



INSPIRE Technical Services and Data Model

How can InGeoClouds help you ?



Our (geo)scientific data... Simplify the sharing and the reuse

G8 summit released the Open Data charter in summer :

Policy paper

G8 Open Data Charter and Technical Annex

Published 18 June 2013

Contents

1. Principle 1: Open Data by Default
2. Principle 2: Quality and Quantity
3. Principle 3: Usable by All
4. Principle 4: Releasing Data for Improved Governance
5. Principle 5: Releasing Data for Innovation
6. Technical annex



Our (geo)scientific data... Simplify the sharing and the reuse

- the “open data” context :
 - Aarhus convention for the environmental information
 - European law on the re-use of public sector information (revision of 2013)
 - Neelie Kroes (Vice-President of the European Commission responsible for the Digital Agenda) : « **Opening up Scientific Data** » (march 2013)
- **And INSPIRE**, the infrastructure for spatial information in Europe to support Community environmental policies, and policies or activities [...] on the environment



InGeoCloudS
Inspired GEOdata CLOUD Services

INSPIRE : A infrastructure for Environmental information

- A infrastructure for :
 - **Discovery** public datasets
 - **View** data via Web
 - **Download** data
 - Develop thematic services (**invoke**)
- A collection of **themes** (34) in regard of public policies in the environment field
- Definition and publication of **common Implementing Rules**
 - Metadata
 - Services
 - Data model
 - Reporting
 - Sharing rules (IP)



