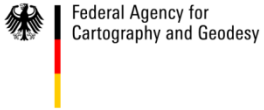


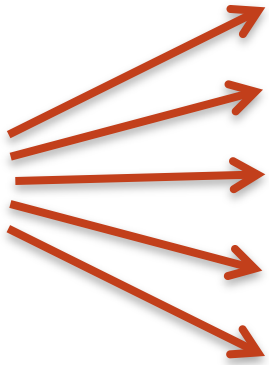

# GGOS Portal and Meta Data

Bernd Richter and Carey Noll

Federal Agency for Cartography and Geodesy
NASA Goddard Space Flight Center

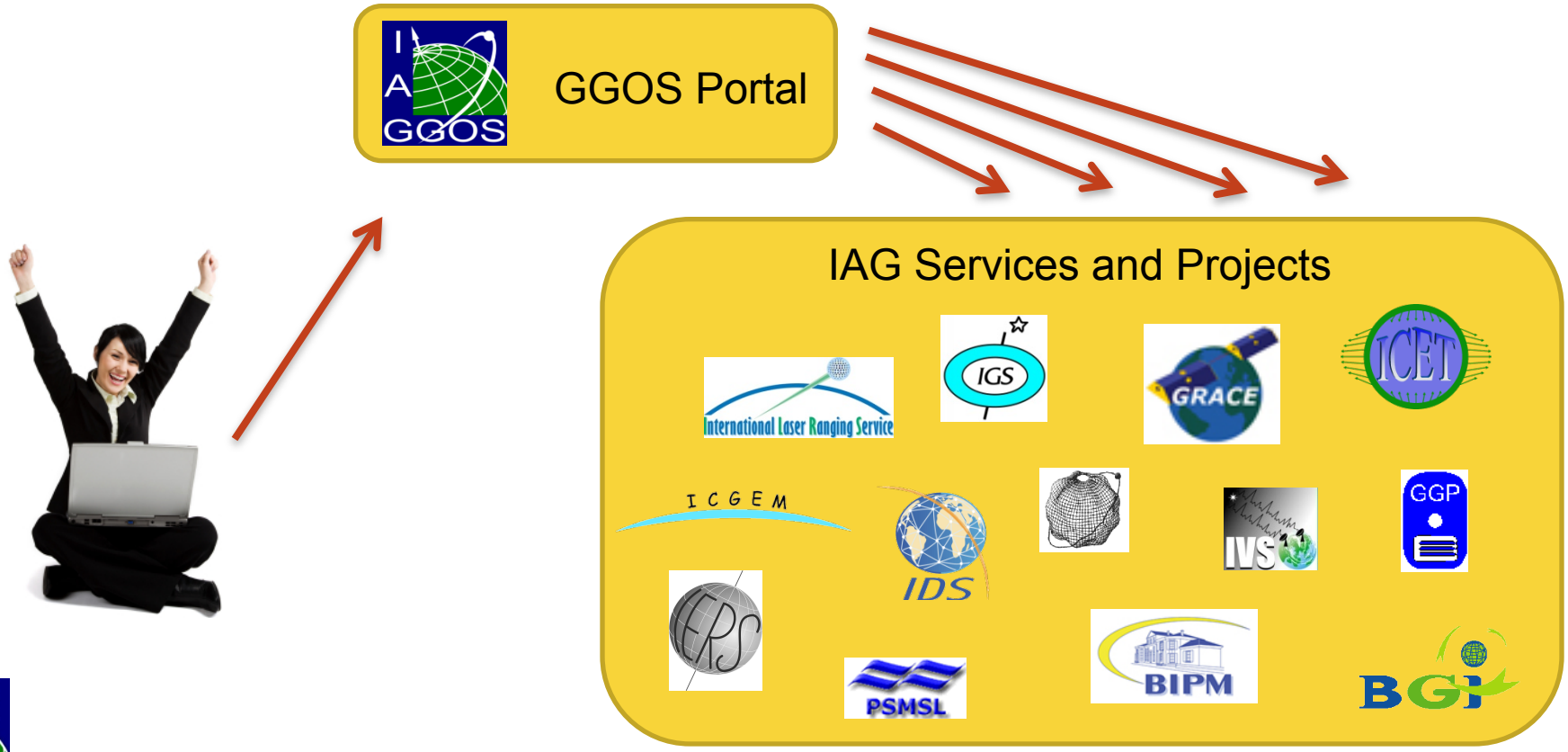
# GGOS Portal: Motivation

- The IAG Services already produce very important and valuable products to be promoted by GGOS
- Each Service has its own Web site for data access
- Fragmentation at national, regional and international level
- Users get lost in mountains of information



