



INSPIRE

Infrastructure for Spatial Information in Europe

MIG temporary sub-group on Extension of Download Service Technical Guidelines for Web Coverage Services (WCS) – Terms of Reference

| | |
|----------------------|---|
| Title | MIG temporary sub-group on Extension of Download Service Technical Guidelines for Web Coverage Services (WCS) – Terms of Reference |
| Creator | Michael Lutz |
| Date created | 2015-03-25 |
| Date modified | 2015-05-18 |
| Subject | Terms of reference (ToR) for the temporary MIG sub-group on Extension of Download Service Technical Guidelines for Web Coverage Services (WCS) |
| Publisher | EC and EEA INSPIRE Team |
| Type | Text |
| Description | This document contains the terms of reference (ToR) for the temporary MIG sub-group on Extension of Download Service Technical Guidelines for Web Coverage Services (WCS). It is based on ToR of the “Commission expert group on INSPIRE Implementation and Maintenance” (MIG). The sub-group addressed task MIWP-7b endorsed in the rolling INSPIRE maintenance and implementation work programme. |
| Contributor | |
| Format | PDF |
| Identifier | http://inspire.ec.europa.eu/mig/tor/miwp-7b |
| Language | En |
| Status | Final |

Preface

According to Art. 7(4) of the INSPIRE MIG's terms of reference¹, *"in agreement with the Commission services, the permanent INSPIRE MIG sub-groups may set up temporary sub-groups to examine specific questions on the basis of terms of reference defined by the permanent INSPIRE MIG sub-groups. Such temporary sub-groups shall be disbanded as soon as their mandate is fulfilled. In particular, sub-groups shall be tasked to work on specific issues related to the maintenance or implementation of INSPIRE."*

This document describes the background for setting up such a temporary MIG subgroup on <topic> and sets out its terms of reference.

The terms of reference are based on a common document template for temporary MIG sub-groups. Boilerplate text from the common template is highlighted in grey.

Background

Many INSPIRE spatial data themes (orthoimagery, elevation, geology, atmospheric conditions/meteorological geographical features, oceanographic geographical features, soil, land cover, natural risk zones, energy resources) include data that, according to the INSPIRE data specifications, have to be made available as coverages. The 'Habitats and Biotopes' and Environmental Monitoring Facilities' specifications mention that the use of coverage model should be considered once mature implementations appear.

Other data specifications such as 'Sea Regions' whilst not mandating data should be provided as coverages, would benefit from consideration within these guidelines.

The current TG for download services are based on Atom feeds (for pre-defined dataset download services) and WFS 2.0 (for pre-defined dataset and direct access download services). While coverage data can also be provided using Atom feeds or WFS, these options are not well suited for many coverage datasets, because single coverages are often several GB or even TB in size and users are typically only interested in some sub-set of the data, e.g. as defined by

- a user-defined bounding box or time period (trimming)
- queries that reduce the dimension of the result coverage (slicing), e.g. extracting a temperature surface at a certain depth from a 3D ocean temperature coverage

The MIG workshop on WCS-based INSPIRE download services on 14-15 October 2014 demonstrated that all operations required by the Download Service IRs can be mapped to the WCS 2.0 standard, and that using a WCS for providing coverage data provides a number of benefits and opportunities (depending on the supported WCS extensions), e.g.

- Data provision of model results (e.g. surfaces and grids) or multi-dimensional or multi-variable data through services
- Advanced download

¹ <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=2958>

- Queries based on filters that are not trimming and slicing, e.g. corridor selection (calculate the exposure to air pollution along a route or the air temperature along flight corridors) or a time slice of meteorological data.
- (Server-side) advanced analyses (directly accessing the data), e.g. statistical analyses, interpolation between point values, aggregations (e.g. means, min/max, exceedances, etc.), time series analyses
- Downloading data for visualisation purposes
 - an image coverage as-is
 - using interpolation of point clouds
 - using reclassification of range values
 - using styling as defined by the user
 - selecting a style provided by the server

The workshop also illustrated that further guidelines or best practices are needed for how to provide harmonised INSPIRE coverage data through the WCS. Such guidelines should revisit and, if required, propose updates to the encoding guidelines currently included in the data specifications.

In the INSPIRE maintenance and implementation work programme, it has been proposed to develop such guidelines as part of action MIWP-7b.

This document proposes terms of reference for this sub-group.

Terms of reference for the temporary MIG sub-group on <topic>

Article 1

Set up of the temporary MIG sub-group on Download services for coverage data

The temporary MIG sub-group on Download services for coverage data, hereinafter referred to as “the temporary sub-group”, is set up as a temporary sub-group of the Commission expert group on INSPIRE Implementation and Maintenance (INSPIRE MIG), in accordance with Art. 7(4) of the INSPIRE MIG’s terms of reference.

