlement locations and toponyms: 1:50 000</p> <p>(Inspire Annex I. Geographical names)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Europeographics for Emergency response service only via formal request.
<p>Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Europeographics for Emergency response service only via formal request. Topographic maps only available at 1:20000 scale

<p>Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m</p> <p>(Inspire Annex II: Elevation)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request.
<p>Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X, Y Z: 6m</p> <p>(Inspire Annex II: Elevation)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	See end notes
<p>Transport networks (roads, railways, airports, ports): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex I. Transport networks)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request.
<p>Large scale population information at administration level 3 or higher: accuracy 0,01 km² (100 m x 100 m)</p> <p>(Inspire Annex III. Population Distribution and demography)</p>	Institut national de la statistique (STATEC)	http://www.statistiques.public.lu/fr/index.html	See end notes
<p>Orthophotos, scale 0.5 m</p> <p>(Inspire Annex II. Orthoimagery)</p>	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Formal data request/agreement
<p>Vertical atmosphere profiles: aircrafts (O₃,NO_x, CH₄, CO₂) sondes (O₃), ground based remote sensing (NO₂, PM 2.5)</p>	Ministère du Développement durable et des Infrastructures Administration de	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	Formal data request/agreement

<p>mass, aerosol properties)</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>l'Environnement</p>		
<p>Total column greenhouse gases: CO2, CH4</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>Ministère du Développement durable et des Infrastructures Administration de l'Environnement</p>	<p>http://www.developpement-durable-infrastructures.public.lu/fr/index.html</p>	<p>Formal data request/agreement</p>
<p>Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLFI), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes</p> <p>Meteorological forecasts: wind speed, wind direction and wind location in real time</p> <p>(Inspire Annex III: Meteorological geographical features)</p>	<p>Service météorologique de Luxembourg (SML) Administration de la navigation aérienne</p>	<p>http://www.ana.public.lu/fr/index.html</p>	<p>See end notes</p>

Desirable/useful data ref GISC priorities report

Aerial photography: spatial resolution 0.2 m (Inspire Annex II. Orthoimagery)	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request. (Orthoimagery 25cmx25/pixel)
Land use data: 1: 25 000, 1: 50 000 (Inspire Annex III. Land use)	Ministère du Développement durable et des Infrastructures Département de l'Environnement	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request. (Orthoimagery 25cmx25/pixel)
Forestry maps, resolution 1: 50 000	Ministère du Développement durable et des Infrastructures Administration de la Nature et des Forêts	http://www.environnement.public.lu/forets/dossiers/ifn/	See end notes
Soil data (scale 1: 100 000) (Inspire Annex III. Soil)	Ministere de l'Agriculture et de la Viticulture, Administration des Services Techniques de l'Agriculture	http://www.ma.public.lu/	Formal data request/agreement
Cadastral data (for cities with more than 100 000 inhabitants or the largest city in the region): 1 : 1 000 (Inspire Annex I. Cadastral parcels)	Administration du Cadastre et de la Topographie	http://www.act.public.lu/fr/index.html	Formal data request/agreement
Land cover data (land cover sampling data): 1: 25 000, 1: 50 000 (Inspire Annex II. Land cover)	Ministère du Développement durable et des Infrastructures Département de l'Environnement	http://www.developpement-durable-infrastructures.public.lu/fr/index.html	Data accessible through Eurogeographics for Emergency response service only via formal request.

<p>UV radiation: UV index, erythemal UV, spectral UV</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>Service météorologique de Luxembourg (SML) Administration de la navigation aérienne</p>	<p>http://www.ana.public.lu/fr/index.html</p>	<p>See end notes</p>
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Not resolved issues/identified gaps: distribution policies not reported for Aerosol optical depth, Hydrographical information (water levels – NRT data; only for disaster affected areas), wetlands inventories, biomass (dry), river discharge data, vegetation variables, grassland inventories, field data (LUCAS), Land parcel information system and thematic maps.

Conclusions

Main stakeholder in Luxembourg are the Ministère du Développement durable et des Infrastructures (Département de l'Environnement) MDDI-DEV, Ministère du Développement durable et des Infrastructures (Administration de l'Environnement) MDDI-AEV, and Ministère du Développement durable et des Infrastructures (Administration de la Nature et des Forêts) MDDI-ANF, the "Administration du cadastre et de la topographie" ILDG (geographical data infrastructure at <http://www.geoportal.lu>). To the meeting also participated Administration des Services Techniques de l'Agriculture, Centre de Ressources des Technologies pour l'Environnement, Service d'Economie Rurale and Institut national de la statistique et des études économiques.

Country: BELGIUM**National GMES focal point (contact details)**

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Meetings held

- A meeting, held in December 2012, aimed at discussing specifically Belgium's in-situ capacities and its possible commitment to secure sustainable access to the in-situ data in Belgium for the GMES services. The meeting targeted public Institutions in Belgium responsible for in-situ data collection and coordination as well as Belgian federal and regional GMES experts.

Individual agreements on access to data signed with specific stakeholders yes/no: no

Key points of data access policy

- **At federal level:** the main actor is the Belgian National Geographic Institute (NGI-IGN): data access policy stated as it is now. Changes due to INSPIRE and federal SDI evolutions For the Land service: during 2013 it will become "free" but not "open"; quite accessible but under specific conditions. "Terms of use" are being elaborated by legal services at this moment. Metadata for the time being via <http://metadata.ngi.be>. (renewed on line services under development and available soon). Access to in-situ data payment is currently required via NGI (a specific convention although can be negotiated). Access conditions to data are available at <http://www.cirb.irisnet.be/catalogue-de-services/urbis/acces-aux-donnees>.
- The agreement signed on 2011 between the EEA (GMES) and Eurogeographics can regulate to provision of in-situ data via Eurogeographics.
- **For the Brussels region:** with the implementation of INSPIRE, data access conditions will evolve in the near future. Access to data will still be

provided free of charge but subject to license (i.e. mention of data source).

- **For the Flemish region:** most of the governmental geographical data of SDI-Flanders can be consulted, explored (metadata), accessed, downloaded, ... via the AGIV website more exactly the downloadportal of AGIV <http://download.agiv.be/>.
- A development of a new Flemish geoportal is foreseen in 2013: www.geopunt.be. URL mentioned in the document (i.e. <http://download.agiv.be/> or <http://metadata.agiv.be> are referring to the specified data and metadata information. Information about licences, fee and data policies mentioned in the document are applicable till the circular of 31 January 2013. At the moment the circular is brought in to practice legally and technically by the different data-owners and AGIV. Currently, there are on-going efforts to make data available in accordance with the INSPIRE Directive.
- **For the Wallonia region:** The majority of geographic data produced by the SPW can be made available through the signing of a license to use digital geographic data available at <http://geoportail.wallonie.be/cms/fr/sites/geoportail/home.html>. WPS recommends access to geospatial data preferentially through web mapping applications and Spatial web services. These resources are catalogued in the regional geocatalogue (<http://geoportail.wallonie.be/cms/home/geocatalogue.html>). Except for special cases, access to geographic information does not require the signing of a license for the provision of data. If a physical copy (DVD copy, hard disk, electronic transfer, etc..) is desired, it is necessary to agree on certain rules set by the owner of the data. These rules are described in the listings of geocatalogue under the "Access" page.

Status of RDA (Reference Data Access) survey

- Not feedback received

Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data

- Contracts between EEA-Eurogeographics & Eurogeographics-NGI are signed "free of charge access, but only when necessitated for GIO EMS products"

Status of GIO Land grant agreement

- Agreement signed by Belgian National Geographic Institute (NGI-IGN) on November 2011.

In-situ data with free* access to all GMES services (or non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information – water bodies (water networks, rivers, canals, lakes, reservoirs,	Brussels area Environment Brussels www.ibgebim.be	Water network : http://wfs.ibgebim.be/cgi-bin/tinyows.fcgi?SERVICE=WFS&VERSION=1.0	Water network and river basins more accurate scale than 1:25000

<p>watersheds, floodplain limits): 1: 25 000,</p> <p>1: 50 000 (Inspire Annex I. Hydrography)</p>	<p>Flemish region: Flemish Environment Agency (VMM) www.vmm.be</p> <p>Research Institute for Nature and Forest (INBO) http://www.inbo.be/content/homepage_en.asp</p> <p>Biological Valuation Map v2.2 [Biologische Waarderingskaart v2.2</p>	<p>O&REQUEST=GetFeature&TYPENAME=IBGE:wsl_bruenvi_water_singel_object</p> <p>Watersheds : http://wfs.ibgebim.be/cgi-bin/tinyows.fcgi?SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=IBGE:wsl_bruenvi_water_watershed</p> <p>client viewer application http://geo-vlaanderen.agiv.be/geo-vlaanderen/vha</p> <p>WMS service http://wms.agiv.be/inspire/wms/hydrografie?service=wms&request=getcapabilities&version=1.3.0</p> <p>http://www.inbo.be/content/homepage_en.asp</p> <p>Download service http://download.agiv.be/Producten/Detail?id=7&title=Biologische_waarderingskaart_versie_2</p> <p>Metadata URL</p>	<p>Only useful for standing waters (not water courses)</p> <p>The biological valuation map includes standing water bodies (lakes, pools, ponds) in its legend. For advice on correct use: De Saeger et al. (2010). Biologische</p>
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	<p>Wallonia region: Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig Public Service of Wallonia – Geomatic Department http://geoportail.wallonie.be</p>	<p>http://metadata.agiv.be/Details.aspx?fileIdentifier=5d89dd1e-5c44-11dc-8314-0800200c9a66</p>	<p>Waarderingskaart versie 2.2. INBO reports INBO.R.2010.36, Brussels. (http://www.inbo.be/files/bibliotheek/63/212663.pdf)</p> <p>Attribute fields: EENH1-12 = 'a%' or 'kn', (where % is a multiple wildcard)</p> <p>Legend information at http://www.inbo.be/content/page.asp?pid=EN_BIO_BVM_start</p>
<p>Hydrographical information (water levels – NRT data; only for disaster affected areas)</p>	<p>Brussels region: Brussels Company for water management www.bmwb.be</p> <p>FlowBru network with water levels of rivers www.flowbru.be</p> <p>Flemish region: Flemish Environment Agency (VMM)</p>	<p>http://www.flowbru.be/flowbru/bruxelles-stations-de-mesures</p> <p>Client application http://geo-vlaanderen.agiv.be/geo-vlaanderen/overstromingskaarten</p>	<p>Technical information available on the website by the end of 2013 under the menu “Technology”.</p> <p>Access conditions at http://www.agiv.be/gis/diensten/?artid=1441</p>

	<p>www.vmm.be</p> <p>Wallonia region: Public Service of Wallonia</p>	<p>http://aqualim.environnement.wallonie.be</p>	<p>Free for visualization thought client application</p>
<p>Wetlands inventory, 1: 25 000 (Inspire Annex II. Land cover)</p>	<p>Flemish region: Research Institute for Nature and Forest (INBO)</p> <p>http://www.inbo.be/content/homepage_en.asp</p> <p>Wallonia region: Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig) and Public Service of Wallonia – Geomatic Department http://geoportail.wallonie.be</p>	<p>Download service at http://download.agiv.be/Producten/Detail?id=7&title=Biologische_waarderingskaart_versie_2 metadata URL http://metadata.agiv.be/Details.aspx?fileIdentifier=5d89dd1e-5c44-11dc-8314-0800200c9a66</p>	<p>Last update of the Biological Valuation Map v2.2 is on 2010 (reference scale is 1:3000) (attribute fields: EENH1-12 = 'a%' or 'kn' or 'm%' or 'hc' or 'hf%' or 'hj%' or 'hm%' or 'hu%' or 'hpr' or 'ce%' or 'ct%' or 'cm%' or 't%' or 'da' or 'dl%' or 'ds' or 'dz' or 'sf' or 'sm' or 'so' or 'v%' or 'lh%', where % is a multiple wildcard)</p> <p>COSW (Land Cover Map of Wallonia)</p>

<p>Forest inventory (forest species), scale 1: 5 000 – 1: 25 000</p> <p>(Inspire Annex II. Land cover)</p>	<p>Brussels region: Environment Brussels www.ibgebim.be</p> <p>Brussels Regional Informatics Center www.bric.irisnet.be</p> <p>Flemish region: Research Institute for Nature and Forest (INBO) http://www.inbo.be/content/homepage_en.asp</p>	<p>http://wfs.ibgebim.be/cgi-bin/tinyows.fcgi?SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=IBGE:wsl_bruenvi_public_green_area</p> <p>http://geoserver.gis.irisnet.be/geoserver/ows?version=1.1.1&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_M_SHAPE_GB_F</p> <p>http://download.agiv.be/Producten/Detail?id=63&title=Bosreferentielaag</p> <p>http://download.agiv.be/Producten/Detail?id=439&title=Digitale_boswijzer_Vlaanderen_2010</p> <p>Historical Forest Maps [Historisch bos] Contains: Forest on the historical Ferraris maps, 1771-1778, 1:50.000 http://download.agiv.be/Producten/Detail?id=99&title=Bebossing_op_de_Ferrariskaarten</p> <p>Forest on the historical Vandermaelen maps, 1846-1854, 1:50.000 http://download.agiv.be/Producten/Detail?id</p>	<p>Product UrbIS-Map : Rb (rail), Gb (green spaces), Wb (water), Tb (metro) Forest cover included as one of the classes of urban green space (Gb).</p> <p>Forest reference layer / Forest inventory of Flanders [Bosreferentielaag (Boskartering van Vlaanderen)] It contains tree species composition, age, canopy closure, ownership category Year 2001, reference scale 1:5000</p> <p>Digital Forest Layer [Digitale Boswijzer Vlaanderen] year 2010, reference scale 1:5000</p>
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		<p>=36&title=Bebossing_op_de_kaarten_van_Va_ndermaelen</p> <p>Forest on the 3rd series of topographical maps of the 'Dépôt de la Guerre', 1910-1940, 1:20.000 http://download.agiv.be/Producten/Detail?id=101&title=Bebossing_op_de_topografische_kaarten_1_20_000</p> <p>Forest constancy in the period 1771-2001 [Bosleeftijdskaart], 1:50.000, http://download.agiv.be/Producten/Detail?id=55&title=Bosleeftijd</p>	
<p>Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex I. Administrative units)</p>	<p>Brussels region: Regional Informatics Center www.bric.irisnet.be</p>	<p>http://geoserver.gis.irisnet.be/geoserver/ows?version=1.1.1&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_A_RE&SRSNAME=EPSG:31370</p> <p>http://geoserver.gis.irisnet.be/geoserver/ows?version=1.1.1&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_A_MU&SRSNAME=EPSG:31370</p>	<p>FWS download service for the Region geometries</p> <p>FWS download service for the geometries of the Municipalities.</p> <p>Since the 1st april 2013, a new license (Open Data) has been adopted : access to the terms of the license via http://www.cirb.irisnet.be/catalogue-de-services/urbis/acces-aux-donnees</p>

	<p>Flemish region: Flemish Geographical Information Agency (AGIV) http://www.agiv.be/gis/</p>	<p>Metadata http://metadata.agiv.be/Details.aspx?fileIdentifier=2a164246-9025-4426-8eb2-08273e710299</p> <p>Portal that includes boundaries http://geo-vlaanderen.agiv.be/geo-vlaanderen/straten/</p> <p>beta service http://ogc.beta.agiv.be/ogc/wms/vrbgINS?SERVICE=WMS&REQUEST=GetCapabilities</p>	<p>Administrative boundaries of Flanders (Under construction: www.geopunt.be) In the meanwhile: View service (WMS): http://wms.agiv.be/inspire/wms/administratieve_eeenheden?service=wms&request=getcapabilities&version=1.3.0</p> <p>and for Large-scale Reference database GRB (Grootschalig Referentiebestand) http://grb.agiv.be/geodiensten/raadpleegdiensten/GRB/wms?request=getcapabilities&service=wms</p>
<p>Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m</p> <p>(Inspire Annex II: Elevation)</p>	<p>Flemish region: Flemish Geographical Information Agency (AGIV)</p> <p>Flemish Environment Agency (VMM) www.vmm.be (via AGIV)</p>	<p>Download service http://download.agiv.be/Producten/Detail?id=336&title=DHM_Vlaanderen</p> <p>view service http://geo-vlaanderen.agiv.be/geo-vlaanderen/dhm/</p> <p>http://wms.agiv.be/inspire/wms/hoogte?service=wms&request=getcapabilities&version=1.3.0</p>	<p>Free of charge but subject to licence agreement</p>
<p>Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90:</p>	<p>Flemish region: Flemish Geographical Information Agency (AGIV)</p>	<p>Download service http://download.agiv.be/Producten/Detail?id=336&title=DHM_Vlaanderen</p>	<p>Free of charge licensing</p>

4m - 6m; X, Y Z: 6m (Inspire Annex II: Elevation)		Client application consuming view service (100,000 scale) http://geo-vlaanderen.agiv.be/geo-vlaanderen/dhm/	
Large scale population information at administration level 3 or higher: accuracy 0,01 km2 (100 m x 100 m) (Inspire Annex III. Population Distribution and demography)	Federal level: Directorate-General for Statistics and Economic Information (ADSEI) http://statbel.fgov.be/		
Orthophotos, scale 0.5 m (Inspire Annex II. Orthoimagery)	Brussels region: Brussels Regional Informatics Center www.bric.irisnet.be	Download service at http://www.cirb.irisnet.be/catalogue-de-services/urbis/telechargement (UrbIS-Ortho) client application: http://geoloc.irisnet.be/	
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5 SO2) (Inspire Annex III: Atmospheric conditions) Near real time ozone data reporting	Federal level: Belgian Interregional Environment Agency (IRCEL-CELINE)= Interregional Cell for the Environment http://www.irceline.be	data available via a Sensor Observation Service (SOS) server: http://sos.irceline.be	Belgian air quality data by IRCEL - CELINE is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License: http://creativecommons.org/licenses/by-nc-nd/3.0/deed.en_US
Surface validated measurements (CH4 (conc.&fluxes), CO, CO2, NMVOC (speciated), NO, NO2,	Federal level: Belgian Interregional Environment Agency	Data available via EEA, Airbase : http://www.eea.europa.eu/themes/air/airbase e (EEA data access policy conditions apply)	

<p>O3, PM spec., PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isopren, PAH)</p> <p>(Inspire Annex III: Atmospheric conditions)</p> <p>AQ-1: Eol data (Eionet priority data flow)</p>	<p>(IRCEL-CELINE)= Interregional Cell for the Environment http://www.irceline.be</p>		
<p>Daily surface temperature and salinity measurements from European vessels (European coverage)</p> <p>(Annex III: Oceanographic features)</p>	<p>Federal level: FED</p> <p>The Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM)</p> <p>Flamish region: Maritieme Dienstverlening en Kust (MDK) http://www.meetnetvlaamsebanken.be/</p>	<p>Automatic measurements by the RV Belgica http://www.mumm.ac.be/EN/</p> <p>http://www.mumm.ac.be/datacentre/Databases/ODAS/index.php</p>	<p>Freely downloadable at the ODAS page The request about the standardisation of the ODAS data has been sent to the people in charge of it. There is no manpower available to do this work in a close future but the request has been noted.</p> <p>Provided by MUMM Temperature at 7 stations of the meetnet vlaamse banken network are available in real-time. The temperature at the station Westhinder is made available at both the NOOS data center and coriolis.</p> <p>Timeseries for the last 30 days of all parameters and stations are presented on the website</p>
<p>Bathymetric data (INSPIRE Annex II. Elevation)</p>	<p>Flemish region: VLAAMSE HYDROGRAFIE</p>	<p>Bathymetric data are already available from several European initiatives such as EMODNET : http://portal.emodnet-</p>	<p>At MUMM's initiative, there is a common Federal/Regional project to map the water depth and the relief of</p>

	(Flemish Authority in charge of the bathymetry sounding and mapping) http://www.vlaamsehydrografie.be/level1.asp?TAAL_ID=1&ITEM_L1_ID=22	hydrography.eu/#LayerPlace:1294335639487430	the sea bed in the Belgian part of the North Sea (http://www.mumm.ac.be/EN/News/item.php?ID=279)
Grassland inventory, 1: 5 000 - 1: 25 000 (Inspire Annex II. Land cover)	Flemish region: Research Institute for Nature and Forest (INBO) http://www.inbo.be/content/homepage_en.asp	Download area http://download.agiv.be/Producten/Detail?id=7&title=Biologische_waarderingskaart_versie_2 metadata http://metadata.agiv.be/Details.aspx?fileIdentifier=5d89dd1e-5c44-11dc-8314-0800200c9a66	Biological Valuation Map v2.2 attribute fields: EENH1-12 = 'h%' (where % is a multiple wildcard)
<i>Desirable/useful data ref GISC priorities report</i>			
Aerial photography: spatial resolution 0.2 m (Inspire Annex II. Orthoimagery)	Brussels region: Brussels Regional Informatics Center www.bric.irisnet.be	UrbIS-Fot http://www.cirb.irisnet.be/phare/departements/services/urbis Client application at http://geoloc.irisnet.be/	License free of charge
Aerial photography: spatial resolution 0.2 m (Inspire Annex II. Orthoimagery)	Federal level: The Belgian National Geographic Institute (NGI-IGN) http://www.ngi.be http://metadata.ngi.be		Available at 30 cm resolution

	<p>Flemish region: Flemish Geographical Information Agency (AGIV) http://www.agiv.be/gis/</p>	<p>Metadata for aerial photography http://metadata.agiv.be/Details.aspx?fileIdentifier=5b6dd52a-46a5-43fc-99c8-7f9813d53c8e</p> <p>View service: http://ogc.beta.agiv.be/ogc/wms/orthoklm?Request=GetCapabilities&version=1.3.0&service=wms</p> <p>Download: http://giraf.agiv.be/</p>	
<p>Forest maps resolution 1: 50 000</p>	<p>Brussels region: Environment Brussels www.ibgebim.be</p> <p>Flemish region: Research Institute for Nature and Forest (INBO) http://www.inbo.be/content/homepage_en.as</p>	<p>Environment Brussels (www.ibgebim.be)</p> <p>Green spaces data: http://wfs.ibgebim.be/cgi-bin/tinyows.fcgi?SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=IBGE:wsl_bruenvi_public_green_area</p> <p>Forest reference layer / Forest inventory of Flanders [Bosreferentielaag (Boskartering van Vlaanderen)] 2001, 1:5000, owner: ANB (contains: tree species composition, age, canopy closure, ownership category)</p>	<p>Forest class included in green spaces data</p>

	<p>p</p> <p>Wallonia region: Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig and Public Service of Wallonia – Geomatic Department http://geoportail.wallonie.be</p>	<p>http://download.agiv.be/Producten/Detail?id=63&title=Bosreferentiaalag</p> <p>Digital Forest Layer [Digitale Boswijzer Vlaanderen] 2010, 1:5000, owner: ANB (contains: forest/non-forest) http://download.agiv.be/Producten/Detail?id=439&title=Digitale_boswijzer_Vlaanderen_2010</p>	<p>Public forests only</p>
<p>Conservation and protected areas: 1: 25 000, 1: 50 000</p> <p>(Inspire Annex I. Protected sites, Annex III. Habitants and biotopes)</p> <p>CDDA-1: Designated areas (Eionet</p>	<p>Federal level: The Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM)</p>		<p>MUMM is in charge of the Belgian marine spatial planning. This includes the GMES topics "conservation and protected areas" and "zoning maps".</p>

<p>priority data flow)</p>	<p>Brussels region: Environment Brussels www.ibgebim.be</p> <p>Flemish region: Research Institute for Nature and Forest (INBO) http://www.inbo.be/content/homepage_en.asp</p>	<p>Download service http://wfs.ibgebim.be/cgi-bin/tinyows.fcgi?SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=IBGE:wsl_bruenvi_european_protected_areas</p> <p>Special Protection Areas under the Birds Directive [Vogelrichtlijngebieden] 2005, 1:50.000, owner: ANB http://download.agiv.be/Producten/Detail?id=28&title=Vogelrichtlijngebieden</p> <p>SCI/SACs under the Habitats Directive [Habitatrichtlijngebieden] 2008 (SCI/SAC), 1:10.000, owner: ANB http://download.agiv.be/Producten/Detail?id=95&title=Habitatrichtlijngebieden</p> <p>Flemish Ecological Network [Gebieden van het VEN en IVON] 2012, 1:25.000, owner: ANB http://download.agiv.be/Producten/Detail?id=75&title=Gebieden_van_het_VEN_en_het_IVON</p> <p>Ramsar sites [Ramsargebieden] 1987, 1:10.000, owner: ANB http://metadata.agiv.be/Details.aspx?fileIdentifier=ef7919da-fb70-41ec-9009-0c849bea5168</p> <p>Public & private nature reserves</p>	<p>Protected areas for Brussels: Natura 2000, areas designated for the abstraction of water intended for human consumption, sensitive area, vulnerable zone</p> <p>All products are either free and open or free and subject to license.</p> <p>data on Natura 2000 sites are also available through the EEA viewer client application http://natura2000.eea.europa.eu/#</p>
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	<p>Various Institutions: Belgian Biodiversity Platform http://data.biodiversity.be, Global GBIF dataportal</p>	<p>[Natuurreservaten] 2002, 1:10.000, owner: INBO http://download.agiv.be/Producten/Detail?id=105&title=Natuurreservaten</p> <p>Forest reserves [Bosreservaten] 2003, 1:10.000, owner: INBO http://download.agiv.be/Producten/Detail?id=49&title=Bosreservaten</p> <p>Biological Valuation Map v2.2 [Biologische Waarderingskaart v2.2] (remark 1 below) 2010, 1:3000, owner: INBO http://download.agiv.be/Producten/Detail?id=7&title=Biologische_waarderingskaart_versie_2 metadata: http://metadata.agiv.be/Details.aspx?fileIdentifier=5d89dd1e-5c44-11dc-8314-0800200c9a66</p> <p>Natura 2000 Habitat Map in Flanders https://www.milieuinfo.be/dms/n/browse/workspace/SpacesStore/bf4710e0-0fd5-4c1f-a894-97e8d4ab7ec5</p> <p>http://data.inbo.be/ipt/</p>	<p>Various INBO-owned species distribution data available through the Belgian GBIF node: http://ipt.inbo.be. INBO acts as data node and has rights for data maintenance and redistribution.</p>
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	<p>http://data.gbif.org ,...</p> <p>Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig and Public Service of Wallonia – Geomatic Department http://geoportail.wallonie.be</p>	<p>Nature conservation areas Natura 2000 General Directorate for land-use planning, housing, patrimony and energy http://dgo4.spw.wallonie.be/dgatlp/dgatlp/default.asp</p>	<p>Data ownership can be retrieved through metadata discovery.</p>
<p>Soil data (scale 1: 100 000) (Inspire Annex III. Soil)</p>	<p>Flemish region: Flemish Geographical Information Agency (AGIV) http://www.agiv.be/gis/</p>	<p>Metadata http://metadata.agiv.be/Details.aspx?fileIdentifier=f2706dac-3729-4489-a43c-61a6c0c65c68</p> <p>viewer client application http://geo-vlaanderen.agiv.be/geo-vlaanderen/bodemkaart/</p> <p>Download: http://giraf.agiv.be/</p>	

	<p>ALBON Departement Land and Soil, Natural Resources http://www.dov.vlaanderen.be/geonetwork/srv/en/main.home</p> <p>Wallonia region:</p> <p>Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig and Public Service of Wallonia – Geomatics Department http://geoportail.wallonie.be</p>		<p>Digital Soil Map of Wallonia</p>
<p>Emission inventory</p> <p>AE-1: LRTAP data (Eionet priority data flow)</p> <p>AE1b: NEC data (Eionet priority data flow)</p> <p>AE-2: UNFCCC data (Eionet priority data flow)</p>	<p>Federal level:</p> <p>Belgian Interregional Environment Agency (IRCEL-CELINE)= Interregional Cell for the Environment</p> <p>http://www.irceline.be</p>		<p>Belgian values derived from regional calculated values (cf. Reporting of directives 2001/81/EC and decision n°280/2004/EC, reports according to LRTAP convention and UNFCCC greenhouse gaz inventory)</p>