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INSPIRE themes

ANNEX I

1 Coordinate reference systems

2 Geographical grid systems

3 Geographical names

4 Administrative units

5 Addresses

6 Cadastral parcels

7 Transport networks

8 Hydrography

9 Protected sites

ANNEX II

1 Elevation

2 Land cover

3 Orthoimagery

4 Geology

ANNEX III

1 Statistical units

2 Buildings

3 Soil

4 Land use

5 Human health and safety

6 Utility and governmental services

7 Environmental monitoring Facilities

8 Production and industrial facilities

9 Agricultural and aquaculture facilities

10 Population distribution and demography

11 Area management / restriction / regulation zones & reporting units

12 Natural risk zones

13 Atmospheric conditions

14 Meteorological geographical features

15 Oceanographic geographical features

16 Sea regions

17 Bio-geographical regions

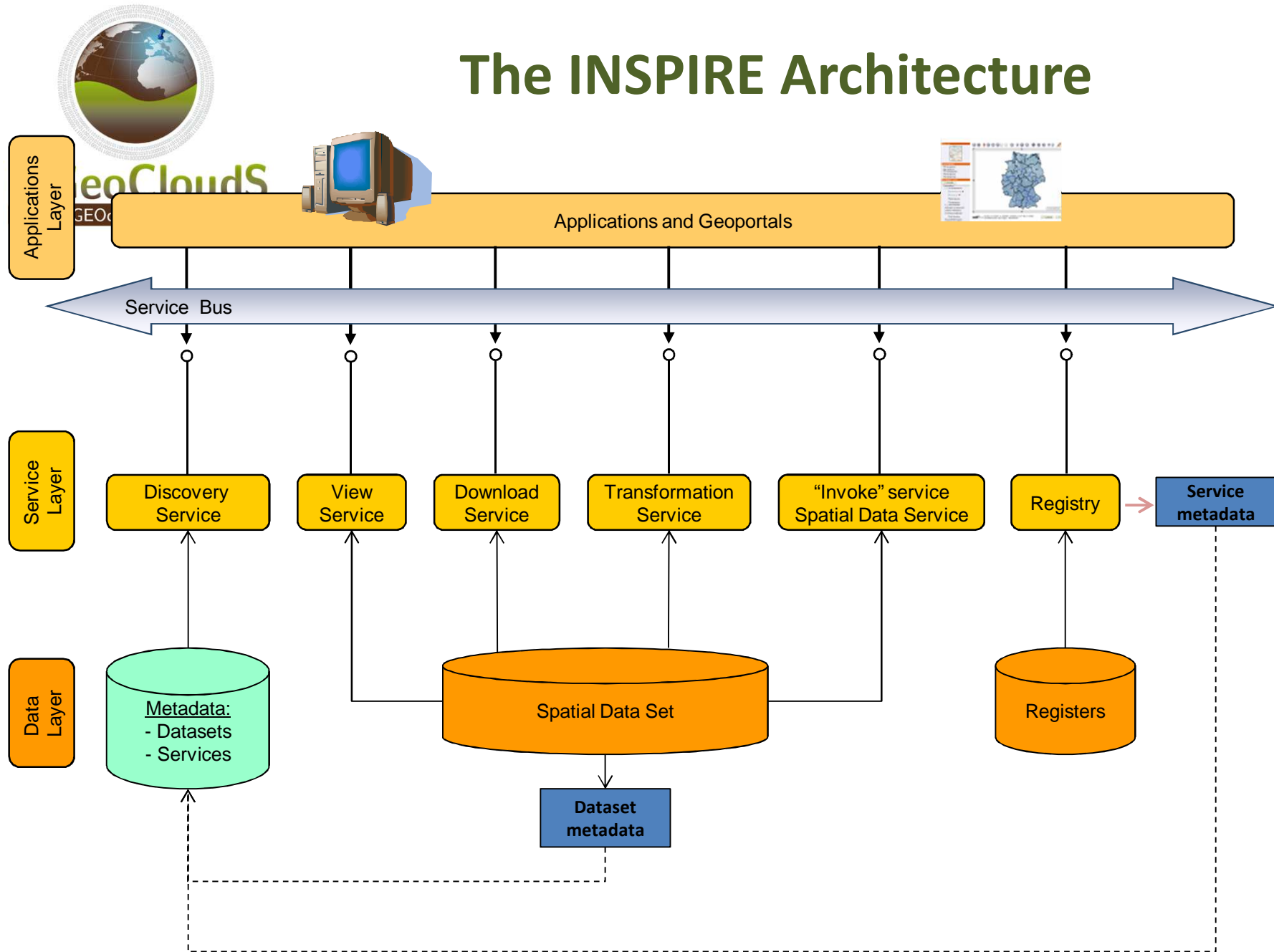
18 Habitats and biotopes

19 Species distribution

20 Energy Resources

21 Mineral Resources

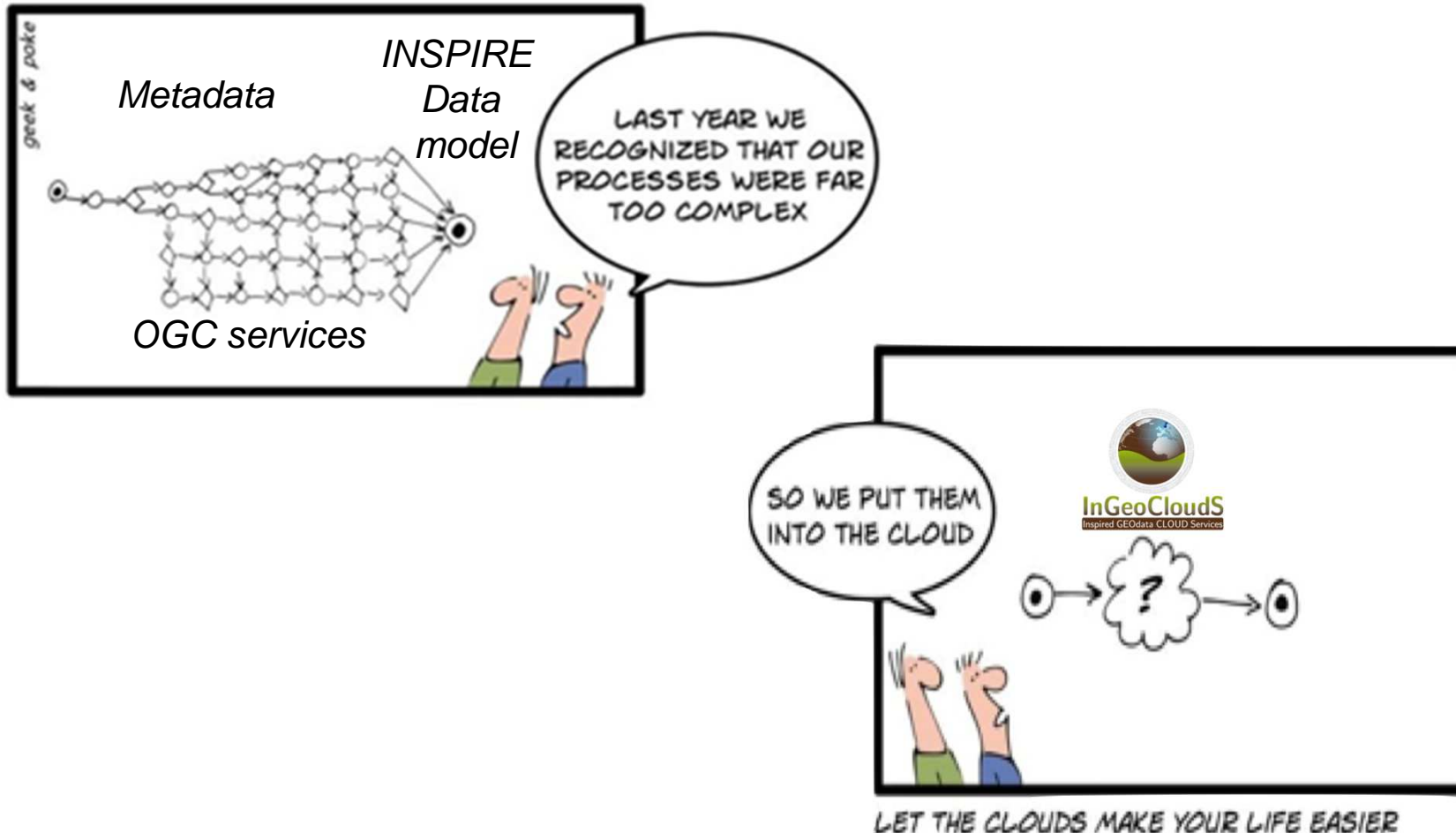
The INSPIRE Architecture



