

INSPIRE CONFERENCE 2018  
Workshop/Seminar proposal

TITLE DETAILS

Workshop title: **Coverages Hands-On: Datacubes at Your Fingertips**

Workshop length: 90 mins

Workshop type: Hackathon

Expected number of participants: 30

WORKSHOP FACILITATOR DETAILS

Name: Peter Baumann, Vlad Merticariu

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WORKSHOP DESCRIPTION INCLUDING LEARNING OBJECTIVES

By 2020, Member States must provide INSPIRE compliant data sets in the scope of Annexes II and III of the Directive. In many of the INSPIRE themes, raster data play a central role, such as Elevation, Land cover, Orthoimagery, Geology (from Annex II), and Soil, Land use, Natural risk zones, Environmental Monitoring Facilities, Atmospheric conditions, Meteorological geographical features, Oceanographic geographical features, Energy resources, Species Distribution (from Annex III).

Coverages, as standardized by OGC and ISO, have been adopted by INSPIRE as the unifying paradigm for spatio-temporal sensor, image (timeseries), simulation, and statistics data – often today summarized as “datacubes”. In parallel to this data model, the Web Coverage Service (WCS) suite, with its Web Coverage Processing Service (WCPS) datacube analytics language, provides a rich and flexible service environment.

In this combined tutorial and hackathon, participants get introduced to the concepts of coverages and serving them through WCS and WCPS, illustrated through a series of live demos and followed by detail, hands-on work. Goal is to address the full workflow, from coverage ingestion through servicing.

Participants coming with their own laptop can send requests to the sample service established for this hackathon to recapitulate demo requests shown, modifying them, and writing own requests. They will even be able to build and upload their

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own coverages to this server for subsequent retrieval. As such, the hackathon is mainly targeted to INSPIRE implementers.

Ample time will be dedicated to interaction and discussion. Notably, own work (“hacking”) is not required for benefitting from this workshop – ample explanations, real-life demonstrations, etc. will also be instructive for spectators.

This workshop constitutes a unique opportunity to practice handling of coverage data and services by the INSPIRE community at large, focusing on the key issues encountered by stakeholders. It is intended as the hands-on complement to the conceptual, strategic discussion in the parallel submission “Practicing INSPIRE coverages”.

**Specific learning objectives:**

- Understand the core of coverage data and services.
- Understand the concept of datacubes, and how this relates to coverages.
- Be able to phrase simple and advanced requests following the WCS and WCPS standards.
- Be able to transform existing raster data sets into coverages.
- Be able to upload a coverage to a WCS based on the WCS-T standard.
- Share experiences and knowledge with other participants.

**WORKSHOP REQUIREMENTS**

AV requirements: Projection and speaker system facilities, together with at least one portable microphone to let attendees to participate in the discussion. Decent Internet connection for presenter and audience.

**Participants prerequisites:**

- Basic understanding of Web services (in particular: GET requests)
- Basic understanding of geo raster data (such as ortho imagery)
- Optional: A laptop with a standards-conformant Web browser (best: Firefox, Chrome)

**Instructions for participants:**

- Make sure to check the webinars and further information provided on <http://myogc.org/go/coveragesDWG> (see “Educational material”).
- Collect questions within their organizations for discussion and clarification.

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- Bring along a (not too big) raster data file (which should be well understood by the participant) for producing their own coverage.
- A laptop is necessary only if participants want to do hands-on coverage work.

#### DETAILED WORKSHOP AGENDA

- **Welcome**
- **Introduction to the coverage data structure**  
domain + range + range type + metadata; coordinate systems; encoding; etc.
- **Introduction to WCS and WCPS**  
how to send requests, request structure, etc.
- **Retrieving coverages**  
Subsetting, processing, filtering, fusion, and visualization on sample 1D/2D/3D/4D coverages provided on the hackathon server, using various clients (including Google diagramming, OpenLayers, NASA WorldWind virtual globe)
- **Building and serving my own coverage**  
setting up a coverage on the laptop, uploading it to the service based on the OGC WCS-T standard, and performing requests on it.
- **Discussion and Wrap-up**  
Feedback by the participants.

#### PROMOTING PARTICIPATION

The presenter is engaged in a variety of professional networks, and will use these for distribution: OGC, ISO, IEEE, and others.

Further, he is strongly connected via social networks, altogether reaching 468,000 named users currently.

Finally, international project networks will be used, such as EarthServer, BigDataCube, LandSupport, etc.