

MSDI Maturity Assessment Survey

This MSDI Maturity Assessment Survey attempts to understand the status of MSDI maturity around the world. This survey is primarily based on a progression through a sequence of "Tiers", defined by the UN-GGIM, which reflect increasing levels of capability and collaboration in a SDI.

INSTRUCTIONS:

Please progress through the following 4 sections of this survey. At the end of the last section, you must SUBMIT your entire survey response in order to SAVE the response for all questions. You will have the opportunity to edit your response after submission.

Reference: "A Guide to the Role of Standards in Geospatial Information Management"

<http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

* Required

1. To begin, please select your country's ISO 3166 Alpha-3 code. *

Mark only one oval.

- ABW
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Tier
1

"Tier 1 Goal – The most fundamental requirement in Tier 1 is to enable the stakeholders and constituents (users) of an organization or institution to view and query interactive maps on the web. Closely associated with this fundamental requirement is the ability to discover, share and use geospatial information."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

1.1 Visualization and Portrayal

"The most basic requirement in an SDI is to be able to easily and effectively access and display geospatial information that may be stored in one or more databases and using different vendor solutions and storage formats."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

2. 1.1.1 Is the data displayed via common web services?

Examples: OGC Web Map Service/ISO 19128 Web Map Server Interface (WMS), OGC Web Feature Service/ISO 19142 Web Feature Service (WFS), OGC Web Map Tile Service (WMTS)

Mark only one oval.

- No common web services being used
- Under development
- Developed
- Implemented
- Fully implemented and maintained

3. 1.1.2 Are common web service portrayal standards used in presenting geospatial data?

Examples: OGC Styled Layer Descriptor (SLD), OGC Symbology Encoding, OGC Web Map Context (WMC), OGC Web Services Context Document (OWS Context), OGC KML

Mark only one oval.

- No common web services being used
- Under development
- Developed
- Implemented
- Fully implemented and maintained

4. 1.1.3 Please check all Visual and Portrayal standards that are currently utilized.

Check all that apply.

- OGC Web Map Service/ISO 19128 Web Map Server Interface (WMS)
- OGC Web Feature Service/ISO 19142 Web Feature Service (WFS)
- OGC Web Map Tile Service (WMTS)
- OGC Styled Layer Descriptor (SLD)
- OGC Symbology Encoding
- OGC Web Map Context (WMC)
- OGC Web Services Context Document (OWS Context)
- OGC KML
- S-52 - Specifications for Chart Content and Display Aspects of ECDIS

Other: _____

1.2 Catalogue and Discovery

"The ISO and OGC standards for catalogue and discovery are widely implemented in national, regional, and local SDIs. Most geospatial technology vendors and open source solutions support these standards. These standards should be implemented if the community requires the ability to search metadata holdings for the geospatial information they require."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

5. 1.2.1 Are common metadata standards used to describe geospatial resources?

Example: ISO 19115, Geographic information – Metadata

Mark only one oval.

- No standards being used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new standards

6. 1.2.2 Are catalogue services used to support the ability to publish and search collection of descriptive information (metadata) for geospatial resources?

Examples: Catalogue Service Implementation Specification (also known as Catalogue services – Web or CSW), OGC Catalogue Services Specification 2.0.2 - ISO Metadata Application Profile (1.0.0), OGC I15 (ISO 19115 Metadata) Extension Package of CS-WebRIM Profile 1.0

Mark only one oval.

- No catalog services used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new catalog services

7. 1.2.3 Please check all Catalogue and Discovery standards that are currently utilized.

Check all that apply.

- ISO 19115, Geographic information – Metadata
- Catalogue Service Implementation Specification
- OGC Catalogue Services Specification 2.0.2 - ISO Metadata Application Profile (1.0.0)
- OGC I15 (ISO 19115 Metadata) Extension Package of CS-WebRIM Profile 1.0

Other: _____

Tier
2

"Tier 2 Goal - An information community wishes to provide access to geospatial information over the web, provide geospatial information download services, and in addition, may provide specific data themes, such as roads, from multiple sources that conforms to an agreed, common data model to create a consistent and integrated 'view' of the geospatial information for users. Tier 2 builds on the infrastructure, policies, technologies, and standards deployed and matured in Tier 1."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

2.1 Distributed Maintenance & Use

"There are two key types of geospatial standards the reader needs to be aware of: information (or content) standards, and technology (interface, API) standards.

An information model in software engineering is a representation of concepts and the relationships, constraints, rules, and operations to specify data semantics for a chosen domain of discourse," (e.g. marine/maritime)

"A very important consideration for the Tier 2 standards is their reliance on a number of abstract standards or models that describe such geographic information elements as geometry (points, lines, etc), coordinate reference systems, data quality, time, and so forth. These fundamental ISO abstract standards are recommended and discussed in the Foundation Standards- General Geospatial Information Standards section, Domain Data Models."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

8. 2.1.1 Are cross-domain standards used for information modelling to promote greater interoperability between different domains?

Examples: OGC/ISO 19136 Geography Markup Language (GML)

Mark only one oval.

- No cross-domain standards being used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new standards

9. 2.1.2 Are common standards for geospatial information query and access used to allow users to specify geographic and attribute queries?

Examples: OGC/ISO 19142 Web Feature Service 2.0, OGC/ISO 19143 Filter Encoding 2.0, OGC Web Coverage Service (WCS) 2.0, GeoSPARQL

Mark only one oval.

- No common standards being used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new standards

10. 2.1.3 Please check all Distributed Maintenance & Use standards that are currently utilized.