<p>AE2b: EU GHG data (Eionet priority data flow)</p>			<p>Data reported to the EIONET Central Data Repository: http://cdr.eionet.europa.eu/</p>
<p>Agriculture statistics: accuracy 2000 – 10 000 km2</p>	<p>Federal level: FED</p> <p>Directorate-General for Statistics and Economic Information (ADSEI) http://statbel.fgov.be/</p>		<p>Data reported to EUROSTAT</p>
<p>Zoning maps (delineation of functional areas): 1: 5 000</p>	<p>Federal level: The Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM)</p> <p>Brussels area: Administration for land use planning and housing http://urbanisme.irisnet.be/ or http://stedenbouw.irisnet.be</p> <p>Flemish region: Flemish Geographical Information Agency (AGIV) http://www.agiv.be/gis/</p>	<p>View: PRAS – GBP layer (Land use regional plan) http://www.brugis.irisnet.be/brugiswms/request.aspx?</p> <p>District plans: download services at http://download.agiv.be/Producten/Detail?id=410&title=Gewestplan</p>	<p>MUMM is in charge of the Belgian marine spatial planning. This includes the GMES topics "conservation and protected areas" and "zoning maps"</p>

	<p>Wallonia region: General Directorate for land-use planning, housing, patrimony and energy http://dgo4.spw.wallonie.be/dgatlp/dgatlp/default.asp</p>	<p>Land Planning Maps at http://dgo4.spw.wallonie.be/dgatlp/dgatlp/default.asp</p>	
<p>UV radiation: UV index, erythemal UV, spectral UV (Inspire Annex III: Atmospheric conditions)</p>	<p>Federal level: The Royal Meteorological Institute of Belgium (RMI) http://www.meteo.be/meteo/view/en/65239-Home.html Belgian Institute for Space Aeronomy (BIRA) http://www.meteo.be/meteo/view/en/65239-Home.html and http://www.aeronomie.be/en/services/uvindex.htm</p>	<p>UV measurements: http://www.meteo.be/meteo/view/en/522044-UV.html</p>	<p>Use of data according to http://www.meteo.be/meteo/view/en/65691-Disclaimer.html For users and meteorological service providers prices are structured based on a price for the information as such and for handling. For research only a price for handling. License conditions and rates can be found at: www.ecomet.eu</p>

In-situ data with license issues or un-clarified data access conditions			
In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information – water bodies (water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits): 1: 25 000, 1: 50 000 (Inspire Annex I. Hydrography)	Federal level: the Belgian National Geographic Institute (NGI-IGN) http://www.ngi.be http://metadata.ngi.be		Watersheds and floodplain limits not available
Critical infrastructures (utilities – public services): 1: 50 000 (Inspire Annex III. Human health and safety, Inspire Annex III. Utility and governmental services)	Federal level: The Belgian National Geographic Institute (NGI-IGN) http://www.ngi.be http://metadata.ngi.be Brussels region: Brussels Regional Informatics Center www.bric.irisnet.be	http://geoserver.gis.irisnet.be/geoserver/ows?version=1.1.1&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_M_ZIPOINT Catalogue service http://ccff02.minfin.fgov.be/geoportalex/csw/discovery?Request=GetCapabilities&Service=	Data available through Eurogeographics for the Emergency response service. Product UrbIS-Map: ZI (Zone of Interest)

		CSW&Version=2.0.2	
<p>Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex I. Administrative units)</p>	<p>Federal level: The Belgian National Geographic Institute (NGI-IGN)</p> <p>http://www.ngi.be http://metadata.ngi.be</p> <p>General Administration of the Patrimonial Documentation</p>	<p>View service http://ccff02.minfin.fgov.be/cadgisWMS/AU/AdministrativeUnits/MapServer/WMSserver?</p>	<p>Data available through Eurogeographics for the Emergency response service at 1:10,000 and 1:50,000 reference scale</p>
<p>Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): better than 1: 10 000</p> <p>(Inspire Annex I. Geographical names, Annex III. Buildings)</p>	<p>Brussels region: Brussels Regional Informatics Center www.bric.irisnet.be</p>	<p>http://www.ngi.be http://metadata.ngi.be</p> <p>http://geoserver.gis.irisnet.be/urbis/wfs?version=1.1.0&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_A_BU&SRSNAME=EPSG:31370</p>	<p>Information partially available (i.e. usage, height) at 1:10,000 scale. Not available for number of floors, building materials.</p> <p>FWS download service: Product UrbIS-Adm, layer: "Bu" (Building).</p>
<p>Settlement locations and toponyms: 1:50 000</p> <p>(Inspire Annex I. Geographical names)</p>	<p>Brussels region: Brussels Regional Informatics Center www.bric.irisnet.be</p>	<p>Download area http://www.cirb.irisnet.be/catalogue-de-services/urbis/telechargement</p>	<p>Product UrbIS-adm: layer: To (Toponymy)</p>
<p>Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000</p>	<p>The Belgian National Geographic Institute (NGI-IGN)</p>		<p>Available at 1:10,000, 1:20,000, and 1:50,000 scales via Eurogeographics for the emergency service.</p>

	http://www.ngi.be http://metadata.ngi.be		
<p>Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m</p> <p>(Inspire Annex II: Elevation)</p>	<p>Federal level: The Belgian National Geographic Institute (NGI-IGN)</p> <p>http://www.ngi.be http://metadata.ngi.be</p> <p>Wallonia region: Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig</p> <p>Public Service of Wallonia – Geomatic Department http://geoportail.wallonie.be</p>		<p>Available at 20m resolution</p> <p>Visualization free of charge, download service access with commercial license DEM (10 m) from ERRUISSOL</p>
<p>Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X, Y Z: 6m</p>	<p>Federal level: The Belgian National Geographic Institute (NGI-IGN)</p> <p>http://www.ngi.be http://metadata.ngi.be</p>		<p>Available via Eurogeographics for Emergency response service at 20m, 40m, 80m</p>

(Inspire Annex II: Elevation)			
<p>Transport networks (roads, railways, airports, ports): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex I. Transport networks)</p>	<p>Federal area: The Belgian National Geographic Institute (NGI-IGN)</p> <p>http://www.ngi.be http://metadata.ngi.be</p> <p>Brussels region: Brussels Regional Informatics Center www.bric.irisnet.be</p>	<p>http://geoserver.gis.irisnet.be/geoserver/ows?version=1.1.1&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_M_RTLINE&SRSNAME=EPSG:31370</p> <p>http://geoserver.gis.irisnet.be/geoserver/ows?version=1.1.1&SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=urbis:URB_A_MY_SS</p>	<p>Airport information available at 1:250,000. Thematic information not available for ports.</p> <p>Product UrbIS-Adm: Layer: Rw (Railway),</p> <p>Layer: Ss (Street section)</p>
	<p>Wallonia region: Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig</p> <p>and Public Service of Wallonia – Geomatic Department</p>		<p>Orthophotos: resolution of 0,25 m (free for visualization, commercial license for access to digital data)</p>

	http://geoportail.wallonie.be		
<p>Vertical atmosphere profiles: aircrafts (O3,NOx, CH4, CO2) sondes (O3), ground based remote sensing (NO2, PM 2.5 mass, aerosol properties)</p> <p>, ground based remote sensing (NO2, , aerosol optical properties, many other minor and trace gases in the atmosphere, like O3, chlorinated and fluorinated gases, nitrogen compounds, CO,)</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>Federal level: The Royal Meteorological Institute of Belgium (RMI) and Belgian Institute for Space Aeronomy (BIRA) http://www.aeronomie.be/index.htm</p>	<p>Available via International NDACC science community (Network for the Detection of Atmospheric Composition Change) NDACC DHF: ftp://ftp.cpc.ncep.noaa.gov/ndacc/ and local databases: http://uv-vis.aeronomie.be/dataproducts/</p>	<p>O3 sondes are operated by IRM-KMI</p> <p>Note that the gb remote-sensing measurements from BIRA-IASB are mainly performed at sites outside of Belgium (except for some limited measurements in Ukkel).</p> <p>Use of data according to http://www.meteo.be/meteo/view/en/65691-Disclaimer.html</p> <p>For users and meteorological service providers prices are structured based on a price for the information as such and for handling. For research only a price for handling.</p>
<p>Total column greenhouse gases: CO2, CH4</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>Federal level: Belgian Institute for Space Aeronomy (BIRA) http://www.aeronomie.be/index.htm</p>	<p>TCCON database: http://tccon.ipac.caltech.edu/</p> <p>Measurements performed at Ile de La Réunion</p>	
<p>Weekly chlorophyll and oxygen measurements (NOOS)</p> <p>(Annex III: Oceanographic features)</p>	<p>The Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM) http://www.mumm.ac</p>		

<p>Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLFI), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes</p> <p>Meteorological forecasts: wind speed, wind direction and wind location in real time</p> <p>(Inspire Annex III: Meteorological geographical features)</p>	<p>be/EN/</p> <p>Federal level: The Royal Meteorological Institute of Belgium (RMI) http://www.meteo.be/meteo/view/en/65239-Home.html</p>	<p>A number of observations with a limited number of parameters are available at: http://www.meteo.be/meteo/view/en/123386-Observations.html</p> <p>UV: http://www.meteo.be/meteo/view/en/522044-UV.html</p>	<p>All synoptic observations are available on an hourly bases except radiation data (available day + 1 every 10 hours).</p> <p>Meteorological predictions on a daily basis : http://www.meteo.be/meteo/view/en/65656-Weather.html</p>
<p>Vegetation biomass Biomass (dry)</p>	<p>Flemish region: Public Waste Agency of Flanders (OVAM) http://www.ovam.be/jahia/Jahia/pid/1601?lang=null</p>		<p>Inventory publicly available</p>
<p>River discharge data</p>	<p>Flemish region: Flemish Environment Agency (VMM)</p>		<p>VMM provides data to MUMM for OSPAR-RID reporting</p>

	www.vmm.be Wallonia region: AQUALIM	http://aqualim.environnement.wallonie.be	Free for visualisation throughout WebGIS tools Licence for digital data
Vegetation variables: accuracy 20% for LAI, 10% for fAPAR	Flemish region: Research Institute for Nature and Forest (INBO) http://www.inbo.be/content/homepage_en.asp	They are not made publicly available but can be requested to INBO	Time series of LAI measurements in the ICP Forests Level II plots: since 2010 5 sites are monitor with yearly frequency. LAI assessments (derived from fish-eye photographs in Flemish forest reserves) are conducted in more than 500 plots collected in 14 forest reserves from 2001 to 2008, single recordings (no repeats).
<i>Desirable/useful data ref GISC priorities report</i>			
Aerial photography: spatial resolution 0.2 m (Inspire Annex II. Orthoimagery)	Federal level: The Belgian National Geographic Institute (NGI-IGN) http://www.ngi.be http://metadata.ngi.be		Available at 30 cm resolution
Land use data: 1: 25 000, 1: 50 000 (Inspire Annex III. Land use)	Federal level: The Belgian National Geographic Institute (NGI-IGN) http://www.ngi.be http://metadata.ngi.be		Partially available at 1:10,000

	<p>Brussels region: Administration for land use planning and housing http://urbanisme.irisnet.be/ or http://stedenbouw.irisnet.be/</p> <p>Flemish region: Flemish Geographical Information Agency (AGIV) http://www.agiv.be/gis/</p>	<p>View services(PRAS – GBP layer - Land use regional plan): http://www.brugis.irisnet.be/brugiswms/request.aspx?</p> <p>Metadata http://metadata.agiv.be/Details.aspx?fileIdentifier=c4ff31dc-9ab2-46a4-848b-4c345bbddc57</p> <p>View: http://wms.agiv.be/inspire/wms/bodemgebruik?service=wms&request=getcapabilities&version=1.3.0</p> <p>Download: http://giraf.agiv.be/</p>	
<p>Cadastral data (for cities with more than 100 000 inhabitants or the largest city in the region): 1 : 1 000</p> <p>(Inspire Annex I. Cadastral parcels)</p>	<p>Federal level: General Administration of the Patrimonial Documentation http://fiscus.fgov.be/interefakredfr/Taken/overzicht.htm</p>	<p>View service http://ccff02.minfin.fgov.be/cadgisWMS/CP_CadastralParcels/MapServer/WMSServer?</p> <p>Discovery service http://ccff02.minfin.fgov.be/geoportalex/csw/discovery?Request=GetCapabilities&Service=CSW&Version=2.0.2</p>	
<p>Land parcel information system</p>	<p>Flemish region:</p>		<p>Information collected into GBCS</p>

<p>(LPIS) (reference parcel with land use/ land cover information): 1: 10 000</p>	<p>Agriculture and Fisheries Agency</p> <p>Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://agriculture.wallonie.be/apps/spip_wolwin/</p>	<p>Download http://download.agiv.be/Producten/Detail?id=455&title=Landbouwgebruikspercelen_ALV_2011</p> <p>SIGEC -Integrated System for Management and control, depending on the CAP - (agricultural areas)</p>	<p>(Geïntegreerd Beheers en ControleSysteem – Integrated management and monitoring system) on behalf of DG AGRI. Also provided (made anonymous) to VLM (Flemish Land Agency) and AGIV (Flemish Geographical Information Agency) or third parties.</p> <p>The data are restricted to comply with the legislation on protection of personal data.</p>
<p>Land cover data (land cover sampling data): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex II. Land cover)</p>	<p>Federal level: The Belgian National Geographic Institute (NGI-IGN) http://www.ngi.be http://metadata.ngi.be</p> <p>Brussels region: Environment Brussels www.ibgebim.be</p> <p>Flemish region:</p>	<p>Download service http://wfs.ibgebim.be/cgi-bin/tinyows.fcgi?SERVICE=WFS&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=IBGE:wsl_bruenvi_seveso_area&SRSNAME=EPSG:31370</p> <p>view service</p>	<p>Available at 1:10,000 scale</p>

	<p>Research Institute for Nature and Forest (INBO)</p> <p>Public Service of Wallonia – General Directorate for Agriculture, Environment and Natural Resources http://environnement.wallonie.be/cartosig and Public Service of Wallonia – Geomatic Department http://geoportail.wallonie.be</p>	<p>http://wms.agiv.be/inspire/wms/bodemgebruik?service=wms&request=getcapabilities&version=1.3.0</p>	<p>COSW (Land Cover Map of Wallonia)</p>
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Not resolved issues/identified gaps:

City maps, Field data (LUCAS), fire data were not reported or data considered not available.

Country: United Kingdom**National GMES focal point (contact details)**

Katherine Bass

Department for Environment Food & Rural Affairs (Defra)

Nobel House, 17 Smith Square

London SW1P 3JR

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Meetings held

- GMES programme – Contribution of United Kingdom to the in-situ component held on 8th November 2011
- Bilateral meeting between the Department for Environment Food and Rural Affairs, held in London, 31st March 2011

The objective of the meeting was to update on the progress achieved in the GISC project and exchange views on the expectations towards the GMES programme, especially in regards to the GMES services, in situ capacities in United Kingdom and its possible commitment in securing sustainability of the in-situ capacities.

- Bilateral meeting with UK and discussions with moderator for the GISC event held in London on 5th of February 2013

Key points of data access policy

- UK has a very open approach to government data. The portal: www.data.gov.uk provides a platform for government bodies to publish administrative data, such as contracts and expenditure, as well as thematic datasets, for example health, crime or environmental data. DEFRA is the lead for GMES in UK and has both a role as coordinator of user organisations and also in-situ providers.
- On data for GMES Emergency Management Service, Ordnance Survey accepted the terms requested by EEA on 29-11-2012 with some specifications that are defined and acknowledged by EEA with the letter sent on 2nd of January 2013 to the Agency by Jon O'Meara Head of Legal Service from Ordnance Survey

Status of RDA (Reference Data Access) survey

- Feedback received

Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data

- The agreement between EEA & EuroGeographics for the provision of data access free of charge has been signed by Land & Property Services of the Northern Ireland only, Ordnance Survey applies different distribution policies with commercial licensing.

Status of GIO Land grant agreement

- Grant agreement signed on 6/09/2012 between EEA and the University of Leicester.

In-situ data with free* access to all GMES services (or non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information – water bodies (water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits): 1: 25 000, 1: 50 000 (Inspire Annex I. Hydrography)		http://www.data.gov.uk/data/search?q=&tags=Hydrography&ext_bbox=-20.48%2C48.79%2C3.11%2C62.66	Hydrography data published in compliancy with INSPIRE standards. Use in GIO Land Service allowed according to the Annex III of the GIO Land Grant agreement
Settlement locations and toponyms: 1:50 000 (Inspire Annex I. Geographical names)	Ordnance Survey and Land & Property Services of the Northern Ireland		Gazetteer data, available as open data at 1:50,000 scale
Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000	Ordnance Survey and Land & Property Services of the Northern Ireland		“VectorMap” of Districts at reference scales of 1:15000-1:35000 distributed as Open data.
Transport networks (roads, railways, airports, ports): 1: 25		http://www.data.gov.uk/data/search?tags=Transport+networks&ext_bbox=-	Some transport network data published for INSPIRE as open data

000, 1: 50 000 (Inspire Annex I. Transport networks)		20.48%2C48.79%2C3.11%2C62.66 and http://www.data.gov.uk/publisher/department-for-transport?q=INSPIRE	
Aerosol optical depth (Inspire Annex III: Atmospheric conditions)	Centre for Terrestrial Carbon Dynamics	http://ctcd.group.shef.ac.uk/ctcd.html	Free to use but source must be acknowledged (Defra and the Devolved Administrations) AOD measurements may be available from the Brewer instruments at Reading if required and University of Manchester carry out linked work at Manchester.
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5, SO2) <i>(Inspire Annex III: Atmospheric conditions)</i> <i>Near real time ozone data reporting</i>	The Department for Environment, Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/	Access via Eionet confirmed http://cdr.eionet.europa.eu/	Free to use but source must be acknowledged (Defra and the Devolved Administrations) Access via EEA Eionet supplied in NRT.
Surface validated measurements (CH4 (conc.&fluxes), CO, CO2, NMVOC (speciated), NO, NO2, O3, PM spec., PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isopren, PAH) (Inspire Annex III: Atmospheric conditions) AQ-1: EoI data (Eionet priority data flow)	The Department for Environment, Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/	Access via Eionet confirmed http://cdr.eionet.europa.eu/	Supplied to AIRBASE via DEM and INSPIRE e-Reporting pilot system in 2013
Surface validated measurements (CH4, CO, CO2, N2O, CFCs, HCFCs, HFCs, PFCs, H2, O3, halocarbons)	The Department of Energy and Climate Change (DECC)	Access to Mace Head data via CDIAC http://cdiac.ornl.gov/ Access to UK DECC network of tall towers via EBAS	Free to use but source must be acknowledged (DECC, AGAGE, the University of Bristol and the Devolved

(chlorine, bromine and iodine species) and NMHCs (speciated).		http://ebas.nilu.no/	Administrations)
<i>Desirable/useful data ref GISC priorities report</i>			
Total column greenhouse gases: CO2, CH4 (Inspire Annex III: Atmospheric conditions)	The Department for Environment, Food and Rural Affairs (Defra)	http://ozone-uv.defra.gov.uk/	Free to use but source must be acknowledged (Defra and the Devolved Administrations)
Daily surface temperature, salinity, (current, chlorophyll and oxygen) measurements from UK Argo programme (Global Ocean) (Inspire Annex III: Oceanographic geographical features)	Met Office http://www.metoffice.gov.uk/	www.coriolis.eu.org	NB RMF – The 1st generation Argo did not measure currents, chlorophyll and oxygen. Currents could be derived from the drift of Argo floats
Daily surface temperature, salinity, current, chlorophyll and oxygen measurements from EuroSites (Global Ocean) (Inspire Annex III: Oceanographic geographical features)	National Oceanography Centre (National Environment Research Council)	http://www.emodnet-physics.eu/	This concerns data from the NOC deep water mooring at the Porcupine Bight (PAP mooring)
Daily surface temperature and current measurements from DBCP drifters (Global Ocean)	Met Office	http://www.eurosites.info/pap/data.php	
Daily surface temperature and salinity measurements from European vessels (European coverage)	National Oceanography Centre (National Environment Research Council)	http://www.emodnet-physics.eu/ http://www.myocean.eu/web/24-catalogue.php	This could refer to ferrybox measurements. The UK does not currently operate any regular ferrybox routes. To register first before downloading MyOcean products.
Weekly chlorophyll and oxygen measurements from European vessels (European coverage)	Proudman Oceanographic Laboratory http://www.pol.ac		

	uk/		
Daily surface temperature and salinity measurements (IBI-ROOS) (Inspire Annex III: Oceanographic geographical features)	British Oceanographic Data Centre	http://www.myocean.eu/web/24-catalogue.php	Access via EuroGOOS and SLAs with ROOSs confirmed
Real-time high frequency (2 h) surface temperature, salinity and chlorophyll measurements for UK coastal seas, North Sea, Irish Sea, Celtic Sea (Inspire Annex III: Oceanographic geographical features)	Centre for Environment, Fisheries & Aquaculture Science	http://cefasmaps.defra.gov.uk/smartbuoyweb/StaticMapPage.asp	This line is for the Cefas SmartBuoy network of 6 operational stations. Available too within MyOcean
Daily sea level measurements (IBI-ROOS) (Inspire Annex III: Oceanographic geographical features)	Met Office	http://www.emodnet-physics.eu/ www.coriolis.eu.org http://www.ibi-roos.eu/Access-to-data/IBI-Data-centers	Access via EuroGOOS and SLAs with ROOSs confirmed
Daily sea level measurements (NOOS) (Inspire Annex III: Oceanographic geographical features)	National Oceanographic Centre	http://www.emodnet-physics.eu/ www.coriolis.eu.org http://www.noos.cc/index.php?id=112	Access via EuroGOOS and SLAs with ROOSs confirmed
Weekly chlorophyll and oxygen measurements (IBI-ROOS) (Inspire Annex III: Oceanographic geographical features)	Met Office		There is no data source that matches this description.
Weekly chlorophyll and oxygen measurements (NOOS)			This line is replaced with the one above for Cefas SmartBuoys

In-situ data with license issues or un-clarified data access conditions

In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water levels – NRT data; only for disaster affected areas)	The Department for Environment, Food and Rural Affairs (Defra)	river level data at http://www.environment-agency.gov.uk/homeandleisure/floods/riverlevels/120701.aspx?stationId=8207 CEH river flow data: http://www.data.gov.uk/data/search?q=UK+Natio nal+River+Flow+Archive	data access conditions at http://www.environment-agency.gov.uk/static/documents/Leisure/RLOI_FAQs.pdf Q.22
Wetlands inventory, 1: 25 000 (Inspire Annex II. Land cover)	NERC Centre for Ecology and Hydrology	There are wetland datasets on data.gov.uk http://www.data.gov.uk/data/search?q=wetland	Use in GIO Land Service allowed according to the Annex III of the GIO Land Grant agreement
Forest inventory (forest species), scale 1: 5 000 – 1: 25 000 (Inspire Annex II. Land cover)	Forestry commission (National Forest Inventory (NFI))	http://www.data.gov.uk/dataset/forestry-commission-gb-national-forest-inventory-woodland download area at http://www.forestry.gov.uk/website/oscompliance.nsf/licence http://www.geostore.com/environment-agency/WebStore?xml=environment-agency	Terms of use allow non-commercial use: http://www.forestry.gov.uk/datadownload . Web page with INSPIRE WMS/WFS URLs
City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1: 25 000	Ordnance Survey and Land & Property Services of the Northern Ireland		Full free and open use according to the Annex III of the GIO Land Grant agreement. ONS (Office of National Statistics) hosts statistics on the use of the data.
Critical infrastructures (utilities – public services): 1: 50 000	Ordnance Survey and Land & Property Services		Some of the data present in the Government service level agreement

(Inspire Annex III. Human health and safety, Inspire Annex III. Utility and governmental services)	of the Northern Ireland		
Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000 (Inspire Annex I. Administrative units)	Ordnance Survey and Land & Property Services of the Northern Ireland	OS Open Data Boundary	
Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): better than 1: 10 000 (Inspire Annex I. Geographical names, Annex III. Buildings)	Ordnance Survey and Land & Property Services of the Northern Ireland		See end notes
Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X, Y Z: 6m (Inspire Annex II: Elevation)			DEM/DTM data currently not available but it might be supplied in the future.
Large scale population information at administration level 3 or higher: accuracy 0,01 km2 (100 m x 100 m)	UK Statistics Authority		

(Inspire Annex III. Population Distribution and demography)			
Orthophotos, scale 0.2 m, 0.5 m (Inspire Annex II. Orthoimagery)	The Department for Environment, Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/		Orthophoto imageries hosted at Defra and licensed under the PGA (Pan-Government Agreement).
River discharge data	Ordnance Survey	http://www.data.gov.uk/dataset/ecn-freshwater-discharge-data http://www.data.gov.uk/data/search?q=river+discharge&UKLP=True	
Grassland inventory, 1: 5 000 - 1: 25 000 (Inspire Annex II. Land cover)	Natural England	Econet Grassland http://www.gis.naturalengland.org.uk/pubs/gis/GIS_register.asp	Data hosted at Natural England
Vertical atmosphere profiles: aircrafts (O3, NOx, CH4, CO2) sondes (O3), ground based remote sensing (NO2, PM 2.5 mass, aerosol properties) (Inspire Annex III: Atmospheric conditions) Measurements to get coverage of troposphere, stratosphere and mesosphere	The Department for Environment, Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/	Could be made available if required (via WOU DIC) but not yet routinely reported and not near real time.	Free to use but source must be acknowledged (Defra and the Devolved Administrations) UMKEHR ozone profile measurements are made with the Brewer instruments at Reading and Manchester. Column measurements of SO2 and NO2 are also possible.
<i>Desirable/useful data ref GISC priorities report</i>			
Aerial photography: spatial resolution 0.2 m	The Department for Environment,		Defra hosts the imageries but it is not currently handling the redistribution.

(Inspire Annex II. Orthoimagery)	Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/		
Land use data: 1: 25 000, 1: 50 000 (Inspire Annex III. Land use)	The Department for Environment, Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/	Homes & Communities Agency NLUD - http://www.homesandcommunities.co.uk/nlud-pdl-results-and-analysis .	2009 data available
Conservation and protected areas: 1: 25 000, 1: 50 000 (Inspire Annex I. Protected sites, Annex III. Habitants and biotopes) CDDA-1: Designated areas (Eionet priority data flow)	Joint Nature Conservation Committee	http://www.data.gov.uk/data/search?tags=Protected+sites&q=&UKLP=True	
Geological maps: 1: 100 000 (Inspire Annex II. Geology)	British Geological Survey	http://www.data.gov.uk/data/search?q=&publisher=british-geological-survey&UKLP=True	Some opendata available
Forestry maps: 1: 50 000	Forestry commission (National Forest Inventory (NFI))	http://www.data.gov.uk/dataset/forestry-commission-gb-national-forest-inventory-woodland web page with INSPIRE WMS/WFS at http://www.geostore.com/environment-agency/WebStore?xml=environment-agency	http://www.forestry.gov.uk/datadownload terms of use allow non-commercial use
Soil data: 1: 100 000 (Inspire Annex III. Soil)	The National Soil Resources Institute		

Cadastral data (for cities with more than 100 000 inhabitants or the largest city in the region): 1 : 1 000 (Inspire Annex I. Cadastral parcels)		INSPIRE services available via http://data.gov.uk/	The UK does not have a cadastral system, the Land Registries record land transactions but do not provide a contiguous dataset of land ownership
Agriculture statistics: accuracy 2000 – 10 000 km2	UK Statistics Authority		Data available via AG census
Land cover data (land cover sampling data): 1: 25 000, 1: 50 000 (Inspire Annex II. Land cover) Zoning maps (delineation of functional areas): 1: 5 000	The Department for Environment, Food and Rural Affairs (Defra) http://uk-air.defra.gov.uk/		CEH land cover map is the reference dataset for Defra.
Fire data	Natural England http://www.naturalengland.org.uk/	http://www.naturalengland.org.uk/ourwork/access/openaccess/fireseverity.aspx	

Not resolved issues/identified gaps:

- In-Situ data not reported or claimed as not available: daily surface temperature, salinity, chlorophyll and oxygen measurements from EGO (European coverage), Built-up areas/settlement information, Large scale population information, Field data (LUCAS project principles), soil data, UV radiations

Version July 2013

Last feedback received June 2013

Country: SWITZERLAND**EEA/Eionet NFP Switzerland (contact details)**

Nicolas Perritaz

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Federal Department of the Environment, Transport, Energy and Communications DETEC

Federal Office for the Environment FOEN

Economics and Environmental Observation Division

Papiermühlestrasse 172, CH-3063 Ittigen

CH-3003 Berne

Meetings held

- The country visit was held with The Federal Office for the Environment on December 2012. The general objectives were to provide a platform for a broader dialogue between EEA and Switzerland and raise awareness among Eionet and other national institutions/networks of these topics; Identify best practices related to the topics of common interest in individual countries in order to share and implement these at European level; support existing national Eionet networks.

