



United States-Canada Hydrographic Commission 45th Meeting

Canada's Usage Merge

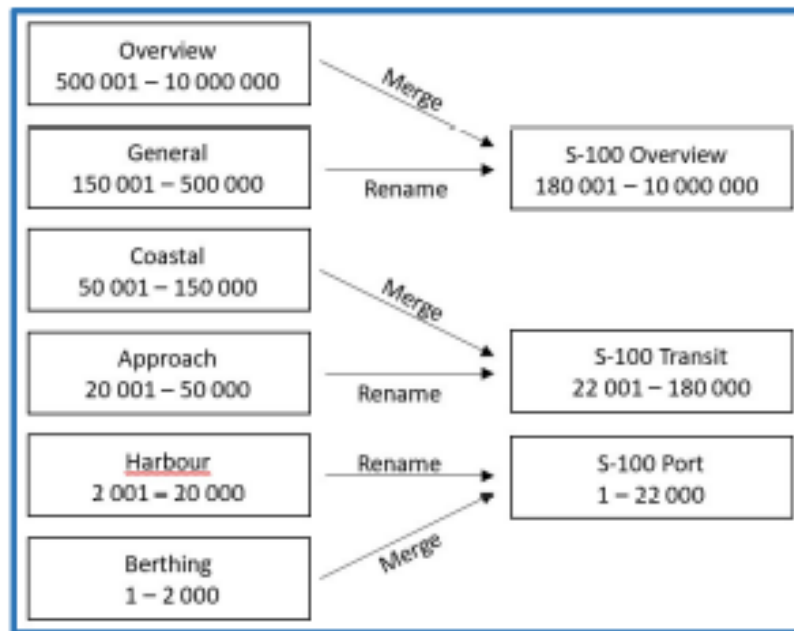
Name: Mark LeBlanc

9-10 June 2022 Ottawa CA



Objective

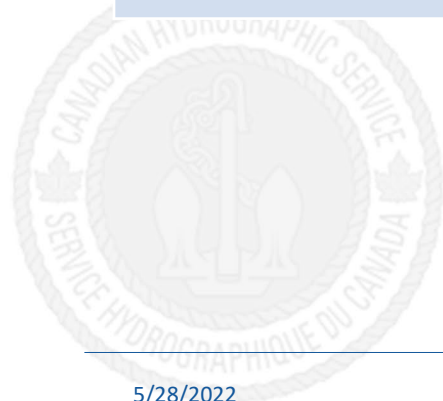
- Reduce to 3 usage bands and adopt IHO S-101 recommended scales
- Adoption is done in conjunction with a move to a gridded ENC scheme
- Rationalize ENCs that do not conform to new usage bands
- Facilitate the migration of ENCs from S-57 to S-101





S-101 Scales / Usage Bands

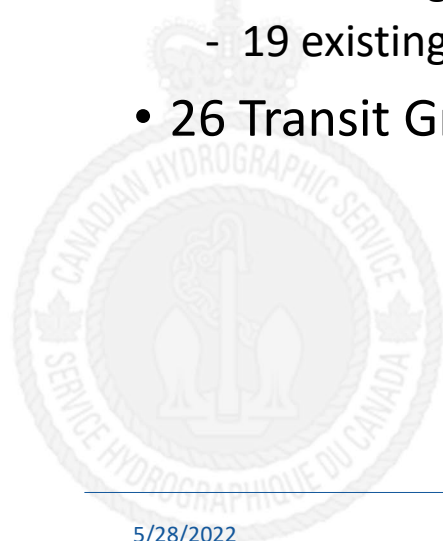
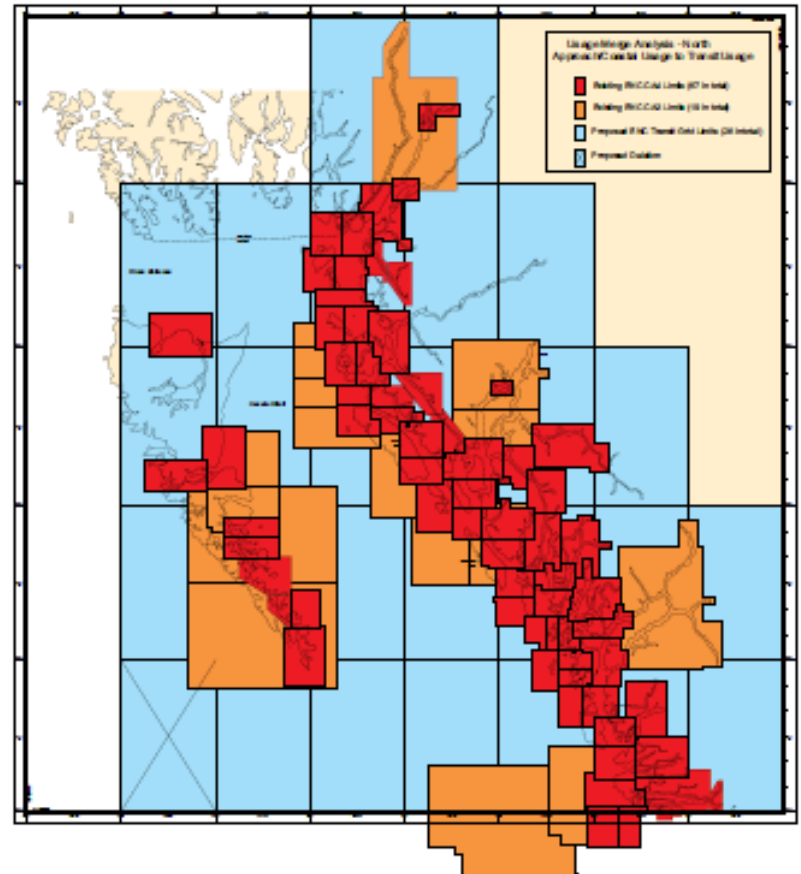
CANADIAN USAGE	SCALE RANGE	STANDARD END SCALES
General	180,001 – 10,000,000	3,500,000; 1,500,000; 700,000; 350,000
Transit	22,001 – 180,000	180,000; 90,000; 45,000
Port	1 – 22,000	22,000; 12,000; 8,000; 4,000; 3,000; 2,000; 1,000





