**Use Case – Legal Boundaries**

**ICSM**

**CANBERRA, ACT**

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# Introduction

This use case has been developed to demonstrate the benefit that the AusHydroid will bring in both locating and representing legal boundaries that are defined by tidal planes.

# Issue

Some legal boundaries are defined by written references to tidal planes that are inadequately mapped. The concept of the tidal plane is legislated, not its spatial realisation, and subsequently the boundary itself is ambiguous. The degree to which this ambiguity is of practical significance is likely to vary around the coast but will become more important as spatial positioning improves. This issue is relevant to both state and federal legislation.   
A federal instance is a maritime boundary defined to start at the Territorial Sea Baseline. This baseline is defined to be the Lowest Astronomical Tide (LAT) tidal plane, whereas the position of LAT on the coast is not accurately defined.

Another case is that of the Common law datum for land-based cadastral purposes. In most Australian jurisdictions this is defined to be the intersection of Mean High Water (MHW) with the coast. MHW is not accurately mapped around the Australian coast. The MHW is also frequently used as the coastal limit on topographical mapping.

The issue is the inability to accurately locate and represent these boundaries along a large proportion of the Australian coastline.

# Terms and Conditions

|  |  |
| --- | --- |
| AHO | Australian Hydrographical Office. |
| AUSHYDROID | The surface separation between the National Ellipsoid and chart datum. |
| GNSS | Global Navigation Satellite System. |
| LAT | Lowest astronomical tide. |
| MHW | Mean High Water. |

# Use Case

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| --- | --- | --- | --- | --- |
| **Name of Use Case:** | Legal Boundaries | | | |
| **Created By:** | ICSM AUSHYDROID WG | | **Last Updated By:** | A.Taylor |
| **Date Created:** | 7-Jan-2020 | | **Last Revision Date:** | 17-Dec-2021 |
|  | |  | | |
| **Description:** | | Being able to accurately locate and represent legal boundaries | | |
| **Actors:** | | AHO, Surveyors, Federal Government, Federal Government, Territory Government. | | |
| **Preconditions:** | | Legal boundaries exist which are defined by tidal planes and are currently unable to be located or represented to a satisfactory degree of accuracy. | | |
| **Postconditions:** | | An improved tidal datum and AUSYDROID for the Australian coastline resulting in a more accurate locating and representation of legal boundaries associated with tidal planes. | | |
| **Flow:** | | 1. Identify areas of the coastline where an improved understanding of the tidal datum is required. 2. Use GNSS equipment at these points to establish a Tide Gauge Bench Mark relative to the National Ellipsoid and install tide gauge(s). 3. Analyse tides to determine LAT. 4. Incorporate information into the creation/updating of the AUSHYDROID. 5. Use the AUSHYDROID to locate/represent legal boundaries. | | |
| **Exceptions:** | |  | | |
| **Requirements:** | | 1. Funding availability must be verified prior to equipment and installation occurs. 2. Analysis of data (tidal height and GNSS) 3. AUSHYDROID observations to be submitted to AHO for inclusion in to a National AUSHYDROID model. | | |

Sponsor Acceptance

Approved by the ICSM AUSHYDROID Working Group:

Date: 17-Dec-2021