Individual agreements on access to data signed with specific stakeholders yes/no: no

- Switzerland is indirectly involved into the Copernicus Programme through its membership to EEA and ESA

Key points of data access policy

- The coordination of geographical information within the Federal Administration is under the strategic direction and management of the coordinating agency for Federal geographical information, GCG. The same is true for the geo.admin.ch information technology platform for geographical information.

Status of RDA (Reference Data Access) survey			
<ul style="list-style-type: none"> Feedback received 			
Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data			
<ul style="list-style-type: none"> The letter of agreement was signed on December 2012. 			
Status of GIO Land grant agreement			
<ul style="list-style-type: none"> A letter of intent was signed by the Economics and Environmental Monitoring Division (FOEN) and received by EEA on November 2011. 			
In-situ data with free* access to all GMES services (or non-commercial use)			
*registration can be required			
In-situ data with license issues or un-clarified data access conditions			
In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information –water bodies (water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits): 1: 25 000, 1: 50 000 (Inspire Annex I. Hydrography)	Federal Office of Topography, swisstopo		Commercial license for external (=provider) use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
Hydrographical information (water levels – NRT data; only for disaster affected areas)	Federal Office for the Environment FOEN		
Wetlands inventory, 1: 25 000 (Inspire Annex II. Land cover)	Federal Office for the Environment FOEN	View client application at http://map.bafu.admin.ch/?lang=en (Each of FOEN’s data contains links to metadata, access and terms & conditions	Data access and terms and conditions at http://www.bafu.admin.ch/gis/02911/index.html?lang=fr

		of use)	
Forest inventory (forest species), scale 1: 5 000 – 1: 25 000 (Inspire Annex II. Land cover)	Swiss Federal Institute for Forest, Snow and Landscape Research	Swiss Federal Institute for Forest, Snow and Landscape Research	Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1: 25 000	Swiss Federal Statistical Office		Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
Critical infrastructures (utilities – public services): 1: 50 000 (Inspire Annex III. Human health and safety, Inspire Annex III. Utility and governmental services)	Federal Office of Topography, swisstopo		Not available
Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000 (Inspire Annex I. Administrative units)	Federal Office of Topography, swisstopo	Download services available at http://www.swisstopo.admin.ch/internet/swisstopo/en/home/products/landscape/swissBOUNDARIES3D.html	
Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): better than 1: 10 000 (Inspire Annex I. Geographical names, Annex III. Buildings)	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Settlement locations and toponyms: 1:50 000 (Inspire Annex I. Geographical	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land

names)			Services)
Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m (Inspire Annex II: Elevation)	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X, Y Z: 6m (Inspire Annex II: Elevation)	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Transport networks (roads, railways, airports, ports): 1: 25 000, 1: 50 000 (Inspire Annex I. Transport networks)	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Large scale population information at administration level 3 or higher: accuracy 0,01 km ² (100 m x 100 m) (Inspire Annex III. Population Distribution and demography)	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Orthophotos, scale 0.5 m (Inspire Annex II. Orthoimagery)	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of

			EEA bilateral treaty with CH (Land Services)
Aerosol optical depth (Inspire Annex III: Atmospheric conditions)	MeteoSwiss		Usage free of charge and conditions. Delivery charges may apply (essential data according to WMO Resolution 40).
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5 SO2) (Inspire Annex III: Atmospheric conditions). Near real time ozone data reporting	Federal Office for the Environment FOEN		See end notes
Surface validated measurements (CH4 (conc.&fluxes), CO, CO2, NMVOC (speciated), NO, NO2, O3, PM spec., PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isopren, PAH) (Inspire Annex III: Atmospheric conditions) AQ-1: Eol data (Eionet priority data flow)	Federal Office for the Environment FOEN www.bafu.admin.ch/luft	http://www.empa.ch/plugin/template/empa/699/6174/---/l=2/changeLang=true/lartid=6174/orga=/type=/theme=/bestellbar=/new_abt=/uacc=	Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services) Also available through EIONET CDR at http://cdr.eionet.europa.eu/ch
Vertical atmosphere profiles: aircrafts (O3, NOx, CH4, CO2) sondes (O3), ground based remote sensing (NO2, PM 2.5 mass, aerosol properties) (Inspire Annex III: Atmospheric conditions)	MeteoSwiss		O3: essential data according to WMO Resolution 40
Total column greenhouse gases:	Federal Office for the		See end notes

CO2, CH4 (Inspire Annex III: Atmospheric conditions)	Environment FOEN		
Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLIF), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes Meteorological forecasts: wind speed, wind direction and wind location in real time (Inspire Annex III: Meteorological geographical features)	MeteoSwiss		Data partly free of charge and conditions. Delivery charges may apply (essential data according to WMO Resolution 40). End user fees plus delivery charge for additional data according to WMO Resolution 40 (see ECOMET Catalogue)
River discharge data	Federal Office for the Environment FOEN		Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
<i>Desirable/useful data ref GISC priorities report</i>			
Aerial photography: spatial	Federal Office of		Commercial license for external use;

resolution 0.2 m (Inspire Annex II. Orthoimagery)	Topography, swisstopo		Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)
Land use data: 1: 25 000, 1: 50 000 (Inspire Annex III. Land use)	Swiss Federal Statistical Office		Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
Conservation and protected areas: 1: 25 000, 1: 50 000 (Inspire Annex I. Protected sites, Annex III. Habitants and biotopes) CDDA-1: Designated areas (Eionet priority data flow)	Federal Office for the Environment FOEN	Available at http://www.geo.admin.ch/internet/geoportal/en/home/services/geoservices.html Viewer client application at http://map.bafu.admin.ch/?Y=660000&X=190000&zoom=1&bgLayer=ch.swisstopo.pixelkarte-grau&lang=en	Data access and terms and conditions http://www.bafu.admin.ch/gis/02911/index.html?lang=fr Each of FOEN's data contains links to metadata, access and terms & conditions of use. Also available through EIONET
Geological maps: 1: 100 000 (Inspire Annex II. Geology)	Swiss Geological Service	Commercial license for external (=provider) use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).	
Forestry maps: 1: 50 000	Swiss Federal Institute for Forest, Snow and Landscape Research	not available (only from CLC or from swisstopo data)	
Soil data: 1: 100 000 (Inspire Annex III. Soil)	Federal Office for Agriculture FOAG	"Carte des aptitudes des sols de la Suis" (1: 200,000 scale) Download services at http://www.blw.admin.ch/dienstleistungen/00334/00337/index.html?lang=fr	
Cadastral data (for cities with more	Federal Office of		Commercial license for external use;

<p>than 100 000 inhabitants or the largest city in the region): 1 : 1 000</p> <p>(Inspire Annex I. Cadastral parcels)</p>	Topography, swisstopo		Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
<p>Field information: field photographs, population statistics, relief actors and deployment activities: accuracy 10-20 m, for disaster affected areas</p>	Swiss Federal Statistical Office		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
<p>Emission inventory</p> <p>AE-1: LRTAP data (Eionet priority data flow)</p> <p>AE1b: NEC data (Eionet priority data flow)</p> <p>AE-2: UNFCCC data (Eionet priority data flow)</p> <p>AE2b: EU GHG data (Eionet priority data flow)</p>	<p>Federal Office for the Environment FOEN</p> <p>www.bafu.admin.ch/luft</p>	<p>http://www.empa.ch/plugin/template/empa/699/6174/---/l=2/changeLang=true/lartid=6174/orga=/type=/theme=/bestellbar=/new_abt=/uacc=</p>	<p>Also available through EIONET CDR at http://cdr.eionet.europa.eu/ch</p>
<p>Agriculture statistics: accuracy 2000 – 10 000 km2</p>	Swiss Federal Statistical Office		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
<p>Land parcel information system (LPIS) (reference parcel with land use/ land cover information): 1: 10 000</p>	Federal Office of Topography, swisstopo		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services).
<p>Land cover data (land cover sampling data): 1: 25 000, 1: 50 000</p> <p>(Inspire Annex II. Land cover)</p>	Swiss Federal Statistical Office		Commercial license for external use; Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land

			Services).
UV radiation: UV index, erythemal UV, spectral UV (Inspire Annex III: Atmospheric conditions)	MeteoSwiss		End User and delivery fees apply.
Thematic maps: 1: 25 000	Federal Office for Spatial Development ARE		Usage free of charge is limited to EEA internal use within the boundaries of EEA bilateral treaty with CH (Land Services)

Not resolved issues/identified gaps: data not available for Surface NRT measurements, Total column greenhouse gases, Biomass (dry), Vegetation variables: accuracy 20% for LAI, 10% for fAPAR, Grassland inventory, forestry maps, zoning maps, fire data.

Conclusions

Most of the data sets are available free of charge for internal EEA use (I take it as first step of achievement to free access for more activities); for other purposes there is commercial license. The access to information is concentrated in few Web services. Few data sets are available free of charge from the re-projected national services (wetlands, administrative boundaries, conservation and protected areas). Discovery services have been implemented, WFS services are under development. Two atmospheric data sets are available from Reportnet CDR and from national portals.

Within the framework of EEA's activities and reporting obligations Switzerland, as member of EEA, conferee rights for the usage of data free of charge to Land and Atmosphere services only.

Country: CZECH REPUBLIC
<p>National GMES focal point (contact details)</p> <p>Simona Losmanová CENIA , Czech Environmental Information Agency Vršovická 1442/65 100 10 Praha 10 Email address: Simona.losmanova@cenia.cz</p>
<p>Meetings held</p> <ul style="list-style-type: none"> • 31 January 2011: Meeting with Simona Losmanová (EIONET NFP) at the EEA. • 27 – 28 April 2011: GMES workshop/country visit. Present were Czech Geological Survey, Czech Hydrometeorological Institute, Ministry of Agriculture, Ministry of Environment, Forest Management Institute, Research Institute for Soil and Water Reclamation, Czech Statistical Office, Czech Office for Surveying, Mapping and Cadastre (COMSC), Mapping Institute under COSMC. Purpose of the meeting was to secure some priority areas of the in-situ capacity needed. • 21st September 2012: Meeting with Simona Losmanova in Prague.
<p>Key points of data access policy</p> <ul style="list-style-type: none"> • National INSPIRE Geoportal: Czech National Geoportal serves as a basic interface to provide access to spatial data of the Czech Republic to the general public regarding to the INSPIRE Directive 2007/2/EC. Through the provided tools and services it allows mandatory providers to publish spatial data and related information with the support of the Geoportal tools. • Geoportal of the Czech Office for Surveying, Mapping and Cadastre (COSMC): COSMC Geoportal is a web interface for access to spatial information acquired by the COSMC resort. It allows for searching metadata about COSMC spatial data, viewing this data or ordering it as a file or service. • IZGARD: (Internet Viewer of Geographical Military Data) is a part of the Digital Military Geographic Information System (DVISU). It is a web map server providing access to military raster and vector data. <p>Access to the authoritative geospatial reference data for GIO EMS is accepted</p>
Individual agreements on access to data signed with specific stakeholders yes/no: no
Main data policy developments

- One of the aims of the national GMES coordination is to inform public authorities about the benefits and opportunities connected with GMES. Some data are available via view services due to the INSPIRE Directive, but the aim is to have more download services.
- In 2013, preparations for new strategy on spatial data have started ("Strategy for the development of the spatial data infrastructure up to 2020").
- The Czech Republic was acquainted with the proposal of the EEA data policy and discussed it with the relevant institutions. These institutions require no additional agreements with the EEA concerning the data availability.

Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS

- Accepted

Status of GIO Land grant agreement

- Agreement signed on December 2012

Status of RDA (Reference Data Access) survey

- Feedback received on December 2012

In-situ data with open access to all GMES services (non-commercial)

In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Surface air quality measurements (Annex III)	Czech Hydrometeorological Institute	acm.eionet.europa.eu/databases www.eea.europa.eu/themes/air/airbase	EIONET (Airbase & NRT databases).
Vertical atmosphere profiles (Annex III)	Czech Hydrometeorological Institute	acm.eionet.europa.eu/databases www.eea.europa.eu/themes/air/airbase	Data are in graphical form. Raw data not accessible.
Transport networks, airports positional accuracy 20 m of true position (Annex I)	Czech Office for Surveying, Mapping and Cadastre	RDA product info: Fundamental base of geographic data of the Czech Republic	View service is WMS. Download available (data files or WFS)

		<p>(ZABAGED).</p> <p>http://geoportal.cuzk.cz/ (in Czech)</p> <p>http://geoportal.cuzk.cz/%28S%28bjduap55c0a1hh55dcuvddjk%29%29/Default.aspx?lng=EN&head_tab=sekce-00-gp&mode=TextMeta&text=uvod_uvod&menu=01&news=yes&UvodniStrana=yes (in English)</p>	<p>Full, free and open for public use. License needed for commercial use.</p>
Transport networks, railways 1:50000	Czech Office for Surveying, Mapping and Cadastre	<p>RDA product info: Fundamental base of geographic data of the Czech Republic (ZABAGED).</p> <p>http://geoportal.cuzk.cz/</p> <p>http://geoportal.cuzk.cz/%28S%28bjduap55c0a1hh55dcuvddjk%29%29/Default.aspx?mode=News&head_tab=sekce-00-gp&newsTyp=id&newsID=827</p>	<p>COSMC provides WMTS (tile view service) View service is WMS. Download available (data files or WFS)</p> <p>Full, free and open for public use. License needed for commercial use.</p>
City maps 1:5000		<p>http://geoportal.gov.cz (CZ)</p> <p>http://geoportal.gov.cz/web/guest/home (ENG)</p>	<p>Available as technical or touristic maps.</p>
Ortophotos 0,25m (Annex II)	Czech Office for Surveying, Mapping and Cadastre	<p>RDA product info: Orthophoto of the Czech Republic.</p> <p>http://geoportal.cuzk.cz/</p>	<p>View service in WMS. Download service available (data files).</p> <p>Full, free and open for public use. License needed for commercial use.</p>
Transport networks: roads	Czech Office for	RDA product info: Fundamental base of	View service is WMS.

1:5000-1:25000 1:25000-1:80000 1:80000-1:250000 (Annex I)	Surveying, Mapping and Cadastre	geographic data of the Czech Republic (ZABAGED). http://geoportal.cuzk.cz/	Download available (data files or WFS) Full, free and open for public use. License needed for commercial use.
Hydrographical data 1:50000 (water bodies, rivers, lakes, watersheds, reservoirs etc) (Annex I)	Czech Office for Surveying, Mapping and Cadastre	RDA product info: Fundamental base of geographic data of the Czech Republic (ZABAGED). INSPIRE ID: CX-00025712-CUZK_Hy http://geoportal.cuzk.cz/	View service is WMS. Download available (data files or WFS) Full, free and open for public use. License needed for commercial use.
Digital elevation model high resolution 1m-25m (Annex II)	Czech Office for Surveying, Mapping and Cadastre	RDA product info: Digital terrain model of the Czech Republic of the 4 th generation (DMR 4G). Accuracy target: Horizontal CE90 1m-5m, Vertical LE90 1m-2.5m http://geoportal.cuzk.cz/	No view service. Download available. Full, free and open for public use. Licence needed for commercial use.
Forest inventory (forest species) 1:5000-1:25000 (Annex II)	Forest Management Institute	www.geoportal2.uhul.cz	Geographic maps of forest species are freely available. National forest inventory data can be provided as aggregated result.
Administrative boundaries 1:1000 – 1:10 000 (0,01 km ² , 100 m x 100 m) (Annex I)	Czech Statistical Office	http://geoportal.gov.cz	Clarification needed if data can be viewed only or also downloaded.
Large scale population information at administration level 3 or higher (500 m x 500 m) (Annex III)	Czech Statistical Office	http://geoportal.gov.cz	Issues with required resolution remain. Clarification needed if data can be viewed only or also downloaded.

Global population dataset accuracy 0,25km2 (Annex III)	Czech Statistical Office	http://geoportal.gov.cz	Issues with scale remains. Clarification needed if data can be viewed only or also downloaded.
Boundaries of cadastral territories (Annex I)	Czech Office for Surveying, Mapping and Cadastre (COSMC)	http://geoportal.cuzk.cz/	Clarification needed if data can be viewed only or also downloaded.
Settlement locations and toponyms 1:5000 – 1:500 000 (Annex I)	Czech Office for Surveying, Mapping and Cadastre (COSMC)	http://geoportal.cuzk.cz/	Clarification needed if data can be viewed only or also downloaded.
Topographic maps (administrative units, transport networks, hydrography, geo names, urban areas etc.) 1:100000, 1:25000, 1:10000 (Annex I)	Czech Office for Surveying, Mapping and Cadastre (COSMC)	http://geoportal.cuzk.cz/	Clarification needed if data can be viewed only or also downloaded.
Built-up areas, settlements 1:25000 (Annex I)	Office of Military Geography and Hydrometeorology	http://izgard.cenia.cz	Clarification needed if data can be viewed only or also downloaded.
Digital topographic maps 1:10000, 1:25000, 1: 100000	Office of Military Geography and Hydrometeorology	http://izgard.cenia.cz	Clarification needed if data can be viewed only or also downloaded.
Topographic maps (hydrography, basin boundaries) 1:100000, 1:25000, 1:10000	Hydrography1 – TGM Water Research institute Hydrography2- River Basin Authorities Basin boundaries -	http://heis.vuv.cz (CZ) http://heis.vuv.cz/napoveda/_main.asp (ENG) http://voda.gov.cz (CZ) http://voda.gov.cz/portal/en/ (ENG) Could be downloaded at:	Cartographic information compatible with ZABAGED layers (see COSMC) Register of rivers and streams (together with information about responsible authority)

	Czech Hydrometeorological Institute (CHMI)	http://voda.chmi.cz/opv/index.html http://heis.vuv.cz/ / www.chmi.cz	
Wetlands inventory 1:25000 (Annex II)	Nature Conservation Agency of the Czech Republic (NCA)	Map could be derived from the Biotopes Mapping Database (wetlands would be composed of appropriate habitats related to water environment) Biotopes Mapping Layer available only in viewer (http://mapy.nature.cz/)	In Czech only
Meteorological in-situ observations (wind, air, humidity, temperature, precipitation, met forecasts etc.) (Annex III)	Czech Hydrometeorological Institute (CHMI)	http://portal.chmi.cz	
Aerosol optical depth (Annex III)	Czech Hydrometeorological Institute (CHMI)	http://portal.chmi.cz	Regular observations will start in 2013.
Grasslands inventory 1:5000-1:25000 (Annex II)	Nature Conservation Agency of the Czech Republic (NCA)	Map could be derived from the Biotopes Mapping Database (wetlands would be composed of appropriate habitats related to water environment) Biotopes Mapping Layer available only in viewer (http://mapy.nature.cz/)	In Czech only
<i>Desirable/useful data ref GISC priorities report</i>			
Land use statistics (land use sampling data)			Only statistical information is available, not geographical.
National Land use			Not available.

information (better than CORINE accuracy) (Annex III)			
Cadastral data 1:5000 (Annex I)	Czech Office for Surveying, Mapping and Cadastre	http://geoportal.cuzk.cz/	Can the required scale be provided? Clarification needed if data can be viewed only or also downloaded.
Land cover inventory (land cover sampling data) 1:25000 (Annex II)	Czech Office for Surveying, Mapping and Cadastre	http://geoportal.cuzk.cz/	Clarification needed if data can be viewed only or also downloaded.
Thematic maps (forest areas, vegetation, buildings, settlements, agricultural inventories, rangeland maps, mineral extraction and dump sites etc.) 1:25000 (Annex I)	Czech Office for Surveying, Mapping and Cadastre	http://geoportal.cuzk.cz/	Can the required scale be provided? Clarification needed if data can be viewed only or also downloaded.
Hydrographical information (NRT data about seasonal variations for disaster and affected areas)	Czech Hydrometeorological Institute (CHMI)	http://portal.chmi.cz (CZ) http://portal.chmi.cz/portal/dt?portal_lang=en (ENG)	View service available. For download agreement is needed.
Greenhouse gases CO2, CH4 (Annex III)	Czech Hydrometeorological Institute (CHMI)	http://portal.chmi.cz/files/portal/docs/uoco/oez/nis/nis_uv_aj.html	Summarized GHG data can be viewed in tabular or graphical form, complete data structure is also available for download. Data are owned by the MoE and are included also in IRZ (CENIA database) together with GPS coordinates of the polluter and statistical numbers such as emissions and over limit in an actual year: http://portal.cenia.cz/irz . In the IRZ database a pollution data about 93 substances are available for the particular

			operators. The database itself serves as a fulfilment of the law and also as information for the public.
Emissions (Annex III)	Czech Hydrometeorological Institute (CHMI)	http://portal.chmi.cz	Clarification needed if data can be viewed only or also downloaded.
UV radiation (Annex III)	Czech Hydrometeorological Institute (CHMI)	http://portal.chmi.cz	The data are available from regular UV spectral measurements taken at the Solar and Ozone Observatory of CHMI in Hradec Králové through the data transfer system of the CHMI.
Conservation and protected areas 1:25000 (Annex I)	Nature Conservation Agency of the Czech Republic (NCA)	http://mapy.nature.cz http://drusop.nature.cz Only in Czech language	Data can be downloaded, geographical data can be viewed only at the moment. In the near future possibility to download (WFS).
Geological maps 1:100000 (Annex II)	Czech Geological Survey	http://www.geology.cz http://mapy.geology.cz	Required scale is not available. Some data available via OneGeology Portal for view, not for download.
Natural risk zones (Annex III)	Czech Geological Survey	http://www.geology.cz http://mapy.geology.cz	View services for some geohazards are available (landslides, radon index etc.
Thematic maps – mineral extraction and dump sites 1:25000	Czech Geological Survey	http://www.geology.cz http://mapy.geology.cz	View services are available.
Land parcel information system (LPIS)	Ministry of Agriculture	http://lpis.cz (CZ) http://lpis.cz/index_en.html (ENG)	Data can be downloaded as a shapefile from: http://eagri.cz/public/app/lpisext/lpis/verejny/

Land cover inventory (land cover sampling data) 1:25000 (Annex II)	Ministry of Agriculture	http://eagri.cz Only in Czech language	Clarification needed if data can be viewed only or also downloaded.
Thematic maps – vegetation maps, agricultural datasets 1:25000	Ministry of Agriculture	http://eagri.cz	Available via LPIS. Clarification needed if data can be viewed only or also downloaded.
<u>In-situ data with potential license/agreement/data policy issues</u>			
In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Digital elevation model low to medium resolution 90m (Annex II)			Product does not exist.
Critical infrastructures (power plants, transmission networks, pipelines, bridges, hospitals, schools, hospitals etc.) 20m of true position. (Annex III)	Ministry of the Interior of the Czech Republic - General Directorate of the Fire and Rescue Service		Product does not exist.
<i>Desirable data ref GISC priorities report</i>			
Population statistics (Annex III)	Czech Statistical Office	http://geoportal.gov.cz	Data will be available in 2013, and will not be for free. Agreement is needed.

Soil data 1:100000 (Annex III)	Research Institute for Soil and Water Reclamation	http://sowac-gis.cz	Data not publicly available. Raw data not published.
Aerial photography			

Conclusions

The Czech Republic has a quite big amount of publicly accessible data. Some Czech geoportals provide access to view services (mainly WMS and WMTS); downloading of the data is available only in some cases as a service (WFS). Only in a few cases the data owners have not been identified. Data is usually free of charge for public use and is licenced for commercial use. Most of the data are consistent with the INSPIRE directive. Only some of the data sources are available also in English language.

Version January 2013

Last feedback received on December 2012

Country: FINLAND
National GMES focal point (contact details) Säynätkäri Tapani Finnish Environment Institute Mechelininkatu 34, Helsinki Email address: tapani.saynatkari@ymparisto.fi
Meetings held <ul style="list-style-type: none"> • 7 June 2011: Country visit. The Finnish Environment Institute hosted the meeting. Agenda embraced EEA and the SOER 2010, SEIS and GMES/GISC/GIO-land. From EEA Tarja Porkka, Tim Haigh and Inese Podgaiska participated. • Spring 2012: Contacts with Säynätkäri Tapani at the EEA in connection with EIONET/NFP meetings.
Key points of data access policy <ul style="list-style-type: none"> • Stakeholders in Finland are generally committed to data re-use and a free and open data policy for public data, but there are obstacles with regard to various data owners. Data access conditions may also prove to be an obstacle in certain cases.
Individual agreements on access to data signed with specific stakeholders yes/no: no
Status of GIO Land grant agreement <ul style="list-style-type: none"> • Signed by both parties 11.7.2012.
Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS <ul style="list-style-type: none"> • Accepted.
Status of RDA action

- Feedback received

In-situ data with open access to all GMES services (non-commercial)

In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water bodies) 1:25000 Inspire Annex 1	Finnish Environment Institute (SYKE) and National Land Survey	www.ymparisto.fi www.nls.fi	Data shall not be delivered to third parties without permission. Available in Finnish only.
Hydrographical information (water levels – NRT data about seasonal variations for disaster affected areas)	Finnish Environment Institute (SYKE)	www.ymparisto.fi	Data shall not be delivered to third parties without permission. Data can be downloaded only in xls-format (not in spatial data form). Available in Finnish only. Hydrological forecasts and maps available at www.environment.fi/waterforecast
Administrative boundaries 1:5000-1:25000, 1:100000 Inspire Annex I	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	1:10 000, 1:20 000, 1:100 000 (Vector and raster)
Aerosol optical depth Inspire Annex III	Finnish Meteorological Institute	www.ilmatieteenlaitos.fi	Use may require specific agreement.
Daily surface temperature, salinity, sea level, chlorophyll and oxygen measurements	Finnish Environment Institute	www.ymparisto.fi	

(Baltic/BOOS) Inspire Annex III			
City maps	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	Topographic raster map 1:50 000 (raster) , coverage: the whole country; Background map raster 1:40 000, coverage: the whole country
Built-up areas/settlements 1:25000 Inspire Annex I	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	1:20 000 raster
Settlement locations and toponyms 1:5000-1:500000 Inspire Annex I	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	
Topographic maps (administrative units, transport networks, hydrography, geographical names etc) 1:100000, 1:25000, 1:10000	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license:	1:10 000, 1:20 000, 1:100 000 (Vector and raster)

Inspire Annex I		http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	
Digital elevation model, high resolution 1m2 – 25m2 Inspire Annex II	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	
Transport networks (railways) 1:50000 Inspire Annex I	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	A topographic raster map.
Orthophotos 0.2m, 0.5m	National Land Survey of Finland	www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	0.5 m (0.2 m not available)
<i>Desirable/useful data ref GISC priorities report</i>			
Land use information CORINE 0,1 km Inspire Annex III	Finnish Environment Institute	www.ymparisto.fi	
Conservation and protected	Finnish Environment	www.ymparisto.fi	Some service only available in Finnish.

areas 1:50000 Inspire Annex I	Institute		
Geological maps 1:100000 Inspire Annex I	Geological Survey of Finland	www.gtk.fi	Free use. Publishing requires agreement.
Aerial photography Inspire Annex III	National Land Survey of Finland	www.maanmittauslaitos.fi In the NLS WMS service, files to be ordered from NLS.	Older than 2009 films only partly scanned.
Thematic maps (forest areas, species, vegetation maps, snow and ice cover, buildings, agricultural datasets, mineral extraction and dump sites etc.) Inspire Annex III	National Land Survey of Finland	Buildings and city maps www.maanmittauslaitos.fi The open data file download service: http://www.maanmittauslaitos.fi/en/file_download_service The National Land Survey of Finland open data license: http://www.maanmittauslaitos.fi/en/NLS_open_data_licence_version1_20120501	Buildings as files: data files to be ordered from the NLS. The buildings are included in the Topographic data base available in the File download service. City maps on the NLS WMS-service and File download service.
Forestry maps 1:50000	The Finnish Forest Research Institute	www.metla.fi , download service: kartta.metla.fi	The pixel size is 20 m x 20 m with 45 thematic forest and land use layers. Free use (incl. commercial use) for 2009 and newer data as given in the licence and metadata http://kartta.metla.fi/MS-NFI-Licence.pdf . For use of older data please contact Erkki Tomppo (erkki.tomppo@metla.fi).