Results - Transit

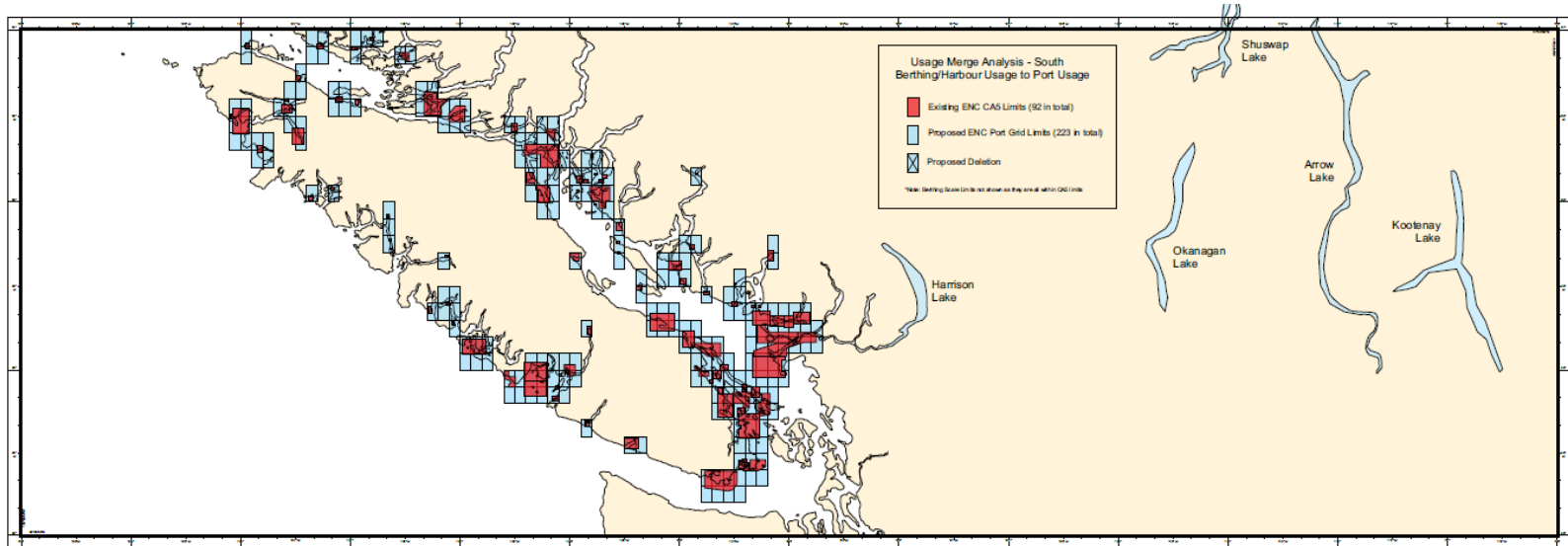
- A logical scheme out of chaos
- Merge Results:
 - 67 existing CA4 ENC's and
 - 19 existing CA3 ENC's into:
- 26 Transit Grid, scale band 2 ENC's





