Heterogeneous Missions Accessibility
Architecture Working Group
Outline

- HMA Architecture Working Group
- HMA Architecture-Level Concerns
- HMA Standardization and Adoption Status
HMA Architecture WG

• “Management of the evolution of the interoperability interface standards defined within the HMA project and in follow on activities”

• Provide requirements
  – GMES contributing missions/national missions
  – EO application services

• Review specifications

• Provide consulting (technologies, ground segment architecture)

• ... as contributions in kind
HMA Architecture WG

• Full members
  - Canadian Space Agency - CSA: Bob Banik
  - Centre National d'Etudes Spatiales- CNES: Jean-Noël Hourcastagnou
  - Deutsches Zentrum fur Luft- und Raumfahrt - DLR: Stephan Kiemle
  - European Space Agency - ESA: Jolyon Martin
  - European Organisation for the Exploitation of Meteorological Satellites - EUMETSAT: Michael Schick
  - Agenzia Spaziale Italiana – ASI (currently unattended)

  - Technical Secretary: Pier Giorgio Marchetti ESA

• Ex-officio members
  - INSPIRE JRC: Paul Smits
  - European Union Satellite Centre EUSC: Lucio Colaiacomo
• Since 2008 2-3 co-located meetings per year at different sites
• Additional workshops on specific issues
• Participation in HMA project reviews
• Regular reports by secretary to GSCB

• HMA Configuration Management Table
  – Standards configuration/evolution control (9 distinct service specifications)
  – Mapping to existing mission GS implementations

• HMA Forum
  – Dialogue of implementers/users, agencies/institutions/industry
  – Discussion of standardization/implementation aspects
  – 336 registered users, 41 threads, 84 replies, up to 21k reads per thread
HMA Architecture-Level Concerns

- Beyond classical EO product user services
  - Ontologies for collection discovery, keyword search
  - Online primary data access on time series
  - Distributed user identity and access management
  - Compliance testing issues

- EO data access security constraints by national legislation

- Visibility of data providers/mission owners

- INSPIRE “compatibility”
HMA Architecture-Level Concerns

• “Careful” evolution of HMA specifications
  – Preservation of investments made
  – Addressing evolving access requirements
  – Innovation towards enhanced/new standards
  – Simplification of use and implementation
  – Controlled upgrades with concerted strategy
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<td>enhancements within HMA-S</td>
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Standards Dependencies Example

**Discovery Specifications**

- **Information Viewpoint** (i.e. metadata)
  - Catalogue 2.0.2
    - OGC 07-006
  - CSW ISO AP
    - OGC 07-045
  - CSW ebRIM AP
    - OGC 07-110
  - RIM
    - ISO/TS 15000-3
  - ebRIM
    - extension package for CIM
      - OGC 07-038
  - ebRIM
    - extension package for EO products
      - OGC 06-131
  - ebRIM
    - extension package for EO products
      - OGC 10-189
  - ebRIM
    - extension package for SensorML
      - OGC 09-163
- **Computational Viewpoint** (i.e. service interfaces)
  - Metadata
    - ISO 19115, ISO 19119, ISO 19139
  - GML Appl. Schema for EO Products
    - OGC 06-080
  - EO O&M
    - OGC 10-157
  - EO SensorML profile for discovery
    - OGC 09-163
  - EO Collection Metadata
    - EO Service Metadata
      - INSPIRE Product metadata
      - INSPIRE Collection metadata
      - INSPIRE Service metadata
  - GML 3.1.1
    - OGC 03-105
    - ISO 19136
  - EO Product Metadata
  - EO Product Metadata
  - EO Sensor Metadata

**INSPIRE Community**

- CSW ISO AP
  - OGC 07-045
- CSW ebRIM AP
  - OGC 07-110
- INISPERE Conformance Class
  - OGC 09-197

**EO Community**

- HMA Architecture Working Group
  - Status 2012-06-06
  - S. Kiemle DLR
## HMA Adoption/Integration Status

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- This overview might be incomplete, see presentations of Sentinels / GCM data access status for details.
Standardization activities towards “linked data” approach

- OpenSearch exploiting EOP O&M metadata
  - http-based search simple to implement
  - data access via direct product URL
  - opening up various data resources/holdings (e.g. G-POD)

- Refinement of EOP O&M metadata (ngEO context)

- Evolution of Service and Collection Discovery (INSPIRE context)

- Evolution of Identity Management Services

Configuration of HMA Official Test portal and “science” catalogues (non GMES)
Questions?

Thanks to
P.G. Marchetti, J. Martin, Y. Coene