# GGOS Portal: Motivation

- Promotion of all IAG products for Earth sciences and applications through the GGOS portal, as a department store for all IAG products



# GGOS Portal: Tasks

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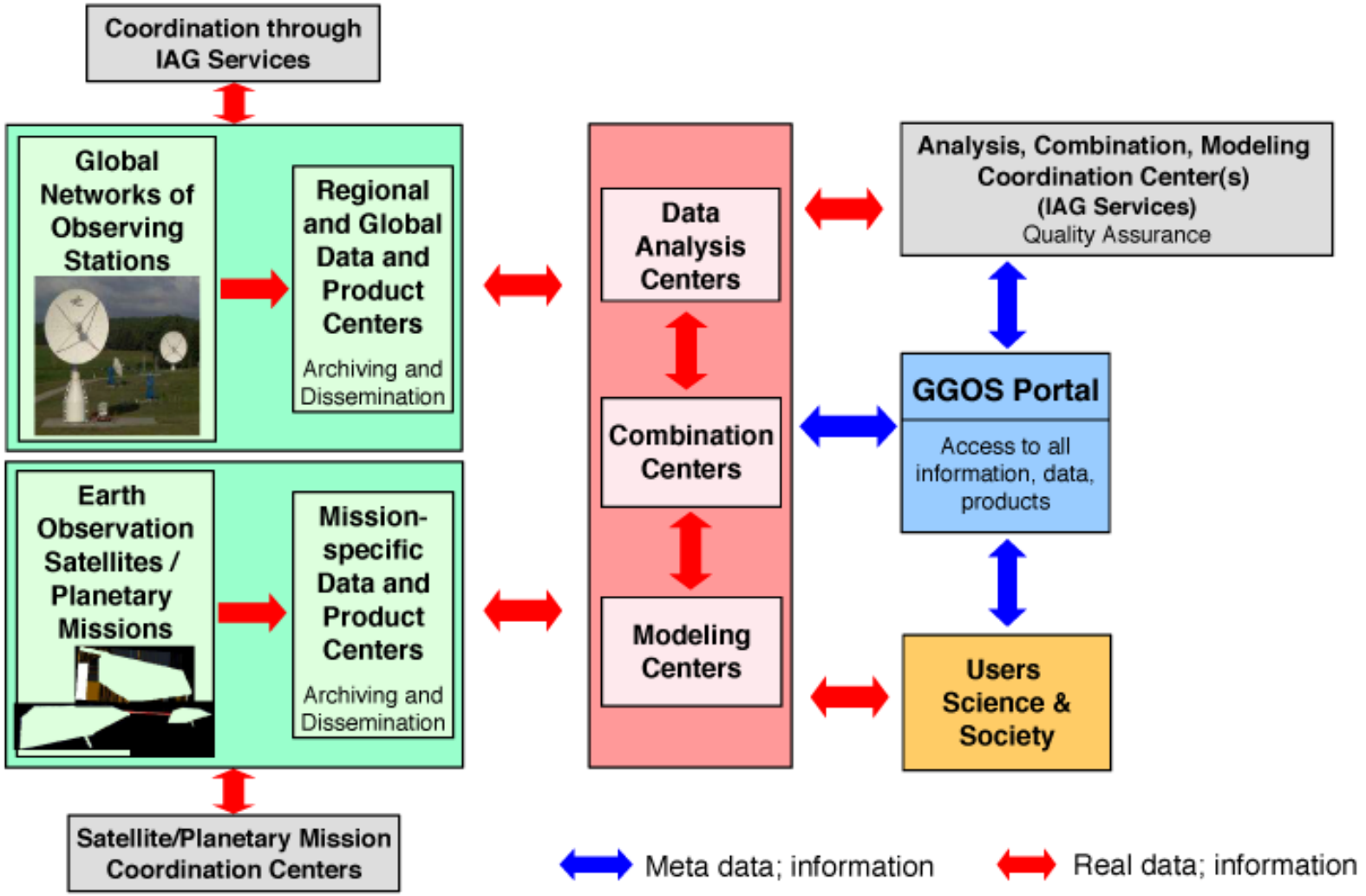
Provide a unique access point for all products and information relevant in the framework of GGOS!