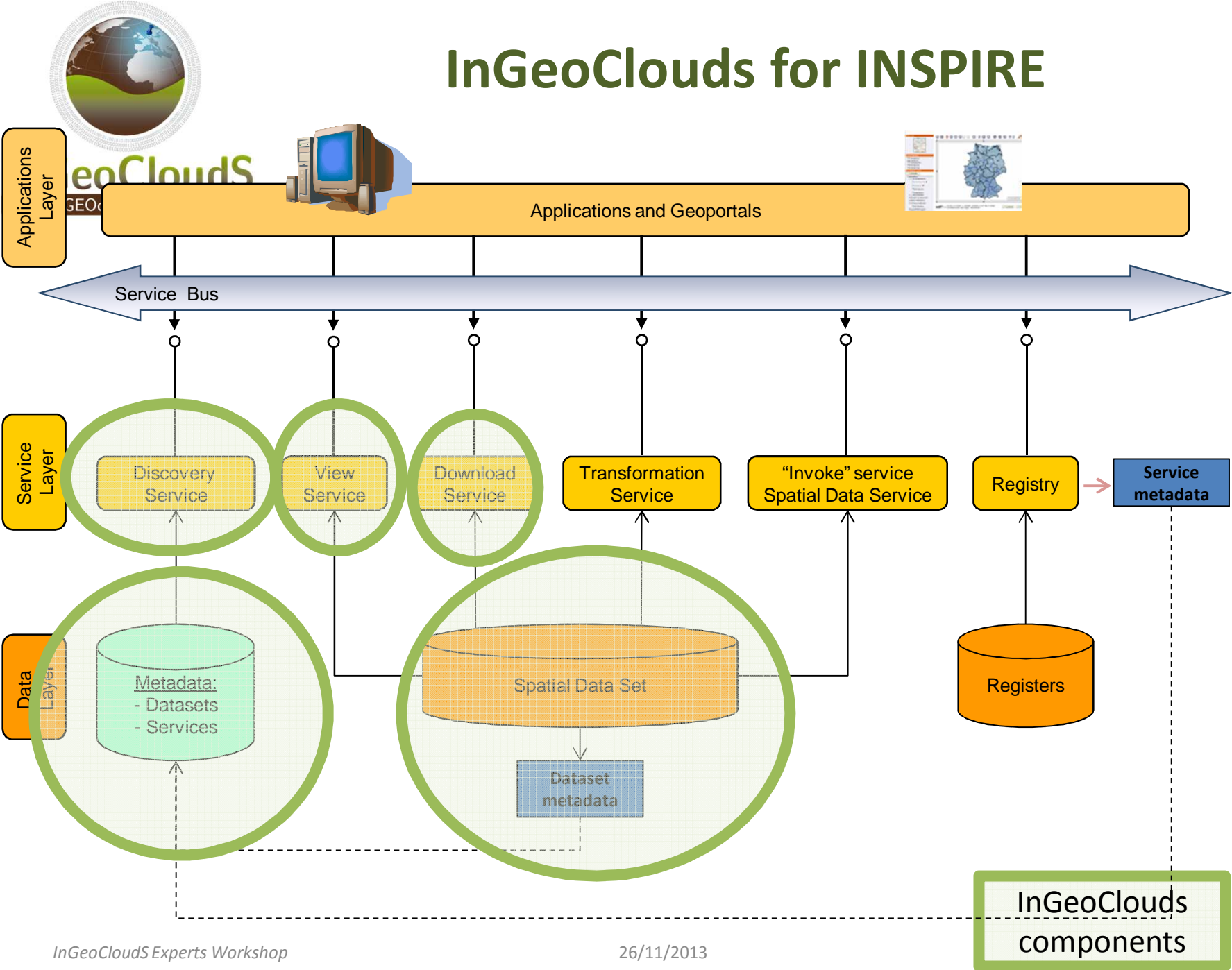


InGeoClouds for scientific publication

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InGeoClouds for INSPIRE





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InGeoClouds: Internet infrastructure

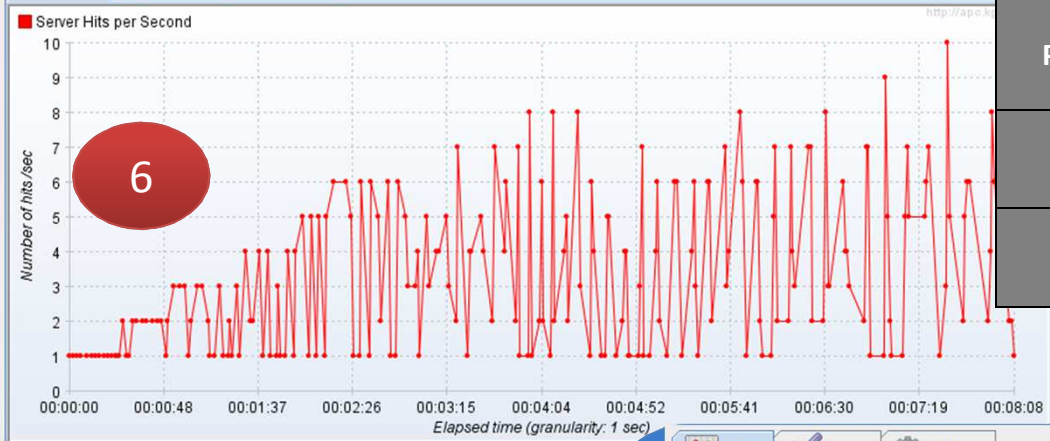
- IGC provides a **Internet** infrastructure open on the Web
- IGC is a **scalable** and **sustainable** infrastructure as required by INSPIRE network services rules



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Inspired GEO data CLOUD Services

