



Australian Government

Geoscience Australia



Australia's National Report

MSDIWG15

Bali, 4–8 March 2024

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Geoscience Australia



Content of Australia's Report

1. **Upcoming UN-DOALOS Publication on Maritime Geospatial Information**
2. **Evolution of Australia's MSDI Ecosystem**
3. **Challenges and Solutions to MSDI in the Australian Context**

UN-DOALOS Publication on Marine Geospatial Information Management

United Nations



General Assembly

A/RES/77/248 Oceans and the law of the sea

09 January 2023

Section XVII Activities of the Division for Ocean Affairs and the Law of the Sea (UN-DOALOS)

Article 388: Requests the Secretary-General to continue the publication activities of the Division, in particular through a publication on marine geospatial information management and the publication of the Law of the Sea Bulletin

UN-DOALOS Publication on Marine Geospatial Information Management

The Group of Experts was established on the basis of the nominations received, Chaired by Australia.

Contributions were received from the following: Ecuador, Egypt, the European Union, France, the Netherlands, Nigeria, Oman, Poland, and the United States of America, Food and Agriculture Organization and Convention on Biological Diversity.

It is anticipated that the Group will complete its work by the end of August 2023. Thereafter, the Division would finalize the publication with a view to submitting it for processing by the end of 2023.

Overview of Australia's Submission

- Underpinning and supporting the existing and future management of Australia's oceans will be the **provision of marine geospatial data**.
- The **breadth** of information required to support Australia's goals is **diverse and growing**.
- Successfully **delivering** this information requires **investment and innovation** in data collection, custodianship, and visualisation.
- To achieve the above outcomes, Australian government, scientific organisations, and academia are required to collaborate to maximise the investment in and derived outcomes of marine geospatial data.
- To achieve this, building coordination within and across sectors and management of marine geospatial data to support whole of jurisdiction decision making is required.

Australia's MSDI Ecosystem

- [Australian Marine Spatial Information System \(AMSIS\)](#): Australia's **maritime limits, boundaries** and information for marine planning
- [National Offshore Petroleum Information System \(NOPIMS\)](#): **marine geology and geophysics** collected by the Petroleum Industry
- [AusSeabed](#) and the [HydroScheme Industry Partnership Program \(HIPP\)](#): Coordination in the collection, custodianship and distribution of **bathymetric data and hydrographic surveys**
- [The Atlas of Living Australia](#): The collection and publication of **biodiversity data**
- The [Integrated Marine Observing System \(IMOS\)](#) and the [Australian Ocean Data Network \(AODN\)](#): **Ocean observation data**
- [Coastkit](#): **Marine geospatial data access at a State Government level** from the Victorian Department of Energy, Environment and Climate Action (DEECA)



ISO 19152 Land Administration Domain Model (LADM)

