Hydrographic Services and Standards Committee

Report of the / Proposal by the

S-121 Project Team

Progress Update

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Some Background

Oct. 2007	• DOALOS approached the IHO with a request to identify appropriate technical standards.
Nov. 2013	• IHO endorsed the creation of an S-121 project team
Dec. 2013	• Initial developments work triggered by the submission of a S-121 draft proposal by Australia.
Aug. 2014	• Australia and Canada agreed cooperation over development of S-121 (Hydro News).
December 2016	• The first S-121 PT meeting was officially launched in the United Nation Head-Quarters, NY.
May 2017	• The second S-121 PT meeting - WebEx
June 2017	• S-121 liaison meeting between ISO, OGC and IHO
September 2017	• OGC Meeting – Marine Domain Working Group • S-121 3rd Project Team Meeting – WebEx
December 2017	• S-121 4th Project Team Meeting – Face to Face

Mandate: To develop a standard to support the management, description and exchange of a State's Maritime Sovereignty, Sovereign rights, extents,and associated juridical zones.

S-121 MLBs Project team was tasked to:

1. Define a proposed **data model**;
2. Create an S-100 conformant product specification for MLBs to support coastal States' **depository obligations** in accordance with the Convention (DOALOS)
3. Determine if S-100 **needs to be extended** to facilitate the implementation of the deposit obligation of coastal States' under the Convention.

Use Cases:

- Depository Obligations under UNCLOS ("plain text format")
- Unambiguous exchange of data between states' parties / member states
- Promulgation via web services to "end users" and others for onward distribution (MSDI etc..)

Principal activities and achievements

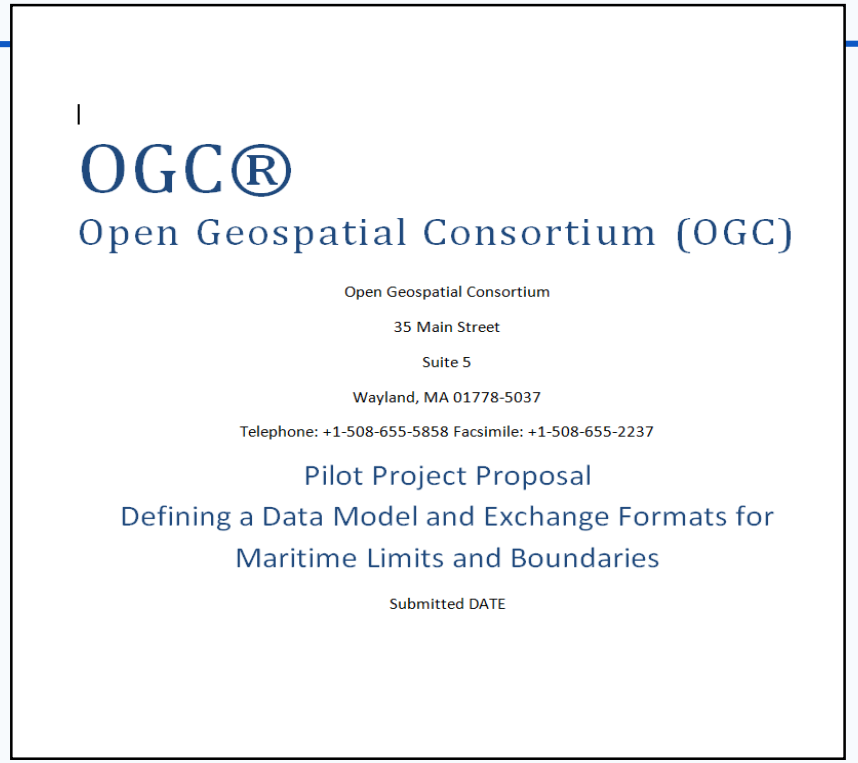
- IHO MSDIWG and OGC MDWG, Brazil Jan 2018
- ISO/TC 211 plenary week, Copenhagen, Denmark, 28 May-01 June 2018
- FIG Congress, Istanbul, Turkey 6 – 11 May 2018
- HSSC 10, Rostock-Warnemünde, Germany, 14-17 May 2018
- OGC TC/PC Meetings, Fort Collins, USA, 04-08 June 2018
  - Pilot Project Call for Sponsors
  - Canada will attend
- UN-SPLOS 28, New York, USA, 11-14 June 2018
  - Information Session: Mark Alcock (chair)
- S-101 Project Team Meeting, Monaco, 19-21 June 2018
  - Registry kickoff
- UN-GGIM, New York, USA, July 30 - Aug 03 2018
  - Canada will attend
  - IHO SG/Project Team presenters ? More consideration required
  - Invite IHO Secretary General via HSSC (Canada could facilitate)
  - Focus should be marine domain management
  - Marine Spatial Planning / Fisheries
  - Sustainable Development Goals (14c)
  - Digital enablement
- OGC Stuttgart September 2018
  - Progress update on pilot project

Achievements - Where Are We?