- Maintenance of a GGOS Web site:
  - general information (structure, components, news, announcements, publications, links, …);
  - facilitate GGOS communication (calendars, bibliography, working group activities, meeting summaries, …);

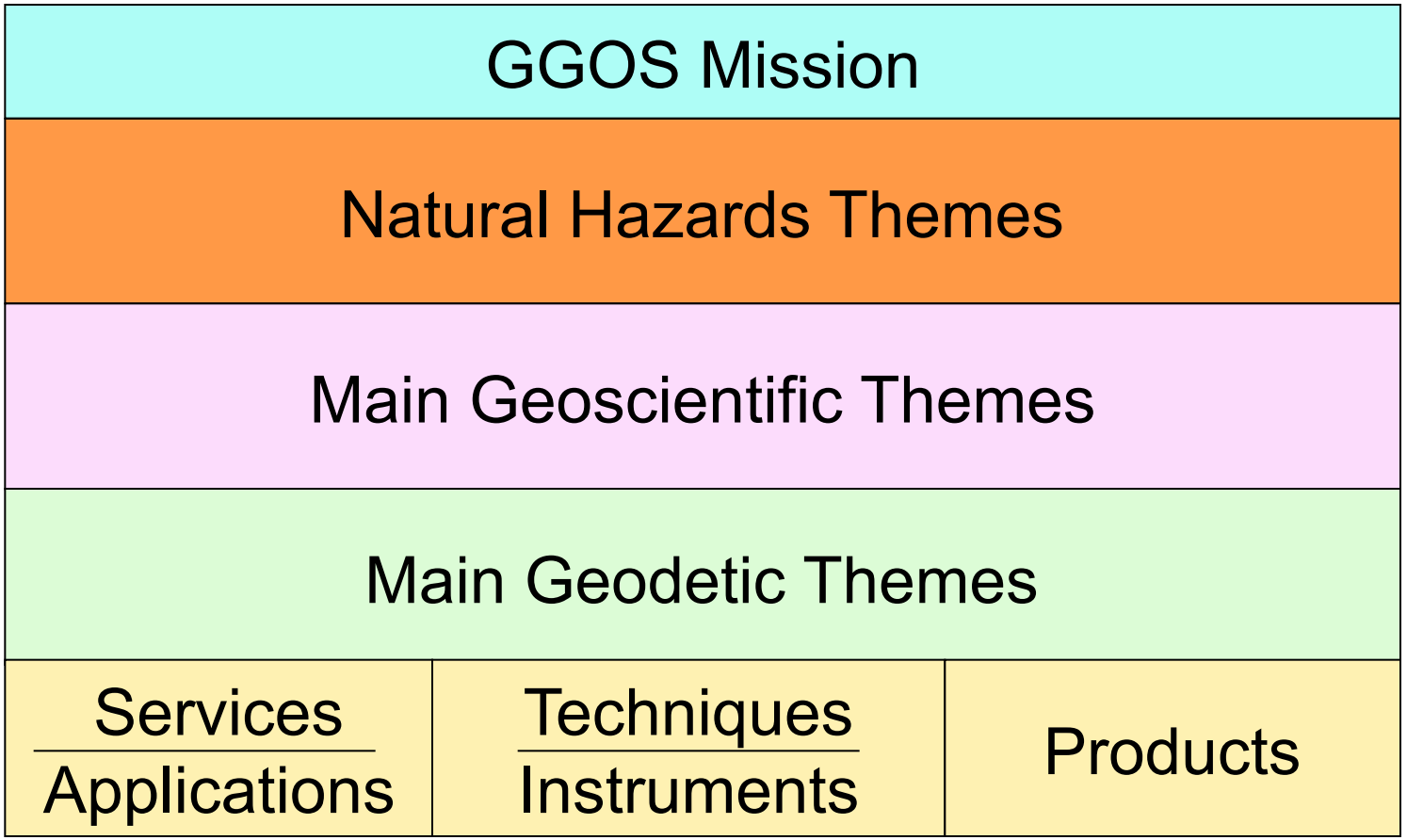
- Maintenance of a GGOS Portal & Clearinghouse):
  - Discovery: search data and service catalogues (local&external);
  - Metadata Editor: collect & manage metadata;
  - Viewer: display data;
  - Applications for data mining of GGOS products and data files, i.e. parse, merge, visualize and analyse data;

