Potentially Applicable OGC Testbed 14 results

OGC Testbed 14

This is a list of the OGC Testbed 14 Engineering Reports. Each entry has links to the HTML and PDF versions of the report. Below each report title is a quick evaluation by ESCO staff.Use the comment section of this page to provide feedback.

- OGC Testbed-14: Next Generation APIs: Complex Feature Handling Engineering Report (18-021) PDF

Possible EOSDIS interest: CMR or other search-oriented services, GIS service providers

  - Emphasis is on feature data (i.e. vectors, or "GIS" data)
  - Provides introduction to OGC "NextGen services" / "Next Generation APIs"
    - "modernized service architecture, that follows the current Web architecture, has a focus on the developer experience, supports the OpenAPI specification [https://www.openapis.org/], and modularizes WFS into building blocks for fine- grained access to spatial data that can be used in APIs for data."
  - Section 7.3.6 briefly discusses the SpatioTemporal Asset Catalog (STAC) spec and possible alignment with OGC Web Feature Service (WFS) 3.0
  - Discussion in section 8 touches on query languages
    - OGC Common Query Language (CQL)
    - GraphQL
    - XQuery
    - WFS 2.0 Query
    - GeoSPARQL

- OGC Testbed-14: SWIM Information Registry Engineering Report (18-022r1) PDF

Possible EOSDIS interest: CMR, GCMD or other search-oriented services

  - Emphasis is on metadata harvesting/aggregation, search relevance, sematic web technologies (OWL, OWL-S, RDF) in a multi-organizational environment (FAA, European counterpart)
  - Natural language queries into a service database

- OGC Testbed-14: MapML Engineering Report (18-023r1) PDF

Possible EOSDIS interest: (Maybe) Worldview team

  - Takes a deep dive into MapML, part of a proposed HTML media type for including and interacting with maps in a web page
  - Describes an implementation of a MapML server

- OGC Testbed-14: CityGML and AR Engineering Report (18-025) PDF
Probably not applicable to EOSDIS

- OGC Testbed-14 Security Engineering Report (18-026r1) PDF

Possible EOSDIS interest: (Maybe) Security teams, cloud computing

  - "During this Testbed, a server that provides OAuth2.0 and OpenID Connect capabilities was extended with a mediation service that allows for a centralized security authority with users/clients that implement different security standards."

- OGC Testbed-14: WMS QoSE Engineering Report (18-028r2) PDF

Possible EOSDIS interest: metrics

  - Quality of Service Experience
  - They developed a Web UI that lets users grade service results
    http://cici.lab.asu.edu:1080/qose/wms/evaluation.html
  - Developed server performance stress-testing methodolgy for WMS
  - Developed live monitoring for GeoServer

Possible EOSDIS Interest: GIBS and DAACs with WMS

- GIBS and DAACs with WMS (and/or other services).

- OGC Testbed-14: Symbology Engineering Report (18-029) PDF
  Probably not applicable to EOSDIS
- OGC Testbed-14: Secure Client Test Engineering Report (18-030) PDF

Possible EOSDIS interest: (Maybe) users/implementers of OGC services

- Discusses implementation tests of the OGC Web Services Security Candidate Standard - which "specifies how conforming OGC Web Services shall advertise their Information Assurance (IA) controls, describes the governance process for IA Control registers, details examples of register contents, and describes how this information should be used."
- Touches on considerations vis-a-vis Amazon Web Services (AWS)

- OGC Testbed-14: Application Schema-based Ontology Development Engineering Report (18-032r2) PDF

Possible EOSDIS interest: (Maybe) search, serach relevance in CMR, GCMD

"This report enhances the understanding of the relationships between application schemas based on the Unified Modeling Language (UML) and ontologies based on the Web Ontology Language (OWL). The work documented in this report provides and improves tools and principled techniques for the development of Resource Description Framework (RDF) based schemas from ISO 19109-conformant application schemas."

- OGC Testbed-14: Compliance Engineering Report (18-034r3) PDF
  Probably not applicable to EOSDIS
- OGC Testbed-14: Semantically Enabled Aviation Data Models Engineering Report (18-035) PDF
  Probably not applicable to EOSDIS
- OGC Testbed-14: WPS-T Engineering Report (18-036r1) PDF

Possible EOSDIS interest: Cloud computing, service metadata

"This Engineering Report describes a proposed transactional extension for the OGC Web Processing Service (WPS) 2.0 standard including Key-Value Pair (KVP) and Extensible Markup Language (XML) bindings and recommendations for a process deployment profile for BPMN (Business Process Model and Notation)."