- As of last project meeting the S-121 group has
  - A model agreed by consensus with group participants
  - List of features ready for ingest to the IHO registry
  - First draft primary use case encoding
  - Example implementations
- Next steps
  - Establishment of specific domain for maritime limits and boundaries (MLB)
  - Ingest of features/attributes to registry and harmonisation with pre-existing features to support other domains.
  - Continuation of outreach to wider community
  - Wider Stakeholder review of product specification
  - Processing of received feedback and production of final version 1.0
  - Engagement of OGC in pilot project.

OGC pilot project

- **A sponsored piece of work managed and executed by the open geospatial consortium (OGC)**
- **Pilot project aims**
  - **Demonstrate GIS Implementation**
  - **Implement DOALOS Submission Format**
  - **Develop and implement Universal Exchange Format (GML)**
  - **Develop Data Display Format**
  - **Extend GIS Implementation**
  - **Test compliance with ISO 19152**
- Currently looking for sponsorship. Some is in place but we need more from interested parties.
- Could this be a model for other IHO product specifications with web services/interoperability requirements??



OGC®

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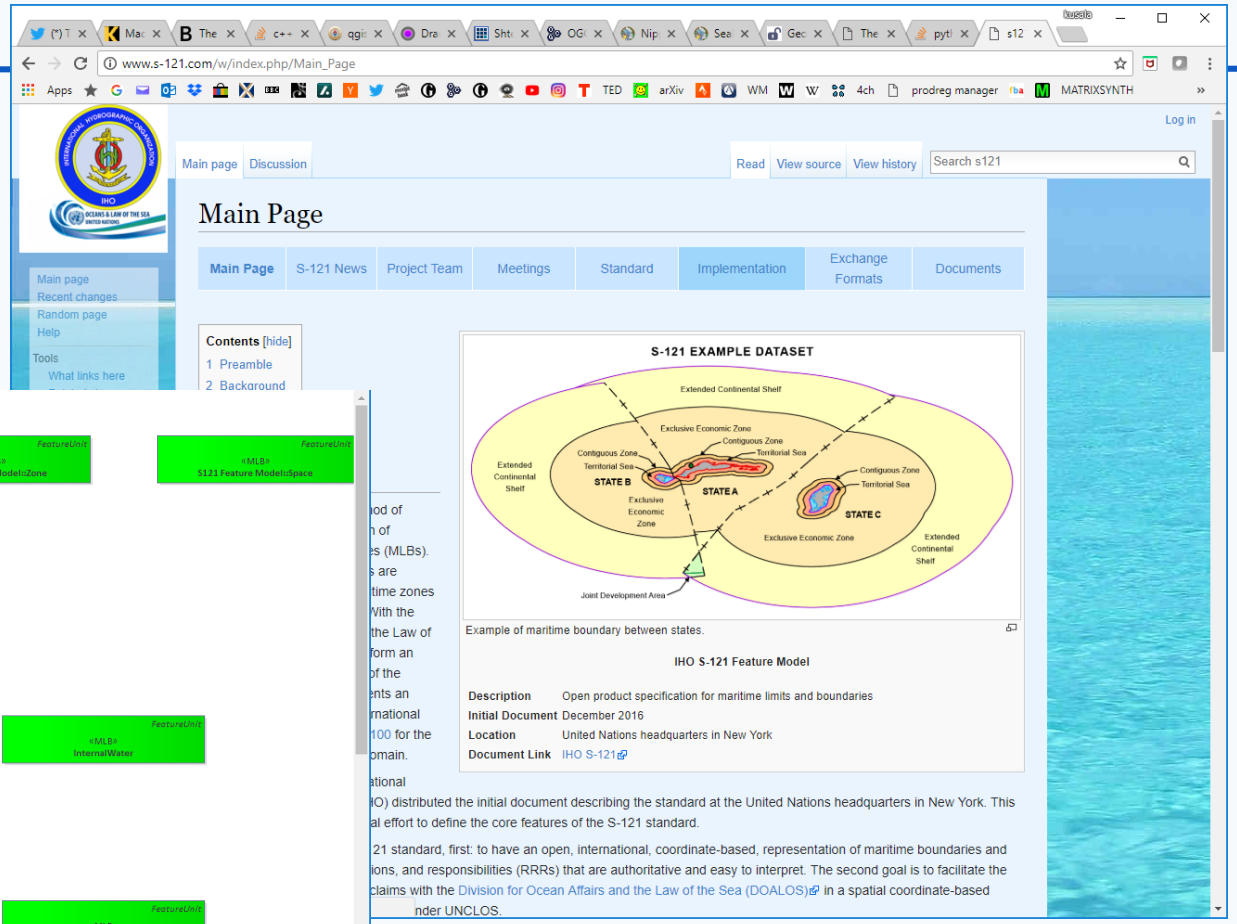
Pilot Project Proposal