# GGOS System Design

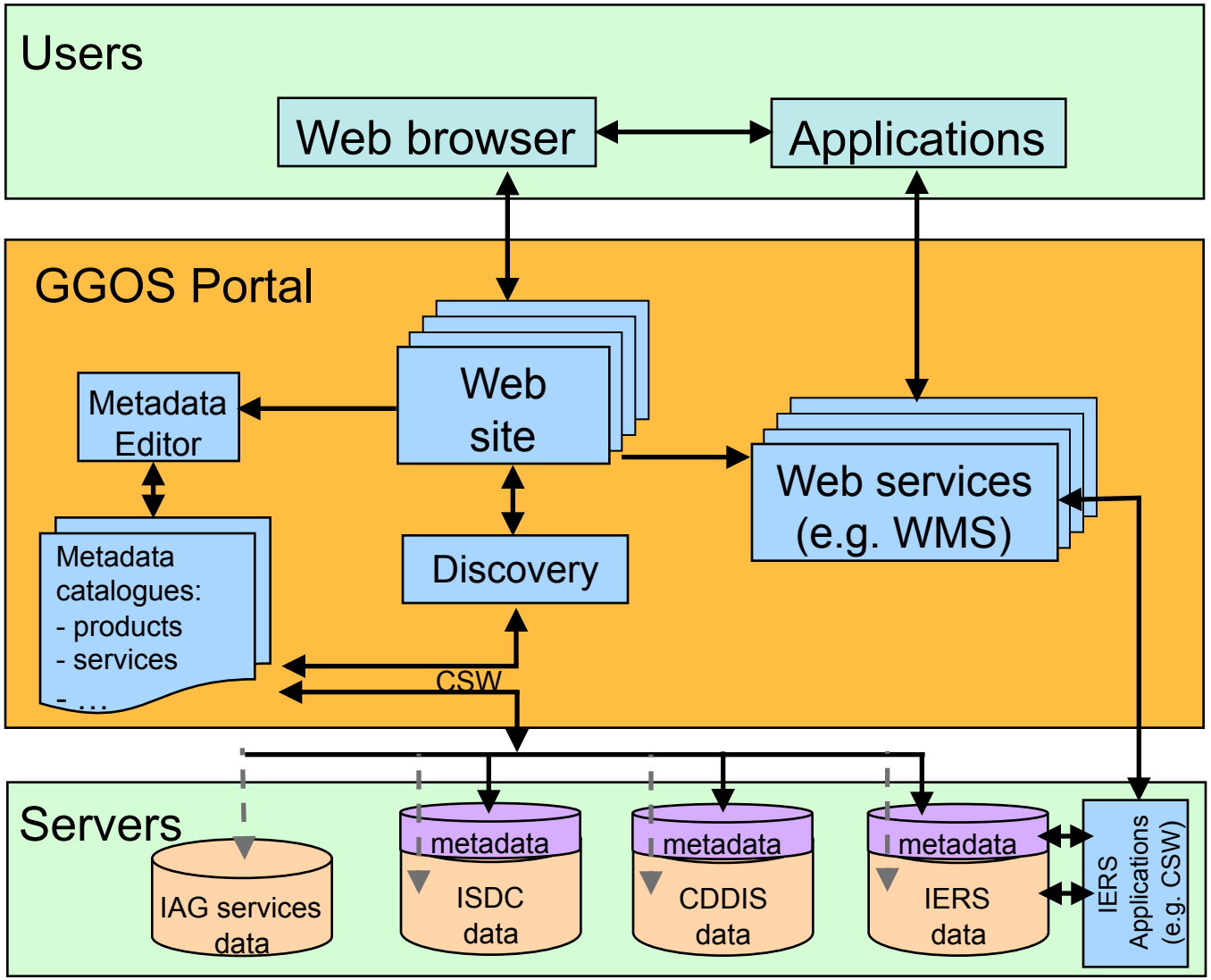


# GGOS-Portal

http://www.ggos.org => structure of home page,
multiple entries to serve all interests