- OGC Testbed-14: Machine Learning Engineering Report (18-038r2) PDF

Possible EOSDIS interest: Cloud analytics, machine learning, feature classification

- Machine learning and big data analytics using OGC Web Services
- Are new interface requirements for gridded data needed?
- Builds on OGC Web Image Classification Service (WICS)
- Examples include feature classification from satellite imagery

- OGC Testbed-14: Next Generation Web APIs - WFS 3.0 Engineering Report (18-045) PDF

Possible EOSDIS interest: OGC Services implementors, Cloud computing

Provides a glimpse into the OGC's overhaul of web interface APIs

- Testing of WFS 3.0 candidate standard
- OpenAPI based "Next Generation API"
- OpenID Connect and OAuth 2.0
- Used Swagger as the OpenAPI tool

- OGC Testbed-14: Swath Coverage Engineering Report (18-047r3) PDF

Possible EOSDIS interest: (High) Data providers, consumers; ESDSWG DIWG

- Covers extensions to WCS - WCS Swath Coverage Profile
- Encoding of swath data in GeoTIFF, NetCDF, GeoPackage as WCS outputs
- WCS API updates to OpenAPI (Next Generation API)
- Makes recommendations regarding GDAL support for non-tiled data
- Provides evaluation of encoding swath data in OGC Coverage Implementation Schema

- OGC Testbed-14: Point Cloud Data Handling Engineering Report (18-048r1) PDF

Possible EOSDIS interest: (future) point cloud data providers and users seeking a standard point cloud service specification

- Excellent introduction to point cloud data and challenges associated with storage, service access, and use
- Discusses requirements of any potential OGC point cloud service spec
- Notes that no current servers meet all the requirements

Possible EOSDIS Interest: DAACs

- DAACs with Lidar point clouds data and wanting to develop tools/services for such data

Possible EOSDIS Interest: (future) GIBS/Worldview

- Useful for displaying 3D data volumes

- OGC Testbed-14: Application Package Engineering Report (18-049r1) PDF

Possible EOSDIS interest: Cloud analytics, MAAP (?)

"The Application Package (AP) serves as a means to convey different kinds of information describing a certain application - often, but not necessarily, an Earth Observation data processing algorithm - so that different elements of an ecosystem generically known as an Exploitation Platform can exchange information among themselves in a standard and interoperable way. The AP guarantees that, despite potentially very heterogeneous implementations and implementing entities, applications are treated equally. The AP also guarantees that the Earth Observation scientist who developed it on the one hand is shielded from infrastructure details and heterogeneity and on the other hand benefits from the ability to execute the same application on different infrastructure."

- European Space Agency is a primary sponsor of this work
- Docker based in Testbed 13
- Now allows for workflows decribed in Common workflow Language (CWL)
- Based on Web Processing Service Transactional Extension (WPS-T)

- OGC Testbed-14: ADES & EMS Results and Best Practices Engineering Report (18-050r1) PDF

Possible EOSDIS interest: Cloud analytics, MAAP (?)

"This Engineering Report (ER) describes best practices and results gathered through the work performed in the Exploitation Platforms Earth Observation Clouds (EOC) Thread of OGC Testbed-14 concerning the Application Deployment and Execution Service (ADES) and the Execution Management Service (EMS)."

- European Space Agency is a primary sponsor
- ESA identifies these as essential elements of a Thematic Exploitation Platform (TEP)
- Based on OGC Web Processing Service (WPS) 2.0

- OGC Testbed-14: Authorisation, Authentication, & Billing Engineering Report (18-057) PDF

Possible EOSDIS interest: (Maybe) Cloud analytics, MAAP (?)

"The primary motivation behind this ER is to tackle user's authentication and subsequent authorization concerns in terms of process deployment and execution within a pool of Thematics Exploitation Platforms (TEP) and Mission Exploitation Platforms (MEP)."

- European Space Agency is a primary sponsor
- Based on OpenID Connect 1.0 and OAuth2

- OGC Testbed-14: BPMN Workflow Engineering Report (18-085) PDF

Possible EOSDIS interest: (Maybe) Cloud analytics, MAAP (?)

"This Engineering Report (ER) presents the results of the D146 Business Process Modeling Notation (BPMN) Engine work item and provides a study covering technologies including Docker, Kubernetes and Cloud Foundry for Developer Operations (DevOps) processes and deployment orchestration."

- OGC Testbed-14: Federated Clouds Engineering Report (18-090r1) PDF

Possible EOSDIS Interest: Security teams, cloud computing

Explores issues around the secure sharing of data among a known set of trusted participants with particular reference to the NIST Federated Cloud Reference Architecture. The report explores some of the issues around federated identification, authorization, and securitization and provides an overview of some of the relevant standards/frameworks.

- OGC Testbed-14: Application Schemas and JSON Technologies Engineering Report (18-091r2) PDF
- OGC Testbed-14: Characterization of RDF Application Profiles for Simple Linked Data Application and Complex Analytic Applications Engineering Report (18-094r1) PDF
    - Possible EOSDIS Interest: DAACs, Earthdata