In-situ data with potential license/agreement/data policy issues

In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Forest inventory (forest species) scale 1:5000-1:25000	The Finnish Forest Research Institute	www.metla.fi	Use requires a specific agreement. Restrictions on delivery of data to third party.
Transport networks: roads, scales: large 1:5 000 - 1:25 000; medium 1:25 000 - 1:80 000; small 1:80 000 - 1:250 000 Inspire Annex I. Transport networks	Finnish Transport Agency	http://www.digiroad.fi/en_GB/	A licence agreement is needed.
Surface air quality measurements Inspire Annex III	Finnish Meteorological Institute	www.ilmatieteenlaitos.fi	Use of data only free for scientific use. Other use needs agreement. (Implementation of Inspire in progress).
Vertical atmospheric profiles	Finnish Meteorological Institute	www.ilmatieteenlaitos.fi	Use of data only free for scientific use. Other use needs agreement. (Implementation of Inspire in progress).
Daily surface temperature and salinity measurements from European vessels (Alg@line, Ferry Boxes). Inspire Annex III	Finnish Environment Institute	www.ymparisto.fi	Use requires a specific agreement.
Meteorological in situ observations (wind, air	Finnish Meteorological	www.ilmatieteenlaitos.fi	Use of data only free for scientific use. Other use needs agreement. (Implementation of

pressure, humidity, temperature, precipitation, radiation etc.) Inspire Annex III	Institute		Inspire in progress).
<i>Desirable data ref GISC priorities report</i>			
Soil data 1:100000 Inspire Annex III	MTT Agrifood Research Finland	www.mtt.fi	Use requires specific agreement. Restriction on delivery to third party.
Cadastral data Inspire Annex I	National Land Survey of Finland	www.maanmittauslaitos.fi In the NLS WMS service, files to be ordered from NLS	A license is needed for inside organization use, another license is needed for publishing the data, an agreement is needed for delivering the data to a third party (if not a consultant using the data in doing something for the license holder).
UV radiation (uv index, erythema uv, spectral uv)	Finnish Meteorological Institute	www.ilmatieteenlaitos.fi	Use of data only free for scientific use. Other use needs agreement. (Implementation of Inspire in progress).
Field data (LUCAS)		http://epp.eurostat.ec.europa.eu/portal/page/portal/lucas/introduction	Available via Eurostat

Not resolved issues/identified gaps:

- Information on access to the following data sets have not been received: Wetlands inventory; Critical infrastructures (power plants, pipelines, etc.); Key infrastructures (ports); Key infrastructures (airports); Total column greenhouse gases CO₂, CH₄; Field information (field photographs, population statistics, relief actors etc.); Emission inventory; Land cover inventory (land cover sampling data); Land use statistics (land use sampling data);
- The following data is not available: Digital elevation model (medium resolution 30m); Digital elevation model (low resolution 90m); Land parcel information system (LPIS).

Conclusions (status)

The need for national and European GMES coordination, in particular in relation to in situ in response to the Regulation, is acknowledged.

Coordination should be built on existing capacities and data exchanges (re-use), including INSPIRE and SEIS.

Only 6 essential and 4 desirable datasets are restricted, requiring either license or specific agreements.

Version: June 2013

Last feedback received on: June 2013

Country: POLAND

This table presents results of analysis of information provided by the Polish in-situ data stakeholders during and after the visit of the GISC project to Poland. Analysis of the provided information was carried out by the GISC project and reviewed by the Polish national focal point in the Eionet.

National Copernicus focal point (contact details)

Beata Mikolajek-Zielinska

Ministry of Science and Higher Education

Email address: beata.mikolajek-zielinska@nauka.gov.pl

Marek Banaszekiewicz,

Director of the Space Research Centre of the Polish Academy of Science

Email address: marekb@cbk.waw.pl**Meetings held**

- 8th October 2012 with representatives from Chief Inspectorate for Environmental Protection, Space Research Centre, Head Office of Geodesy and Cartography, Institute of Geodesy and Cartography, Ministry of Science and Higher Education, Ministry of Economy, Ministry of Environment and other stakeholders (>20 in total). Status of the meeting - GISC/EEA country visit with the purpose of getting an overview of the in-situ landscape in Poland.

Key points of data access policy

- Oceanographic observations are free. Access to the Polish oceanographic observations provided to EuroArgo programme is available through EuroArgo portal. Access to oceanographic observations via regional oceanographic observation data centre in the Baltic Sea (BOOS) remains to be checked in the dialogue between BOOS and the Polish members of the BOOS.
- Air quality and other air pollution data are freely and openly available through Eionet.
- Geospatial reference data are not free of charge for the Copernicus programme. Exception has been made for Copernicus EMS. As a general rule data are free for entities performing public tasks and Copernicus is seen as a commercial project until more information on the nature of Copernicus is provided by

the EEA.

- Hydrological and meteorological information are not free of charge for the Copernicus programme. Standard data are free for entities performing public tasks and for research and Copernicus is seen as a commercial project until more information on the nature of Copernicus is provided by the EEA. EUMETNET and WMO is not authorised to provide access to the Polish meteorological and hydrological data to Copernicus programme.
- Where relevant, INSPIRE Directive should serve as framework to access required in-situ data.

Individual agreements on access to data signed with specific stakeholders yes/no: yes

- GIO Land grant agreement
- EEA-EG letter

Status of RDA (Reference Data Access) survey

- No feedback received

Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS

- Signed in December 2012 by Head Office of Geodesy and Cartography. Information on electronic data access nodes were provided directly to the technical coordinator of the Copernicus EMS in February 2013 and tested in February – March 2013.

Status of GIO Land grant agreement

- Signed in August 2012 by Institute of Geodesy and Cartography

In-situ data with free* access to all Copernicus services (non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)/ coordinating institutions	On-line access to data (view and download)	Comments by Poland
<i>Essential data ref GISC priorities report</i>			
Forest inventory (forest species), scale 1: 5 000 – 1: 25 000	State Forests National Forest Holding (only state property)	-	About data availability: data available in scale of 1:5 000. Databank on forest properties being developed (pilot project about all forest properties, on-line access foreseen). Data is provided on request in form of e-mail, CD etc.

<i>(Inspire Annex II. Land cover)</i>			
<p>Large scale population information at administration level 3 or higher: accuracy 0,01 km² (100 m x 100 m)</p> <p><i>(Inspire Annex III. Population Distribution and demography)</i></p>	Central Statistical Office	<p>CSO Local Data Bank http://www.stat.gov.pl/bdlen</p> <p>Geostatistics Portal to be opened in 2013</p>	<p>About data availability: the access to more accurate data is possible and provided by Gmina authorities (LAU2 level). Conditions under local authorities.</p>
<p>Critical infrastructures (utilities – public services): 1: 50 000</p> <p><i>(Inspire Annex III. Human health and safety, Inspire Annex III. Utility and governmental services)</i></p>	Head Office of Geodesy and Cartography	<p>Data is available for view through the national geoportal: www.geoportal.gov.pl</p>	<p>About data availability: Head Office of Geodesy and Cartography gathers and shares data on power plants, transmission networks, water treatment plants, pipelines, bridges, hospitals, schools, fire brigade stations, bridges, tunnels, train stations in database of topographic objects in scale 1:10 000 – full coverage of data for whole country is planned by the end of 2013.</p> <p>Free access for Copernicus EMS according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p>
<p>Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000</p>	Head Office of Geodesy and Cartography	<p>Data is available for view through the national geoportal: www.geoportal.gov.pl</p>	<p>About data availability: Head Office of Geodesy and Cartography possess the full coverage of the country with scans of topographic maps in scale 1:25 000 from years 70-80s (coordinates system “1965”). Scans of topographic maps in other scales (in different coordinates and different coverage) are also available. Full coverage of database of topographic objects in scale 1:10 000 for whole country is planned by the end of 2013.</p> <p>Free access for Copernicus EMS according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor</p>

			General of Poland on 19 December 2012.
Settlement locations and toponyms: 1:50 000 <i>(Inspire Annex I: Geographical names)</i>	Head Office of Geodesy and Cartography	Data is available for view through the national geoportal: www.geoportal.gov.pl	Free access for Copernicus EMS according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.
	Central Statistical Office	http://www.stat.gov.pl/broker/access/index.jsp http://www.stat.gov.pl/bip/36_ENG_HTML.htm	About data availability: The National Official Register of Territorial Division of the Country – TERYT is not a spatial reference database. It contains only the official names of administrative units, cities and streets in Poland and their official ID numbers. This database is much smaller than National register of geographical names led by HOGC.
Aerosol optical depth <i>(Inspire Annex III: Atmospheric conditions)</i>	Polish Academy of Science Institute of Geophysics , Institute of Oceanology of the Polish Academy of Sciences – for marine locations	Data can be accessed through the Aeronet website: URL: http://aeronet.gsfc.nasa.gov/cgi-bin/type_piece_of_map_opera_v2_new?level=1	About data availability: atmospheric aerosols characteristics (optical depth, Angstrom Coefficient, Fine and Coarse Fraction of aerosol optical depth). Some data (at IG PAS stations, Belsk: 52N, 21E, Hornsund: 77N, 15E) are measured by the institute and made available freely and openly on-line by the NASA, USA.
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5 SO2) <i>(Inspire Annex III: Atmospheric conditions, Inspire Annex III: Environmental monitoring)</i>	Chief Inspectorate for Environmental Protection	Data on O3 and PM 10 come from the regions - 16 Voivodship Inspectorates for Environmental Protection – available at websites of VIEPs and CIEP: http://powietrze.gios.gov.pl	About data availability: provided to and available through Eionet/EEA. From 1st January 2014 Poland will be obliged to report NRT data to EEA, although Poland already now reports data on ozone and PM10

<p><i>Facilities)</i></p> <p><i>Near real time ozone data reporting</i></p>		<p>v.pl/gios/site/content/air_quality_online Eionet CDR</p>	
<p>Surface validated measurements (CH4 (conc.&fluxes), CO, CO2, NMVOC (speciated), NO, NO2, O3, PM spec., PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isopren, PAH)</p> <p><i>(Inspire Annex III: Atmospheric conditions, Inspire Annex III: Environmental monitoring Facilities)</i></p> <p><i>AQ-1: Eol data (Eionet priority data flow)</i></p>	<p>Chief Inspectorate for Environmental Protection</p>	<p>-</p>	<p>About data availability: data come from the regions and coordinated by the Chief Inspectorate of Environmental Protection (excluding CH4 and halogen source gases); provided to and available through Eionet/EEA.</p>
<p>Vertical atmosphere profiles: aircrafts (O3, NOx, CH4, CO2) sondes (O3), ground based remote sensing (NO2, PM 2.5 mass, aerosol properties)</p> <p><i>(Inspire Annex III: Atmospheric conditions, Inspire Annex III:</i></p>	<p>Under State Environmental Monitoring coordinated by the Chief Inspectorate for Environmental Protection:</p> <p>Institute of Meteorology and</p>	<p>Data for site in- Belsk available on: http://www.igf.edu.pl/pl/zaklady_naukowe/zaklad_fizyki_atmosfery/ozon_uv (not online with a few days delay)</p> <p>Past data since March</p>	

<p><i>Environmental monitoring Facilities)</i></p>	<p>Water Management – National Research Institute: vertical atmosphere profiles: sondes (O3)</p> <p>Polish Academy of Science Institute of Geophysics (IG PAS): vertical atmosphere profiles: sondes O3 (also total column ozone)</p>	<p>1963 for the Belsk observatory available on the website of World Ozone and UV Data Base, Toronto, Canada: http://www.woudc.org</p>	
<p>Daily surface temperature, salinity and current measurements from EuroArgo programme (Global Ocean)</p> <p><i>(Inspire Annex III: Oceanographic geographical features)</i></p>	<p>Institute of Oceanology of the Polish Academy of Sciences</p>	<p>Data can be accessed through the EuroArgo web site: http://www.euro-argo.eu/</p>	
<p>Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave</p>	<p>Institute of Oceanology of the Polish Academy of Sciences /see also “in-situ data with licenses issues” part/</p>	<p>Data can be accessed through the operational part of the SatBaltyk project web site http://www.satbaltyk.eu/</p>	<p>About data availability:</p> <ul style="list-style-type: none"> - longwave radiation - shortwave radiation <p>for marine and coastal locations Operational service will start in 2013. Origin of the data needs to be credited.</p>

<p>radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLIF), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes</p> <p>Meteorological forecasts: wind speed, wind direction and wind location in real time</p> <p><i>(Inspire Annex III: Meteorological geographical features)</i></p>			
<p>Aerial photography: spatial resolution 0.2 m</p> <p><i>(Inspire Annex II. Orthoimagery)</i></p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: www.geoportal.gov.pl</p>	<p>About data availability: data is gathered in database of aerial and satellite imageries, orthophoto map and digital elevation model.</p> <p>Free access for Copernicus EMS according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p>
<p>Vegetation variables: accuracy 20% for LAI, 10% for fAPAR</p>	<p>Institute of Geodesy and Cartography</p>	<p>-</p>	<p>About data availability: the data will be available free of charge for Copernicus, but not on-line. It can be provided by the Institute of Geodesy and Cartography on request.</p>
<p><i>Desirable/useful data ref GISC priorities report</i></p>			
<p>Geological maps, 1: 100</p>	<p>Polish Geological</p>	<p>http://ikar2.pgi.gov.pl/c</p>	<p>About data availability: geological maps with the resolution 1:1000000,</p>

000 <i>(Inspire Annex II. Geology)</i>	Institute – National Research Institute	ms/	1:500000 and 1:50000 are available only.
Conservation and protected areas: 1: 25 000, 1: 50 000 <i>(Inspire Annex I. Protected sites, Annex III. Habitants and biotopes)</i> <i>CDDA-1: Designated areas (Eionet priority data flow)</i>	General Directorate for Environmental Protection	Data available at GDEP portal: http://geoserwis.gdos.gov.pl JPG Natura 2000 maps available at official GDEP Natura 2000 website at http://natura2000.gdos.gov.pl/datafiles Eionet CDR	About data availability: Eionet/EEA - data provided under CDDA (Eionet priority data flow)
Field data (LUCAS project principles): land cover, land use, landscape photos, 2x2 km grid <i>(Inspire Annex II: Land cover)</i>	Central Statistical Office	-	About data availability: available at Eurostat
Forestry maps, resolution 1: 50 000	State Forests National Forest Holding	-	About data availability: data available in scale of 1:5 000. Databank on forest properties being developed (pilot project about all forest properties, on-line access foreseen). Data is provided on request in form of e-mail, CD etc.
Emission inventory <i>AE-1: LRTAP data (Eionet priority data flow)</i>	National Centre for Emissions Management at the Institute of	Eionet CDR	Eionet/EEA - priority data flows

<p>AE1b: NEC data (Eionet priority data flow) AE-2: UNFCCC data (Eionet priority data flow) AE2b: EU GHG data (Eionet priority data flow)</p>	<p>Environmental Protection – National Research Institute</p>		
<p>Agriculture statistics: accuracy 2000 – 10 000 km²</p>	<p>Central Statistical Office</p>	<p>CSO Local Data Bank: http://www.stat.gov.pl/bdlen/app/strona.html?p_name=indeks</p>	<p>About data availability: geostatistics Portal (geo.stat.gov.pl) will be opened in 2013 providing National Census results down to LAU2 level</p>
<p>UV radiation: UV index, erythemal UV, spectral UV <i>(Inspire Annex III: Atmospheric conditions)</i></p>	<p>Institute of Meteorology and Water Management – National Research Institute and Polish Academy of Science Institute of Geophysics mostly provided under State Environmental Monitoring coordinated by the Chief Inspectorate for Environmental Protection</p>	<p>http://www.pogodynka.pl/indeksuv http://www.imgw.pl/wl/internet/zz/pogoda/uv.html One site (in Belsk) of the Polish Academy of Science Institute of Geophysics: http://uvb.igf.edu.pl/ Past data since March 1963 for the Belsk observatory available on the website of World Ozone and UV Data Base, Toronto, Canada: http://www.woudc.org</p>	
<p>Thematic maps (mineral extraction and dump sites):</p>	<p>Polish Geological Institute - National</p>	<p>Mineral extraction and dump sites in scale</p>	

1: 25 000	Research Institute	(resolution) 1:50 000: http://emgsp.pgi.gov.pl/emgsp/ IKAR Geoportal of PGI-NRI http://ikar2.pgi.gov.pl/cms/index.php?option=com_content&view=section&layout=blog&id=5&Itemid=18&lang=en	
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Not resolved issues/identified gaps: none

In-situ data with licenses issues

In-situ data requirement	In-situ data owner	On-line access	Comments by Poland
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water levels – NRT data; only for disaster affected areas)	Institute of Meteorology and Water Management – National Research Institute	Present data available on-line (only for the part of stations): http://www.pogodynka.pl/polska/podest http://www.pogodynka.pl/polska/hydro/wisla/ http://www.pogodynka.pl/polska/hydro/odra/ http://www.pogodynka.pl/polska/hydro/odra/	About data availability: historical database available upon request Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen; standard data are free for entities performing public tasks and for research

<p>Wetlands inventory, 1: 25 000</p> <p><i>(Inspire Annex II. Land cover)</i></p>	<p>Institute of Technology and Life Sciences</p>	<p>pl/polska/hydro/rzeki/</p>	<p>About data availability: not available for the whole country in the required scale 1:25 000, but available in the scale 1: 100 000. Examples of available data: vegetation types (8 groups), water supply (5-6 categories) which is available for the whole country etc.</p> <p>Digital database is under preparation which means:</p> <ul style="list-style-type: none"> - verification of the archive plots – where relevant projects are implemented (most basic materials comes from 90’s – vegetation types, data on peatland deposits are even earlier), - generate digital database in the scale 1:25 000 for chosen regions, administrative units oraz plots. <p>The data availability on-line is possible (geoportal) but the scope has to be specified by individual client.</p> <p>Some additional important information:</p> <ul style="list-style-type: none"> - in the database there is direct information about site conditions in terms of soil material, soil process which means that there is indirect information about water supply), - vegetation types are related to both: seminatural and natural ones - vegetation types are related directly only to few habitats from Habitat Directive -forest on wetlands are not differentiated into more precise categories. <p>Data access conditions: different data access conditions may apply depending on the type of requested information. Access to the data on the geoportal would be charged as the data would have to be prepared and put on the portal for a client.</p> <p>Other arrangements: access for the Institute of Geodesy and Cartography (IGC) in the process of the GIO Land grant implementation for verification on the basis of bi-lateral cooperation between the institutes.</p>
<p>Grassland inventory, 1: 5 000 - 1: 25 000</p>	<p>Institute of Technology and Life</p>		<p>About data availability: not available for the whole country in the required scale.</p>

<p><i>(Inspire Annex II. Land cover)</i></p>	<p>Sciences</p>		<p>Data access conditions: different data access conditions may apply depending on the type of requested information. Access to the data on the geoportal would be charged as the data would have to be prepared and put on the portal for a client.</p>
<p>Hydrographical information – water bodies (water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits): 1: 25 000, 1: 50 000 1: 50 000 <i>(Inspire Annex I. Hydrography)</i></p>	<p>National Water Management Authority (NWMA)</p>	<p>Preview of some of NWMA data is available as wms services at http://geoportal.kzgw.gov.pl</p>	<p>About data ownership: National Water Management Authority (NWMA)</p> <p>About data availability: Digital Map of Hydrographical Division of Poland is available in vector format, in 1:50 000 resolution, and consists of watersheds, catchments, rivers and lakes. In the end of 2013 the data set will be available in 1:10 000 resolution. Digital Map of Hydrographical Division of Poland has a continuous and hierarchic water network used for modelling and network analysis. Additionally, when the 1:10 000 dataset is ready, it will be available as an INSPIRE compliant web services.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen: fee is calculated on the basis of Act of July 18, 2001 - Water Law. NWMA provides the data via e-mail or on a DVD (depending on the volume of the data). Data is free for public, non-commercial purposes.</p>
	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: http://www.stat.gov.pl/bdlen</p>	<p>Head Office of Geodesy and Cartography is not owner of the hydrographical data but gathers and shares it in database of topographic objects in scale 1:10 000, among others: river network (rivers and streams, canals, drainage ditches), water surfaces (sea waters, standing waters, drain waters) – full coverage of data for whole country is planned by the end of 2013. Access can be arranged as web service.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.</p>

			<p>Other arrangements:</p> <p>Free access for Copernicus EMS (for non-commercial use) according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p> <p>Free access for the Institute of Geodesy and Cartography (IGC) via WMS view service of database of topographic objects in the process of the GIO Land grant implementation.</p>
<p>City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1: 25 000</p>			<p>About data availability: maps in digital form available through the web pages of the cities, however to confirm the accuracy and terms of use the contact with the president of the city may be required.</p> <p>Data access conditions: may vary</p> <p>Other arrangements:</p> <p>For GIO Land the data will be available for verification, according to the particular rules defined by each data owner.</p> <p>Like in the case of previous CLC projects IGC can make available city maps in analogue form for verification team of GIO Land Monitoring during in-situ verification missions.</p>
<p>Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000</p> <p><i>(Inspire Annex I. Administrative units)</i></p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: http://www.stat.gov.pl/bdlen</p>	<p>About data availability: data on administrative boundaries are gathered and shared in national register of boundaries and areas of territorial division units. The register contains data on boundaries in scale larger than 1:25 000 and areas of territorial units. The register does not contain data on population, which is gathered by Central Statistical Office (CSO Local Data Bank http://www.stat.gov.pl/bdlen)</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen.</p> <p>Other arrangements:</p>

			<p>Free access for Copernicus EMS according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p> <p>Free access for the Institute of Geodesy and Cartography (IGC) via WMS view service of database of topographic objects in the process of the GIO Land grant implementation.</p>
<p>Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): 1: 10 000, 1: 50 000</p> <p><i>(Inspire Annex I. Geographical names, Annex III. Buildings)</i></p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: http://www.stat.gov.pl/bdlen</p>	<p>About data availability: Head Office of Geodesy and Cartography gathers and shares data on buildings in database of topographic objects in scale 1:10 000 – full coverage of data for whole country is planned by the end of 2013. More detailed Attributes as type and height of buildings are voidable. More detailed attributes are maintained and shared at county level in register of land and buildings. In most cases data is in analogue version. Names of settlements are gathered in national register of geographical names.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.</p> <p>Other arrangements: Free access for Copernicus EMS (for non-commercial use) according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p> <p>Free access for the Institute of Geodesy and Cartography (IGC) via WMS view service of database of topographic objects in the process of the GIO Land grant implementation.</p>
<p>Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m</p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal:</p>	<p>About data availability: data is gathered in database of aerial and satellite imageries, orthophoto map and digital elevation model.</p>

<p><i>(Inspire Annex II: Elevation)</i></p>		<p>http://www.stat.gov.pl/bdlen</p>	<p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.</p> <p>Other arrangements: Free access for Copernicus EMS (for non-commercial use) according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p> <p>Free access for the Institute of Geodesy and Cartography (IGC) via WMS view service of database of topographic objects in the process of the GIO Land grant implementation.</p>
<p>Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X, Y Z: 6m</p> <p><i>(Inspire Annex II: Elevation)</i></p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: http://www.stat.gov.pl/bdlen</p>	<p>About data availability: data is gathered in database of aerial and satellite imageries, orthophoto map and digital elevation model.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.</p> <p>Other arrangements: Free access for the Institute of Geodesy and Cartography (IGC) via WMS view service of database of topographic objects in the process of the GIO Land grant implementation.</p>
<p>Large scale population information at administration level 3 or higher: accuracy 0,01 km² (100 m x 100 m)</p> <p><i>(Inspire Annex III. Population Distribution and</i></p>	<p>Gmina authorities</p>		<p>About data availability: more accurate data than at Statistical Office.</p> <p>Data access conditions: under local authorities.</p>

<i>demography)</i>			
<p>Transport networks (roads, railways, airports, ports): 1: 25 000, 1: 50 000</p> <p><i>(Inspire Annex I. Transport networks)</i></p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: http://www.stat.gov.pl/bdlen</p>	<p>About data availability: Head Office of Geodesy and Cartography gathers and shares data on transport, including roads, railways, airports, ports, in database of topographic objects in scale 1:10 000 – full coverage of data for whole country is planned by the end of 2013.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.</p> <p>Other arrangements: Free access for Copernicus EMS (for non-commercial use) according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.</p> <p>Free access for the Institute of Geodesy and Cartography (IGC) via WMS view service of database of topographic objects in the process of the GIO Land grant implementation.</p>
	<p>Hydrographical Office of the Polish Navy</p>		<p>About data availability: particular data are accessible on the nautical charts and electronic navigational charts.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen.</p>
<p>Orthophotos, spatial resolution better than 0.5 m</p> <p><i>(Inspire Annex II. Orthoimagery)</i></p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: http://www.stat.gov.pl/bdlen</p>	<p>About data availability: data is gathered in database of aerial and satellite imageries, orthophoto map and digital elevation model.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.</p> <p>Other arrangements: Free access for the Institute of Geodesy and Cartography (IGC) via WMS</p>

			view service of database of topographic objects in the process of the GIO Land grant implementation.
<p>Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLIF), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes</p> <p>Meteorological forecasts: wind speed, wind direction and wind location in real time</p> <p><i>(Inspire Annex III: Meteorological geographical features)</i></p>	Institute of Meteorology and Water Management	<p>Some of the information (present data for part of stations) is published on the website of the institute of Meteorology and Water Management: http://www.pogodynka.pl/polska/numeryczna/</p>	<p>About data availability: NRT and historical data are available. Much more data (also historical) is available upon request.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Standard data is free for entities performing public tasks and for research.</p>
River discharge data	Institute of Meteorology and	Central historical database	Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Standard data is free for

	Water Management – National Research Institute	Operational data published on the website, but only for the part of stations: http://www.pogodynka.pl/polska/podest http://www.pogodynka.pl/polska/hydro/odra/ http://www.pogodynka.pl/polska/hydro/rzeki/	entities performing public tasks and for research.
Bathymetric data <i>(Inspire Annex II. Elevation)</i>	Hydrographic Office of the Polish Navy (marine waters)	-	About data availability: bathymetric data are accessible on the nautical charts and electronic navigational charts. Hydrographic Office participates in the Baltic Sea Bathymetric Database working group. Work is going on to create bathymetric model as a grid - full coverage of data for whole Baltic Sea is planned in 2013. Bathymetric data will be created by Swedish Maritime Administration. In the future gridded data should be free of charge. Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen.
<i>Desirable/useful data ref GISC priorities report</i>			
Land use data: 1: 25 000, 1: 50 000 <i>(Inspire Annex III. Land use)</i>	Head Office of Geodesy and Cartography	Data is available for view through the national geoportal: www.geoportal.gov.pl	About data availability: Head Office of Geodesy and Cartography gathers and shares data on transport, including land use complexes, in database of topographic objects in scale 1:10 000 - full coverage of data for whole country is planned by the end of 2013. Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation. Other arrangements:

			Free access for Copernicus EMS (for non-commercial use) according to the terms of data supply described in the EEA-EG letter from 29 November 2012 signed by Surveyor General of Poland on 19 December 2012.
Soil data (scale 1: 100 000) <i>(Inspire Annex III. Soil)</i>	Institute of Soil Science and Plant Cultivation		About data availability: existing information was collected in 1960s, land use update is covering mid-last decade. Soil data is available on textural classes of soils and mineral classification of Polish Society of Soil Science. Available on-line under request, URL cannot be provided at the moment. Data access conditions: licence agreement, payment required.
Cadastral data (for cities with more than 100 000 inhabitants or the largest city in the region): 1 : 1 000 <i>(Inspire Annex I. Cadastral parcels)</i>	Head Office of Geodesy and Cartography		About data availability: cadastral data are maintained and shared at county level in register of land and buildings. In most cases data is in analogue version. Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen. Data is free, on demand, for entities performing public tasks according to national legislation.
(LPIS) (reference parcel with land use/ land cover information): 1: 10 000	Agency for Restructuring and Modernisation of Agriculture	Some data from LPIS is hosted by Head Office of Geodesy and Cartography and is available for view through the national geoportal: www.geoportal.gov.pl	Data access conditions: access conditions to other data than on geoportal to be clarified by ARMA when direct request is received.
Land cover data (land cover sampling data): 1: 25 000, 1: 50 000	Not identified (Head Office of Geodesy and Cartography gathers		About data availability: no sampling data available

<p><i>(Inspire Annex II. Land cover)</i></p>	<p>and shares data on transport, including land use complexes, in database of topographic objects in scale 1:10 000 – full coverage of data for whole country is planned by the end of 2013).</p>		
<p>Thematic maps (forest areas, forest species, vegetation maps, snow and ice cover, buildings, city maps, settlements, development plans, agricultural datasets/inventories, vineyards, yearly burnt areas, new forest clear-cuts, rangeland map): 1: 25 000</p>	<p>Head Office of Geodesy and Cartography</p>	<p>Data is available for view through the national geoportal: www.geoportal.gov.pl</p>	<p>About data availability: Head Office of Geodesy and Cartography prepares zoological map and hydrographical map of Poland in scale 1:50 000. Both maps cover about 60% of Poland.</p> <p>Data access conditions: for use in Copernicus programme licence agreements are required and payment is foreseen.</p>

Conclusions

As follows from the information gathered during and after the meeting, Poland has rather restrictive data access policies set in the national legislation. Separation between commercial use and public tasks in terms of data access conditions exists on national level and in case of the Copernicus programme the rules are often to be clarified (see the example of Copernicus EMS). More information on Copernicus explaining its nature and the way the data are to be used have been requested by the data providers to be able to answer the question on the data policy.

