Status Update of Marine Spatial Data Infrastructure (MSDI) Implementations
related to a Marine Spatial Architecture

The intent of the study is to determine the relative level of advancement of various countries in the development of their MSDI. It also explores what is offered and what can be offered within a given resource framework. This means that the questions are intended to scope the scale of the MSDI resources required in their development.

Section 1 – General: Define the MSDI name, owners, mandate, users and access types

Does the MSDI possess a discovery portal, web page, web mapping service? If so please provide the link

1.1. **Identification** – Identification of the MSDI (e.g.: Title, description; such as Canada's Federal Geospatial Platform or INSPIRE)

1.2. **Sponsorship** – Organizations responsible for MSDI development?

What organizations are funding the MSDI?

1.3. **Mandate** – What is the Intended purpose of the MSDI?

1.4. **Audience** –Who are target users? (e.g.: Senior Management, Operational Management, Public Use, Academia, Private Sector, Specific Users such as mariners or all of the above)

Is the MSDI available to the public or is access restricted to a select community?

Section 2 – Policy

2. Policy: Define policies associated with MSDI and key purpose or objectives
Is the MSDI in development or is it operational?

2.1. **Governing Policies** – What are the governing policies of the MSDI? (e.g.: Policies related to public access, sales, support for a service such as navigation, etc.).

What are the policies on copyright in your MSDI?

What are the costs to access the information in your institution, if any?

Does your MSDI support conventions? (e.g.: Navigation, UN Convention on the Law of the Sea, or International Maritime Organization (IMO) regulations, etc.)

2.2. **Management Policies** – Are there policies for the management of the MSDI? (If possible provide a link) and how is it structured?

2.3. **Support Usage** – What are the main applications of your MSDI? (e.g.: sell charts, promote scientific research, etc.).

Does it support emergency or safety services?

Is your MSDI the only source of this information? (e.g.: Is the MSDI the only way to obtain electronic charts or updates of auxiliary data such as digital bathymetry data?)

3. Technical Oriented Questions: Level of Services implemented.

Levels to be indicated by:

Operational [ ]	An operational service is fully available to its target audience (not necessarily to the public)
Introductory [ ]	An introductory service has limited availability or limited data
Demonstration [ ]	A demonstration service is technically functional, but not intended for operational use
Planned [ ]	A planned service is in the planning or software development stage
Not Available [ ]	A service that is not available

3.1. **Data Discovery** - The ability to find the data offered through the MSDI.

3.1.1 Is there a Discovery Portal (compliant with the OGC[1] Catalogue Service for the Web[2] (CSW) protocol available or compliant with another specification)

Operational [ ]   Introductory [ ]   Demonstration [ ]   Planned [ ]   Not Available [ ].

If not compliant with OGC CSW, which specification is it compliant with?

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[1] OGC Open Geospatial Consortium < http://www.opengeospatial.org/ >
[2] OGC Catalogue Service for the Web (CSW) < http://www.opengeospatial.org/standards/cat > < http://en.wikipedia.org/wiki/Catalog_Service_for_the_Web >

3.1.2   Is the data available from a website, if so how? (e.g.: HTML webpage, FTP site, or other download service).

3.2. **Web Mapping** - The ability to view the data offered through the MSDI.

3.2.1   Is there a Web Mapping Service[3] (WMS) available (compliant with the OGC Web Mapping Service standard protocol or compliant with another specification)?

Operational [ ]   Introductory [ ]   Demonstration [ ]   Planned [ ]   Not Available [ ].

If not compliant with OGC WMS, which specification or proprietary service is it compliant with?

3.2.2   Is the data viewable using a conventional HTML web browser and/ or is a special software tool or app used?

3.3. **Access to Feature data** - The ability to access feature level data (such as IHO S-57 or future IHO S-10X ENC data) through a web service or through a file service.

3.3.1   Is there a Web Feature Service (compliant with the OGC Catalogue Web Feature Service[4] protocol or compliant with another specification)?

Operational [ ]   Introductory [ ]   Demonstration [ ]   Planned [ ]   Not Available [ ].

If not compliant with OGC WFS, which specification is it compliant with?

3.3.2   Is there the ability for select users to upload/download data (e.g.: ICE Service spotters reporting ice conditions or the reporting of nautical hazards)?