# GGOS Portal: Architecture



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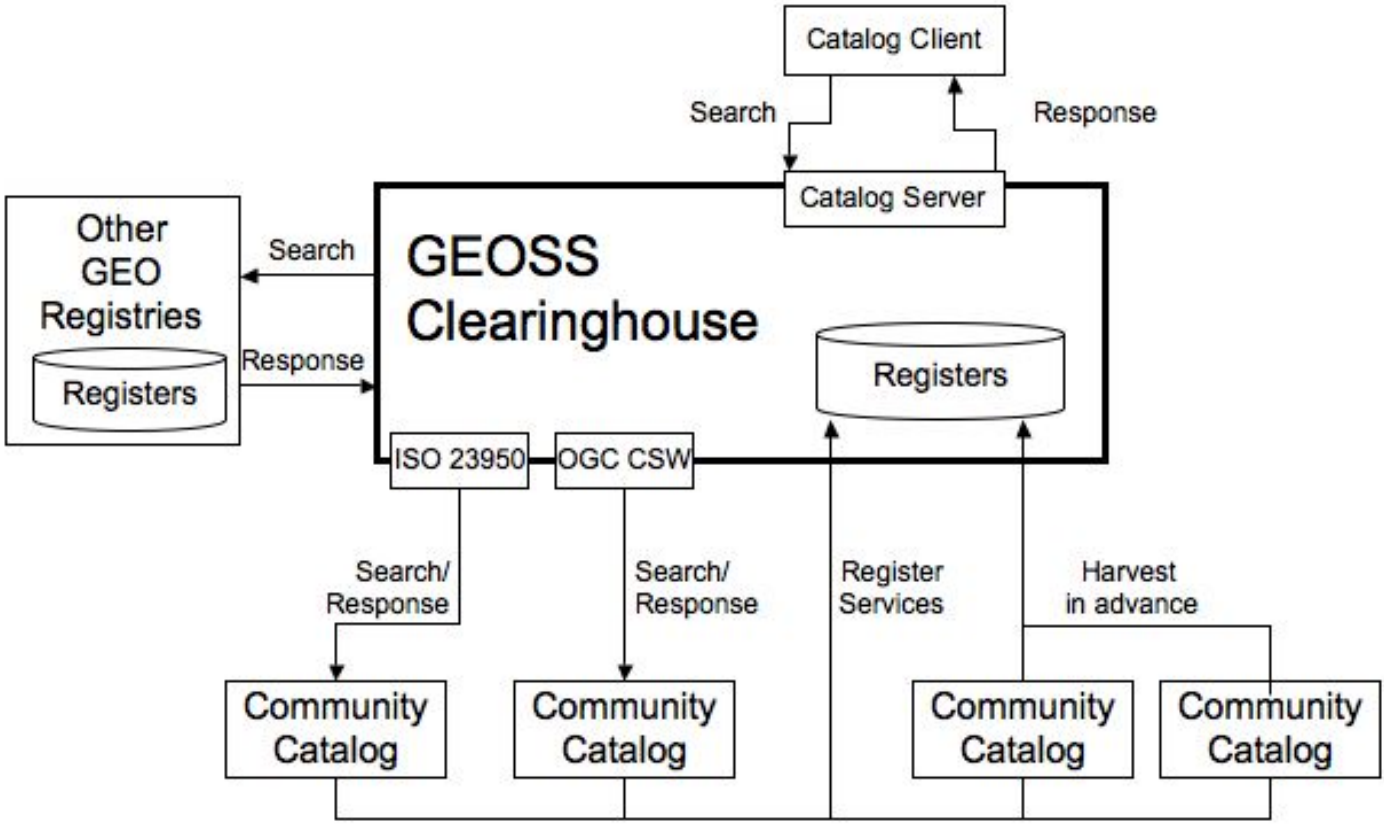
# GGOS Clearinghouse architecture engineering viewpoint



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# Metadata - a prerequisite to re-use geodetic data sets

- Metadata provide information about the identification, the extent, the quality, the spatial and temporal schema, the spatial reference and the distribution of data.
- Metadata are capable of locating, evaluating, extracting, and employing the required datasets.

# Metadata Standards

- **Metadata standards are a prerequisite for interoperable and interdisciplinary search**
- **Choice of meta data catalogue**
  - Directory Interchange Format (DIF) developed by NASA (Global Change Master Directory), focused on science, used by Marine Environmental Data Inventory (MEDI) or at GFZ
  - ISO 19XXX standards (widely used standard in GIS, WMO, …)
    - ISO 19115 Meta data
    - ISO 19119 Geographic information - services
    - ISO 19139 Data Exchange - XML schema implementation
- **Interoperability** by cross-mapping the different metadata standards

# Proposal for GGOS Core Metadata

| ISO19115 metadata entity set information | ISO No | Metadata elements | ISO core | GGOS |
|---|---|---|---|---|
| **MD_Metadata** | 2 | Metadata file identifier | o | o |
| | 10 | Metadata standard name | o | o |
| | 11 | Metadata standard version | o | o |
| | 3 | Metadata language | c | c |
| | 4 | Metadata character set | c | c |
| | 8 | Metadata point of contact | m | m |
| | 9 | Metadata date stamp | m | m |
| | 6 | Scope to which the metadata applies | (o) | **c** |
| **MD_Identification** | 360 | Dataset title | m | m |
| | 361 | Dataset short title | (o) | **o** |
| | 362 | Dataset reference date | m | m |
| | 29 | Dataset responsible party | o | **m** |
| | 25 | Abstract describing the dataset | m | m |
| | 33 | Descriptive keywords | (o) | **m** |
| | 28 | Status | (o) | **o** |
| **MD_DataIdentification** | 37 | Spatial representation type | o | o |
| | 38 | Spatial resolution of the dataset | o | **m** |
| | 39 | Dataset language | m | m |
| | 40 | Dataset character set | c | c |
| | 41 | Dataset topic category | m | m |
| | 42 | Geographic location | | |
| | 45 | Vertical and temporal extent of dataset | o | **m** |