Version April 2013

Last feedback received on April 2013

Country: SWEDEN**National GMES focal point (contact details)****Manuela Notter**

Naturvårdsverket /Swedish Environmental Protection Agency

Manuela Notter, Naturvårdsverket

106 48 Stockholm

Tel. 010-698 10 00

Email address: Manuela.Notter@naturvardsverket.se**Meetings held**

- 30 November 2012 at the Swedish Environmental Protection Agency with representatives from a broad range of in-situ data owners. The purpose was to discuss the status of GMES/Copernicus and the Swedish in-situ data landscape.

Individual agreements on access to data signed with specific stakeholders yes/no: no**Key points of data access policy**

- The INSPIRE Regulation has been incorporated in to Swedish law. A Geodata Advisory Board is advising the Swedish Mapping Authority in the INSPIRE implementation process. The Swedish Geodata Portal forms the national node of INSPIRE www.geodata.se.
- A movement towards open data has begun in Sweden resulting that some of the Swedish national authorities are 100% financed by the Government and can distribute their data at delivery cost. Others, however – such as the Mapping Authority – are not on the Finance Bill and must finance its activities by licensing its data.
- The overall data policy of the Swedish Environmental Protection Agency is that data produced by the Agency is free of charge, searchable through the internet and available for download. In many cases, data specifications are only in Swedish.
- As of 1/1 2014, the Swedish Meteorological and Hydrological Institute will open up its data for free for all purposes.

Status of GIO Land grant agreement			
<ul style="list-style-type: none"> • Agreement signed. 			
<ul style="list-style-type: none"> • Status of on access to the authoritative geospatial reference data for GIO EMS Accepted. 			
Status of RDA action:			
<ul style="list-style-type: none"> • Feedback received 			
<u>In-situ data with open access to all Copernicus services (non-commercial)</u>			
In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5, SO2) (Annex III)	Swedish Environmental Protection Agency	http://www.naturvardsverket.se NRT ozone data reporting.	Free and open access for data produced by the EPA.
Surface validated measurements (CH4 (conc and fluxes) CO, CO2, NMVOC (speciated) NO, NO2, O3, PM spec, PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isoprene, PAH) (Annex III)	Swedish Environmental Protection Agency	http://www.naturvardsverket.se AQ-1: Eol (Eionet priority data flow)	Free and open access for data produced by the EPA.

Vertical atmosphere profiles (O3, NOx, CH4, CO2 sondes (O3), ground based remote sensing (NO2, PM 2.5 mass, aerosol properties) (Annex III)	Swedish Environmental Protection Agency	http://www.naturvardsverket.se	Free and open access for data produced by the EPA.
Total column greenhouse gases CO2, CH4 (Annex III)	Swedish Environmental Protection Agency	http://www.naturvardsverket.se	Free and open access for data produced by the EPA.
Wetlands inventory 1:25000 (Annex II)	Swedish Environmental Protection Agency	http://www.naturvardsverket.se	Free and open access for data produced by the EPA. National inventory of landscapes in Sweden.
Grasslands inventory 1:5 000-1:25 000 (Annex II)	Swedish University of Agricultural sciences	http://www.slu.se/sv/	Free and open access upon request. Location data not available.
Forest inventory (forest species) 1:5 000-1:25 000 (Annex II)	Swedish University of Agricultural sciences	http://www.slu.se/sv/	Free and open access upon request. Location data not available.
Aerosol optical depth (Annex III)	Swedish Meteorological and Hydrological Institute	http://www.smhi.se	SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.
Hydrographical information (NRT data about seasonal variations for disaster and affected areas)	Swedish Meteorological and Hydrological Institute	http://www.smhi.se	SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.
Daily surface temperature	Swedish	http://www.smhi.se	SMHI data policy: Open access for non-

<p>and salinity measurements from European vessels, mainly Ferrybox, integrated by NIVA</p> <p>(Annex III)</p>	<p>Meteorological and Hydrological Institute</p>	<p>www.myocean.eu</p> <p>www.seadatanet.eu</p>	<p>commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.</p>
<p>Daily surface temperature, salinity, current and seal level measurements (BOOS, NOOS)</p> <p>(Annex III)</p>	<p>Swedish Meteorological and Hydrological Institute</p>	<p>http://www.smhi.se</p> <p>www.myocean.eu</p> <p>www.seadatanet.eu</p>	<p>SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.</p>
<p>Weekly chlorophyll and oxygen measurements from European vessels, mainly Ferrybox, integrated by NIVA and NOOS</p> <p>(Annex III)</p>	<p>Swedish Meteorological and Hydrological Institute</p>	<p>http://www.smhi.se</p> <p>www.myocean.eu</p> <p>www.seadatanet.eu</p>	<p>SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.</p>
<p>Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, long wave radiation, short wave radiation, global solar radiation, sunshine duration, vapor pressure, evaporation, cloud cover</p> <p>Meteorological forecasts:</p>	<p>Swedish Meteorological and Hydrological Institute</p>	<p>http://www.smhi.se</p> <p>WMO, GTS</p>	<p>SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.</p>

wind speed, wind direction and wind location in real time (Annex III)			
River discharge data	Swedish Meteorological and Hydrological Institute	http://www.smhi.se www.efas.eu	SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.
<i>Desirable/useful data ref GISC priorities report</i>			
Conservation and protected areas 1:25 000, 1: 50 000 (Annex I)	Swedish Environmental Protection Agency	http://www.naturvardsverket.se CDDA-1: Designated areas (Eionet priority data flows)	Free and open access for data produced by the EPA.
Field data (LUCAS project principles) 2x2 km grid			
Forestry maps, 1:50 000	Swedish University of Agricultural sciences	http://www.slu.se/sv/	Free and open access upon request. Location data not available.
Land parcel information system LPIS (reference parcel with land use/land cover information) 1: 10 000	Swedish University of Agricultural sciences	http://www.slu.se/sv/	Free and open access upon request. Location data not available.
Soil data, 1:100 000 (Annex III)	Royal Swedish Academy of Agriculture and Forestry	http://www.ksla.se	Free and open access upon request. Location data not available.

UV radiation: UV index, erythermal UV, spectral UV (Annex III)	Swedish Meteorological and Hydrological Institute	http://www.smhi.se	SMHI data policy: Open access for non-commercial purposes, incl. official duty and R&D. Data will be freely and openly available for all usage as of 1/1 2014.
Emission inventory	Swedish Environmental Protection Agency	http://www.naturvardsverket.se AE-1: LRTAP data (Eionet priority data flow) AE1b: NEC data (Eionet priority data flow) AE-2: UNFCCC data (Eionet priority data flow) AE2b: EU GHG data (Eionet priority data flow)	Free and open access for data produced by the EPA.
<u>In-situ data with potential license/agreement/data policy issues</u>			
In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water bodies, rivers, lakes, watersheds, reservoirs etc.) 1:10 000, 1:50 000, 1: 250 000 (Annex I)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012. National coverage of hydrographical networks in 1:10 000 foreseen by 2018.
City maps (for cities with more than 100 000 inhabitants) 1: 25 000	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary.

Critical infrastructures (utilities – public services) (Annex III)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Administrative units (official administrative names, local names, population) 1:10 000, 1:50 000 (Annex I)	Swedish Mapping Authority	http://www.lantmateriet.se	Annual updates. Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Digital elevation model low to medium resolution, 1: 100 000, 30m - 90m, horizontal CE90: 5m-15m, vertical LE90: 4m-6m, X Y Z: 6m (Annex II)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Digital elevation model high resolution, 1:10 000 – 1:50 000, accuracy 0.5 m (Annex II)	Swedish Mapping Authority	http://www.lantmateriet.se	70% of the country covered. Full coverage by 2015. Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Built-up areas, settlement information Better than 1: 10 000 (Annex I)	Swedish Mapping Authority	http://www.lantmateriet.se	Annual updates. Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.

Settlement locations and toponyms 1:50 000 (Annex I)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Topographic maps (standard maps in digital formats compatible with national features) 1:25 000	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Transport networks (roads, airports, railways, ports) 1:10 000 (Annex I)	Swedish Mapping Authority	http://www.lantmateriet.se	Annual updates. Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Ortophotos 0.25 -1m (Annex II)	Swedish Mapping Authority	http://www.lantmateriet.se Available via Saccess http://saccess.lantmateriet.se/map_viewer?map=27&maplevelindex=0	Restricted. License necessary. Free access for users in Nordic countries.
Large scale population information at administration level 3 or higher (Annex III)	Statistics Sweden	http://www.scb.se/default_30.aspx	Grid size: 250 x 250 m inside localities and 1 x 1 km outside localities. Restricted. License necessary.
Bathymetric data	Swedish Maritime	http://www.sjofartsverket.se	Restricted by military secrecy within territorial

(Annex II)	Administration	www.geodata.se	waters. Application and permit needed. License necessary and costs may apply. Geodata web services will be published during 2013.
<i>Desirable data ref GISC priorities report</i>			
Cadastral data (for cities with more than 100 000 inhabitants) 1:1000 (Annex I)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Agriculture statistics, 2000 – 10 000 km2	Statistics Sweden	http://www.scb.se/default_30.aspx	Restricted. License necessary. (tbc)
Aerial photography spatial resolution 0.2m (Annex II)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Land cover data (land cover sampling data) 1:25 000, 1: 50 000 (Annex II)	Swedish Mapping Authority	http://www.lantmateriet.se	Restricted. License necessary. Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
Land use data and	Swedish Mapping	http://www.lantmateriet.se	Restricted. License necessary.

vegetation 1:25 000, 1: 50 000 (Annex III)	Authority		Free access for the Emergency Management service ref. EG/EEA letter signed 13/12 2012.
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Not resolved issues/identified gaps:

No information on biomass (dry), vegetation variables, zoning maps, fire data.

Conclusions

By far the most institutions in Sweden apply an open data policy and allow use for public purpose/ official duty, incl. Copernicus. The main exception is the Swedish Mapping Authority, whose restricted data policy affects quite a large number of essential as well as desirable datasets. Most of the data are consistent with the INSPIRE directive. Only few data sources are available also in Swedish.

Country: THE NETHERLANDS
National GMES focal point (contact details) Kees Schotten PBL Netherlands Environmental Assessment Agency Ant. van Leeuwenhoeklaan 9 PO box 303 Bilthoven Email address: Kees.Schotten@pbl.nl
Meetings held <ul style="list-style-type: none">18th June 2012 with representatives from the Ministry of Economy, Agriculture and Innovation, the Netherlands Space Office, PBL Netherlands Environmental Assessment Agency, Geonovum, Deltares, Rijkswaterstaat, BMT Argoss, the Dutch Maritime Institute, TNO, KNMI and other stakeholders. Status of the meeting - GISC/EEA country visit with the purpose of getting an overview of the in-situ landscape in the Netherlands.
Key points of data access policy <ul style="list-style-type: none">The Netherlands is committed to principles of data re-use and free and open data policy for public data.The re-use of data should be through available mechanisms, provided by European coordinating bodies, International arrangements, EU legislation and national structures.INSPIRE Directive should serve as framework to access in-situ data, though there is need to tackle some obstacles in relation to the mismatch in the timeframe
Individual agreements on access to data signed with specific stakeholders yes/no: no
Status of GIO Land grant agreement <ul style="list-style-type: none">Letter signed on February 2013.

Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS

- Accepted

Status of RDA action

- No feedback received

In-situ data with free* access to all GMES services (non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the Netherlands
<i>Essential data ref GISC priorities report</i>			
Aerosol optical depth	Het Koninklijk Nederlands Meteorologisch Instituut (KNMI) TNO	EBAS database at NILU http://ebas.nilu.no/ Aeronet http://aeronet.gsfc.nasa.gov/ WDCA http://www.gaw-wdca.org/ CESAR database at KNMI http://www.cesar-database.nl/Welcome.do	Contact points: peter.van.velthoven@knmi.nl mvelthoven@knmi.nl mbas.henzing@tno.nl martijn.schaap@tno.nl Sustainability issues identified by KNMI
Greenhouse gases, Greenhouse gases – total column, validated and NRT data	Het Koninklijk Nederlands Meteorologisch Instituut (KNMI) for the station in Cabauw Rijksuniversiteit Groningen for 2 stations in	CESAR database at KNMI http://www.cesar-database.nl/Welcome.do Validated data through GAW/WDCGG http://ds.data.jma.go.jp/gmd/wdogg	Contact points: mfred.bosveld@knmi.nl ma.vermeulen@ecn.nl Sustainability issues identified by KNMI

	Lutjewad		
	ECN		
Surface air quality measurements, validated and NRT data	Rijksinstituut voor Volksgezondheid en Milieu (RIVM)	<p>Eionet</p> <p>NRT: http://www.eea.europa.eu/maps/ozone/welcome</p> <p>Validated data: Airbase: http://www.eea.europa.eu/themes/air/airbase</p> <p>At national level: RIVM: http://www.lml.rivm.n</p> <p>At province level: Noord-Holland: http://www.luchtmetingen.noord-holland.nl/Default.aspx</p> <p>Noord-Brabant: http://www.brabant.nl/dossiers/dossiers-op-thema/milieu/luchtkwaliteit.aspx</p> <p>Limburg: http://luchtkwaliteit.limburg.nl/</p> <p>At regional level: Amsterdam agglomeration web based NRT AQ database: http://www.gezond.amsterdam.nl/Milieu--gezondheid/Meetnet-Luchtkwaliteit http://www.luchtmetingen.amsterdam.nl/</p> <p>Rotterdam agglomeration web based NRT AQ database: http://www.dcmr.nl/nl/wonenenmilieu/lucht/index.html, With NRT viewer at: http://www.dcmr.nl/luchtkwaliteit/index.htm</p>	<p>Contact point: daan.swart@rivm.nl</p> <p>NO2, SO2 and CO are not yet provided to EEA</p> <p>Some of the data available at province or regional levels</p> <p>Position of the Netherlands: to use Eionet as one access point</p>
Meteorological observations in	Het Koninklijk	Eumetnet	Contact point:

<p>real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLRF), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes</p> <p>Meteorological forecasts: wind speed, wind direction and wind location in real time</p>	<p>Nederlands Meteorologisch Instituut (KNMI)</p>	<p>WMO WIS: http://www.wmo.int/pages/prog/www/WIS/GISCs.html</p>	<p>mengelenv@knmi.nl</p>
<p>Emmissions</p>	<p>Het Koninklijk Nederlands Meteorologisch Instituut (KNMI)</p> <p>Rijksinstituut voor Volksgezondheid en Milieu (RIVM)</p>	<p>National Emissions Inventory: http://www.emissieregistratie.nl/ERPUBLIEK/erpub/default.en.aspx</p>	<p>Free & open access to 5x5 km only, for other scales access is limited</p>
<p>Vertical atmosphere profiles - ground based remote sensing</p>	<p>Het Koninklijk Nederlands Meteorologisch Instituut (KNMI)</p> <p>Rijksinstituut voor Volksgezondheid en Milieu (RIVM)</p>	<p>EARLINET: http://access.earlinet.org/EARLINET/</p>	<p>Contact points: arnoud.apituley@rivm.nl donovan@knmi.nl mark.allard@knmi.nl rinus.scheele@knmi.nl</p> <p>Sustainability issues identified</p>

Data from Euro-Argo programme	Het Koninklijk Nederlands Meteorologisch Instituut (KNMI)	CORIOLIS data centre: http://www.coriolis.eu.org/	
Data from DBCP programme	Het Koninklijk Nederlands Meteorologisch Instituut (KNMI)	CORIOLIS data centre: http://www.coriolis.eu.org/	
Data from NOOS	Rijkswaterstaat DELTARES	Inland and marine monitoring networks at Rijkswaterstaat: http://www.rws.nl/water/scheepvaartberichten_waterdata/actuele_waterdata/index.aspx MATROOS database at DELTARES: http://matroos.deltares.nl/ NOOS regional data centre at BSH, Germany: http://www.noos.cc/	Contact point: kees.borst@rws.nl
FERRYBOX	Rijkswaterstaat	FERRYBOX: http://www.ferrybox.com	Contact point: kees.borst@rws.nl
Administrative boundaries (official administrative names, local names, population), >1: 25 000, 1:50 000, 1: 100 000	Kadaster en Openbare Registers	Inspire geoportal Metadata http://nationalegeoregister.nl/	
Settlement locations and toponyms (official administrative names, local names, population), >1: 50 000	Kadaster en Openbare Registers	Top50Vector TMS TOP50raster WMTS TOP250raster WMTS Metadata http://nationalegeoregister.nl/	Through Inspire
Built-up area/ settlement	Kadaster en	Top50Vector TMS	Through Inspire

information (type (communication, energy, environmental barriers, transport); usage (religious building, silo, stadium, storage tank, tower, windmill)), >1: 10 000	Openbare Registers	Metadata http://nationalegeoregister.nl/	
Buildings, 1: 10 000, 1: 50 000	Kadaster en Openbare Registers	Top50Vector TMS Adressen WMS Metadata http://nationalegeoregister.nl/	Through Inspire
Transport networks: roads-railways, >1:25 000, 1: 50 000, 1: 100 000 For roads: <ul style="list-style-type: none"> • Road category (highway, dual carriage, national...) • Road name • Number of lanes • Surface type For Railways: <ul style="list-style-type: none"> • Number of tracks • Power specification (electrified, diesel) 	Kadaster en Openbare Registers Ministerie van infrastructuur en milieu (IenM)	Top50Vector TMS Nationaal Wegen Bestand WFS Nationaal Wegen Bestand Spoorwegen WFS Digitaal Topografisch Bestand (DTB) Weggeg Metadata http://nationalegeoregister.nl/	Through Inspire Nationaal Wegen Bestand (National Roads database: roads, railroads & waterways) - managed at national, provincial or local government level DTB - dry infrastructure managed by national government Rijkswaterstaat Weggeg - database with road characteristics for road management
Transport networks: airports- ports (international airport, regional, recreational), >1: 50 000	Kadaster en Openbare Registers Ministerie van	Nationaal Wegen Bestand WFS Top50Vector TMS Metadata	Through Inspire

	infrastructuur en milieu (IenM)	http://nationalegeoregister.nl/	
Critical infrastructures: utilities- public services (education, religious, industrial, military, health), >1: 50 000	Kadaster en Openbare Registers	Top50Vector TMS Metadata http://nationalegeoregister.nl/	Through Inspire
Digital Aerial Orthophotos, spatial resolution: 0.2 m	Kadaster en Openbare Registers		For use in GIO Land only (response from Annex III of the GIO Land agreement) Without leaves (winter) for topographic map. Only 'right of usage' obtained With leaves (spring) 20 cm 2010 for governmental use. Only 'right of usage' obtained
Hydrographic information – water bodies (water networks, rivers, canals, lakes, ponds, streams, reservoirs, watersheds, floodplain limits, dams), >1: 250 000, 1: 50 000, 1: 100 000	Kadaster en Openbare Registers	Top50Vector TMS Nationaal Wegen Bestand WFS Digitaal Topografisch Bestand (DTB) Watertypenkaart Metadata http://nationalegeoregister.nl/	Through Inspire
Digital elevation model – low to medium resolution, spatial resolution: 30 to 90 m		Not available in requested specifications	
Large scale population dataset	Centraal Bureau voor der Statistiek	Bevolkingskernen 2008 WFS CBS Vierkant Statistieken 100m 2010 WFS	Through Inspire

	CBS	Wijken en Buurten Gegeneraliseerd 2010 versie 2 WFS Metadata http://nationalegeoregister.nl/ Also: http://www.cbs.nl/nl-NL/menu/themas/dossiers/nederland-regionaal/cijfers/cartografische-toegang/geoviewer.htm	
National land use vector data, 1: 25 000, 1: 50 000	Kadaster en Openbare Registers Centraal Bureau voor der Statistiek CBS	Top50Vector TMS Bestand Bodemgebruik 2008 WMS Metadata http://nationalegeoregister.nl/ Land Zoning data www.ruimtelijkeplannen.nl	Through Inspire
City maps (> 100 000 inhabitants or the largest city in the region), 1: 5 000	Centraal Bureau voor der Statistiek CBS	Bevolkingskernen 2008 WFS Metadata http://nationalegeoregister.nl/	Through Inspire
National forest inventory data, 1: 5 000 – 1: 25 000	Kadaster en Openbare Registers Centraal Bureau voor der Statistiek CBS	Top50Vector TMS Bestand Bodemgebruik 2008 WMS Metadata http://nationalegeoregister.nl/	Through Inspire
National wetlands inventory data, 1: 25 000	Ministerie van Economische Zaken, Landbouw en Innovatie	Wetlands (RAMSAR)-gebieden WFS Metadata http://nationalegeoregister.nl/	Through Inspire
<i>Desirable/useful data ref GISC priorities report</i>			

UV index, Spectral UV, Erythema UV	Het Koninklijk Nederlands Meteorologisch Instituut (KNMI) Rijksinstituut voor Volksgezondheid en Milieu (RIVM)	WOUDC http://www.ec.gc.ca/air-sc-r/default.asp?lang=En&n=5E7COD28-1	Contact point: harry.slaper@rivm.nl The UV index is not archived, only UV observations
LPIS data – outline of the agricultural parcels (AAN)	Ministerie van Economische Zaken, Landbouw en Innovatie	http://geodata.nationaalgeoregister.nl/aan/atom/aan.xml	
National land cover vector data, 1: 25 000, 1: 50 000	Kadaster en Openbare Registers	Service Agrarisch Areaal Nederland (AAN) Metadata http://nationaalgeoregister.nl/	Through Inspire
Digital topographic maps (standard topographic maps in digital format compatible with national feature sets), >1: 25 000, 1: 100 000	Kadaster en Openbare Registers	Top50Vector TMS Metadata http://nationaalgeoregister.nl/	Through Inspire
Field survey data (LUCAS approach), 2 km x 2 km grid	Ministerie van Economische Zaken, Landbouw en Innovatie	Bestand Bodemgebruik 2008 WMS Metadata http://nationaalgeoregister.nl/	Through Inspire
Forestry maps, 1: 50 000	Kadaster en Openbare Registers	Top50Vector TMS Metadata http://nationaalgeoregister.nl/	Through Inspire
Protected areas, 1: 50 000	Ministerie van Economische Zaken, Landbouw en Innovatie	Nationale Parken Beschermdenatuurmonumenten Natura2000 WFS	Through Inspire

		Metadata http://nationalegeoregister.nl/	
Digital elevation model – high resolution, spatial resolution: 1 to 10 m	Ministerie van Infrastructuur en Milieu	Actueel Hoogtebestand Nederland 1 (AHN1) 1996-2000 25meter raster	Through Inspire

Not resolved issues/identified gaps in data access conditions:

1. orthophotos - this product is commercial according to the information provided by the Netherlands, however in the Annex III of the GIO Land grant agreement it is specified that the Netherlands will provide access to orthophotos for use in GIO Land – to be clarified whether the product will be provided free of charge or not.
2. DEM low to medium resolution – not available in the Netherlands.
3. City maps – the requirement has been misunderstood by the Netherlands. What is required is equivalent to touristic maps, but the data provided is about population in the cities

In-situ data with licenses issues

In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Digital Aerial Orthophotos, spatial resolution: 0.2 m	Kadaster en Openbare Registers		Commercial product Without leaves (winter) for topographic map. Only 'right of usage' obtained With leaves (spring) 20 cm 2010 for governmental use. Only 'right of usage' obtained
National land use vector data, 1: 25 000, 1: 50 000	Kadaster en Openbare Registers	LGN6: Landelijk Grondgebruik Nederland Metadata	Through Inspire

	Centraal Bureau voor der Statistiek CBS	http://nationalegeoregister.nl/	
National grasslands inventory data, 1: 5 000 – 1: 25 000	Ministerie van Economische Zaken, Landbouw en Innovatie		
<i>Desirable/useful data ref GISC priorities report</i>			
Fire data			
LPIS data – attached administrative data	Ministerie van Economische Zaken, Landbouw en Innovatie	Basisregistratie Percelen (BRP)	
National agriculture statistics	Centraal Bureau voor der Statistiek		
Soil information/maps, 1: 100 000	ALTEERRA	Bodemkaart van Nederland 1 : 250 000, 1997 Bodemkaart van Nederland 1 : 50 000 Metadata http://nationalegeoregister.nl/	Through Inspire
Hydrographical information – water levels	Rijkswaterstaat	http://www.rws.nl/water/scheepvaartberichten_waterdata/actuele_waterdata/index.aspx	Contact point: kees.borst@rws.nl
Cadastral parcels, 1: 1 000, 1: 5 000	Kadaster en Openbare Registers	Basis Registratie Kadaster (BRK) Kadastrale Kaart WMTS Metadata http://nationalegeoregister.nl/	Through Inspire
National land use statistics	Centraal Bureau voor der Statistiek	CBS website as a table Derived from CBS Bestand Bodemgebruik http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=37105&D1=a&D2=0,2,7,9,I&D3=0-	

Not resolved issues/identified gaps in data access conditions:

1. on-line access node not specified for orthophotos
2. different land cover data products are proposed – some are free, and some are commercial. At the same time in the Annex III of the GIO Land grant agreement it is specified that the Netherlands will provide full free and open access to national land cover data. It may be useful to get additional clarifications which products exactly will be provided freely and openly to all GMES services
3. no information provided on national grassland inventory, fire data, biomass (dry), river discharge data, vegetation variables: accuracy 20% for LAI, 10% for fAPAR, bathymetric data, field data (field photographs, population statistics, ..), zoning maps (delineation of functional areas): 1: 5 000, thematic maps: 1: 25 000
4. access conditions to orthophotos to LPIS data, on-line access node not specified for LPIS data
5. on-line access node not specified for national agriculture statistics
6. access conditions to hydrographic information – water levels
7. Access conditions to cadastral parcels

Version March 2013

Last feedback received on December 2012

Country: DENMARK
<p>National GMES focal point (contact details)</p> <p>Jeppes S�ndergaard Pedersen The Danish Agency for Science, Technology and Innovation Email address: jesp@fi.dk Phone: +45 72 31 82 49</p>
<p>Meetings held</p> <ul style="list-style-type: none"> • 20th June 2011 with representatives from the Danish Maritime Safety Administration, The Nature Agency, The National Geodata agency, Statistics Denmark, The Danish Meteorological Institute. This was a country visit with the purpose of getting an overview of the in-situ landscape in Denmark. • 15th December 2011 with the Geodata agency to discuss their elaboration of an agreement to use national data by EU institutions. • Telephone meetings end 2012 with the Geodata Agency about the new geodata policy of Denmark.
<p>Key points of data access policy</p> <ul style="list-style-type: none"> • The Danish Government has, from 1st of January 2013, decided to open up the national geospatial treasures, providing free access to everyone in the public sector, enterprises and the citizens. The new agreement comprises free access to data from the Danish Geodata Agency, including all Topographic data, Cadastral data and the Danish Height Model. It is an important step within the Danish eGovernment Strategy 2013-2016, and it paves the way for easier and more efficient access to the Basic data from the public sector. The opening of the access to geospatial data and information is a stepwise process, which will be fully completed by 2015.
<p>Individual agreements on access to data signed with specific stakeholders yes/no: no</p>
<p>Status of GIO Land grant agreement</p> <ul style="list-style-type: none"> • Letter signed on July 2013.