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[3] OGC Web Mapping Service (WMS) < http://www.opengeospatial.org/standards/wms > < http://en.wikipedia.org/wiki/Web_Map_Service >
[4] OGC Web Feature Service (WFS) < http://www.opengeospatial.org/standards/wfs> < http://en.wikipedia.org/wiki/Web_Feature_Service >

3.4. **Access to Coverage Data** - The ability to access imagery, gridded or other coverage data through a web service or through a file service (e.g.: IHO S-102 Bathymetry data).

    3.4.1   Is there a Web Coverage Service (compliant with the OGC Web Coverage Service[5] protocol or compliant with another specification)?

    Operational [ ]   Introductory [ ]   Demonstration [ ]   Planned [ ]   Not Available [ ].

    If not compliant with OGC WCS, which specification is it compliant with?

    3.4.2   Is there an extended Web Coverage Service (e.g.: supporting extensions such as transactions, subsetting, or special coverage types such as TIN or quad tree)? If yes please elaborate.

3.5. **Online data processing** - The ability to apply geospatial processes to data such as calculations based on the data. (e.g.: Find all of the rivers and stream upstream of a point on a selected river, calculate tidal levels or simply to calculate distance).

    3.5.1   Is there a Web Processing Service (compliant with the OGC Web Processing Service[6] protocol or compliant with another specification)?

    Operational [ ]   Introductory [ ]   Demonstration [ ]   Planned [ ]   Not Available [ ].

    If not compliant with OGC WPS, which specification is it compliant with?

3.6. **Data Questions** - Data types, volume and audience?

    3.6.1   **Data Types –** Which types of data are supported?

geolocated textual data	(e.g.: a Gazetter) such as a list of place names, or a maritime "List of Lights", etc.	[ ]
auxiliary textual data	(e.g.: location keyed information) such as road map directions, maritime "Sailing Directions" etc.	[ ]
bit map images	(e.g.: georeferenced scanned or generated images of maps) such as road maps or other map elements that may be included in a Web Map	[ ]

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[5] OGC Web Coverage Service (WCS) < http://www.opengeospatial.org/standards/wcs > < http://en.wikipedia.org/wiki/Web_Coverage_Service >
[6] OGC Web Processing Service < http://www.opengeospatial.org/standards/wps > < http://en.wikipedia.org/wiki/Web_Processing_Service >

Service.

Imagery	(e.g.: georeferenced satellite or other geospatial imagery)	[ ]
Pictures	(e.g.: image views) scenes as viewed from a location, such as the harbour views in a chart PICREP, or Google Street View.	[ ]
feature data	(e.g.: access to the geospatial features that make up a map)	[ ]
coverage data	(e.g.: other types of coverage data than imagery)	[ ]

3.6.2 **Topic –** What is the subject matter addressed by the information service.

topographic data	surface relief map	[ ]
imagery	satellite imagery	[ ]
transportation and logistics data	road maps, routes and directions	[ ]
marine	eNavigation, supporting marine data such as currents, ice, oceanography, marine biology, fisheries, sovereignty, sonar bathymetry	[ ]
military	defence, public safety or other high security data	[ ]
other	(please elaborate)	[ ]

If other, please elaborate.

Section 4 – Standards

4. MSDI Standards Oriented Questions:

There are a broad range of standards needed to support the technology used in the data infrastructure. It is relatively easy to say that the IHO, ISO and OGC standards are supported, but there are many choices involved in the standards. How are product specifications managed?

4.1. **IHO Standards** – Which is the International Hydrographic Organization (IHO) standards are supported? (e.g.: IHO S-57, IHO S-100, etc.)

Section 5 – Resources

5.   Resource Oriented Questions:

Understanding the resource related issues is probably the most important part of determining the scale of a Marine Spatial Data Infrastructure for comparison purposes.

5.1 Timeframe – Start date and projected end date of project.

Start Date [   ]   End Date [   ]

5.2 Life Span – Is the MSDI intended to be a permanent operational system, explain?

5.3 Resources – What are the resources allocated to this MSDI (e.g.: budget, personnel, and organizational support, etc.?)

What is the funding mechanism used to support the MSDI (e.g.: Government, partnership, private sector, etc.)?

5.4 Future Plans – What are the future plans for the continued use or development of the MSDI?

5.5 Advice – Do you have any advice for others developing an MSDI?

5.6 What were the challenges you faced and what lessons have you learned?