INSPIRE
Invoke *Spatial Data Services* Service

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INSPIRE Invoke Service

content:

1. Legal requirements
2. Proposed understanding
3. Technologies to invoke
4. Scope of an Implementing Rule?!
5. Roadmap for an Implementing Rule?!

…and these are all first thoughts & visions...!?!
Legal Requirements

INSPIRE Directive, Article 11(e)

… services allowing spatial data services to be invoked. Those services shall take into account relevant user requirements and shall be easy to use, available to the public and accessible via the Internet or any other appropriate means of telecommunication. …

- Thus, take closer look into & develop a common understanding for:
  1. why an invoke service
  2. spatial data services
  3. publicly available & accessible via Internet
  4. invoke services
Proposed Understanding
1. Why an *invoke SDS service* - Initial thoughts

- To allow the interoperable usage of all the available *Spatial Data Services*
- By specifying well defined means on how to interoperably invoke (a workflow on) *Spatial Data Services* and finally serve the required spatial information
- As a basis for an SDI not only allowing *web map mashups* but also *geoprocessing mashups*
- Clearly this needs well defined *Spatial Data Services*...
Proposed Understanding

2. Spatial Data Services

- Spatial Data Services ?!
  - Metadata IR lists (all) possible SD categories

100 Geographic human interaction services (humanInteractionService)
This category comprises the following subcategories:

200 Geographic model/information management service (infoManagementService)
This category comprises the following subcategories:

201 Feature access service (infoAccessService)
Service that provides a client with the ability to access geographic features. This service may include the ability to search, browse, and download data.

202 Map access service (infoMapAccessService)
Service that provides a client with the ability to access map-level data.

203 Coverage access service (infoCoverageAccessService)
Service that provides a client with the ability to access coverage-level data.

300 Geographic workflow/task management services (taskManagementService)
This category comprises the following subcategories:

301 Chain definition service (chainDefinitionService)
Service to define a chain and to enable it to be executed by the workflow engine.

302 Workflow enactment service (workflowEnactmentService)
This category comprises the following subcategories:

400 Geographic processing services – spatial (spatialProcessingService)
This category comprises the following subcategories:

401 Coordinate conversion service (spatialCoordinateConversionService)
Service to change coordinates from one coordinate system to another coordinate system with the same datum.
Proposed Understanding
2. Spatial Data Services

- Requirements on Spatial Data Services:
  1. need to be well described & discoverable, currently we may lack
     - a set of well defined service types
       (and related service type registries)?
     - WSDL-profiles or similar
       additional to current MD IR to support invocation?!
     - registries to browse service types
       (i.e. service interface descriptions)?
  - Related question:
    are current discovery services usable as service
    registries (i.e. service instances)?
Proposed Understanding
2. Spatial Data Services

- Requirements on Spatial Data Services:
  1. need to be well described & discoverable
     - ...
  2. need to be machine-invokable
     - technically accessible
       - also if linked with a e-commerce-service or similar
     - support a specific communication pattern
       - synchronous or asynchronous
       - push or pull
       - state(fullness) of the provided spatial data sets
       - ...
     - how to deal with data flows…?!
Proposed Understanding
3. publicly available & accessible via Internet

- Following the principles as defined in the INSPIRE NS Architecture 3.0:
  - following SOA principles
    - services have a well defined interface
  - spatial data services and invoke services understood as (being accessible as) web services
Proposed Understanding
4. Invoke Service

- Clearly any client application could act as an ‘invoke spatial data services’ mechanism…
- …but, an Implementing Rule should reduce to specify an *invoke spatial data services* service:
Technologies to invoke

- WSDL & SOAP to describe service capabilities
  - partly lacks 'spatial awareness'
  - not yet fully supported

- OGC WPS as an interface to an invoke service
  - a very (!) generic approach
  - lacks partly rigidity (e.g. to describe ‘stored data’)
  - does not yet tackle the data flow problem
  - could be linked with BPEL to describe the specific workflows

- But: All these approaches seem to lack a level of maturity which would qualify for an operational usage
Possible Scope of an Implementing Rule

- An example of a possible service interface:

```
An example of a possible service interface:
+ describeInvokeService()
+ InvokeSpatialDataServices(in workflow)
+ ExecuteInvocation()
```

Additional rules on:
- Service Quality (SLA)
- Communication Patterns
- Links to Spatial Data Specifications as Description of Parameters
- (Formal) Description of workflows
Roadmap for an Implementing Rule?!

- Required for drafting of an Invoke Service IR
  - draft IR on Spatial Data Services
  - common understanding on ‘invoke‘
  - partly matured technology
  - …

- A possible Roadmap?
  - common understanding on ‘invoke‘: Mid 2011
  - first draft on an IR: End 2011
  - technical guidance: Mid-End 2012
  - Implementation from 201X onwards….
Thanks!

Find related resources under: http://inspire.jrc.ec.europa.eu/

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http://tu-dresden.de/fg/hgeo/gis
Proposed Understanding
1. Spatial Data Services

Spatial Data Services & Network Services:

- **Follow INSPIRE legal constraints (service quality, well defined interfaces,...)**
- **Network Services**
  - **View Service**
  - **Discovery Service**
  - **Download Service**
  - **Transformation Service**
  - **Invoke SDS Service**

**SD a superset of NS ?!?**
**NS to comply (specific) additional requirements !!**