



High definition bathymetry production, distribution and updating.

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Plan

- Introduction
- Seaway project
- Technique used
- Proposed solutions
- Updating, Distribution
- Conclusion



Introduction

- Bigger faster wider ships
- Dredging not an easy option
- Increasing draft without increasing risk
- Needs
- S-100 series



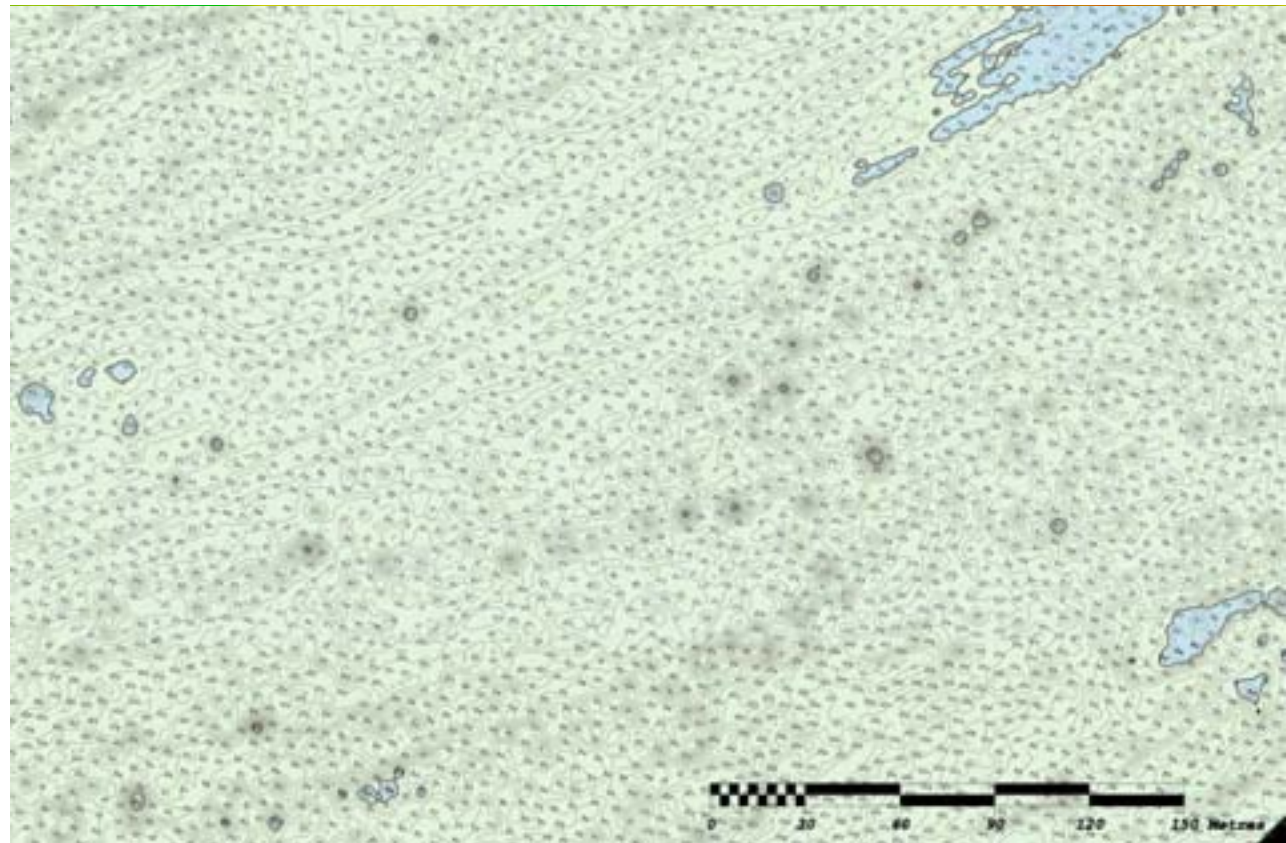
Seaway Project

- Specific need
- Working with S-57 format but pushing it to the limit
- Challenges
 - File size
 - Contouring
 - ...