Themes

Part 1: Fundamentals

Part 2: Land registration

Part 3: Marine georegulation

Part 4: Valuation information

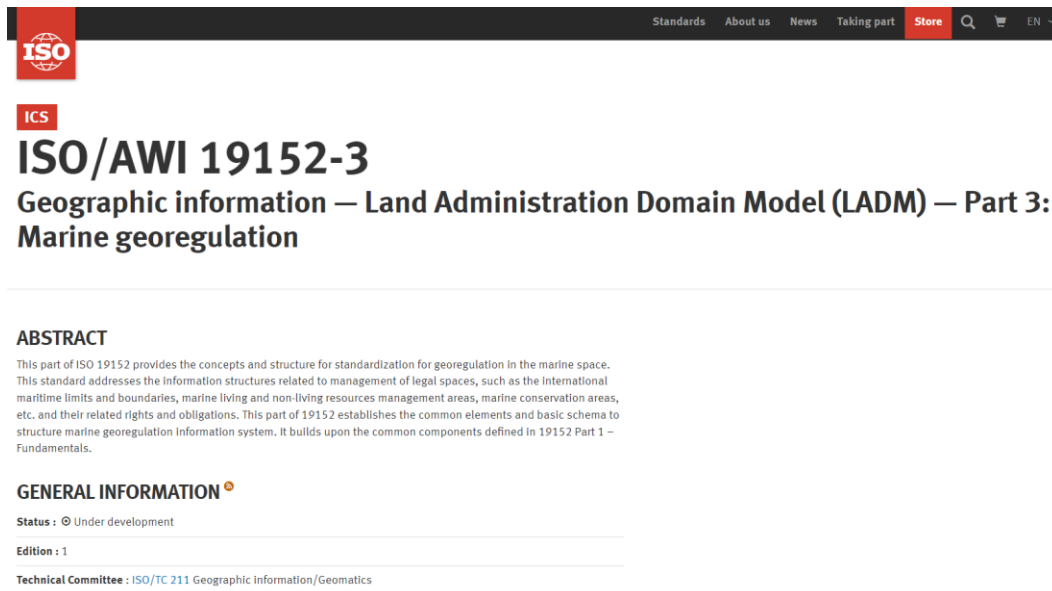
Part 5: Spatial plan information

Part 6: Implementation aspects

Status:

Part 1: Published in 2023

Part 3: Publishing 30 March 2024



The screenshot shows the ISO website interface. At the top, there is a navigation bar with links for Standards, About us, News, Taking part, Store, and a search icon. Below the navigation bar is the ISO logo. The main heading is "ISO/AWI 19152-3" followed by "Geographic information — Land Administration Domain Model (LADM) — Part 3: Marine georegulation". Below this is an "ABSTRACT" section with a paragraph of text. Further down is a "GENERAL INFORMATION" section with a small orange icon, and a "Status" field showing "Under development". Below that is an "Edition" field showing "1" and a "Technical Committee" field showing "ISO/TC 211 Geographic Information/Geomatics".

Standards About us News Taking part Store Q EN

ISO

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ISO/AWI 19152-3

Geographic information — Land Administration Domain Model (LADM) — Part 3: Marine georegulation

ABSTRACT

This part of ISO 19152 provides the concepts and structure for standardization for georegulation in the marine space. This standard addresses the information structures related to management of legal spaces, such as the international maritime limits and boundaries, marine living and non-living resources management areas, marine conservation areas, etc. and their related rights and obligations. This part of 19152 establishes the common elements and basic schema to structure marine georegulation information system. It builds upon the common components defined in 19152 Part 1 – Fundamentals.