# GGOS-D: Metadata Management – SINEX files

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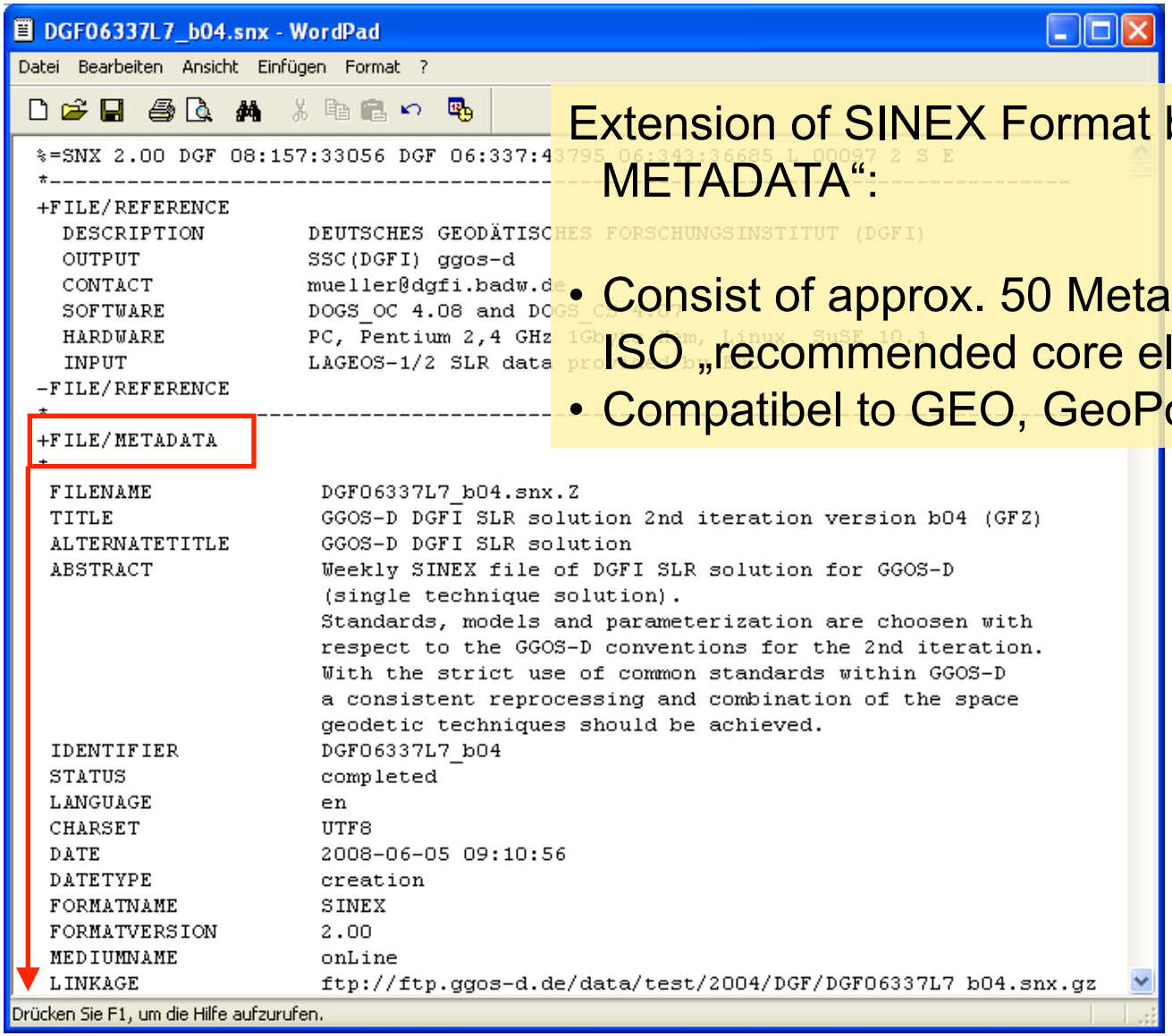
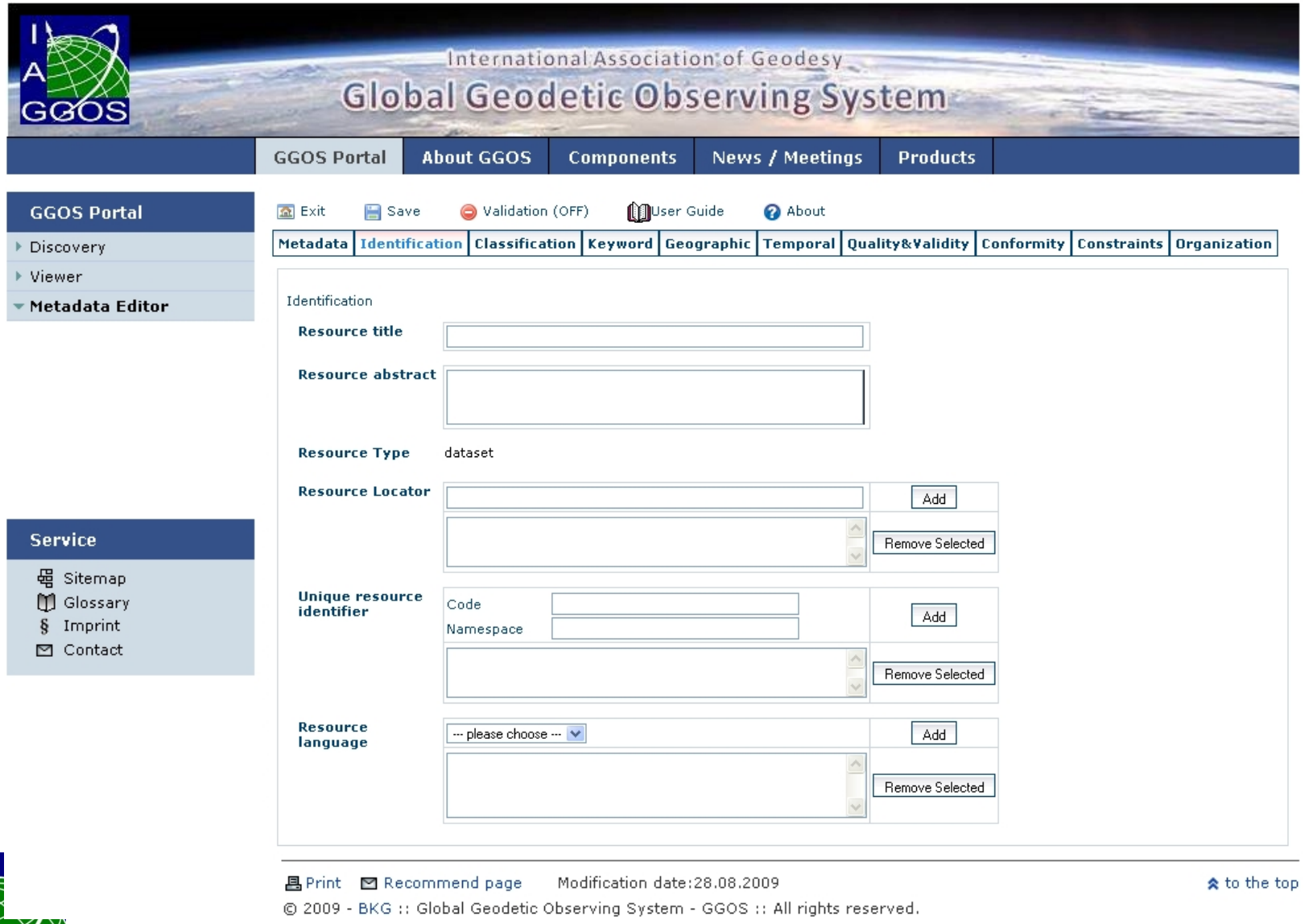