Technique used

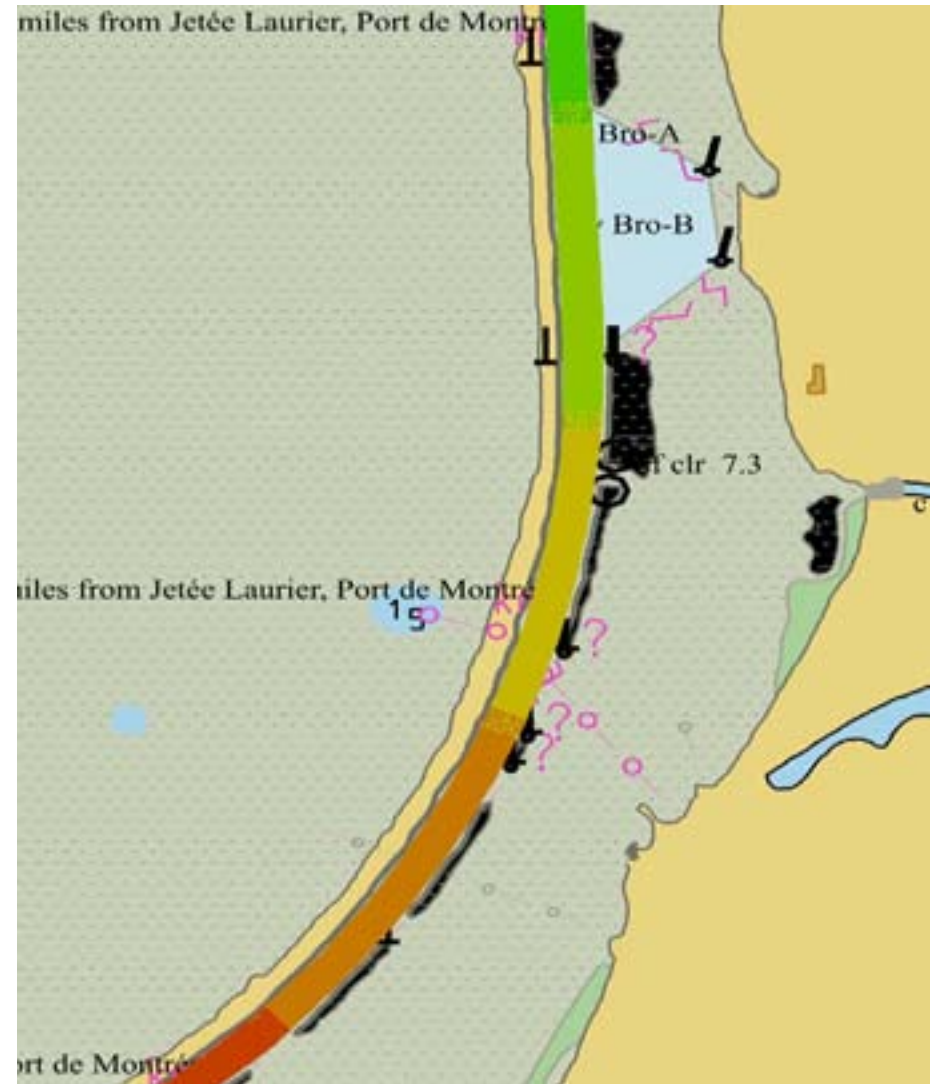
- Working with navigation surface concept
- Resolution issues
- Level of generalisation





Technique used

- Contours creation
- Sounding selection
- Cookie cutter
- Zones
- File names





S-100 Workshop and specs

- No projection work in LAT-LONG (LLDG)
- Toward 3 usages (Harbour, Coastal, Overview)
- Compatible with S-57 3.1
- Fast turn around from survey to product
- Data Quality