Article 2

Scope, tasks and outcomes

1. The scope of the sub-group shall be to propose an update to INSPIRE Technical Guidelines for setting up download services using WCS 2.0 and, if necessary, for the provision of coverage data in conformance with the INSPIRE data models. Guidelines for view services for coverages and the development of Abstract or Executable Test Suites (ATS/ETS) are out of scope.
2. The tasks of the temporary sub-group shall be:
 - a. Propose and coordinate with the MIG any update of the Technical Guidance document for INSPIRE download services to include options for direct access and pre-defined download services based on WCS 2.0
 - b. If necessary, propose and coordinate with the MIG technical guidelines (or updates to existing technical guidelines) for the provision of coverage data in conformance with the INSPIRE data models using a WCS (including data encoding).
 - c. Document the current state-of-play of WCS 2.0 solutions (servers and clients) and solutions based on the deprecated WCS standard versions.
 - d. Demonstrate the feasibility of the proposed guidelines by
 - i. implementing the INSPIRE extensions in at least one open source WCS 2.0 solution,
 - ii. using this open source solution to deploy sample coverage data sets from several INSPIRE spatial data themes
 - iii. demonstrating interoperability of the deployed data and services with (different) client applications, including the INSPIRE geoportal
 - e. Establish a web space and maintain an issue tracker for questions related to the establishment of INSPIRE download services for coverage data.
 - f. If necessary, propose and coordinate with the MIG technical guidelines (or updates to existing technical guidelines) for the provision of coverage data in conformance with the INSPIRE data models using a WCS (including data encoding).
3. The temporary sub-group shall produce the following outcomes / deliverables:
 - a. Updated Technical Guidelines for Download Services to include WCS
 - b. Technical Guidelines (or updates to existing technical guidelines) for the provision of coverage data in conformance with the INSPIRE data models using a WCS
 - c. Open Source INSPIRE compliant WCS 2.0 implementation(s) based on existing mature WCS 2.0 software
 - d. Analysis of the impacts (e.g. costs) of implementing the updated Technical Guidelines

Article 3

Planned duration, effort and criteria for completion of work

1. The temporary sub-group is expected to be active from 2015-05-01 to 2016-06-30.
2. Members of the temporary sub-group are expected to contribute to the work with an effort of around 2 days per month.
3. The work will be considered completed and the temporary sub-group will be disbanded when
 - a. The proposed technical guidelines are endorsed by the MIG-T and MIG-P.

Article 4

Membership – Appointment

1. The members of the temporary sub-group shall be selected by the INSPIRE MIG permanent sub-groups, in agreement with the Commission, from the INSPIRE pool of experts² and the representatives of the INSPIRE MIG permanent sub-groups.
2. The members of the temporary sub-group shall be selected, following a call for participation, based on
 - a. proposals of experts by the members of the MIG permanent sub-groups, and
 - b. applications of experts included in the pool of experts or the MIG permanent sub-groups.
3. The members of the temporary sub-group should have expertise in one or several of the following areas:
 - a. INSPIRE download services Technical Guidelines and Implementing Rules
 - b. The OGC Web Coverage Service 2.0 specification
 - c. Setting up and/or using WCS 2.0 services
 - d. Development of WCS 2.0 solutions (clients, servers)
 - e. Data specifications for one or several of the coverage-related INSPIRE themes (orthoimagery, elevation, geology, atmospheric conditions/meteorological geographical features, oceanographic geographical features, soil, land cover, natural risk zones, energy resources)
 - f. Coverage data management
4. When selecting members for the temporary sub-group, the INSPIRE MIG should aim at striking a balance within the temporary sub-group in terms of representativeness of members, gender and geographical origin.
5. The Commission may invite experts from outside the pool of experts with specific competence in a subject on the agenda to participate in the work of a temporary sub-group on an *ad hoc* basis. In addition, the Commission's representative may give observer status to individuals, organisations as defined in Rule 8(3) of the horizontal rules on expert groups and candidate countries.
6. Members of the temporary sub-group are appointed for the duration needed to complete the planned work (see Article 3).
7. Members of the temporary sub-group who are no longer capable of contributing effectively to the work or who resign may be replaced.
8. If necessary during the course of its work (e.g. because specific expertise is missing), the temporary sub-group may request additional experts to be selected by the MIG.
9. Personal data shall be collected, processed and published in accordance with Regulation (EC) No 45/2001.

² The pool of experts has been set up according to Art. 10 of the MIG's terms of reference. See <http://inspire.ec.europa.eu/index.cfm/pageid/5160/list/experts> for the current members of the pool of experts.

Article 5

Operation

1. The INSPIRE MIG shall appoint a facilitator from among the members of the sub-group. The facilitator shall chair the temporary sub-group and liaise with the MIG.
2. The sub-group shall regularly inform the MIG about its progress and can request guidance from the MIG when needed.
3. Secretarial services shall be provided by the National Land Survey of Finland.
4. Members of the temporary sub-groups, as well as invited experts and observers, shall comply with the obligations of professional secrecy laid down by the Treaties and their implementing rules, as well as with the Commission's rules on security regarding the protection of EU classified information, laid down in the Annex to Commission Decision of 29 November 2001 amending its internal Rules of Procedure 2001/844/EC, ECSC, Euratom. Should they fail to respect these obligations, the Commission may take all appropriate measures.
5. In order to cut down costs and commitments, the meetings of the temporary sub-group should, where possible, be organised virtually (i.e. using tele-, video- or web-conferencing facilities).
6. Commission officials with an interest in the proceedings may attend meetings of the temporary sub-group.
7. The physical and intellectual products generated by the members of the temporary sub-group under these terms of reference will remain the property of the Commission. Any published deliverable or paper will acknowledge the authorship and other contributions of the members of the temporary sub-group. Such deliverables or papers will be made available in accordance with the European Commission Decision of 12 December 2011 on re-use of Commission documents, without restrictions on access and re-use for commercial and non-commercial purposes.

Article 6

Expert remuneration and meeting expenses

1. Participants in the activities of the temporary sub-groups shall not be remunerated for the services they render.
2. Travel and subsistence expenses incurred by participants in the activities of the temporary sub-group shall be reimbursed by the Commission in accordance with the provisions in force within the Commission.

Article 7

Tasks supported through funding

1. A Technical Guidelines editor will be supported through funding made available by the Joint Research Centre (JRC).
2. Software development of INSPIRE/WCS open source solutions will be supported through funding made available by the UK Department for Environment Food & Rural Affairs (Defra) and the Horizon 2020 EarthServer 2 project.