- **Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS**
Accepted.

Status of RDA action

- Feedback received

In-situ data with open access to all GMES services (non-commercial use)

In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Large scale population information at level 3 or higher	Statistics Denmark	http://www.statistikbanken.dk	Level 3 is provided by municipalities free of charge. Other levels and grid data are not free of charge
Cadastral data for cities 1:1000	Geodata Agency	http://www.geodata-info.dk	
Built-up areas/settlement geographical names	Geodata Agency	http://www.geodata-info.dk	
Aerosol optical depth 0.005m	Danish Meteorological Institute	http://aeronet.gsfc.nasa.gov/	Available through Aeronet
Surface NRT measurements (air quality)	Centre for Environment and Energy (old name DMU)	http://www.eionet.europa.eu	Available through Eionet NRT airbase
Surface validated measurements	Centre for Environment and Energy (DCE)	http://www.eionet.europa.eu	Available through Eionet airbase
Vertical atmosphere profiles (aircrafts)	Danish Meteorological Institute (DMI)	www.dmi.dk	In general data are made available according to WMO

			(res. 40) and ECOMET, however handling costs may apply
Daily surface temperature, salinity and current measurements	Danish Meteorological Institute	www.Coriolis.eu.org/Data-Services-Products/MyOcean-In-Situ-TAC	Available through MyOcean In Situ TAC
Daily sea level measurements	Danish Meteorological Institute	www.Coriolis.eu.org/Data-Services-Products/MyOcean-In-Situ-TAC	Available through MyOcean InSitu TAC
Meteorological observations real time	Danish Meteorological Institute	www.dmi.dk	In general data are made available according to WMO (res.40) and ECOMET, however handling costs may apply
River discharge – only point source discharge not river discharge to the sea	Nature Agency	www.miljoportalen.dk (Point source discharge)	Point source discharge can be obtained from Miljoportalen.dk
Grassland inventory 1:5000 – 1:25000 (Agricultural purposes)	Nature Agency Danish AgriFish Agency	www.miljoportalen.dk	The contact is the Danish AgriFish Agency for agricultural purposes
Meteorological observations and observations of melt from the Greenland ice sheet	Geological Survey of Denmark and Greenland (GEUS)	http://jupiter.geus.dk/promiceWWW/home.seam	The PROMICE project
Digital elevation model high resolution 1m – 10m	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Administrative boundaries official administrative names 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013

Digital elevation model low to medium resolution 30m – 90m	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Hydrographical information water bodies 1:25000, 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013, Except for specific hydro chart information
City maps 1:25000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Critical infrastructures utilities 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Built-up areas/settlements locations buildings 1:10000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Digital topographic maps 1:25000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Settlement locations and toponyms 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Transport networks 1:25000 – 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Ortho-imagery 0.5m	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
<i>Desirable/useful data ref GISC priorities report</i>			
Land use data 1:25000 – 1:50000	Nature Agency	www.miljoportalen.dk	If not specified, land use data will have more than one owner. Not all aspects of land use can be obtained through the Miljoportalen.dk site
Conservation and protected	Nature Agency	www.miljoportalen.dk	

areas			
Soil data 1:100000	Geological Survey of Denmark and Greenland	www.geus.dk	Available 1:200000 geological mapping
Field information from disaster affected areas 10-20m for public information and operational purposes	Danish Emergency Management Agency (DEMA)	www.brs.dk	Available on brs.dk for public information. For operational purposes information will be available through the GMES ERS service or in collaboration with the European Commission through the EC Joint Resource Centre
Emission inventory	Centre for Environment and Energy (old name DMU)	EIONET priority data flow http://www.eionet.europa.eu	
Agriculture statistics 2000 – 10000km	Statistics Denmark	http://www.statistikbanken.dk	Everything in Statistikbanken is free to use
Land cover sampling data 1:25000 – 1:50000	Nature Agency	www.miljoportalen.dk	If not specified, land cover data will have more than one owner. Not all aspects of land cover can be obtained through the Miljoportalen.dk site
UV radiation	Danish Meteorological Institute	http://www.dmi.dk	
Bathymetric data		http://www.emodnet-chemistry.eu	Available through EMODNET data portals
Landcover vector data	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013

Land use 1:25000 – 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
Land cover 1:25000 – 1:50000	Geodata agency	http://www.gst.dk	Freely available by 1/1-2013
In-situ data with license issues or other restrictions			
In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Hydrographical information water levels	Nature Agency	http://www.naturstyrelsen.dk/	Ownership in some cases shared with Geodata agency. The respective data for water levels is no longer a part of the data agreement between the Nature Agency and Miljøportalen and may therefore not be readily available here
Wetlands inventory 1:25000	Nature Agency Danish AgriFish Agency	http://www.naturstyrelsen.dk/	National map of wetlands is not publicly available. The Danish AgriFish Agency may have wetland themes in connection to reimbursement cases
Forest inventory 1:5000 – 1:25000	Nature Agency	http://www.naturstyrelsen.dk/	Not publicly available. Not a part of the Miljøportalen.dk site
Forestry maps 1:50000	Nature Agency	http://www.naturstyrelsen.dk/	Geodata agency applies an

			<p>unspecified forest cover theme to their digitally land maps. However, detailed forestry maps are not publicly available and not a part of Miljoportalen.dk</p>
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Not resolved issues/identified gaps:

In-Situ data not reported or claimed as not available: aerial imagery 0.2m, biomass, vegetation variables, land parcel information system LPIS, zoning maps, fire data, thematic maps, field data (LUCAS), land use vector data.

Conclusion (status)

By far the most of the required data are openly and freely available or will be in the coming years. A few datasets are restricted (the Nature Agency). For what concerns the non-resolved datasets, Denmark advises that due to uncertainty on exactly which data are covered by the headings above, a more detailed review of match between availability and requirements should be carried out.

Country: NORWAY

National GMES focal point (contact details)

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(GMES coordination in Norway shared between the Norwegian Space Centre and the Climate and Pollution Agency)

Meetings held

- Meeting with the Norwegian Institute for Water Research 15th of June 2010. Objective: To understand how NIVA can contribute to GMES and learn about NIVA's Ferrybox component and its potential in the framework of GMES in-situ data requirements.
- Country visit on 12th of October 2010 with the purpose of discussing possible commitment in securing sustainability of the Norwegian in-situ data capacities. Participants: Ministry of Environment, Norwegian Space Centre and the Climate and Pollution Directorate.
- Country visit/GMES workshop on 12th of January 2011 to follow-up on the meeting in October 2010. Purpose: To hold a broader workshop on GMES in-situ capacities in Norway and discuss possible commitment from Norway to secure sustainability of in-situ data provision.
- Correspondence with Norwegian Institute for Air Research during 2011 about access to data hosted by them (EMEP, ACTRIS, NRT Ozone sonde, EVDC, NDACC, WMO-GAW and InGOS).

Individual agreements on access to data signed with individual stakeholders yes/no: no

Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS

- Letter of agreement signed

Key points of data access policy

In general Norway pursues an open and free data policy.

- The National Spatial Data Infrastructure (Norway digital) has been operational since 2004, and includes most public institutions that produce or use geospatial data. Participating institutions contribute their own data as well as a membership fee which is used for further data production and maintenance. Data included in the NSDI are available to the participating institutions and can be used when they participate in European monitoring programs. Considerable amounts of the data available in the NSDI are also open and available to third parties.
- Geovekst is a formal cooperation between the largest organisations and companies purchasing detailed survey and mapping services in Norway. The participants are both public and private organizations. Through Geovekst, the participants agree on prioritizing of annual survey campaigns, pool together funds available for surveying and release joint tenders for private companies to carry out the survey projects. Due to the partly private funding involved, there is restricted access to Geovekst data. Institutions participating in the NSDI can have access to Geovekst data, and pay for this access through their annual NSDI membership fee. NSDI participants with access to Geovekst data can use the data when they participate in European land monitoring programmes, but cannot release the data for use by a third party.
- As of September 2007, all meteorological data from the Norwegian Meteorological Institute has been freely available. It has proved a huge success with very few downsides (misuse of data). Met data are now much wider used in Norwegian society, including in areas such as energy systems, manpower planning and logistics.
- There are on-going negotiations within the Norwegian government to set even more data owned by the Mapping Authority free. The data which are envisaged to be opened up include elevation data, land cover data, transport network, settlements, administrative boundaries etc.

Status of GIO Land grant agreement

The agreement was signed between EEA and the Norwegian Forest and Landscape Institute on March 2013.

Status RDA action

Feedback on the Reference Data Access survey received.

In-situ data with open access to all GMES services (non-commercial)

In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC requirements report</i>			
Large scale population information at administration level 3 or higher: accuracy 0,01 km ² (100 m x 100 m)	Statistics Norway	http://www.statkart.no	
Administrative boundaries (official administrative names, local names, population): 1:25 000, 1:50 000	Norwegian Mapping Authority	http://www.statkart.no	
Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m	Norwegian Mapping Authority	http://www.statkart.no	Not available for all areas in high resolution.
Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X,	Norwegian Mapping Authority	http://www.statkart.no	

Y Z: 6m			
Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000	Norwegian Mapping Authority	http://www.statkart.no	
Critical infrastructures (utilities – public services): 1:50 000	Norwegian Mapping Authority	http://www.statkart.no	
Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLIF), ALBEDO, sunshine duration, vapour pressure, evaporation, cloud cover, soil moisture, surface fluxes Meteorological forecasts: wind speed, wind direction and wind location in real time	Norwegian Meteorological Institute	http://met.no	
Bathymetric data	Norwegian Mapping Authority	http://www.statkart.no	
Fluvial run-off	Norwegian Water Resources and Energy Directorate (NVE)	http://www.nve.no	
Daily temperature and salinity	Compilation of all providers	www.imr.no	Not all ferry boxes available in NRT.

measurements from ferry box	available within the MyOcean II project via the Global In Situ TAC (IFREMER, France/NIVA, Norway) and the Arctic In-situ TAC portal. Arctic portal is led by IMR, Norway. BSH, Germany, is in charge of the NOOS regional portal. Continuation after MyOcean via the regional EuroGOOS portals.	www.noos.cc www.myocean.eu www.bsh.de	Link with the Arctic ROOS portal has to be established.
Daily temperature and salinity measurements from Arctic, NOOS	Compilation of all providers available within the MyOcean II project via the Arctic In situ TAC portal led by IMR, Norway. BSH, Germany, is in charge for the NOOS regional portal. Continuation after MyOcean via the regional EuroGOOS portals.	www.imr.no www.noos.cc www.myocean.eu www.bsh.de	Link with the Arctic ROOS portal has to be established.
Weekly nutrients measurements from ferry box	Compilation of all providers available within the MyOcean II project via the Global In Situ TAC (IFREMER, France/NIVA, Norway) and the Arctic In situ TAC portal. Arctic portal is led by IMR, Norway. BSH, Germany, is in charge for the NOOS regional portal. Continuation after MyOcean via the regional EuroGOOS portals.	www.imr.no www.noos.cc www.myocean.eu www.bsh.de	Only a few data available. Link with the Arctic ROOS portal has to be established.
Weekly nutrients measurements from Arctic, NOOS	Compilation of all providers available within the MyOcean II project via the Arctic In situ TAC portal led by IMR, Norway. BSH,	www.imr.no www.noos.cc www.myocean.eu www.bsh.de	Link with the Arctic ROOS portal has to be established.

	Germany, is in charge for the NOOS regional portal. Continuation after MyOcean via the regional EuroGOOS portals.		
Aerosol optical depth	Norwegian Institute for Air Research	http://ebas.nilu.no	"Fair use" data policy (described with data)
Surface NRT measurements (CO, NO, NO2, O3, PM 10, PM 2.5 SO2)	Norwegian Institute for Air Research	www.luftkvalitet.info http://ebas.nilu.no	Open access "Fair use" data policy (described with data). Data are also provided to EEA in NRT and made available by them.
Surface validated measurements (CH4 (conc.&fluxes), CO, CO2, NMVOC (speciated), NO, NO2, O3, PM spec., PM 10, PM 2.5, SO2, aerosol properties, benzene, halogen source gases, isopren, PAH)	Norwegian Institute for Air Research	http://ebas.nilu.no	"Fair use" data policy (described with data)
Total column greenhouse gases: CO2, CH4	Not measured by Norwegian institutions. Measurements in Longyearbyen by UniBremen, measurements at Harestua by UniGøteborg (Chalmers)		Norway currently do not have a measurement program for such data, but NILU provides access to such data provided by other countries through http://evdc.nilu.no and http://nadir.nilu.no/cdb
Vertical atmosphere profiles:	Only some available from Norway	http://ebas.nilu.no	"Fair use" data policy (described

aircrafts (O3,NOx, CH4, CO2) sondes (O3), ground based remote sensing (NO2, PM 2.5 mass, aerosol properties)	(Norwegian Institute for Air Research)		with data) Norway currently do not have a measurement program for most of these data, but NILU provides access to such data provided by other countries through http://ebas.nilu.no , http://evdc.nilu.no and http://nadir.nilu.no/cdb . Ozone sondes (NRT) are available via ftp://zardoz.nilu.no
<i>Useful/desirable data ref GIS requirements report</i>			
Soil data, 1: 5000	Norwegian Forest and Landscape Institute	http://kilden.skogoglandskap.no	Data available at 1:5000 scale. Only available for agricultural areas, Current (2012) coverage is approximately 43 %.
Agriculture statistics	Statistics Norway	http://www.ssb.no/english/ http://www.ssb.no/english/subjects/10/04/10/	
Conservation and protected areas 1:25 000, 1:50 000	Norwegian Directorate for Nature Management	http://english.dirnat.no/	

Land cover data: AR50 is a land cover/land use/land productivity map available for the entire country. Detailed vegetation maps are available for certain areas where surveys have been completed.	Norwegian Forest and Landscape Institute	http://kilden.skogoglandskap.no	Actually a “land resource map” but with relevant land cover components.
Forestry maps, 1:50 000	Norwegian Forest and Landscape Institute	http://kilden.skogoglandskap.no	
UV radiation: UV index, erythemat UV, spectral UV	The Norwegian Meteorological Institute	http://met.no	

In-situ data with license/agreement issues

In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC requirements report</i>			
Hydrographical information –water bodies (water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits): 1:25 000, 1:50 000	Norwegian Mapping Authority and Norwegian Water Resources and Energy Directorate and Directorate for Nature Management	Data contained via geovekst (?)	Terms to be checked, product under cost sharing scheme.
Hydrographical information (water levels – NRT data; only for disaster affected areas)	Norwegian Water Resources and Energy Directorate	http://www.nve.no/en	

Wetlands inventory, 1:25 000	Norwegian Directorate for Nature Management	http://english.dirnat.no/	
Grassland inventory, 1:5 000 - 1:25 000	Norwegian Forest and Landscape Institute	http://www.statkart.no/nor/Land/Fa/gomrader/Geovekst/	Access and licensing through Geovekst Agricultural grassland including pasture is part of the AR5 dataset from Norwegian Forest and landscape Institute
Forest inventory (forest species), scale 1:5 000 – 1:25 000		Restricted access	Restricted due to statistical considerations. Sample points must be kept secret. Statistics and summary products are available. The “forestry maps” above are generalized from Forest inventory data (combined with remote sensing) and is open access. Products available on internet. Raw data access requires special access permit.
City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1:25 000	Norwegian Mapping Authority	http://www.statkart.no	
Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): better than 1:10 000	Norwegian Mapping Authority	http://www.statkart.no	
Settlement locations and toponyms:	Norwegian Mapping Authority	http://www.statkart.no	

1:50 000			
Transport networks (roads, railways, airports, ports): 1:25 000, 1:50 000	Norwegian Mapping Authority	http://www.statkart.no	
Orthophotos, scale 0.2, 0.5 m	Norwegian Mapping Authority	http://www.statkart.no	
Biomass (dry)			The "Forest map" above includes "Volume" as a parameter – but only for forested areas.
<i>Useful/desirable data ref GISC requirements report</i>			
Cadastral data (for cities with more than 100 000 inhabitants or the largest city in the region): 1:1 000	Norwegian Mapping Authority	http://www.statkart.no	
Emission inventory	Climate and Pollution Agency Statistics Norway	Access via klif.no	
Land parcel information system (LPIS) (reference parcel with land use/ land cover information): 1: 10 000	Norwegian Forest and Landscape Institute	http://www.statkart.no/nor/Land/Fa gomrader/Geovekst/	Access and licensing through Geovekst. Products available on internet. Raw data access and detailed info on farmers requires special access permit. Access and licensing is done through Geovekst.
Aerial photography: spatial resolution 0.2 m	Norwegian Mapping Authority	http://www.statkart.no	

Fire data	Norwegian Directorate for Civil Protection (DSB)		Fire data: Any information about forest fires, i.e. places and maps of burnt areas.
Field data (LUCAS project principles): land cover, land use, landscape photos.	Norwegian Forest and Landscape Institute	Not online. Restricted access.	Partly. Norway not currently participating in LUCAS. The Norwegian survey is using the initial 18x18 km grid (not 2x2 km grid).
Land use data: 1:25 000, 1:50 000	Statistics Norway	http://www.statkart.no/Norge_digital/Engelsk/About_Norway_Digital/	Access to be confirmed. Statistics Norway plan to disseminate land use data on Norway Digital during 2013.

Conclusions (status)

Some GMES in-situ data requirements from Norway can be met through existing monitoring programmes. Agreements by data owners especially with regard to atmospheric data needed in order for NILU to grant access to use of data for GMES services.

EAA encouraged to coordinating and streamlining data flow in order to avoid duplications. At least for the marine data the EuroGOOS ROOS's should be used to coordinate and streamline the data flow.

GISC-deliverables are useful for further convincing the necessity and utility of securing the provision of in-situ data and infrastructure located in Norway.

Country: PORTUGAL**National GMES focal points (contact details)****Mário Caetano**

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Joao Romana

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Meetings held

- Country visit 18th January 2012. The meeting was held at Fundação para a Ciência e a Tecnologia and participants included representatives from key in-situ institutions. The meeting centred around explaining EEA's role in GMES (GISC and GIOLand), Portugal's views and expectations for GMES and clarifying the availability and accessibility of in-situ capacities in Portugal.

Key points of data access policy

Access to in-situ data vary from one institution to another and has been developed on a case by case basis. For some institutions, there is not yet clarity about data policy due to reorganisations or new laws to be passed. In some cases, access for GMES could be discussed and arranged, and even modified, upon special request from EEA. Other institutions can only make data available based on license agreement.

In general, there is support for the dual approach pursued by GISC, i.e. to access national data both directly and through available international mechanisms (for instance EU coordinating bodies). The INSPIRE Directive should serve as a framework for accessing in-situ data (the mismatch between GMES and INSPIRE implementation is however acknowledged).

Individual agreements on access to data signed with specific stakeholders yes/no: no			
Status of GIO Land grant agreement			
<ul style="list-style-type: none"> Letter signed on May 2013. 			
Status of the response to the letter co-signed by EEA and EuroGeographics on free access to national geospatial data for Copernicus EMS: n/a			
Status of RDA action			
<ul style="list-style-type: none"> No feedback received 			
In-situ data with open access to all GMES services (non-commercial)			
In-situ data requirement	Data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Large scale population information at administration level 3 or higher 100m x 100m Inspire Annex III	Instituto Nacional de Estatística	www.ine.pt	Full coverage and up to date.
Meteorological in situ observations (wind, air pressure, humidity, temperature, precipitation, radiation etc.) Inspire Annex III	Instituto de Meteorologia	www.meteo.pt	Full coverage and up to date.
Forest inventory (forest species) scale 1:5000-1:25000	Autoridade Florestal Nacional	www.afn.min-agricultura.pt/portal	Full coverage and up to date.

Inspire Annex II			
Critical infrastructures (renewable energy plants, wind generators, solar photovoltaic plants)	Direcção Geral de Energia e Geologia	www.lneg.pt	Open data policy tbc.
Hydrographical information (flow and water levels – NRT data about seasonal variations for disaster affected areas)	Instituto da Água	www.snirh.pt	Full coverage and up to date.
Wetlands inventory 1:25000 Mainland Portugal Inspire Annex II	Instituto da Conservação da Natureza e da Biodiversidade	www.portal.icnb.pt	Full coverage and up to date.
Administrative boundaries 1:25000, 1:100000 Mainland Portugal Inspire Annex I	Instituto Geográfico Português	www.igeo.pt	Full coverage and up to date.
Surface air quality measurements Inspire Annex III	Agencia Portuguesa do Ambiente	www.qualar.org	Full coverage and up to date. Certain restrictions on data use (downloads) concerning current year data.
<i>Desirable/useful data ref GISC priorities report</i>			
Land use information Mainland Portugal	Instituto Geográfico Português	www.igeo.pt	Full coverage outdated.

CORINE 0,1 km 1:100000 Inspire Annex III			
Land cover inventory 1:25000 Mainland Portugal Inspire Annex II	Instituto Geográfico Português	www.igeo.pt	Full coverage outdated.
Thematic maps (forest areas, species, vegetation maps, burnt areas, new forest clear.cuts) Mainland Portugal 1:25000 Madeira	Autoridade Florestal Nacional Direcção Geral de Agricultura e Desenvolvimento Rural Direcção Regional de Florestas	www.afn.min-agricultura.pt/portal www.dgadr.pt www.sra.pt/drf	Full coverage and up to date. User license fee in some cases. Full coverage and up to date.
Total column greenhouse gases Inspire Annex III	Instituto Superior de Agronomia, Universidade de Lisboa	www.isa.utl.pt	Data access policy tbc.
Conservation and protected areas 1:25000 Inspire Annex I	Instituto da Conservação da Natureza e da Biodiversidade	www.portal.icnb.pt	
UV radiation (uv index, erythemal uv, spectral uv)	Instituto de Meteorologia	www.meteo.pt	Partial coverage up to date.
Emission inventory	Agencia Portuguesa do Ambiente	www.apambiente.pt	Data access policy tbc.

In-situ data with potential license/agreement/data policy issues			
In-situ data requirement	In-situ data owner	On-line access	Comments
<i>Essential data ref GISC priorities report</i>			
Cadastral data Mainland Portugal Azores Inspire Annex I	Instituto Geográfico do Exército Dirrecção de Servicos de Cartografia	www.igeoe.pt www.ideia.azores.gov.pt	User license fee. Price for product. Partial coverage.
Critical infrastructures (airports, windmills, masts and towers)	Instituto Geográfico do Exército	www.igeoe.pt	Price for product. Full coverage and up to date.
Built-up areas/settlement information 1:25000 Mainland Portugal, Azores, Madeira Inspire Annex I	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Full coverage up to date.
Settlement locations and toponyms 1:50000 Inspire Annex I	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Full coverage up to date.

Topographic maps (administrative units, transport networks, hydrography, geographical names etc) 1:25000, Mainland Portugal, Azores Inspire Annex I	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Partial coverage up to date.
Digital elevation model, high resolution 1m – 10m Inspire Annex II	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Partial coverage up to date.
Digital elevation model, low resolution 90 m Inspire Annex II	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Partial coverage up to date.
Hydrographical information inland waters (water bodies) 1:25000 Inspire Annex I	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Partial coverage up to date.
Hydrographical information inland waters (water bodies) 1:50000 for Azores Inspire Annex I	Secretaria Regional da Ciência, Tecnologia e Equipamentos	www.ideia.azores.gov.pt	Price for product. Partial coverage up to date.
Hydrographical information (water levels, NRT data for disaster affected areas)	Instituto Geográfico Português	www.igeo.pt	Restricted (scientific). Partial coverage outdated.
Toponyms scale 1:25000, Mainland Portugal, Azores, Madeira	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Partial coverage up to date.

Transport networks (roads, railways) 1: 25000, 1:50000 Mainland Portugal, Azores, Madeira Inspire Annex I	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Partial coverage up to date.
Orthophotos scale 0.5m Mainland Portugal Inspire Annex II	Instituto Geográfico do Exército	www.igeoe.pt	Fee per use. Full coverage up to date.
Daily surface temperature and salinity and sea level measurements (IBI-ROOS) From EuroArgo programme Inspire Annex III	Instituto de Investigação das Pescas do Mar Centro de Oceanografia	www.inrb.pt/ipimar www.fc.ul.pt	Restricted access (scientific). IPIMAR is under reorganisation and will be part of a new Portuguese Oceanic and Atmosphere Institute.
Bathymetric data / miscellaneous geophysical and marine geological and oceanographic data Inspire Annex II	Laboratório Nacional de Energia e Geologia	www.lneg.pt	Restricted (scientific). Partial coverage up to date.
<i>Desirable data ref GISC priorities report</i>			
Aerial photography spatial resolution 0.2m Inspire Annex II	Instituto Geográfico Português	www.igeo.pt	Fee per use. Full coverage up to date.

Soil data 1:100000 Inspire Annex III	Direcção Geral de Agricultura e Desenvolvimento Rural	www.dgadr.pt	Price for product. Partial coverage up to date.
Land parcel information system (LPIS) Agriculture 1:10000	Instituto de Financiamento da Agricultura e Pescas	www.ifap.min-agricultura.pt	Price for product. Partial coverage up to date.

Not resolved issues/identified gaps:

Information on availability and access to the following data sets have not been received:

Zoning maps, River discharge, Vegetation variables, Grassland inventory, Field data LUCAS, Forestry maps, Agricultural statistics, Fire data, Biomass.

Conclusions

Portuguese stakeholders were eager to learn more about how GMES is going to handle national data, including what mechanisms will be in place to testify the authenticity, data integrity and quality which will be important to encourage public administrations reliance on GMES services. There is a need to define procedures for the certification of the data production within GMES. The principles of subsidiarity should be respected. And over and above all, Portugal is indeed supporting a full, free and open access to Sentinel data as well as full, free and open access to GMES services and information. GMES is a public service built with public money and shall contribute to the economic growth of the EC through inter alia the involvement of SMEs (job creation).

Information about availability and access of a number of data sets required by the GMES services is outstanding.

In some cases, data access policies need to be confirmed.