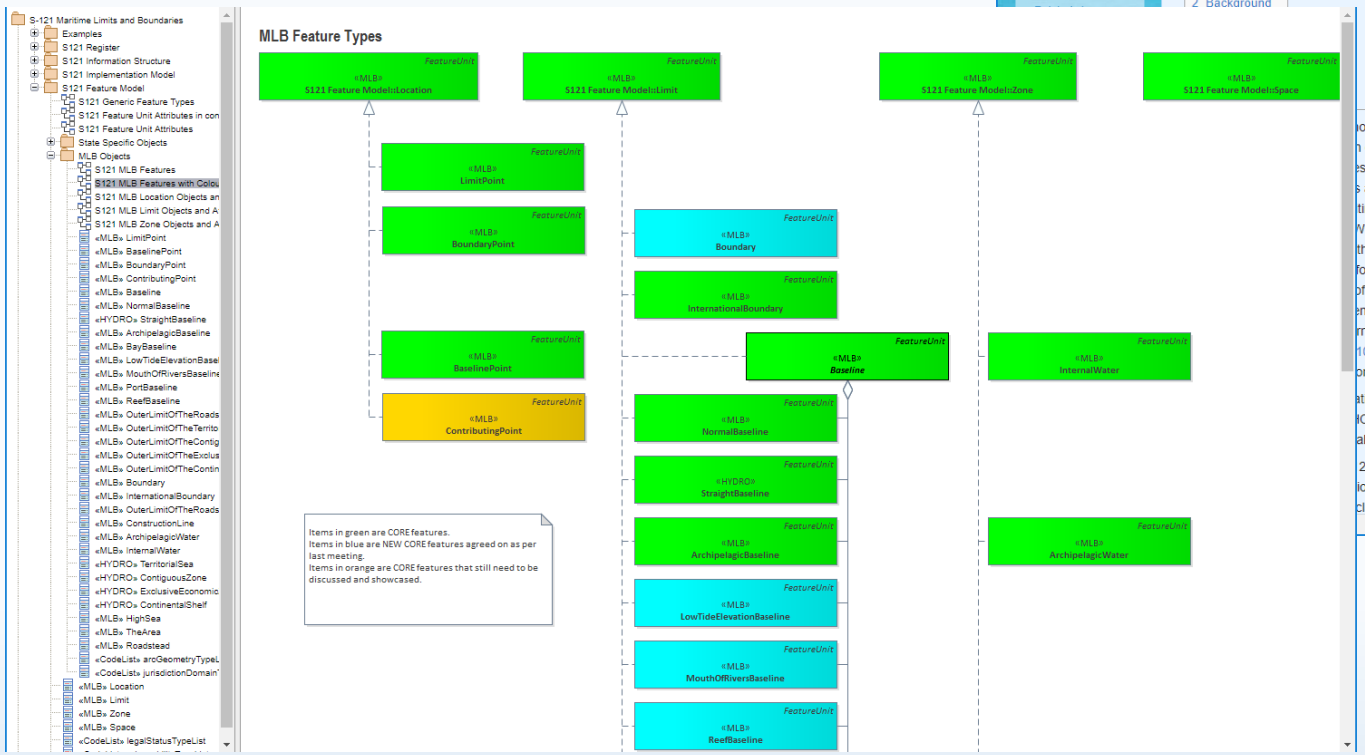
Defining a Data Model and Exchange Formats for Maritime Limits and Boundaries