GENERAL INFORMATION

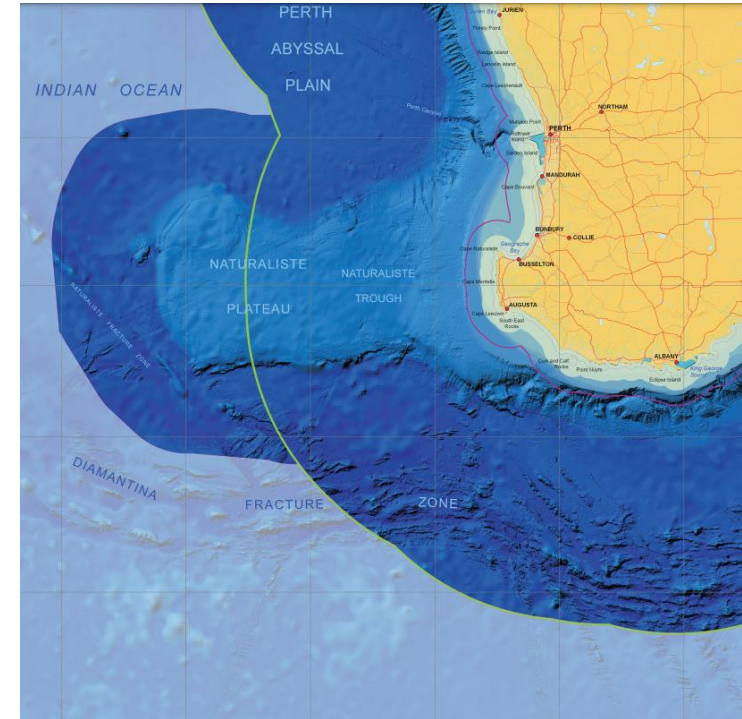
Status :  Under development

Edition : 1

Technical Committee : ISO/TC 211 Geographic Information/Geomatics

Challenges to Australian MSDI

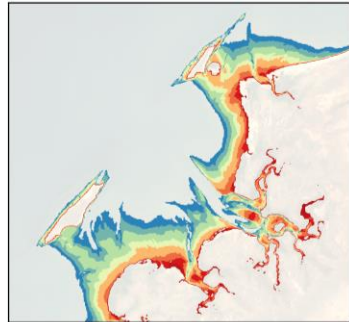
- **Geography:**
Australia is an Island Continent with a vast marine estate. The quantity of data, as well as the incompleteness is a challenge to MSDI.
- **Stakeholders:**
There are many Ocean stakeholders. Governments, Industry, Environmentalists, First Nations people etc. Sometimes stakeholders hold differing views over Ocean use and their willingness to share data.
- **Governance:**
Ocean management is split over three levels of government, as well as First Nations People's Rights. This makes for a complex system.



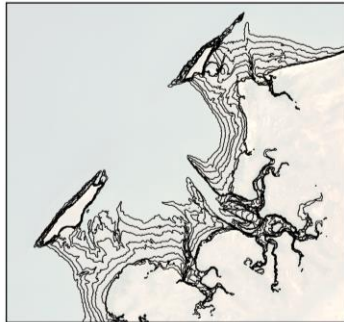
Australia's Vast Marine Estate

Challenge:

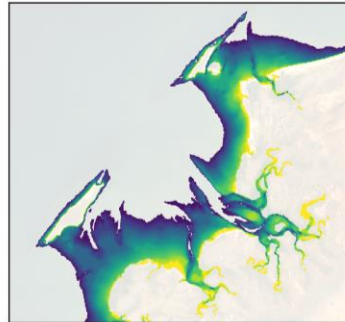
Australia has a large marine jurisdiction. We face many challenges collecting the primary and derivative datasets required to feed into our MSDI ecosystem. These challenges include the limitation of traditional surveying methods to cost-effectively collect data for Australia's significantly large marine estate.



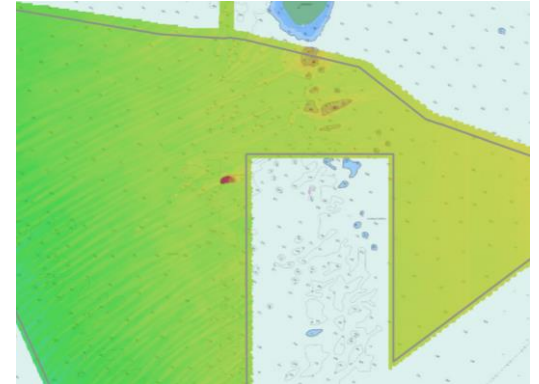
10% intervals of the tidal range mapped from 30 years of Landsat satellite imagery



Waterline contours extracted and assigned median tidal heights for each 10% interval



Interpolated elevation relative to mean sea level
< 2.50 m 0.00 m > 1.50 m

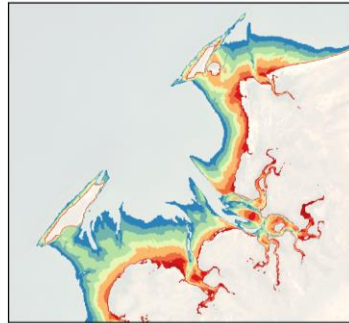


Australia's Vast Marine Estate

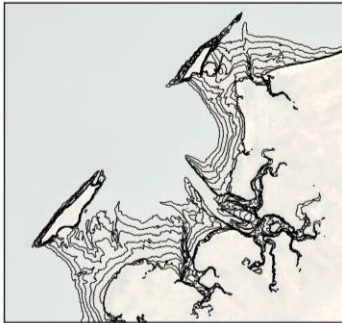
Solution:

We have invested in innovative solutions to solve the challenge of having a marine estate too large for conventional high-quality data collection methodologies:

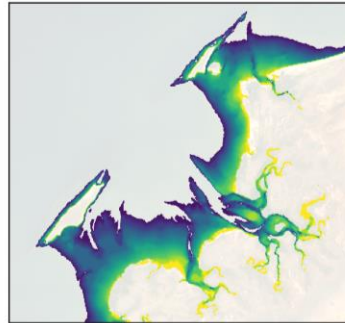
- Using Earth Observation (EO) mapping techniques to derive our coastline and shallow water bathymetry such as DEA Coastlines, DEA National Intertidal Digital Elevation Model (NIDEM), and Satellite Derived Bathymetry
- Developing the HIPP to progress targeted high-quality mapping of bathymetry working towards full EEZ coverage by 2050.



