Australian Government
Department of Defence

AUSTRALIAN
HYDROGRAPHIC
OFFICE

Fact Sheet: Hydrographic Surveying

High Density Bathymetric ENC – Survey Metadata Form

INSTRUCTIONS FOR USE

This form describes the minimum metadata required to accompany bathymetry collected in support of the compilation of High Density bathymetric Electronic Navigation Charts.

This form is to accompany every survey submitted by a port in support of HD bENC. It enables the AHO to fast-track validation of each survey and allow it to pass directly to the nautical cartographers to create a new or replacement ENC for the area surveyed. Failure to supply this form, satisfactorily completed, will introduce delays in production until missing or inadequate information is resolved.

For Hydrographic survey data to be suitable for use in HD bENC the AHO must be able to completely replace existing charted data with the new data within the bounds of the AU6 ENC cell. In order to achieve this the survey extents must overshoot the AU6 ENC data coverage limits by at least 50m to permit reliable generation of depth contours, with the data meeting the following IHO S-44 Special Order requirements (Ports Australia "Class A"):

Maximum allowable Total Horizontal Uncertainty (95% confidence):	+/- 2 m
Maximum allowable Total Vertical Uncertainty (95% confidence): A = +/- 0.25m B = 0.0075	**TVU for 10m depths = +/- 0.26m** **TVU for 20m depths = +/- 0.29m**
Feature Detection:	**Full seafloor search (able to detect features greater than 1 cubic metre in size)**

The bathymetry supplied needs to be referenced to:

- WGS84. This is what ships, pilots, and ENC use. Transformation to other reference systems, and back again, increases the THU.

- LAT, based upon a specified port tidal datum (such as "zero of the port tide gauge", "x.xx metres below [named] benchmark" or similar). Where multiple tidal stations or nodes have been used, each should be listed to ensure accuracy is maintained through to the ENC, as simply stating "LAT" does not provide sufficient detail to replicate the tidal reference plane within the AHO. LAT within ports is frequently insufficiently defined for levels of accuracy to be maintained through to the ENC. If in doubt about the horizontal or vertical datum details required please contact the AHO's Tidal and Geodetic Control Section: tides.support@defence.gov.au

The preferred format of bathymetric data is:

- Processed,
- Gridded at 1m resolution or better, shoal depth true position,
- Provided as either ascii (xyz txt pts etc) or Caris CSAR format. Full source data will be accepted.

Please forward survey data with the completed Survey Metadata Form to:

Hydrographer of Australia
C/- Maritime Data Management Section
Australian Hydrographic Service
Locked Bag 8801
Wollongong NSW 2500

Email survey data and Survey Metadata Form to: datacentre@hydro.gov.au for datasets less than 7mb for each email

Contact: datacentre@hydro.gov.au for arrangements for datasets larger than 7mB

Notes:

Those mandatory fields highlighted will be used during the initial assessment of the suitability of a survey for use in a bathymetric ENC.
Remaining fields assist in confirming claimed requirements have been met, and ensuring alignment between reference systems used by the port and the AHO.

General

Survey Title and ID (as supplied)	(M)	
AU6 Cell surveyed	(O)	
Survey Authority	(M)	
Surveyor in Charge and qualification	(M)	
Start date of survey	(M)	
End date of survey	(M)	

Data Coverage

Survey extents overshoot AU6 data coverage by at least 50m (If 'No' the survey may be rejected)	**(M)**	

Horizontal Control

Datum **WGS84**	(M)	
Spheroid	(M)	
Projection and Zone	(M)	
Estimated **THU of soundings at 2 Sigma (95%) confidence level better than +/-2m**.(Calculations can be included as an attachment.	(M)	

Vertical Control

Soundings datum **LAT**	(M)	
Tide reduction method	(M)	
Tide Station 1 details (M if observed tides used)	(M)	
Benchmark (BM) used and datum connection	(M)	
Geoid details if using GPS tides	(M)	
Tide Station 2 details (M if multiple tide stations used)	(O)	
Benchmark (BM) used and datum connection	(O)	
Geoid details if using GPS tides	(O)	
Tide Station 3 details	(O)	
Benchmark (BM) used and datum connection	(O)	
Estimated TVU of soundings at 2 Sigma (95%) confidence level **better than IHO Special Order / Ports Australia "Class A"** (+/- 0.26m @10m, +/- 0.29m @20m2m) (Calculations can be included as an attachment)	(M)	

Feature Detection and Data Density

Full sea floor search achieved (at least 100%)	(M)	
IHO Special Order feature detection achieved	(M)	
Shoal depths systematically investigated and least depths determined?	(M)	
Data density provided (1.0m or better)	(M)	
Has data been thinned from that collected?	(O)	
If thinned, thinning method and bin size used	(O)	