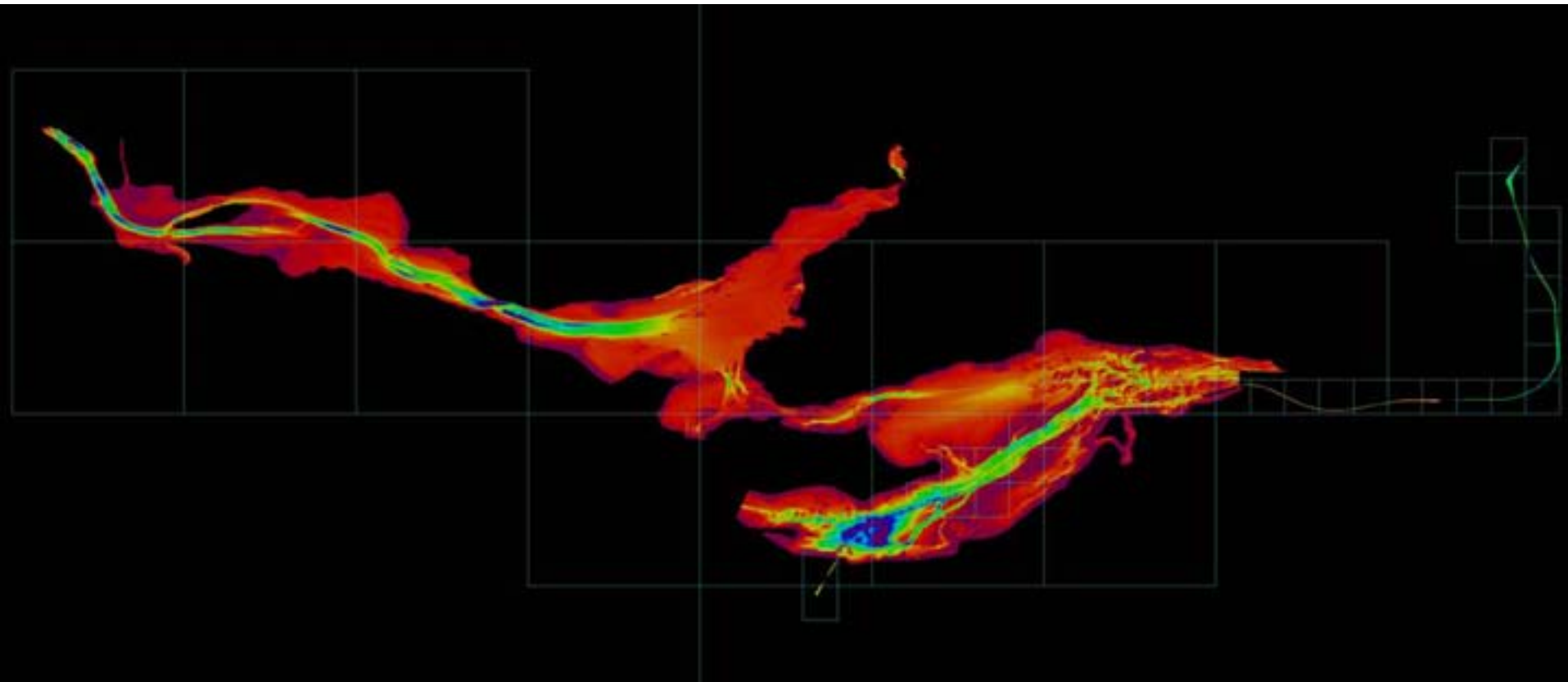


Evaluating the Seaway Work

- Grids used were Mercator
- Zones were cut following survey zone
- Existing grids in mercator could not be cut using LLDG.
- Switch to grids in geographics (LLDG)