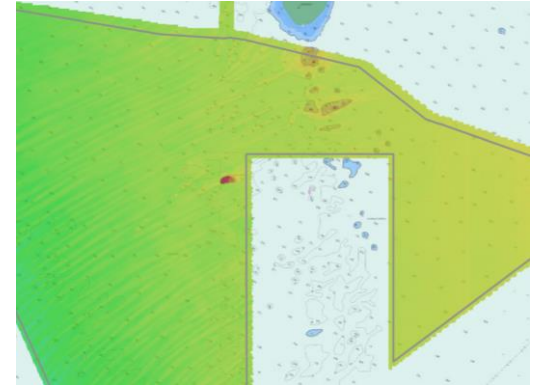
10% intervals of the tidal range mapped from 30 years of Landsat satellite imagery



Waterline contours extracted and assigned median tidal heights for each 10% interval



Interpolated elevation relative to mean sea level
< 2.50 m 0.00 m > 1.50 m



AHO Bathymetry Release Policy

Challenge:

Bathymetry is a fundamental data source for MSDI and Marine cadaster. The Australian Hydrographic Office is the custodian of extensive bathymetry of Australia's marine estate.

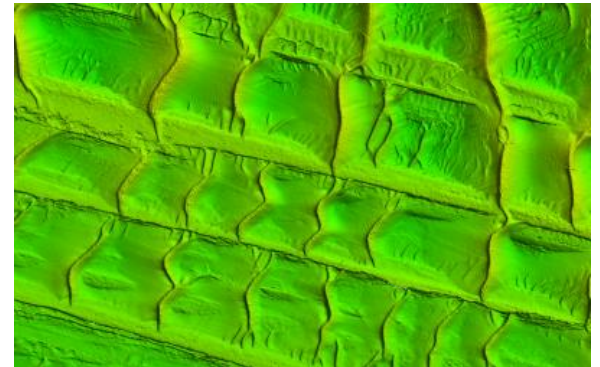
The AHO is focused on digital transformation of its navigation products and services. It will leverage the adoption of S100 to extend its capability to disseminate data for use in MSDI.



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AHO Bathymetry Release Policy

Solution:

AHO contributes to MSDI by release of bathymetric data through 3 mechanisms:

1. Releasing 30m Grids of HIPP surveys via AusSeaBed
2. Providing a public index of survey coverages as polygons for ad-hoc requests
3. Provide source data for production of national 250m and regional 30m grids created by Geoscience Australia

The AHO benefits from releasing data in support of MSDI:

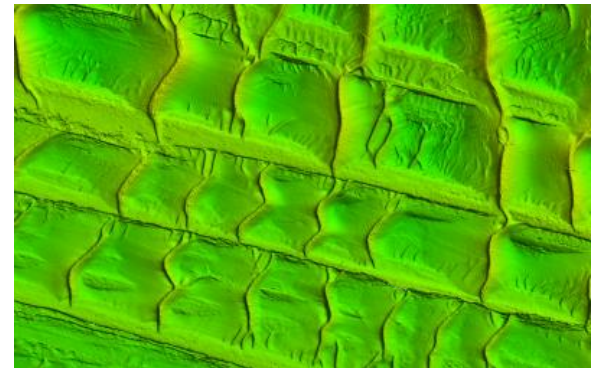
- AusSeaBed allows the bathymetric community to inform the AHO of areas of interest for future survey activity
- AusSeaBed community standards and capability lift increases the quality of third-party bathymetry the AHO receives.



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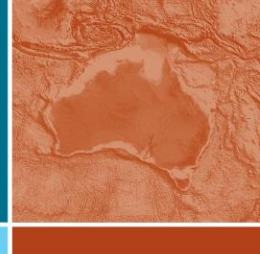
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Thank you.

Please see me for any questions!

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