Check all that apply.

- OGC/ISO 19142 Web Feature Service 2.0
- OGC/ISO 19143 Filter Encoding 2.0
- OGC Web Coverage Service (WCS) 2.0
- OGC GeoSPARQL
- OGC/ ISO 19125 Simple Feature Access

Other: _____

2.2 Domain Data Models

"While information modelling typically refers to modelling just one system, domain modelling involves the practice of creating definitions of concepts which are reused between multiple systems. In the standards context this is further extended to imply interoperability of models and platform independence. Both information models and domain models are relevant to Tier 2 and Tier 3 in the evolution of an SDI."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

11. 2.2.1 Are domain data model standards used in collecting, processing, and/or rendering the data?

Examples: S-57 - IHO Transfer Standard for Digital Hydrographic Data, S-100 Universal Hydrographic Data Model, ISO 19152, Geographic information -- Land Administration Domain Model (LADM), Defence Geospatial Information Working Group DGI Standards

Mark only one oval.

- No standards being used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new standards

12. 2.2.2 Please check all Domain Data Model standards that are currently utilized.

Check all that apply.

- OGC CityGML
- ISO 19144, Geographic information – Classification systems
- ISO 19152, Geographic information – Land Administration Domain Model (LADM)
- Defence Geospatial Information Working Group DGI Standards
- ISO 19160, Addressing
- GeoSciML – Geological structure and bore holes
- OGC WaterML 2.0 - Sharing in-situ sensor water observations
- S-57 - IHO Transfer Standard for Digital Hydrographic Data
- S-100 Universal Hydrographic Data Model standards

Other: _____

Tier
3

"Tier 3 Goal - Multiple organizations share foundation/framework geospatial information and services with each other and the broader community to improve knowledge and understanding, thereby contributing to evidence-based decision making, situational awareness, and improved societal outcomes."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

3.1 Mobile, Analysis, Situational Awareness, Real Time

"Increasingly, mobile devices are becoming a key source for geospatial data capture, maintenance and application. These capabilities are in addition to the simple ability to display maps to a mobile device as required in Tier 1."

"Increasingly, geospatial information is being generated as the result of real time observations being captured by in-situ and dynamic (moving) sensor systems. These information resources provide the ability to enhance decision making, situational awareness, quality of life, sustainability, and so on."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

13. 3.1.1 Are Geospatial Processing & Analytics services used to support the ability for users to conduct analysis on data/services provided?

Example: OGC Web Processing Service (WPS)

Mark only one oval.

- No services used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new services

14. 3.1.2 Are common grid systems being used to enable integrated analysis of very large, multi-source, multi-resolution, multi-dimensional, distributed geospatial data?

Example: OGC Discrete Global Grid Systems (DGGS)

Mark only one oval.

- No grid systems used
- Under development
- Developed
- Implemented
- Fully implemented and adaptable to new or other grid systems

15. 3.1.3 Are standards being use to support geospatial data capture, maintenance, or applications on mobile devices?

Example: OGC Open GeoSMS, OGC GeoPackage

Mark only one oval.

- No standards used
 Under development
 Developed
 Implemented
 Fully implemented and adaptable to new standards

16. 3.1.4 Are standards being used to support real time observations being captured by in-situ and dynamic (moving) sensor systems?

Example: Sensor Web Enablement(SWE) suite of standards

Mark only one oval.

- No standards used
 Under development
 Developed
 Implemented
 Fully implemented and adaptable to new standards

17. 3.1.5 Are semantic web standards used to define and use ontologies?

Examples: ISO 19150 Geographic information – Ontology, Resource Description Framework (RDF), GEOSPARQL

Mark only one oval.

- No standards used
 Under development
 Developed
 Implemented
 Fully implemented and adaptable to new standards

18. 3.1.6 Please check all Mobile, Analysis, Situational Awareness, Real Time standards that are currently utilized.

Check all that apply.

- OGC Web Processing Service (WPS)
 OGC Discrete Global Grid Systems (DGGS)
 OGC Open GeoSMS
 OGC GeoPackage
 OGC/ISO Observations & Measurements Schema (O&M) / ISO 19156
 OGC Observations and Measurements XML (OMXML)
 OGC Sensor Model Language (SensorML)
 OGC Sensor Observations Service (SOS)
 OGC Sensor Planning Service (SPS)
 ISO 19150 Geographic information – Ontology

Other: _____

Tier
4

"As our global web of information continues to increase with both data and technology, our capacity to share geospatial data increases towards becoming a spatially enabled web of data."

4.1 Spatial Data Integrated with Global Data Ecosystem

"These trends are driving requirements for enhancing existing geospatial standards, rethinking and crafting a new generation of standards based on the lessons learned of the existing baseline, and incorporating new suites of standards required to leverage the value of the emerging technologies and user requirements."

Reference: <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

19. 4.1.1 Please select any of the following trends in which your organization is current engaged with, exploring, developing, or implementing.

Check all that apply.

- Internet of Things (IoT)
- Unmanned Aerial Vehicles (UAVs)/Connected Autonomous Vehicles (CAVs)
- Autonomous Surface or Underwater Vehicles (ASV/AUV)
- Full Motion Video
- Big Data
- GeoAI
- APIs for the Web/Models
- Volunteered Geographic Information (VGI)
- Data Science Analytics
- Linked Data
- Machine Learning/ Deep Learning
- Cloud Optimized Geoprocessing and Blockchain

Other: _____

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