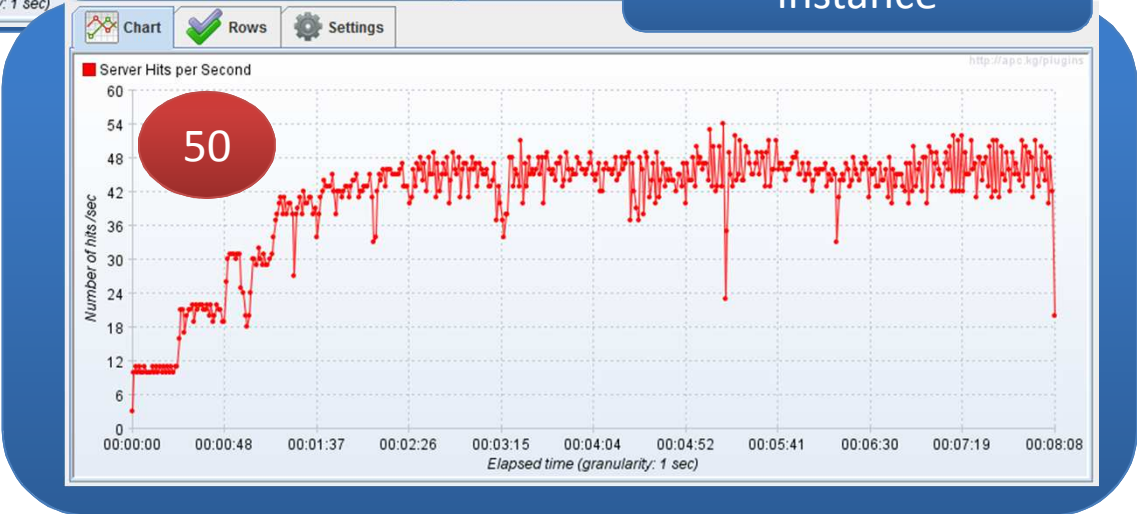
Example with the number of requests with a WMS GetMap

Small Amazon instance



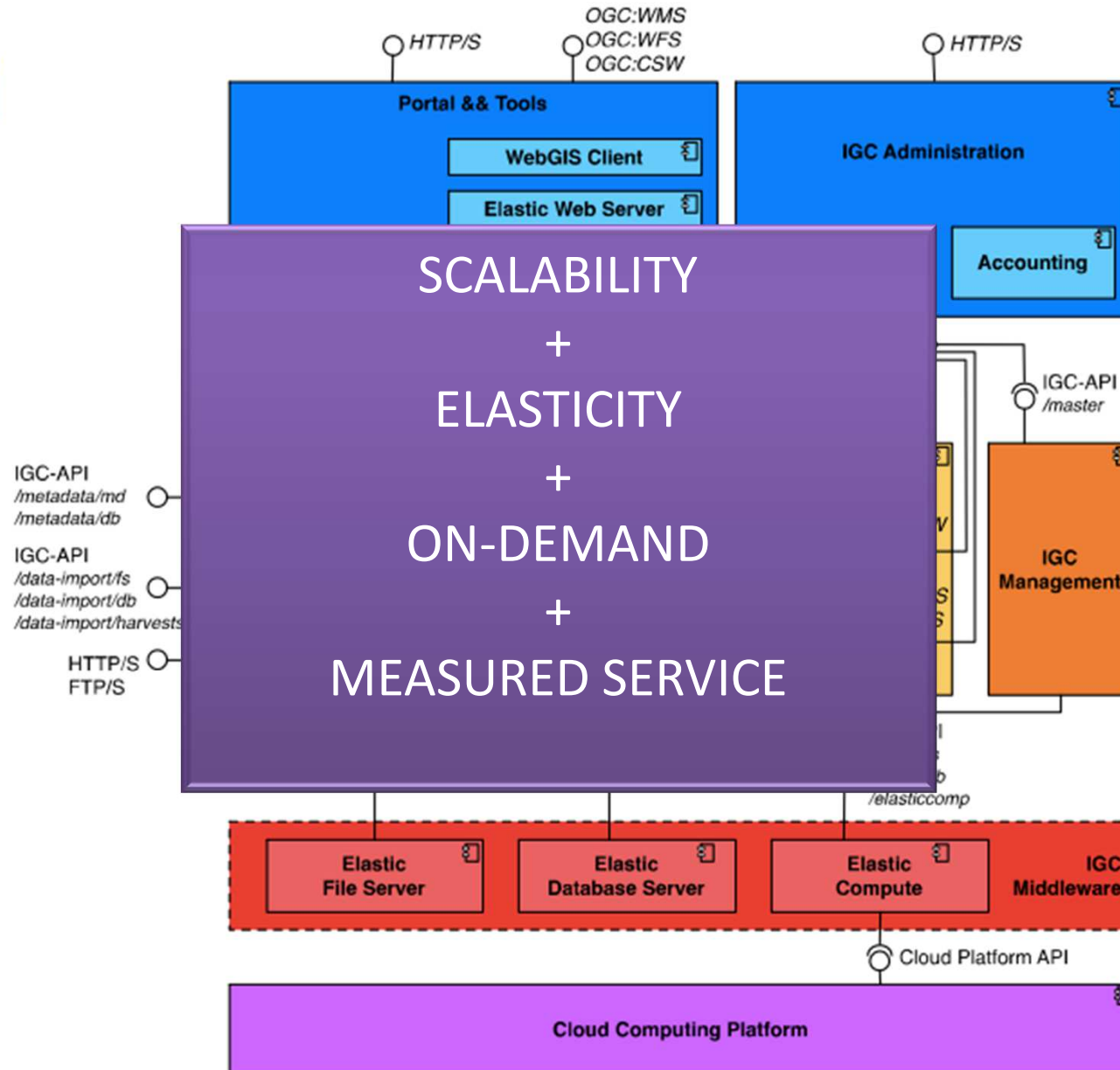
	WMS
Performance	GetMap 800x600 <5 s
Capacity	simultaneous requests > 20/s
Availability	99%