Version July 2013

Last feedback received in July 2013

Country: FRANCE
National GMES focal point (contact details) Vincent Pircher Ministry For Ecology, Sustainable Development and Energy Email address: Vincent.Pircher@developpement-durable.gouv.fr
Meetings held <ul style="list-style-type: none">• 25th January and 19th December 2011. Status of the meeting - GISC/EEA country visit with the purpose of getting an overview of the in-situ landscape in France
Individual agreements on access to data signed with specific stakeholders yes/no: no
Key points of data access policy <ul style="list-style-type: none">• Marine data are available for free. Approach with EuroGOOS was confirmed and access via regional seas data centres (ROOSs) was accepted.• Meteorological data could be accessed via EUMETNET agreement, but a further confirmation is expected from data provider.• Air quality data are free and open via Eionet data flows. A request for better reporting on use of data and better visibility of MACC products was pointed out.• Many geospatial reference data are <u>free of charge</u> for the GMES programme to integrate them in free of charge online view services. There are limitations on the availability for commercial uses of Copernicus data and information derived from geospatial reference data, the aim is that added value contributes to update geospatial reference data. Harmonised EEA - EuroGeographics agreement has been made for GIO EMS.• Meteorological information which is already exchanged between NMSs e.g. via the GTS (WMO's Global Telecom System) or the WIS (WMO's Information System) - including WMO Resolution 40 essential and additional observations - are <u>free of charge</u> for GMES services (previously known as core services), considered as public official duty users (operational phase) or research and education users (development phase). Other uses of meteorological information (e.g. downstream services and/or applications) can be considered commercial and fall under ECOMET rules.• Data from the Water Information System in France can be freely viewed and downloaded. This public data can be used, but 'BD Carthage' is not free-data for a commercial use.

- INSPIRE Directive should serve as framework to access in-situ data, though there is need to tackle obstacles in relation to the mismatch in the timeframe

Status of RDA (Reference Data Access) survey

- No response provided

Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data

- Signed in December 2012 by Institut National de l'Information géographique et forestière.

Status of GIO Land grant agreement

- Signed in December 2012 by Ministry of Ecology, Sustainable Development and Energy.

In-situ data with free* access to all GMES services (or non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Topographic maps (administrative units, transport networks, hydrography, geographical names, urban areas, etc), scale 1:25 000 <i>(Annex I: Administrative units, Annex I: Hydrography, Annex I: Geographical names, Annex I: Transport networks, Annex III: Land use)</i>	Institut national de l'information géographique et forestière (IGN)	Download services at: http://professionnels.ign.fr/bdtopo http://professionnels.ign.fr/route120#tab-3 Client viewer application: http://www.geoportail.gouv.fr/accueil under "Cartes (IGN)" View on your own website or in a GIS: https://api.ign.fr/geoportail/	free download for public use; free view Access secured for GMES Emergency Management Service through the EEA-EG agreement and the letter from IGN
Administrative boundaries (official administrative names, local names), 1: 1 000 – 1: 10 000	Institut national de l'information géographique et forestière (IGN)	Download services at: http://professionnels.ign.fr/geofla#tab-3	Distributed under open data licence

<i>(Annex I: Administrative units)</i>			
Buildings (vector data, meter accuracy)			See end notes
<i>(Inspire Annex III: Buildings)</i>			
Digital Elevation Model (grid step 25 m) <i>(Inspire Annex II: Elevation)</i>	Institut national de l'information géographique et forestière (IGN)	Download services at http://professionnels.ign.fr/bdalti View: http://www.geoportail.gouv.fr/accueil	Free download for public use; free view. Access secured for GMES Emergency Management Service through the EEA- EG agreement and the letter from IGN. under "Catalogue de données", "Thèmes INSPIRE", "Altitude", "Carte du relief" on the left side
Daily surface temperature, salinity, current, chlorophyll , oxygen and sea level measurements – French contribution (Global Ocean) from Argo (including gliders from EGO and DBCP drifters), OceanSites, GOSUD, EuroGOOS institutes (including MOON and IBI-ROOS European Vessels) <i>(Inspire Annex III: Oceanographic geographical features)</i>	Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER)	Coriolis data centre: http://www.coriolis.eu.org/Data-Services- Products/View-Download	Free and open access to registered users; data access via common portal at international data access centre – Coriolis. Agreement with EuroGOOS and SLAs with ROOS
Re-Analysed temperature and salinity measurements from Coriolis database (Global Ocean) <i>(Inspire Annex III: Oceanographic geographical features)</i>	Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER)	Aggregated product for Ocean Re-analysis and Climate studies build upon Coriolis data base re-assess by scientist http://www.coriolis.eu.org/Science/Data- and-Products/CORA2	Free and open access to registered users; data access via common portal at international data access centre – Coriolis.

<p>Surface NRT air quality measurements, research networks : O3, CO, NO, NO2, PM2.5, PM10, PM spec., CO2 (conc. & fluxes), CH4 (conc. & fluxes)</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>Institut national des sciences de l'Univers (INSU) - CNRS (Centre National de la Recherche Scientifique)</p>	<p>Ministère de l'Écologie, du Développement Durable et de l'Énergie (MEDDE)</p> <p>http://www.developpement-durable.gouv.fr/-Air,2573-</p> <p>INSU</p> <p>http://www.insu.cnrs.fr/node/4148 http://www.icare.univ-lille1.fr/drupal/</p> <p>http://icos-infrastructure-france.lsce.ipsl.fr/index.php?p=home</p> <p>http://www.actris.net/Home/tabid/4276/language/en-GB/Default.aspx http://paes.aero.obs-mip.fr</p>	<p>Contribution of France to European or international networks: AERONET [PHOTONS (french sub-network), ICOS, ACTRIS (data base in NILU) French networks: RAMCES (GES), PAES ICARE (data base for French space missions including in situ measurements for validation)</p> <p>Free access for GMES services and research only.</p>
<p>Aerosol optical depth</p> <p>(Inspire Annex III: Atmospheric conditions)</p>	<p>Centre National de la Recherche Scientifique (Photon CNRS) http://www.cnrs.fr/index.php Centre National d'Etudes Spatiales (CNES) http://www.cnes.fr</p> <p>http://loaphotons.univ-lille1.fr/</p>		<p>Free access for GMES services and research only</p>
<p>Vertical atmosphere profiles (contribution of France to global and European coverage): O3, CO2, CH4, NOx, PM2.5, PM10</p>	<p>Institut national des sciences de l'Univers (INSU) - CNRS (Centre National</p>	<p>ETHER database (INSU): http://www.pole-ether.fr/etherTypo/index.php?id=1450&L=1</p>	<p>Free access on request for database managed in ETHER Contribution of France to European or international networks: MOZAIC/IAGOS,</p>

<p><i>(Inspire Annex III: Atmospheric conditions)</i></p>	<p>de la Recherche Scientifique)</p>	<p>http://www.iagos.fr/web/ http://osur.univ-reunion.fr/observations/soere/oraure/</p>	<p>NDACC O3 profiles and integrated O3 French networks : ORAURE (SIRTA, OPGC, OMP, USTL), Next LIDAR network (Météo France).</p>
<p>Geographically-mapped information on water-related issues: water levels, water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits</p> <p><i>(Inspire Annex I: Hydrography, Inspire Annex III: Natural risk zones)</i></p>	<p>Office National de l'Eau et des Milieux Aquatiques (ONEMA)</p>	<p>http://sandre.eaufrance.fr http://www.rapportage.eaufrance.fr http://www.data.eaufrance.fr http://eionet.europa.eu/</p> <p>CCM: http://desert.jrc.ec.europa.eu/action/php/index.php?action=view&id=24</p> <p>BD Carthage: http://www.sandre.eaufrance.fr/recherche.php?itemsPerPage=50&lang=fr&recherche=bdcarthage&domaine%5B%5D=500&submit=Rechercher</p>	<p>Data from the Water Information System in France can be viewed and downloaded.</p> <p>On the EIONET website: Free access</p> <p>Data from 'BD Carthage' can be downloaded but this is not free-data for a commercial use</p>
<p>Land cover maps</p> <p><i>(Inspire Annex II. Land cover)</i></p>	<p>Ministère de l'Écologie, du Développement Durable, et de l'Énergie (MEDDE)</p>	<p>Service de l'Observation et des Statistiques Viewer client application: http://sd1878-2.sivit.org/</p> <p>Download services page: http://www.statistiques.developpement-durable.gouv.fr/donnees-ligne/t/telechargement-donnees.html?tx_ttnews[tt_news]=11263&cHash=198a579c8e605a1c967fabbd0cbc48a2</p> <p>EIONET</p>	<p>On the SOeS website : free and open access to data, with a form to fill in</p>

		Download : http://cdr.eionet.europa.eu/fr/eea/clc	
Large scale population information at administration level 3 or higher <i>(Inspire Annex III. Population distribution and demography)</i>	Institution National de la Statistique et des Études Économiques	Download service at http://www.insee.fr/fr/themes/detail.asp?reg_id=0&ref_id=donnees-carroyees Population census (administrative level): http://www.insee.fr/fr/bases-de-donnees/default.asp?page=recensements.htm	Free access
Critical infrastructures: power plants, transmission networks, water treatment plants, pipelines, bridges, hospitals, schools, fire brigade locations <i>(Inspire Annex III. Utility and governmental services)</i>	Institut national de l'information géographique et forestière (IGN)	Download services at http://professionnels.ign.fr/bdtopo View: http://www.geoportail.gouv.fr/accueil View on your own website or in GIS: https://api.ign.fr/geoportail/	Free access to download and view services for public use. Free download for public use under "Cartes (IGN)" on the left side
City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1: 25 000	Institut national de l'information géographique et forestière (IGN)	"Pyramide Plan" maps: View services available at www.geoportail.gouv.fr API at www.api.ign.fr	No download services available. Available from 15 July 2013. Free of charge for uses pertaining to public tasks and for companies developing applications for the large public.
Settlement locations and toponyms: 1:50 000 <i>(Inspire Annex I. Geographical names)</i>	Institut national de l'information géographique et forestière (IGN)	Download services at http://professionnels.ign.fr/bdtopo	Free download for public use; free view. Access secured for GMES Emergency Management Service through the EEA-EG agreement and the letter from IGN

		View: http://www.geoportail.gouv.fr/accueil View on your own website or in GIS: https://api.ign.fr/geoportail/	under “Catalogue de données”, “Thèmes INSPIRE”, “Réseaux de transport” on the left side
Transport networks (roads, railways, airports, ports): 1: 25 000, 1: 50 000 <i>(Inspire Annex I. Transport networks)</i>	Institut national de l’information géographique et forestière (IGN)	Download services at http://professionnels.ign.fr/bdtopo View: http://www.geoportail.gouv.fr/accueil View on your own website or in GIS: https://api.ign.fr/geoportail/	Free download for public use; free view. Access secured for GMES Emergency Management Service through the EEA-EG agreement and the letter from IGN. under “Catalogue de données”, “Thèmes INSPIRE”, “Réseaux de transport” on the left side
<i>Desirable/useful data ref GISC priorities report</i>			
Conservation and protected areas, scale 1: 25 000 to 1 :50 000 <i>(Inspire Annex I. Protected sites)</i> <i>(Eionet priority data flow – CDDA-1: Designated areas)</i>	Museum National d’Histoire Naturelle (MNHN)	Download services page: http://inpn.mnhn.fr/telechargement/cartes-et-information-geographique Viewer client application: http://inpn.mnhn.fr/carto/metropole EIONET Download: http://cdr.eionet.europa.eu/fr/eea/cdda1	Free access
National forest inventory data (forest species), 1: 5 000 – 1: 25 000	Institut National de l’Information Géographique et Forestière (IGN)	Download data http://inventaire-forestier.ign.fr/spip/spip.php?rubrique153 View data: http://inventaire-forestier.ign.fr/edb/query/show-query-	Donwloaded data are available free of charge for any use as well as view services.

		form/default/predefined#predefined_request	
Total column greenhouse gases: CO2, CH4 <i>(Inspire Annex III: Atmospheric conditions)</i>	Institut national des sciences de l'Univers (INSU) - CNRS (Centre National de la Recherche Scientifique)		Free access for GMES services and research only
UV radiation: UV index, erythematous UV, spectral UV <i>(Inspire Annex III: Atmospheric conditions)</i>	Institut national des sciences de l'Univers (INSU) - CNRS (Centre National de la Recherche Scientifique)	ETHER database (INSU): http://www.pole-ether.fr/etherTypo/index.php?id=1450&L=1	Free access on request for database managed in ETHER
Land parcel information system	Agence de services et de paiement	Download: http://www.data.gouv.fr (under "Registre Parcellaire Graphique") View: http://www.geoportail.gouv.fr/accueil	All Land Parcels are distributed under Open Licence "Catalogue de données"/"Thèmes INSPIRE"/"Usage des sols"/"Registre parcellaire graphique (on the left side suggestions list)
Geological maps from 1:1000000 up to 1:50000 <i>(Inspire Annex II. Geology)</i>	Bureau de Recherches Géologiques et Minières (BRGM)	http://infoterre.brgm.fr/	View only
Land use classification (CORINE)	Ministère de l'Écologie, du Développement Durable, et de l'Énergie (MEDDE)	Service de l'Observation et des Statistiques http://www.statistiques.developpement-durable.gouv.fr/donnees-ligne/t/nomenclature.html?tx_ttnews[tt_news]=11270&cHash=3ea1052d98defb77a7ed	Free access

		<p>d1866f134b27</p> <p>http://www.statistiques.developpement-durable.gouv.fr/fileadmin/documents/Produits_editoriaux/Donnees_en_ligne/Environnement/Nomenclature_details.pdf</p> <p>EIONET</p> <p>http://sia.eionet.europa.eu/CLC2000/classes</p>	
<p>Land use statistics (CORINE Land Cover and TERUTI)</p> <p><i>(Inspire Annex III. Land use)</i></p>	<p>Ministère de l'Écologie, du Développement Durable, et de l'Énergie (MEDDE)</p>	<p>CORINE Land Cover statistics</p> <p>http://www.statistiques.developpement-durable.gouv.fr/donnees-ligne/t/telechargement-donnees.html?tx_ttnews[tt_news]=11263&cHash=198a579c8e605a1c967fabbd0cbc48a2</p>	<p>Free access</p>
<p>Forestry maps: 1: 50 000</p>	<p>Institut national de l'information géographique et forestière (IGN)</p>	<p>Download services and contact for data order at:</p> <p>http://professionnels.ign.fr/bdforet</p> <p>Client viewer application:</p> <p>http://www.geoportail.gouv.fr/accueil</p> <p>"Catalogue de données", "Thèmes INSPIRE", "Occupation des terres", "Carte forestière" on the left side suggestions list</p> <p>http://www.geoportail.gouv.fr/accueil?c=1.8110007833450665,47.24078464425955&z=0.010833127048055243&l=LANDCOVER.FORESTINVENTORY.V1::GEOPORTAIL:OGC:WMTS(1)&permalink=yes%3D%3D</p>	<p>Free download for public use. Access secured for GMES Emergency Management Service through the EEA-EG agreement and the letter from IGN</p> <p>Free view services access</p>

<p>Cadastral data (for cities with more than 100 000 inhabitants or the largest city in the region): 1 : 1 000</p> <p><i>(Inspire Annex I. Cadastral parcels)</i></p>	<p>Institut national de l'information géographique et forestière (IGN)</p>	<p>Download services at http://professionnels.ign.fr/bdparcellaire</p> <p>View: http://www.geoportail.gouv.fr/accueil</p> <p>View on your own website or in GIS: https://api.ign.fr/geoportail/</p>	<p>Free download for public use; free view.</p> <p>under "parcelles cadastrales" on the left side</p>
<p>In-situ data with license issues or un-clarified data access conditions</p>			
<p>In-situ data requirement</p>	<p>In-situ data owner</p>	<p>On-line access</p>	<p>Comments by the country/GISC project</p>
<p><i>Essential data ref GISC priorities report</i></p>			
<p>Meteorological in-situ observations: wind (speed), wind (direction), air pressure, humidity, temperature, precipitation, longwave radiation, shortwave radiation; meteorological forecasts: wind speed, wind direction and wind location in real time</p> <p><i>(Inspire Annex III: Meteorological geographical features)</i></p>	<p>Meteo-France http://france.meteofrance.com/france/accueil/</p>	<p>Public data https://public.meteofrance.com/public/accueil</p>	<p>Access nodes delivered to GMES services (previously known as core services) through EUMETNET or directly by Meteo-France</p>
<p>Bathymetric data</p> <p><i>(Inspire Annex II: Elevation)</i></p>	<p>SHOM (Service Hydrographique et Océanographique de la Marine) http://www.shom.fr/</p>	<p>http://www.shom.fr/les-produits/bases-de-donnees-numeriques/bathymetrie/</p>	
<p>Wetlands inventory</p>	<p>ONEMA The French National</p>	<p>http://www.zones-humides.eaufrance.fr/</p>	

<i>(Inspire Annex II : Land cover)</i>	Agency for Water and Aquatic Environments http://www.onema.fr/		
Grasslands inventory <i>(Annex II : Land cover)</i>			See end notes
Orthophotos, scale 0.2 m, 0.5 m <i>(Inspire Annex II. Orthoimagery)</i>	Institut national de l'information géographique et forestière (IGN)	Download services at http://professionnels.ign.fr/bdortho View: http://www.geoportail.gouv.fr/accueil View on your own website or in GIS: https://api.ign.fr/geoportail/	Free download for public use; free view. Access secured for GMES Emergency Management Service through the EEA-EG agreement and the letter from IGN under "Catalogue de données", "Thèmes INSPIRE", "Ortho-imagerie" on the left side
<i>Desirable/useful data ref GISC priorities report</i>			
Emissions : contribution to global coverage <i>(Inspire Annex III: Atmospheric conditions)</i> <i>(Eionet priority data flows - AE-1: LRTAP data, AE-2: UNFCCC data, AE1b: NEC data, AE2b: EU GHG data)</i>	Institut national des sciences de l'Univers (INSU) - CNRS (Centre national de la recherche scientifique) Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique (CITEPA) Institut National de l'Environnement Industriel et des Risques	http://eccad.sedoo.fr/eccad_extract_interface/JSF/page_login.jsf;jsessionid=9822B9B14D76F91F125968DEA0C4D5BD http://www.citepa.org/fr/inventaires-etudes-et-formations/inventaires-des-emissions	

	(INERIS)		
Soil data (1: 100 000) <i>(Inspire Annex III: Soil)</i>	Institut de recherche agronomique (INRA)	Groupement d'Intérêt Scientifique sur les Sol (GIS Sol) http://www.gissol.fr/index.php	
Field data (based on TERUTI survey or any survey following LUCAS project principles): land cover, land use, landscape photos, 1 km grid <i>(Annex II: Land cover & III. Land use)</i>	Ministère de l'agriculture, de l'agroalimentaire et de la forêt Service de la Statistique et la Prospective (SSP)	http://agreste.agriculture.gouv.fr/page-d-accueil/article/donnees-en-ligne	

Not resolved issues/identified gaps:

- Data access nodes and data access policies not communicated for Biomass (dry), River discharge data, Vegetation variables: accuracy 20% for LAI, 10% for fAPAR, Grassland inventories, Buildings (vector data).

Conclusions

Version July 2013

Last feedback received on June 2013

Country: Italy
National GMES focal point (contact details) Maria dalla Costa Head, Institutional and International Relations Service ISPRA (Italian National Institute for Environmental Protection and Research) Via V. Brancati, 48 - 00144 Rome, Italy maria.dallacosta@isprambiente.it Nico Bonora Italian National Institute for Environmental Protection and Research Via V. Brancati, 48 - 00144 Rome, Italy nico.bonora@isprambiente.it
Meetings held The meetings were held on: 19 th April 2011-Bilateral meeting ISPRA and EEA 7 th October 2011- The GMES programme – Contribution of Italy to the in-situ component
Individual agreements on access to data signed with specific stakeholders yes/no: no
Key points of data access policy The Italian position to data policy within GMES is: <ul style="list-style-type: none">• “Full, Open and free of charge access. In some cases, some marginal cost when transparent and justified may be considered”, guaranteeing the full operation of the GMES services in term of continuity, reliability and security, as appropriate, of data and information and guaranteeing a wide use of the GMES services by the EU and national institutional users and service providers.

Status of RDA (Reference Data Access) survey			
<ul style="list-style-type: none"> • Not received 			
Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data			
<ul style="list-style-type: none"> • Signed by the IGM (Istituto Geografico Militare), on 29 November 2012 			
Status of GIO Land grant agreement			
<ul style="list-style-type: none"> • Signed by both parties on 28 December 2012 			
In-situ data with free* access to all GMES services (or non-commercial use)			
*registration can be required			
In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water bodies – information on water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits; scale 1: 50 000). (Inspire Annex I. Hydrography)	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)	View services: http://www.geoservices.isprambiente.it/arcgis/services/MAP/I_8_Idrografia_autorita_di_bacino/MapServer/WMSServer?request=GetCapabilities&service=WMS http://www.geoservices.isprambiente.it/arcgis/services/MAP/I_8_Idrografia_bacini_principali/MapServer/WMSServer?request=GetCapabilities&service=WMS http://www.geoservices.isprambiente.it/arcgis/services/MAP/I_8_Idrografia_bacini_secondari/MapServer/WMSServer?request=GetCapabilities&service=WMS http://www.geoservices.isprambiente.it/arcgis/services/MAP/I_8_Idrografia_nodi_reticolo_idrografic	Also available also through GEOSS

		<p>o/MapServer/WMSServer?request=GetCapabilities&service=WMS</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/8_Iidrografia_reticolo_idrografico/MapServer/WMSServer?request=GetCapabilities&service=WMS</p> <p>http://sgi1.isprambiente.it/arcgis/services/servizi/idrogeologia_italia/MapServer/WMSServer?</p> <p>Download services: http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/bacini-idrografici-principali-1-250.000/at_download/file</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/bacini-idrografici-secondari-1-250.000/at_download/file</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/reticolo-idrografico/at_download/file</p>	
<p>Critical infrastructures: power plants, transmission networks, water treatment plants, pipelines, bridges, hospitals, schools, fire brigade locations (positional accuracy: 20 m of true position) <i>Inspire Annex III. Human health and safety, Inspire Annex III. Utility and governmental services</i>)</p>	<p>Dipartimento della Protezione Civile</p>	<p>http://www.protezionecivile.gov.it/jcms/en/rischi.wp?request_locale=en</p>	

Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000 <i>(Inspire Annex I. Administrative units)</i>	ISTAT - Istituto Nazionale di Statistica	http://www3.istat.it/ambiente/cartografia/non_geralizzati/2011/prov2011.zip http://www3.istat.it/ambiente/cartografia/non_geralizzati/2011/com2011.zip http://www3.istat.it/ambiente/cartografia/non_geralizzati/2011/reg2011.zip	Also available also through GEOSS
Built-up areas/settlement information (type, usage, condition, height of buildings, number of floors, building materials): better than 1: 10 000 <i>(Inspire Annex I. Geographical names, Annex III. Buildings)</i>	Ministero dell'Ambiente (1:25.000)	http://www.pcn.minambiente.it/GN/index.php?language=en http://www.istat.it/ http://dawinci.istat.it/MD/dawinciMD.jsp	
Digital Elevation Model (high resolution): spatial resolution: 1 m - 10 m <i>(Inspire Annex II: Elevation)</i>	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)	www.mais.sinanet.isprambiente.it	Also available also through GEOSS
Large scale population information at administration level 3 or higher: accuracy 0,01 km ² (100 m x 100 m) <i>(Inspire Annex III. Population Distribution and demography)</i>	ISTAT	http://www.istat.it/ http://dawinci.istat.it/MD/dawinciMD.jsp?a1=u0GG0c0I0&a2=mG0Y8048f8&n=1UH10009OG0	
Aerosol optical depth	Consiglio Nazionale delle Ricerche (CNR)	http://www.cnr.it/sitocnr/home.html	
Surface NRT measurements (CO, NO, NO ₂ , O ₃ , PM 10, PM 2.5 SO ₂) <i>(Inspire Annex III: Atmospheric conditions)</i>	Consiglio Nazionale delle Ricerche (CNR)	http://www.cnr.it/sitocnr/home.html	Available through Eionet

<p><i>Near real time ozone data reporting</i></p>			
<p>Surface validated measurements (CH₄ (conc.&fluxes), CO, CO₂, NMVOC (speciated), NO, NO₂, O₃, PM spec., PM 10, PM 2.5, SO₂, aerosol properties, benzene, halogen source gases, isopren, PAH) <i>(Inspire Annex III: Atmospheric conditions)</i> <i>AQ-1: Eol data (Eionet priority data flow)</i></p>	<p>Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) Consiglio Nazionale delle Ricerche (CNR)</p>	<p>http://www.isprambiente.gov.it/en/databases/air-and-atmospheric-emissions http://www.cnr.it/sitocnr/home.html</p>	<p>Available through Eionet</p>
<p>Vertical atmosphere profiles: aircrafts (O₃,NO_x, CH₄, CO₂) sondes (O₃), ground based remote sensing (NO₂, PM 2.5 mass, aerosol properties) Total column greenhouse gases: CO₂, CH₄ <i>(Inspire Annex III: Atmospheric conditions)</i></p>	<p>Consiglio Nazionale delle Ricerche (CNR)</p>	<p>http://www.cnr.it/sitocnr/home.html</p>	
<p>Daily surface temperature, salinity, current, chlorophyll and oxygen measurements from Euro-Argo programme (Global Ocean) <i>(Inspire Annex III: Oceanographic geographical features)</i></p>	<p>Istituto Nazionale di Oceanografia e di Geofisica Sperimentale</p>	<p>http://argoitaly.ogs.trieste.it/</p>	<p>Available through Coriolis</p>
<p>Daily surface temperature, salinity and current measurements from GOSUD (Global Ocean)</p>	<p>Agenzia nazionale per le nuove tecnologie, l'energia e lo</p>	<p>http://www.enea.it/ http://utmea.enea.it/tirreno/index_it.php?qualeora=11&qualegiorno=04-06-2013&zona=NO&variabile=C</p>	

	sviluppo economico sostenibile (ENEA)		
Weekly chlorophyll and oxygen measurements (MOON) <i>(Inspire Annex III: Oceanographic geographical features)</i>	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale	http://www.ogs.trieste.it http://www.enea.it/ http://moon.santateresa.enea.it/ooenea.html http://e1.bo.ismar.cnr.it/perl/e1_home.pl	Available through Coriolis
Weekly current measurements from drifters (MOON) <i>(Inspire Annex III: Oceanographic geographical features)</i>	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale Consiglio Nazionale delle Ricerche (CNR)	http://www.ogs.trieste.it (http://nettuno.ogs.trieste.it/jungo/argoitaly/drifters.html) http://www.cnr.it/sitocnr/home.html	Available through Coriolis
Grassland inventory, 1: 5 000 - 1: 25 000 <i>(Inspire Annex II. Land cover)</i>	Ministero dell'Ambiente, Servizio Conservazione della Natura	http://www.minambiente.it/home_it/index.html?lang=it	
<i>Desirable/useful data ref GISC priorities report</i>			
Land use data: 1: 25 000, 1: 50 000 <i>(Inspire Annex III. Land use)</i>	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)	http://www.isprambiente.gov.it/en/databases/soil-and-territory	
Conservation and protected	Ministero	http://www.minambiente.it/home_it/index.html?lang=it	Available through Eionet

<p>areas: 1: 25 000, 1: 50 000</p> <p><i>(Inspire Annex I. Protected sites, Annex III. Habitants and biotopes)</i></p> <p><i>CDDA-1: Designated areas (Eionet priority data flow)</i></p>	<p>dell'Ambiente, Servizio Conservazione della Natura</p>	<p>ang=it</p>	
<p>Field data (LUCAS project principles): land cover, land use, landscape photos, 2x2 km grid</p> <p><i>(Inspire Annex II: Land cover)</i></p>	<p>Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)</p>	<p>http://www.isprambiente.gov.it/en/view-services:</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_1990/MapServer/WMServer?request=GetCapabilities&service=WMS</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_2000_IV_livello/MapServer/WMServer?request=GetCapabilities&service=WMS</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_2000/MapServer/WMServer?request=GetCapabilities&service=WMS</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_2006_IV_livello/MapServer/WMServer?request=GetCapabilities&service=WMS</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_2006/MapServer/WMServer?request=GetCapabilities&service=WMS</p>	<p>Also available also through GEOSS</p>