Submitted DATE

So, we have a website (with example data)….

www.s-121.com





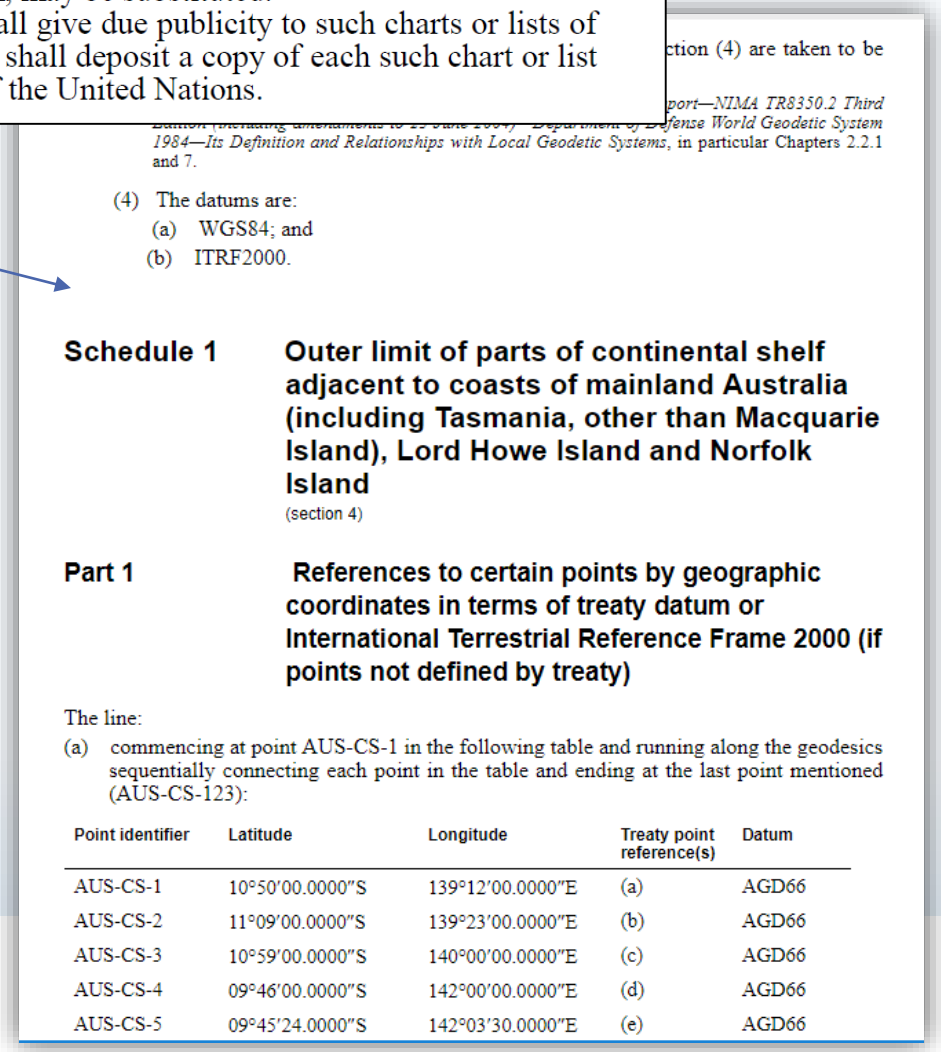
And a model…

Key Challenge
Primary Use Case.

Article 16
Charts and lists of geographical coordinates

1. The baselines for measuring the breadth of the territorial sea determined in accordance with articles 7, 9 and 10, or the limits derived therefrom, and the lines of delimitation drawn in accordance with articles 12 and 15 shall be shown on charts of a scale or scales adequate for ascertaining their position. Alternatively, a list of geographical coordinates of points, specifying the geodetic datum, may be substituted.
2. The coastal State shall give due publicity to such charts or lists of geographical coordinates and shall deposit a copy of each such chart or list with the Secretary-General of the United Nations.