Large Amazon instance





A Cloud for INSPIRE... with Amazon Web Services





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Metadata management in InGeoClouds

U S E R S

IGC allows to discover services

D a t a
p r o v i d e r

IGC allows to create metadata for

- (Geo) Datasets, series
- Services

I T t e a m

IGC uses a GeoNetwork catalog available for data providers



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View services in InGeoCloudS

USERS

IGC allows to view datasets via OGC WMS 1.3 service

Data provider

IGC allows to create WMS services

- Online Web Editor with description of fields, portrayal choices,..
- OR Via API call (GeoPublication API)

IT team

IGC is build on the top of the Opensource MapServer + GeoPublication API



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(1) Pre-defined dataset Download services in InGeoCloudS

U S E R S

IGC allows to download datasets via INSPIRE ATOM requirements + Web Interface

D a t a
p r o v i d e r

IGC allows to create ATOM services

- Online Web Editor with description of fields
- OR Via API call (GeoPublication API)

I T t e a m

IGC has developed a specific ATOM generator + GeoPublication API



InGeoCloudS
Inspired GEOdata CLOUD Services

(2) Direct access Download services in InGeoClouds

U S E R S

IGC allows to access datasets via OGC WFS V1.1 (V2.0 in progress) / GML 3.1.1 (GML 3.2 in progress)

D a t a
p r o v i d e r

IGC allows to create WFS services

- Online Web Editor with description of fields
- OR Via API call (GeoPublication API)