Results - Ports

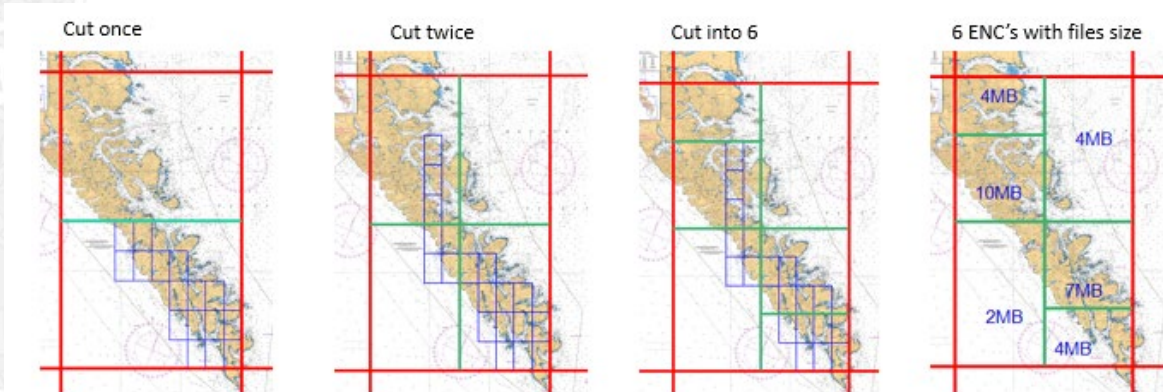
- More cells at a better scale for critical navigation
- Merge Results: 92 existing CA5 ENCs into 223 Scale band 3 ENCs





Advantages

- Improved management of updates and creation of larger scale products where needed
- S-101 recommended scales adopted
- Supports true vector production / continuous maintenance



Note that the 10MB cell will have to be cut again and likely the 7MB as well

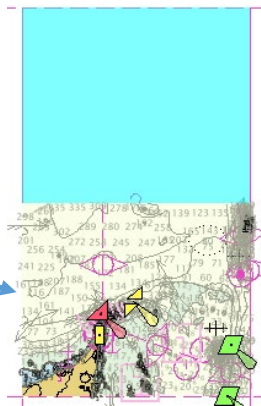
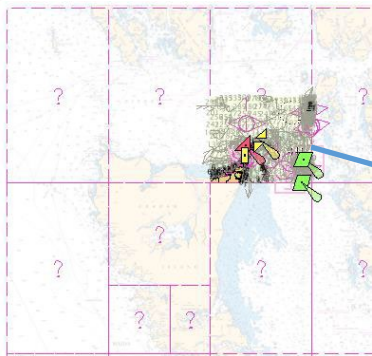


Challenges

- A significant increase in the number of ENC's
- ENC cell file size limits still required (10 MB)
- Object alignment along borders between usages
- Separate paper chart scheme necessary or automate process – Paper Chart 2.0
- Renaming necessary when generating S-101 datasets
- Compilation scales may be different when migrating to new usages; default value should be the compilation scale appropriate to the greater part of the data in the cell – test to ensure there are no scamin issue.