- Example – AUS Continental shelf proclamation 2012.
- Shows S-121 Primary use case, “satisfying deposit obligations”
- Replicate point schedules
- Must be able to support
  - Good formatting
  - Long lists
  - Multiple datums
  - Multiple representations of “coordinates”
  - Looking at RTF (Unicode) vs pdf vs XML/GML
- Must satisfy the “lawyer test”
- Human-Readable, Printed Output



ction (4) are taken to be

port—NIMA TR8350.2 Third Edition (including amendments to 23 June 2004)—Department of Defense World Geodetic System 1984—Its Definition and Relationships with Local Geodetic Systems, in particular Chapters 2.2.1 and 7.

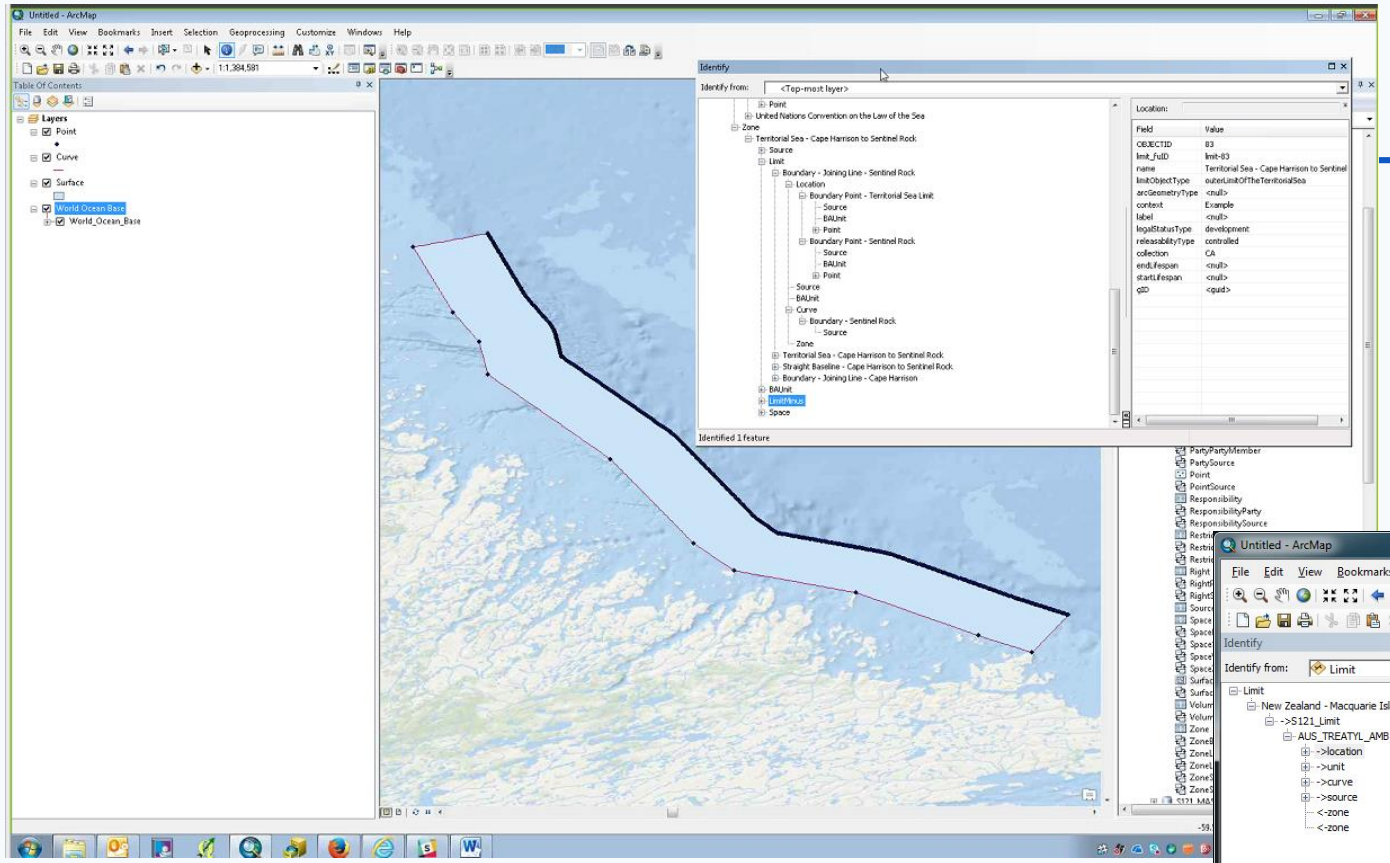
(4) The datums are:
(a) WGS84; and
(b) ITRF2000.