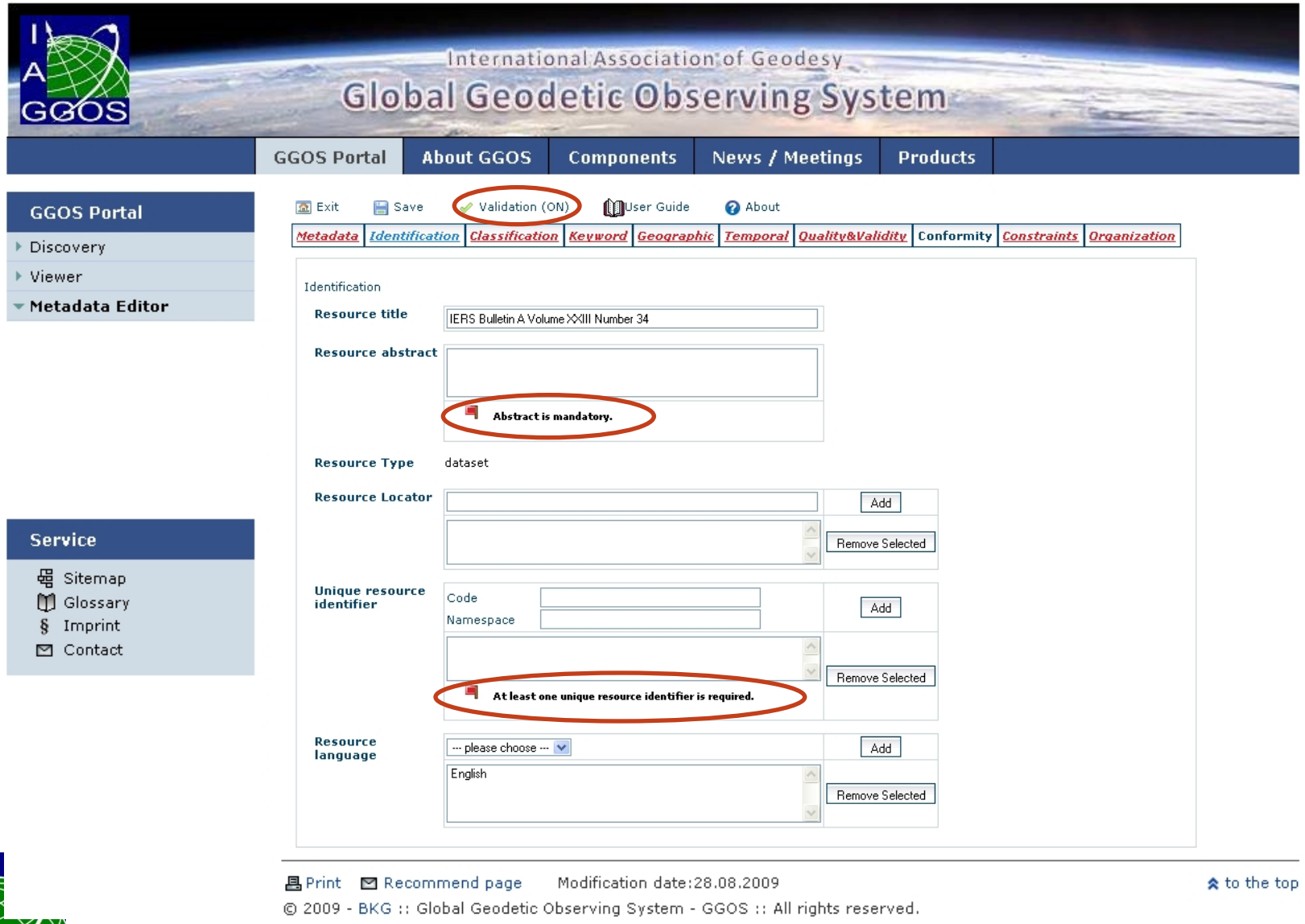

Extension of SINEX Format by one block „FILE/METADATA“:

- Consist of approx. 50 Metadata elements, ISO „recommended core elements“
- Compatibel to GEO, GeoPortal.Bund (IERS).

# GGOS portal – Metadata Editor



# GGOS portal – Metadata Editor



# GGOS WG on DIS will

- develop and provide suggestions for an uniform access to heterogeneous space geodetic and in-situ data and information systems
- evolve GGOS portal
- promote use of web standards and conventions
- support implementation of metadata management in the services for GGOS
- work on interoperability with other data bases and services i.e., interfaces for machine-to-machine communication
- align with GEOSS (Group on Earth Observations System of Systems) approach and methodology

# Membership list:

| | |
|---|---|
| ▪ Bernd Richter chair / IERS<br>▪ Carey Noll chair / ILRS<br>▪ Wolfgang Schwegmann Portal manager<br>▪ Ruth Nealan IGS<br>▪ Laurent Soudarin IDS<br>▪ Dirk Behrend IVS | **GEOMETRY** |
| ▪ Franz Barthelmes ICGEM<br>▪ Jean-Pierre Barriot ICET<br>▪ Sylvain Bonvalot BGI | **GRAVITY** |
| ▪ Lesley Rickards PSMSL | **SEA LEVEL** |
| ▪ Felicitas Arias BIPM | **TIME Service** |

# Summary

- Global and interdisciplinary networks of data make high demands on data management in projects like GGOS and GEOSS
- Interoperability of data and services request the consequent use of standardized
  - Meta data
  - Data formats
  - Web services
- GGOS web & portal will provide the necessary technique
- GGOS WG DIS will support the GGOS web and portal development and the services

but

**the services have to provide the data and information**