Challenges - Example

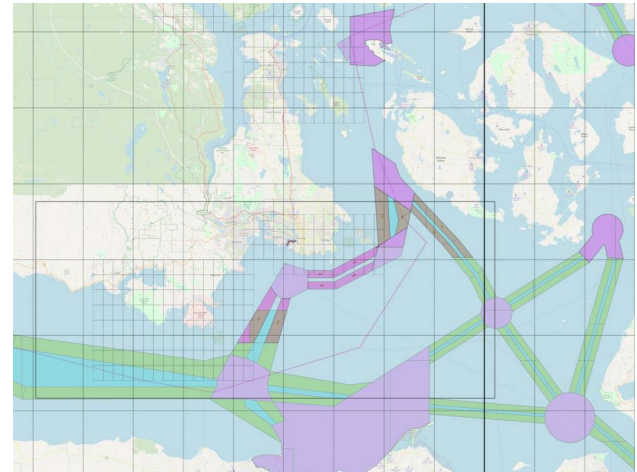
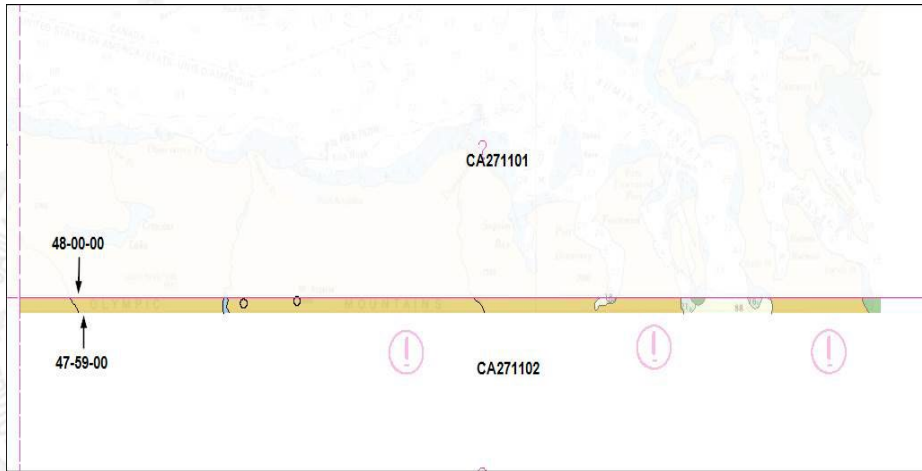
- Data for CA471036 ENC consists of three scales: 40,000, 80,000 and 200,000.
- CA471036 ENC is at a scale of 180,000 with M_CSCLs of 45,000 and 90,000 to match the recommended IHO scales.
- Incorporating new bathymetry, full orthophoto reviews, need to be done to recompile at a single scale





Challenges – Transborder Areas

- Avoid slivers – existing transborder agreement references 47°59'00" and grid requires 48°00'00"
- Usages and grid are related





Progress – Pacific Region

Usage Merge and Gridded ENC Creation				Released Gridded ENC		
Usage Merge Completed	Planned Gridded ENCs this fiscal	Completed Planned Gridded ENCs	Cancellations	Released Gridded Port ENCs (will be ~380 in total)	Released Gridded Transit ENCs (will be ~100 in total)	Released Gridded Overview ENCs (will be 14 in total)
25%	63	3	3	48	28	8

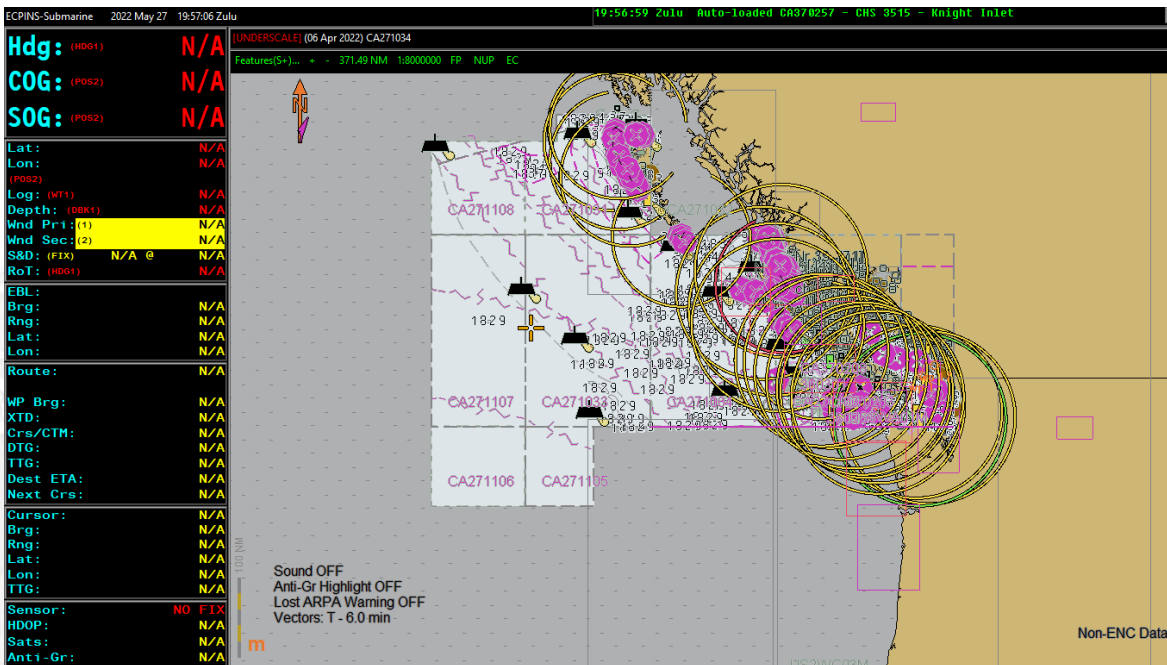
Pacific Usage Merge & Gridded ENCs
for all of Pacific Region