Schedule 1 **Outer limit of parts of continental shelf adjacent to coasts of mainland Australia (including Tasmania, other than Macquarie Island), Lord Howe Island and Norfolk Island**
(section 4)

Part 1 **References to certain points by geographic coordinates in terms of treaty datum or International Terrestrial Reference Frame 2000 (if points not defined by treaty)**

The line:
(a) commencing at point AUS-CS-1 in the following table and running along the geodesics sequentially connecting each point in the table and ending at the last point mentioned (AUS-CS-123):

Point identifier	Latitude	Longitude	Treaty point reference(s)	Datum
AUS-CS-1	10°50′00.0000″S	139°12′00.0000″E	(a)	AGD66
AUS-CS-2	11°09′00.0000″S	139°23′00.0000″E	(b)	AGD66
AUS-CS-3	10°59′00.0000″S	140°00′00.0000″E	(c)	AGD66
AUS-CS-4	09°46′00.0000″S	142°00′00.0000″E	(d)	AGD66
AUS-CS-5	09°45′24.0000″S	142°03′30.0000″E	(e)	AGD66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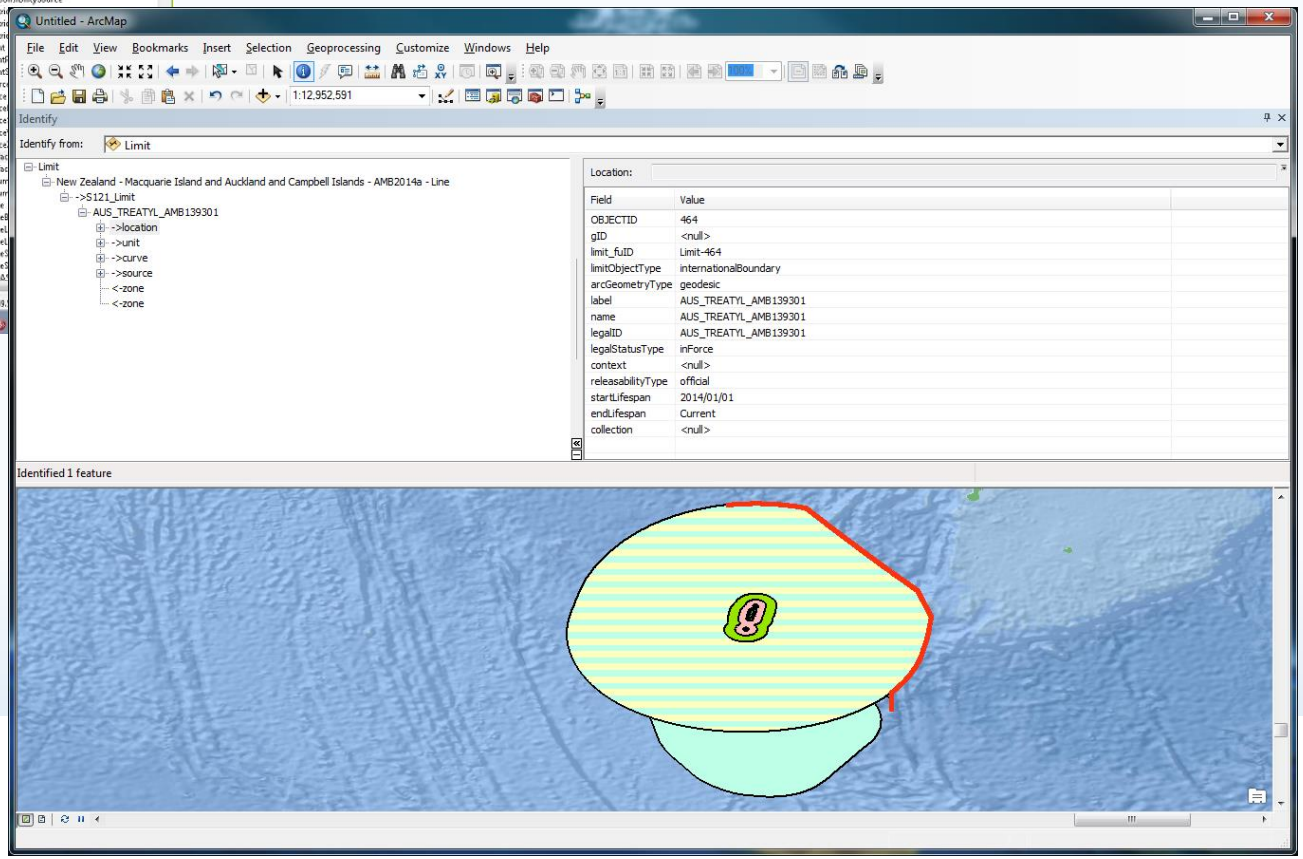
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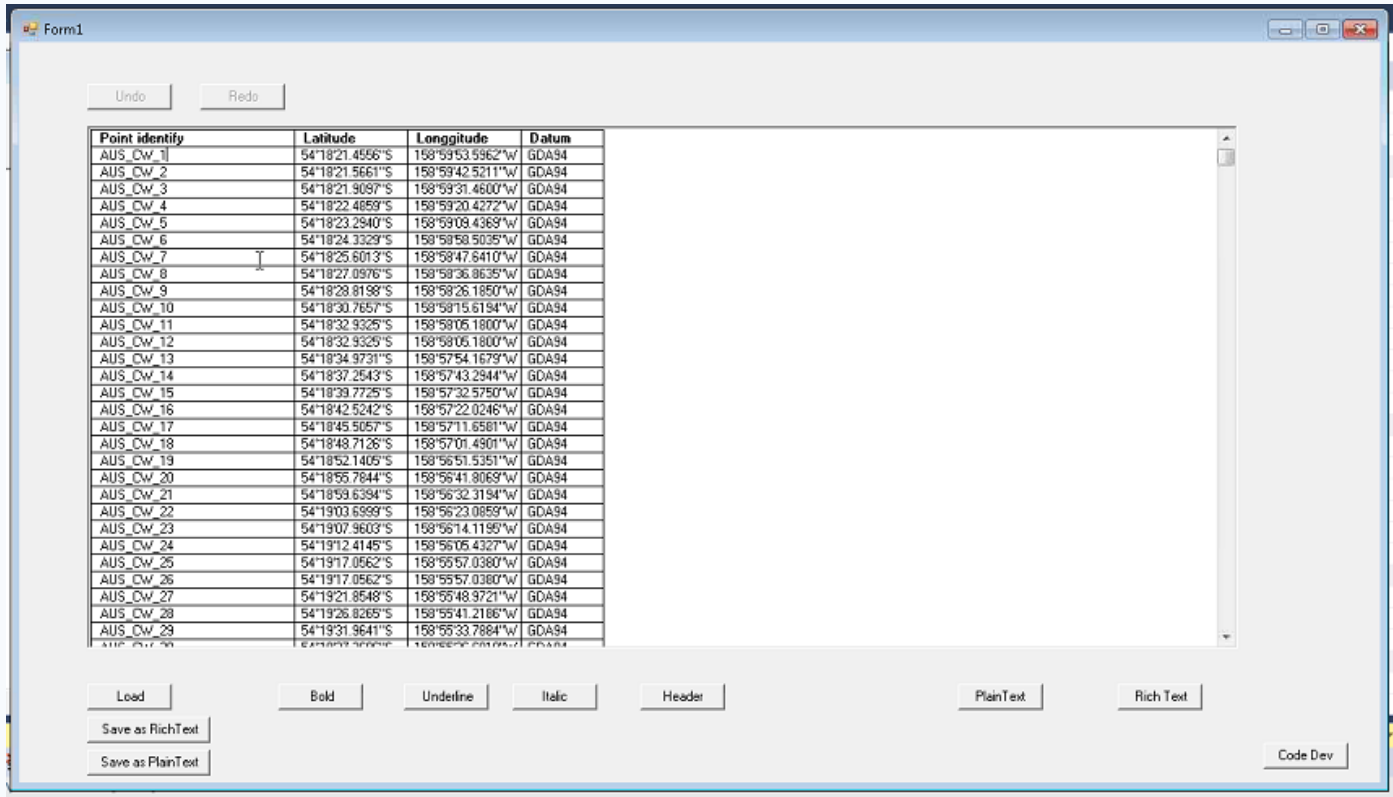
Identified 1 feature

“Flat Text Encoding”