		<p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_cambiamenti_1990_2000/MapServer/WMServer?request=GetCapabilities&service=WMS</p> <p>http://www.geoservices.isprambiente.it/arcgis/services/MAP/II_2_Copertura_del_suolo_Corine_Land_Cover_cambiamenti_2000rev_2006/MapServer/WMServer?request=GetCapabilities&service=WMS</p> <p>download service</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/impianti-di-monitoraggio-ambientale/punti-di-verifica-clc/at_download/file</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-2006/at_download/file</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-cambiamenti-2000rev-2006/view</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-2006-iv-livello/at_download/file</p> <p>http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-2000/at_download/file</p>	
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		http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-cambiamenti-1990-2000/at_download/file http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-2000-iv-livello/at_download/file http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/corine-land-cover-1990/at_download/file http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/corine-land-cover/uso-suolo-1960/at_download/file	
Forestry maps, resolution 1: 50 000	Corpo Forestale dello Stato Istituto Geografico Militare Italiano	http://www.sian.it/inventarioforestale/jsp/home.jsp http://www.igmi.org/	
Soil data (scale 1: 100 000) <i>(Inspire Annex III. Soil)</i>	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) Centro Nazionale di Cartografia Pedologica	http://www.isprambiente.gov.it/en/databases/soil-and-territory http://abp.entecra.it/soilmaps/en/downloads.html	
Cadastral data (for cities with more than 100 000 inhabitants or	Agenzia del Territorio	http://www.agenziaterritorio.it/	

the largest city in the region): 1 : 1 000 <i>(Inspire Annex I. Cadastral parcels)</i>			
Field information: field photographs, population statistics, relief actors and deployment activities: accuracy 10-20 m, for disaster affected areas	ISTAT - Istituto Nazionale di Statistica	http://www.istat.it/	
Emission inventory <i>AE-1: LRTAP data (Eionet priority data flow)</i> <i>AE1b: NEC data (Eionet priority data flow)</i> <i>AE-2: UNFCCC data (Eionet priority data flow)</i> <i>AE2b: EU GHG data (Eionet priority data flow)</i>	Consiglio Nazionale delle Ricerche (CNR)	http://www.cnr.it/sitocnr/home.html	
Agriculture statistics: accuracy 2000 – 10 000 km2	ISTAT - Istituto Nazionale di Statistica	http://www.istat.it/	
Land parcel information system (LPIS) (reference parcel with land use/ land cover information): 1: 10 000	Agenzia per le Erogazioni in Agricoltura Agenzia del Territorio	http://www.agea.gov.it/portal/page/portal/AGEAP_ageGroup/HomeAGEA http://www.agenziaterritorio.gov.it/	

In-situ data with license issues or un-clarified data access conditions

In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water levels – NRT data about seasonal variations; only for disaster affected areas) <i>(Inspire Annex I. Hydrography)</i>	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)	Web Client application http://www.mareografico.it/?session=0S2961617299N85VO7579UU&syslng=ita&systemen=-1&sysind=-1&sysub=-1&sysfnt=0&code=RETE&idr=1	Full free and open use according to the Annex III of the GIO Land Grant agreement
Wetlands inventory, 1: 25 000 <i>(Inspire Annex II. Land cover)</i>	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)	http://www.geoportale.isprambiente.it/geoportale/catalog/search/resource/details.page?uuid=META_Siti_protetti	Full free and open use according to the Annex III of the GIO Land Grant agreement
Forest inventory (forest species), scale 1: 5 000 – 1: 25 000 <i>(Inspire Annex II. Land cover)</i>	Corpo Forestale dello Stato	http://www.sian.it/inventarioforestale/jsp/cartogrammi.jsp	Available for use in GIO Land according to the Annex III of the GIO Land Grant agreement
Transport networks (roads, railways, airports, ports): 1: 25 000, 1: 50 000 <i>(Inspire Annex I. Transport networks)</i>	<p>Agenzia del Territorio</p> <p>Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)</p> <p>Istituto Geografico Militare Italiano (Ports, roads, railways)</p>	<p>http://www.agenziaterritorio.it/</p> <p>Download services: http://www.sinanet.isprambiente.it/Members/maius/retidi_trasporto/porti_dati_1998_2008.zip/download http://www.sinanet.isprambiente.it/Members/maius/retidi_trasporto/Opere_portuali.zip/download</p> <p>http://www.agenziaterritorio.it/ http://www.igmi.org/</p>	<p>Full free and open use of road networks according to the Annex III of the GIO Land Grant agreement</p> <p>Available for use in GIO Land according to the Annex III of the GIO Land Grant agreement</p> <p>Full free and open use of road networks according to the Annex III of the GIO Land Grant agreement</p>

	Centro Informazioni Geotopografiche Aereonautiche (Airports)	http://www.aeronautica.difesa.it/communities/	
Orthophotos, scale 0.2, 0.5 m (<i>Inspire Annex II. Orthoimagery</i>)	Ministero dell'Ambiente	http://www.pcn.minambiente.it/	Available for use in GIO Land according to the Annex III of the GIO Land Grant agreement
City maps (for cities with more than 100 000 inhabitants or the largest city in the region): 1: 25 000	Agenzia del Territorio	http://www.agenziaterritorio.gov.it/ http://sister2.agenziaterritorio.it/Main/index.jsp http://www.igmi.org/	Full free and open use according to the Annex III of the GIO Land Grant agreement (private map resellers) Free account to do
Administrative boundaries (official administrative names, local names, population): 1: 25 000, 1: 50 000	Istituto Geografico Militare Italiano	http://www.igmi.org/	Coverage through IGM catalogue. Available to IGM - Sale Department
Settlement locations and toponyms: 1:50 000 (<i>Inspire Annex I. Geographical names</i>)	Istituto Geografico Militare Italiano (1:25.000)	http://www.igmi.org/	Available to IGM - Sale Department
Topographic maps (standard topographic maps in digital format compatible with national feature sets): 1:25 000	Istituto Geografico Militare Italiano (1:25.000-1:250.000)	http://www.igmi.org/	Full free and open use according to the Annex III of the GIO Land Grant agreement Coverage through IGM catalogue. Available to IGM - Sale Department

<p>Digital Elevation Model (low to medium resolution): spatial resolution: 30 m- 90 m; scale ~1: 100 000; accuracy: horizontal CE90: 5m - 15m; vertical LE90: 4m - 6m; X, Y Z: 6m (<i>Inspire Annex II: Elevation</i>)</p>	<p>Istituto Geografico Militare Italiano</p> <p>Centro Informazioni Geotopografiche Aereonautiche</p>	<p>http://www.igmi.org/</p> <p>http://www.aeronautica.difesa.it/communities/</p>	<p>Full free and open use according to the Annex III of the GIO Land Grant agreement</p>
<p>Orthophotos, scale 0.2, 0.5 m</p>	<p>Centro Informazioni Geotopografiche Aereonautiche</p> <p>Geographic Military Institute (only chief town province)</p>	<p>http://www.aeronautica.difesa.it/communities/</p> <p>http://www.igmi.org</p>	<p>The user has to register</p>
<p>Meteorological observations in real time: wind speed, wind direction, air pressure, humidity, air temperature, dew point temperature, land surface temperature, precipitation, longwave radiation, shortwave radiation, down-welling global solar radiation (DSSF), down-welling thermal infrared radiation (DSLIF), ALBEDO, sunshine duration, vapor pressure, evaporation, cloud cover, soil moisture, surface fluxes Meteorological forecasts: wind</p>	<p>Aeronautica Militare CNMCA Servizio Meteorologico</p>	<p>http://www.meteoam.it/</p>	<p>Available through Eumetnet</p>

speed, wind direction and wind location in real time (Inspire Annex III: Meteorological geographical features)			
NRT vertical atmospheric profile (wind direction and speed, temperature, humidity) (Inspire Annex III: Atmospheric conditions)	Aeronautica Militare – Servizio Meteorologico	www.meteoam.it	
Bathymetric data (Annex II. Elevation)	Istituto Idrografico della Marina	http://www.marina.difesa.it/conosciamoci/comandanti/scientifici/idrografico/Pagine/home.aspx	
Desirable/useful data ref GISC priorities report			
Aerial photography: spatial resolution 0.2 m (Inspire Annex II. Orthoimagery)	Centro Informazioni Geotopografiche Aeronautiche	http://www.aeronautica.difesa.it/communities/ http://www.pcn.minambiente.it	
Forestry maps, resolution 1: 50 000	Istituto Geografico Militare Italiano	http://www.igmi.org/	

Conclusions By far the most of the required data are openly and freely available or will be in the coming years.

The data policy in Italy is to:

- Give a “Full, Open and free of charge access. In some cases, some marginal cost when transparent and justified may be considered”
- Guaranteeing the full operation of the GMES services in term of continuity, reliability and security, as appropriate, of data and information.
- Guaranteeing a wide use of the GMES services by the EU and national institutional users and service providers.

Data download operations on demand on the Italian National Cartographic Portal (<http://www.pcn.minambiente.it>); it will be possible also to receive an increased data download speed by contacting directly the National Cartographic Portal Point of Contact.

Version no June 2013

Last feedback received on June 2013

Country: SPAIN
National GMES focal point (contact details) Elisa Rivera Mendoza Ministerio de Agricultura, Alimentación y Medio Ambiente Email address: eriveram@magrama.es Antonio Arozarena Deputy Director of Land Observation Instituto Geográfico Nacional Email address: aarozarena@formento.es
Meetings held 13-14 th September 2012 in Madrid and Toledo. Status of the meeting - GISC/EEA country visit with the purpose of getting an overview of the in-situ landscape in Spain, participation of Spain in GMES programme and discussing possible commitment of Spain in regards to in-situ data provision to GMES services
Key points of data access policy Access to the Spanish in-situ data required by GMES services is free and open for non-commercial use AEMET, the National Meteorological Organization is reviewing its data policy and will attempt to take into account the applicable European Legislation.
Status of RDA (Reference Data Access Survey) Response provided by Instituto Geográfico Nacional in January 2013
Status of the response to the letter co-signed by EEA and EuroGeographics on access to national geospatial data Signed in December 2012 by Instituto Geográfico Nacional

In-situ data with free* access to all GMES services (or non-commercial use)

*registration can be required

In-situ data requirement	Data owner(s)	On-line access to data (view and download)	Comments by the country/GISC project
<i>Essential data ref GISC priorities report</i>			
Hydrographical information (water bodies – information on water networks, rivers, canals, lakes, reservoirs, watersheds, floodplain limits; scale 1: 25 000) (Annex I: Hydrography, Annex III: Natural risk zones)	Ministerio de Fomento. DG Instituto Geográfico Nacional http://www.ign.es/ign/main/index.do Ministerio de Agricultura, Alimentación y Medio Ambiente. Floodplain cartography: http://sig.marm.es/snczi/visor.html?herramienta=DPHZI	SDI Spain: www.idee.es	Open for non-commercial uses
Hydrographical information (water levels – NRT data about seasonal variations; only for disaster affected areas)	Ministerio de de Agricultura, Alimentación y Medio Ambiente. Dirección General del Agua http://www.magrama.gob.es/es/es/	Hydrology Information Automatic System http://sig.marm.es/saih/	Sistema automático de información hidrológica
Wetlands inventory, scale 1:25 000 (Annex II: Land cover)	Ministerio de Agricultura, Alimentación y Medio Ambiente, Dirección General de Calidad y Evaluación Ambiental y Medio Natural	http://www.magrama.gob.es/es/biodiversidad/servicios/banco-datos-naturaleza/informacion-disponible/mapas_documentacion.asp	Under the “Real Decreto 435/2004, 12 March”. Also available throught the Ramsar Sites Database: http://ramsar.wetlands.org/Database/Se

	http://www.magrama.gob.es/es/	x#para2	archforsites/tabid/765/Default.aspx
Grasslands inventory, scale 1: 5 000 – 1: 25 000 (Annex II: Land cover)	Ministerio de Agricultura, Alimentación y Medio Ambiente. Dirección General de Desarrollo Rural y Política Forestal http://www.magrama.gob.es/es/ Ministerio de Fomento, DG Instituto Geográfico Nacional: SIOSE: National Information System on land cover & land use for Spain (land cover areas defined as vegetation – trees). http://www.ign.es/ign/main/index.do www.siose.es	Client viewer application (under other services) http://sig.magrama.es/bdn/ SIOSE website: www.siose.es SDI Spain: www.ideo.es	Mapa Forestal de España Ley 43/2003, de 21 de noviembre, de Montes. Open for non-commercial uses, permission required Open for non-commercial uses
Forest inventory (forest species), scale 1: 5 000 – 1: 25 000	Ministerio de Agricultura, Alimentación y Medio Ambiente. Dirección General de Desarrollo Rural y Política Forestal Artículo 28, Ley 43/2003, de 21 de Noviembre, de Montes. http://www.magrama.gob.es/es/	http://www.magrama.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-forestal-nacional/default.aspx	Open for non-commercial uses, permission required Data also available at the European Forest Data Center (JRC)
City maps (> 100 000 inhabitants or the largest city in the region),	Ministerio de Fomento, DG Instituto Geográfico	SIOSE website: www.siose.es	Open for non-commercial uses

scale 1: 50 000	Nacional: http://www.ign.es/ign/main/index.do	SDI Spain: www.idee.es	
Critical infrastructures: power plants, transmission networks, water treatment plants, pipelines, bridges, hospitals, schools, fire brigade locations (positional accuracy: 20 m of true position) (Annex III. Utility and governmental services)	Ministerio de Fomento, DG Instituto Geográfico Nacional: National Topographic Database: BTN25 SIOSE: National Information System on land cover & land use for Spain (land cover areas defined as infrastructures – only those detected according to SIOSE technical specifications). http://www.ign.es/ign/main/index.do	SIOSE website: www.siose.es SDI Spain: www.idee.es	Open for non-commercial uses.
Administrative boundaries, scale 1: 5 000 – 1: 25 000, 1: 100 000 (Annex I. Administrative units)	Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do	SIOSE website: www.siose.es SDI Spain: www.idee.es	Open for non-commercial uses.
Built-up areas/settlements, scale 1: 25 000 (Annex I. Geographical names)	Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do SIOSE: National Information System on land cover & land use for Spain (land cover areas defined as urban fabric). http://www.ign.es/ign/main/index.do www.siose.es	SIOSE website: www.siose.es SDI Spain: www.idee.es http://siu.vivienda.es/portal/	Open for non-commercial uses.

	Ministerio de Fomento, Dirección Gral. de Suelo y Políticas Urbanas Sistema de Información Urbana (SIU)		
Settlement locations and toponyms, scale 1:5 000 - 1:500 000 (Annex I. Geographical names)	Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do Ministerio de Fomento, Dirección Gral. de Suelo y Políticas Urbanas Sistema de Información Urbana (SIU)	SDI Spain: www.idee.es http://siu.vivienda.es/portal/	Open for non-commercial uses.
Topographic maps (administrative units, transport networks, hydrography, geographical names, urban areas, etc), scale 1:25 000 (Annex I: Administrative units, Annex I: Hydrography, Annex I: Geographical names, Annex I: Transport networks, Annex III: Land use)	Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do	SDI Spain: www.idee.es	Open for non-commercial uses
Topographic maps, scale 1: 10 000	Spanish Regional Mapping Agencies (Comunidades Autónomas)	SDI Spain: www.idee.es	Open for non-commercial uses.

<p>Digital Elevation Model (high resolution: 1 m2 - 25 m2)</p> <p>(Annex II: Elevation)</p>	<p>Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do</p> <p>National Plan for Aerial Orthophotography (PNOA)</p>	<p>IBERPIX viewer: http://www.ign.es/iberpix/visoriberpix/visorign.html</p> <p>SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses</p>
<p>Digital Elevation Model (low resolution 90 m: 8100 m2 (90 m x 90 m), X, Y CE90: 15 m, Z: 6 m)</p> <p>(Annex II: Elevation)</p>	<p>Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do</p> <p>National Plan for Aerial Orthophotography (PNOA)</p>	<p>IBERPIX viewer: http://www.ign.es/iberpix/visoriberpix/visorign.html</p> <p>SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses</p>
<p>Digital Elevation Model (low resolution 90 m: 8100 m2 (90 m x 90 m), X, Y CE90: 15 m, Z: 6 m)</p> <p>(Annex II: Elevation)</p>	<p>Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do</p> <p>National Plan for Aerial Orthophotography (PNOA)</p>	<p>IBERPIX viewer: http://www.ign.es/iberpix/visoriberpix/visorign.html</p> <p>SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses.</p>
<p>Key infrastructures: ports, scale 1: 100 000</p> <p>(Annex I. Transport networks)</p>	<p>Ministerio de Fomento Puertos del Estado, http://www.puertos.es/</p> <p>Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do</p> <p>National Topographic Database: BTN25</p> <p>SIOSE: National Information</p>	<p>http://www.puertos.es/</p> <p>SIOSE website: www.siose.es</p> <p>SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses.</p> <p>System on land cover & land use for Spain (land cover areas defined as infrastructures – only those detected according to SIOSE technical specifications). http://www.ign.es/ign/main/index.do</p>

<p>Key infrastructures: airports, positional accuracy: 20 m of true position</p> <p>(Annex I. Transport networks)</p>	<p>Ministerio de Fomento, AENA http://www.aena.es/csee/Satellite/Home</p>	<p>SIOSE website: www.siose.es SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses.</p>
<p>Transport networks: roads, scales: large 1:5 000 - 1:25 000 medium 1:25 000 - 1:80 000 small 1:80 000 - 1:250 000</p> <p>(Annex I. Transport networks)</p>	<p>Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do National Topographic Databases: BTN25, BTN200</p> <p>Ministerio de Fomento, DG Carreteras</p>	<p>SIOSE website: www.siose.es SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses.</p>
<p>Transport networks: railways, scale 1: 50 000</p> <p>(Annex I. Transport networks)</p>	<p>Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do National Topographic Databases: BTN25</p> <p>Ministerio de Fomento, DG Carreteras</p>	<p>SIOSE website: www.siose.es SDI Spain: www.idee.es</p>	<p>Open for non-commercial uses.</p>
<p>Large scale population information at administration level 3 or higher (accuracy 0,01 km² (100 m x 100 m))</p> <p>(Annex III. Population Distribution and demography)</p>	<p>Instituto Nacional de Estadística http://www.ine.es/</p>		
<p>Orthophotos, scale 0.25 m, 0.5 m</p>	<p>Ministerio de Fomento,</p>	<p>IBERPIX viewer:</p>	<p>Open for non-commercial uses.</p>

(Annex II. Orthoimagery)	DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/index.do National Plan for Aerial Orthophotography (PNOA)	http://www.ign.es/iberpix/visoriberpix/visorign.html SDI Spain: www.idee.es	
Aerosol optical depth	Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas http://www.ciemat.es/ Ministerio de Ciencia e Innovación, Consejo Superior de Investigaciones Científicas http://www.csic.es/web/guest/home Agencia Estatal de Meteorología CIMEL Observations	EBAS database at NILU http://ebas.nilu.no/Default.aspx http://aeronet.gsfc.nasa.gov/new_web/data_usage.html	Open data
Surface air quality measurements (validated data and NRT data)	Agencia Estatal de Meteorología Observations GAW/EMEP Network Background pollution: Graphics http://www.aemet.es/es/portal/web/eltiempo/observacion/contaminacionfondo Data http://www.aemet.es/es/servidor-datos/acceso-datos/listado-contenidos/detalles/contaminacion	Both NRT and validated data are available through the EEA EIONET web site.	NRT data obtained at Regional level Data validation centralised at federal level www.magrama.gob.es/es

	Air Quality forecast: http://www.aemet.es/es/eltempo/prediccion/calidad_del_aire		
Meteorological in-situ observations: wind (speed), wind (direction), air pressure, humidity, temperature, precipitation, longwave radiation, shortwave radiation; meteorological forecasts: wind speed, wind direction and wind location in real time (Annex III: Meteorological geographical features)	Agencia Estatal de Meteorología Observations: Graphics http://www.aemet.es/es/eltempo/observacion Data http://www.aemet.es/es/servidor-datos/acceso-datos/listado-contenidos Forecasts: http://www.aemet.es/es/eltempo/prediccion/municipios		Data available through EUMETNET (open)
Daily temperature, salinity, current, chlorophyll and oxygen measurements from EuroArgo (Global ocean)	Instituto Español de Oceanografía http://www.ieo.es/index.htm	Coriolis data centre http://www.coriolis.eu.org/	
Daily temperature, salinity, sea level, weekly chlorophyll and oxygen measurements from IBI-ROOS	Instituto Español de Oceanografía http://www.ieo.es/index.htm	IBI-ROOS data portal http://www.ibi-roos.eu/Access-to-data/The-IBI-Portal	
<i>Desirable/useful data ref GISC priorities report</i>			
Aerial photography	Ministerio de Fomento, DG Instituto Geográfico Nacional: http://www.ign.es/ign/main/in	SDI Spain: www.idee.es	Open for non-commercial uses.

	dex.do National Plan for Aerial Orthophotography (PNOA),		
Field data (LUCAS project principles): land cover, land use, landscape photos, 1 km grid (Annex II: Land cover)	Ministerio de Fomento, DG Instituto Geográfico Nacional: <a href="http://www.ign.es/ign/main/in
dex.do">http://www.ign.es/ign/main/in dex.do	www.siose.es SDI Spain: www.idee.es <a href="http://www.magrama.gob.es/es/biodi
versidad/temas/inventarios-
nacionales/inventario-forestal-
nacional/default.aspx">http://www.magrama.gob.es/es/biodi versidad/temas/inventarios- nacionales/inventario-forestal- nacional/default.aspx	SIOSE: National Information System on land cover & land use for Spain: Field verification database (field photos, minimum 16 points for each MTN25 unit) Ministerio de Medio Ambiente y Medio Rural y Marino Survey on surfaces and crop production (ESYRCE) Inventario Forestal Nacional (IFN) from 1997, on 10 year bases. Open for non-commercial uses.
Land use information (CORINE; accuracy 0.1 km ² (100 m x100 m, X, Y CE90: 20 m) (Annex III. Land use)	Ministerio de Fomento, DG Instituto Geográfico Nacional: Corine Land Cover Spain (1990, 2000, 2006)	SDI Spain: www.idee.es	Open for non-commercial uses.
Conservation and protected areas, scale 1: 50 000 (Annex I. Protected sites)	Ministerio de Agricultura, Alimentación y Medio Ambiente Dirección General de Calidad y Evaluación Ambiental y Medio Natural. <a href="http://www.magrama.gob.es/e
s/">http://www.magrama.gob.es/e s/	European level: Natura 2000: CNTRYES.mdb Natural Protected Areas: CDDA.mdb International Level The Ramsar Sites Database: <a href="http://ramsar.wetlands.org/Database/
Searchforsites/tabid/765/Default.aspx">http://ramsar.wetlands.org/Database/ Searchforsites/tabid/765/Default.aspx	

		<p>National level: http://www.magrama.gob.es/es/biodiversidad/servicios/banco-datos-naturaleza/informacion-disponible/mapa_cartografia_espacios_nat.aspx</p> <p>Client viewer application at http://sig.magrama.es/bdn/</p>	<p>Inventario Español de Espacios naturales Protegidos, Natura 2000 Network and international protected areas (Law 42/2007 13 December Biodiversity National Heritage</p> <p>Free access to the national catalogue via WMS services.</p>
<p>Forestry maps: forest type, resolution 1: 50 000 (Annex II: Land cover)</p>	<p>Ministerio de Agricultura, Alimentación y Medio Ambiente. Dirección General de Desarrollo Rural y Política Forestal http://www.marm.es/es/</p>	<p>Forest map for Spain Client viewer application (under other services) http://sig.magrama.es/bdn/</p>	<p>National Forest Map Article 28, Law43/2003, 21 November</p>
<p>Soil data (scale 1: 100 000) (Annex III. Soil)</p>	<p>Ministerio de Agricultura, Alimentación y Medio Ambiente Dirección General de Desarrollo Rural y Política Forestal. Inventario Nacional de Erosión del Suelo. http://www.magrama.gob.es/es/</p>	<p>Data on soil and erosion Client viewer application (under other services) http://sig.magrama.es/bdn/</p>	<p>Open for non-commercial uses, permission required Law 43/2003 21 November</p>
<p>Geological maps (1:100 000) (Annex II. Geology)</p>	<p>Instituto Geológico y Minero de España http://www.igme.es/internet/default.asp</p>		<p>Open for non-commercial uses Also available through EuroGeoSurveys at http://www.onegeology.org/</p>
<p>Total column greenhouse gases: CO2, CH4</p>	<p>Fundación Centro de Estudios Ambientales del Mediterráneo</p>		

	http://www.ceam.es/		
Emission inventory (Annex III: Statistical units)	Subdirección General de Calidad del Aire y Medio Ambiente Industrial, Ministerio de Agricultura, Alimentación y Medio Ambiente http://www.magrama.gob.es/es/es/		
Land parcel information system (LPIS) (reference parcel with land use/ land cover information)	Fondo Español de Garantía Agraria (FEGA) (Collaboration with the Departments of Agriculture in regional governments) http://www.fega.es/PwfGcp/es/		
Land use statistics (land use sampling data) (Annex III. Land use)	Instituto Nacional de Estadística http://www.ine.es/		
Thematic maps (forest areas, forest species, vegetation maps, snow and ice cover, buildings, city maps, settlements, development plans, agricultural datasets/inventories, vineyards, yearly burnt areas, new forest clear-cuts, rangeland map, Mineral extraction and dump sites) (Annex III: Agricultural and	Ministerio de Agricultura, Alimentación y Medio Ambiente. Dirección General de Desarrollo Rural y Política Forestal	Client viewer application (under other services): http://sig.magrama.es/bdn/	Forest map: Open for non-commercial uses, permission required National yearly burnt areas database: free, but permission required. Data also included in European Forest Fire Information System (EFFIS)

aquaculture facilities, Annex III: Area management/ restriction/ regulation zones & reporting units, Annex III: Buildings, Annex III: Utility and governmental services)			
UV radiation: UV index, erythemal UV, spectral UV	Agencia Estatal de Meteorología	<p>Graphics: http://www.aemet.es/es/el tiempo/ob_servacion/radiacion/radiacion</p> <p>Data http://www.aemet.es/es/servicios climaticos/datosclimatologicos/atlas_radiacion_solar</p> <p>UV radiation forecasts at: http://www.aemet.es/es/el tiempo/pr ediccion/radiacionuv</p>	Open AEMET is working as far as possible to assure a high quality monitoring data for total ozone column, ozone sondes, solar radiation, UVB radiation, aerosols and background pollution
In-situ data with license issues or un-clarified data access conditions			
In-situ data requirement	In-situ data owner	On-line access	Comments by the country/GISC project
<i>Desirable/useful data ref GISC priorities report</i>			
Cadastral data: for cities with more than 100 000 inhabitants or the largest city in the region (Annex I. Cadastral parcels)	Dirección General del Catastro http://www.catastro.minhac.es/	Cadastral parcels, Addresses and buildings available upon registration	Personal data (name of owner and value): Citizens have open, free-of-charge access to all NON protected data. Public administrations as European Commission, after registering, have access to all levels of data, including

			protected data, but exclusively for de performance of their competences. Some addresses also available through the EC project EURADIN (European Addresses Infrastructure).
Land cover inventory (land cover sampling data), scale 1: 25 000 (Annex II. Land cover)	Ministerio de Agricultura, Alimentación y Medio Ambiente SIOSE website: www.siose.es SDI Spain: www.ideo.es	Client viewer application: http://sig.magrama.es/bdn/	forest, grassland, wetlands inventories SIOSE: National Information System on land cover & land use for Spain (Open for non-commercial uses, permission required)

Not resolved issues/identified gaps in data access conditions:

- Hydrographical information – water levels
- Large scale population information at administration level 3 or higher
- Soil data
- Emission inventory
- Land parcel information system (LPIS)
- Land use statistics (land use sampling data)