Category	% Done	% Remaining
Usage Merge	25%	75%
Released CA5 Gridded ENCs	10%	90%
Released CA4 Gridded ENCs	25%	75%
Released CA2 Gridded ENCs	55%	45%



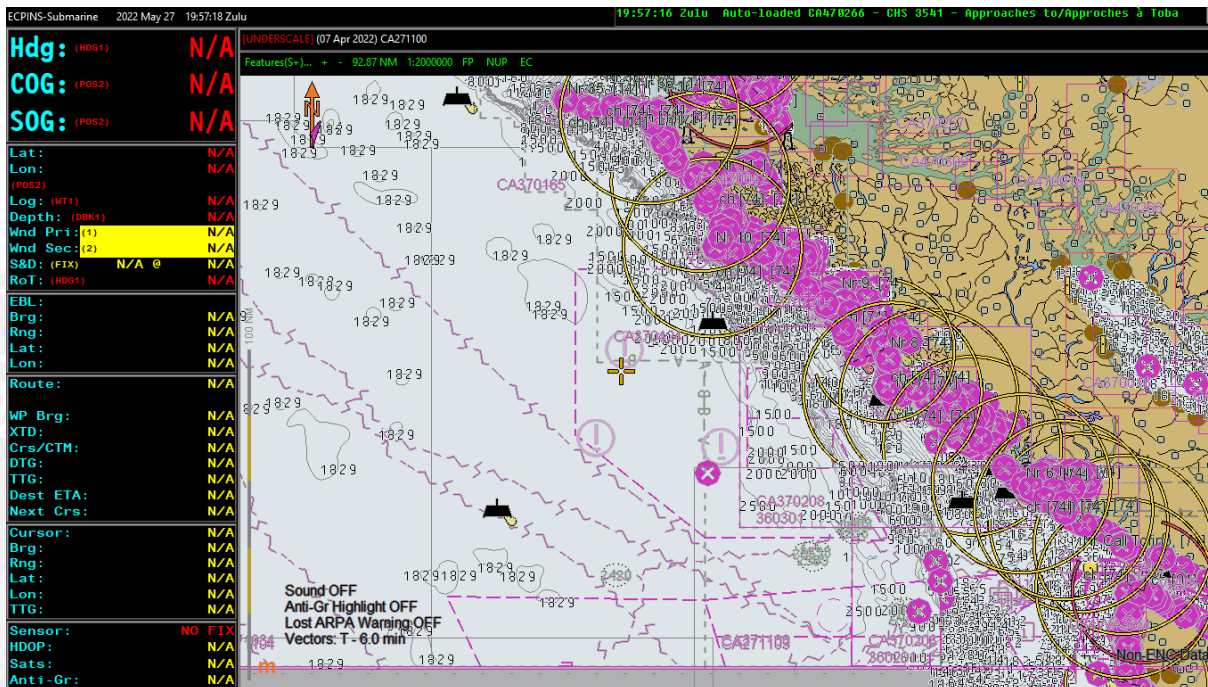


ECDIS DISPLAY – SCALE BAND 1





ECDIS DISPLAY – SCALE BAND 2





ECDIS DISPLAY – SCALE BAND 3

ECPINS-Submarine 2022 May 27 19:56:09 Zulu 19:48:38 Zulu Auto-Loaded CA571080

(UNDERSCALE) (12 Apr 2022) CA571080
Features(S+)... + - 4.64 NM 1:100000 FP NUP EC

Hdg: (HD01)	N/A
COG: (POS2)	N/A
SOG: (POS2)	N/A
Lat:	N/A
Lon:	N/A
(POS2)	N/A
Log: (MT1)	N/A
Depth: (DBK1)	N/A
Wnd Pri: (1)	N/A
Wnd Sec: (2)	N/A
S&D: (FIX)	N/A @
RoT: (HD01)	N/A
EBL:	N/A
Brg:	N/A
Rng:	N/A
Lat:	N/A
Lon:	N/A
Route:	N/A
WP Brg:	N/A
XTD:	N/A
Crs/CTM:	N/A
DTG:	N/A
TTG:	N/A
Dest ETA:	N/A
Next Crs:	N/A
Cursor:	N/A
Brg:	N/A
Rng:	N/A
Lat:	N/A
Lon:	N/A
TTG:	N/A
Sensor:	NO FIX
HDOP:	N/A
Sats:	N/A
Anti-Gr:	N/A

Sound OFF
Anti-Gr Highlight OFF
Lost ARPA Warning OFF
Vectors: T - 6.0 min

Non-ENC Data



Thank you

Mark.LebLANC@dfo-mpo.gc.ca