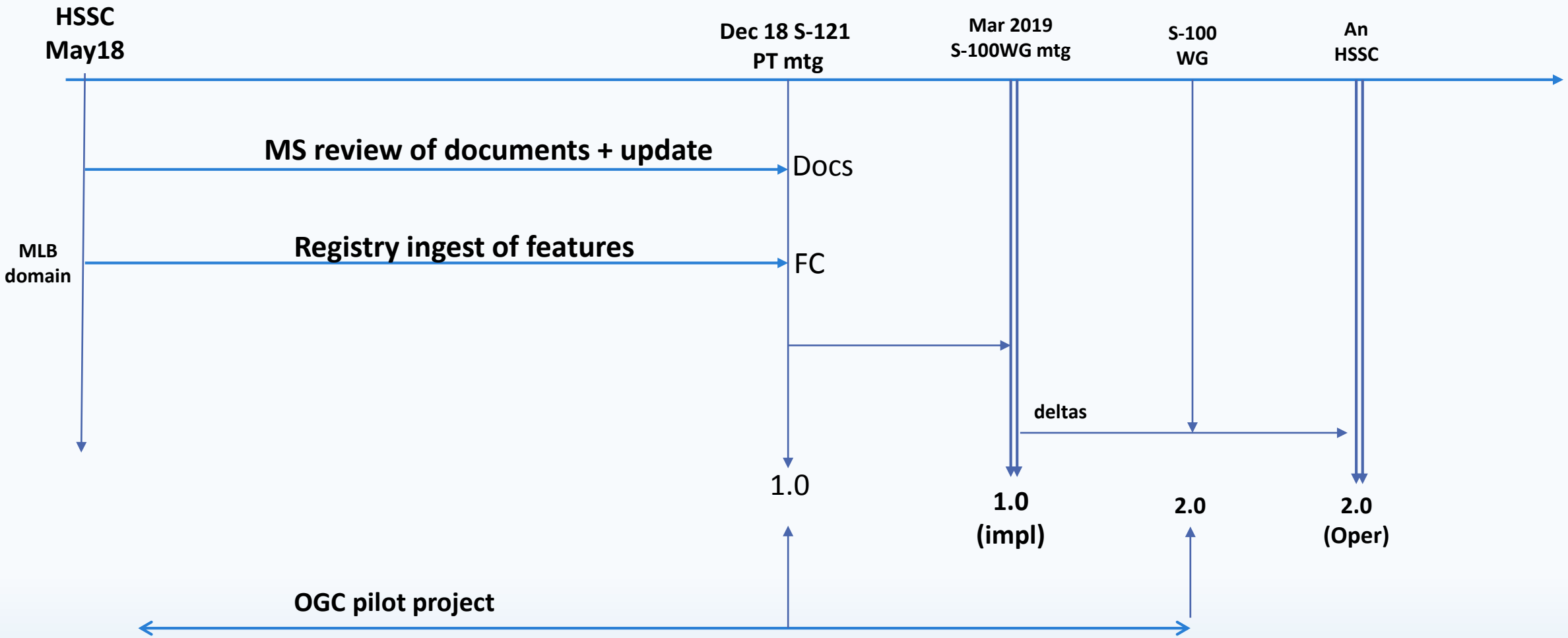
- First draft within documents for review
- Going through active development
- Consultation with MS representatives
- OGC pilot will contribute extensively to process
- Need to Get The Model Right First – stakeholder view
- Early prototypes from test data (AUS)



Future work programme (Next Steps)

- **Review with wider stakeholders**
- **Harmonise comments**
- **OGC pilot commencement and management**
- **Registry ingest of features, harmonisation and input to IHO S-32**
- **Publish (end 2018 PT meeting NY)**

The Timeline Slide…



Action requested of HSSC

- Establishment of MLB domain
- Start of feature/attribute ingest to registry
  - Import of S-121 elements
  - Harmonisation and de-duplication where necessary to ensure backwards compatibility with existing features
  - Resolve any issues with S-32 nomenclature and registry concepts
- Note progress so far
  - Establishment of model agreed by MS within project team
  - Note the need for a wider stakeholder review, invitation by CL
  - Note the timetable for review, registry and publication activities
- Release by CL for review by wider member states
- Note the call for OGC sponsorship for the pilot project and the benefits of working within the IHO/OGC MOU
- Engage in the UN-GGIM process and note the importance of S-121 data as a fundamental part of that discussion

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Thank You ☺

Questions?

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