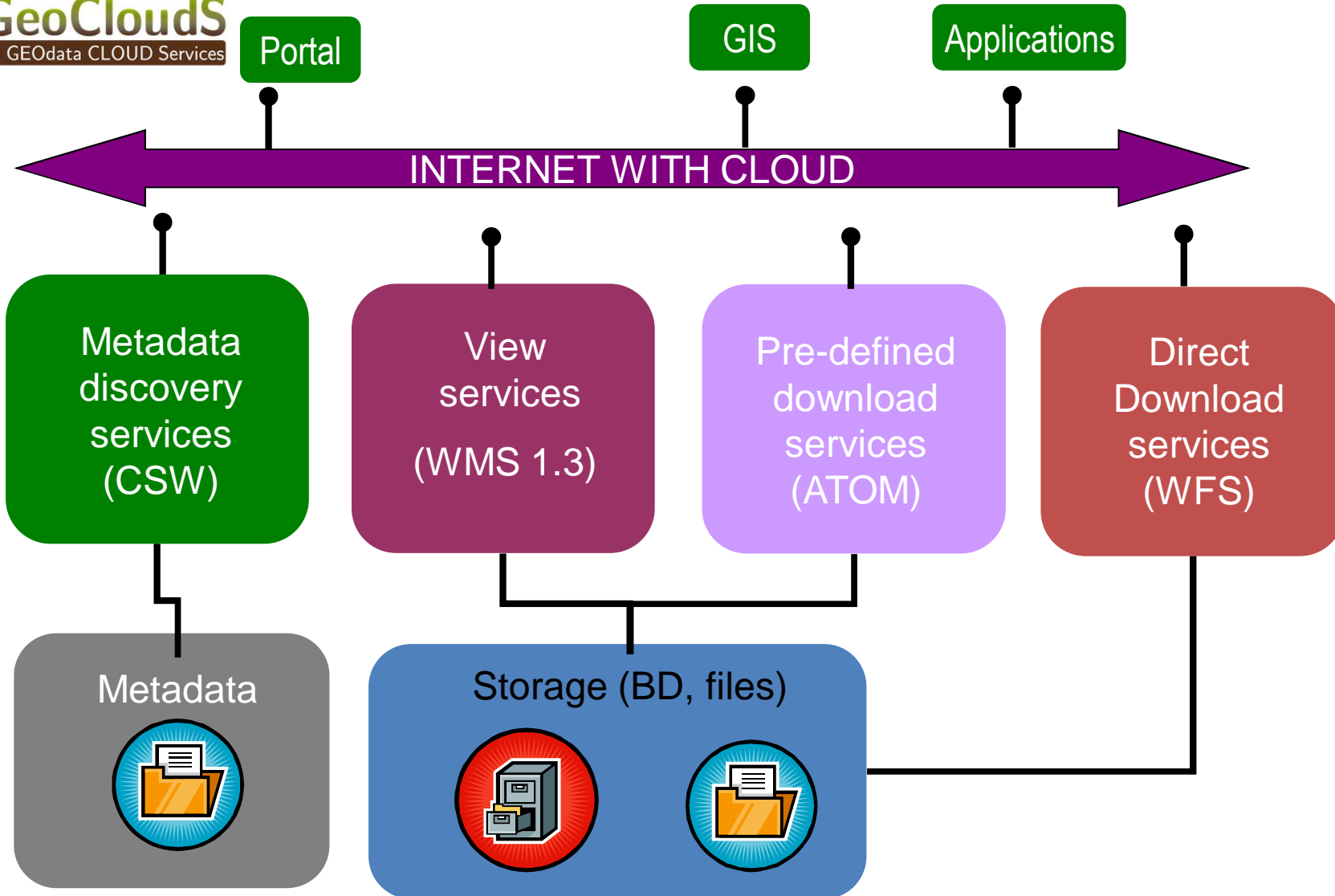
I T t e a m

IGC is build on the Mapserver WFS implementation + Version WFS 2.0 is in development (V7.0)



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Wrap-up : InGeoClouds Network services for INSPIRE





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And Data model in InGeoClouds...

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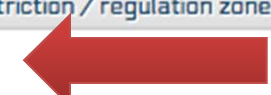
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Data and INSPIRE

- Current datasets in relation with a direct INSPIRE requirements (technical guidelines)
 - Geology (1M) and boreholes
 - Groundwater : wells and quality / quantity information
 - Natural hazards : landslides and shakemaps
- For this datasets, The WFS / ATOM service should provide a GML version of this data



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InGeoClouds INSPIRE GML export ?

- MapServer allows to provide a GML export of datasets (v 3.1.1 currently and in progress v 3.2)
- But the GML is limited to the SF-1 specification and not compliance with the (complex) INSPIRE requirement
- Need to build specific approach -→ Linked data export in GML