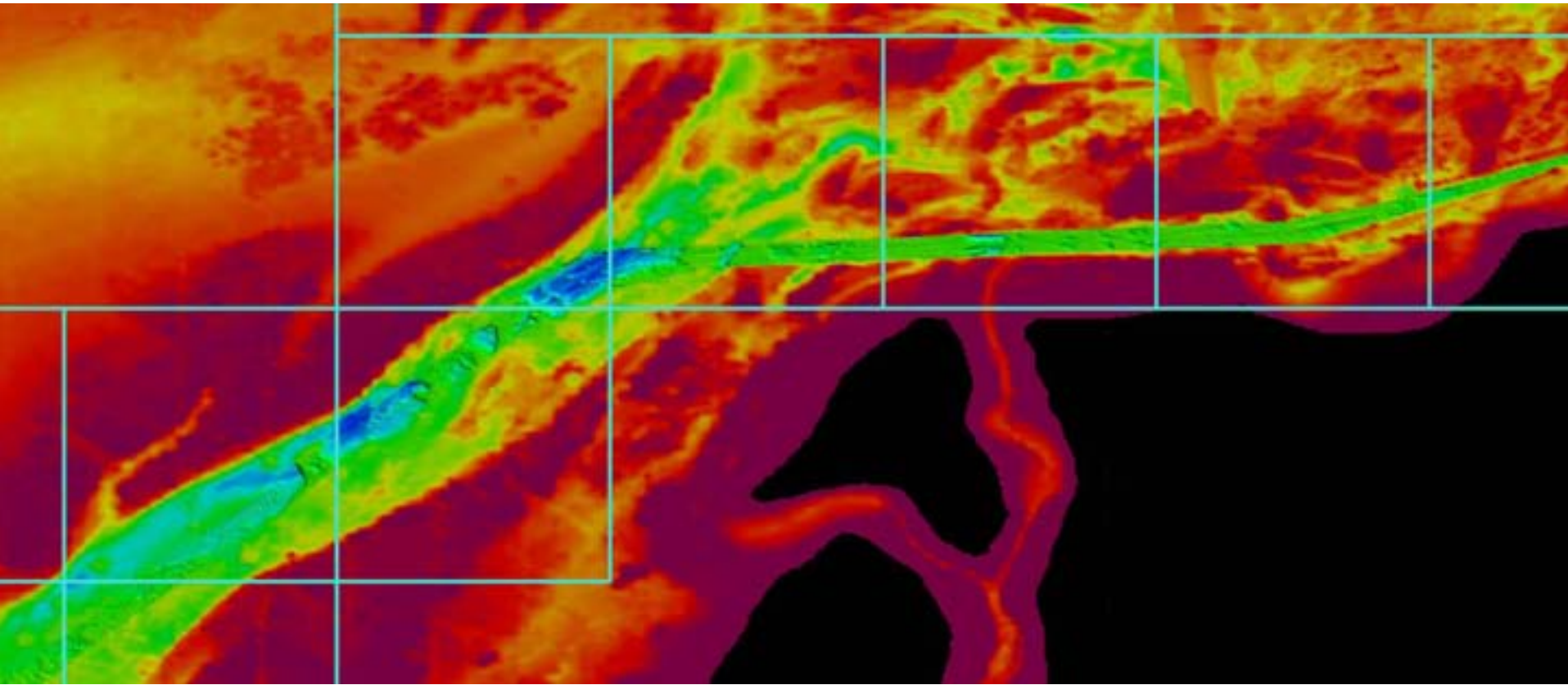


Proposed solutions





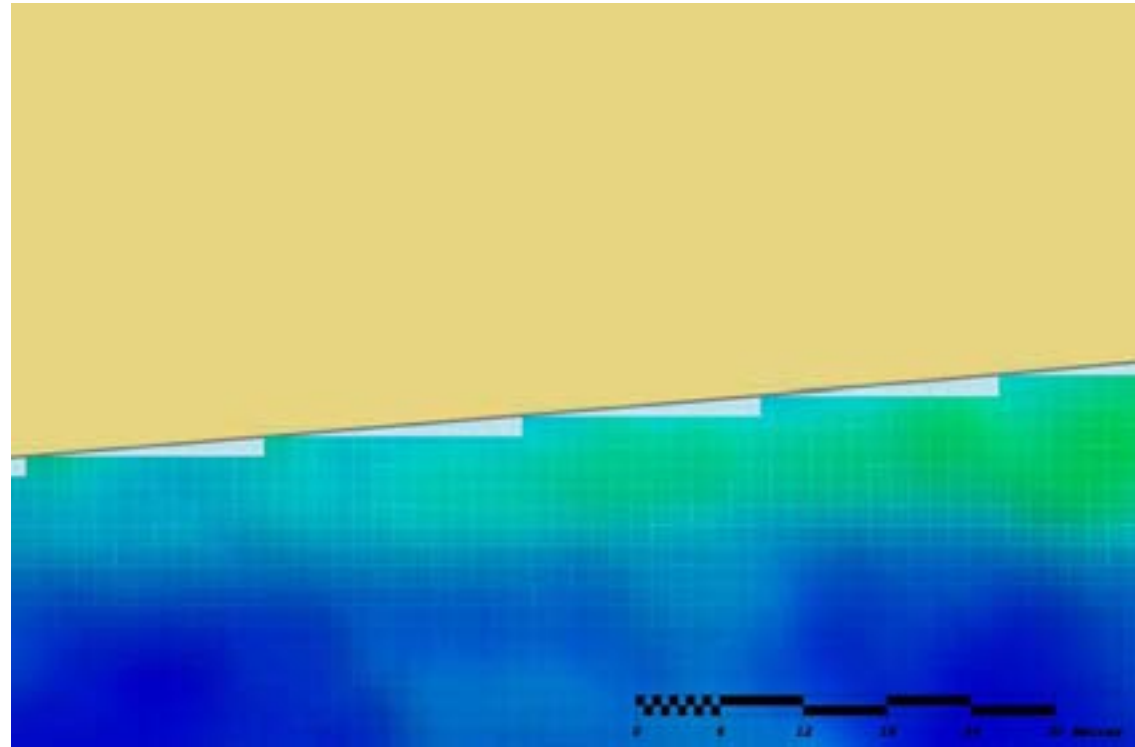
Proposed solutions





Problems

- Grids can't fit perfectly with S-57 chart
- Resolution differences





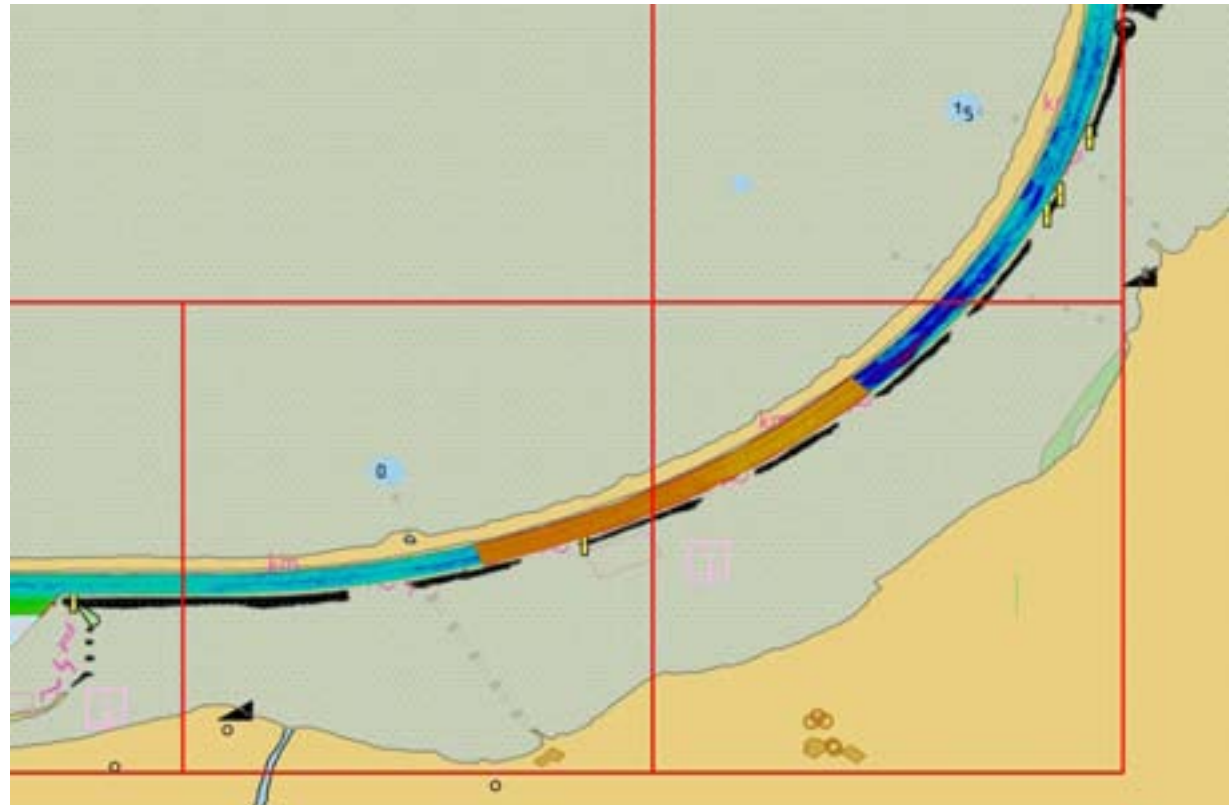
Updating: Producer side

- Database of all surfaces
- New surface comes in
- Integration in database (Quality control)
- What are the new editions I need to output
- Output new editions to product database
- New editions ready for clients



Example of update : Producer side

- New survey comes in
- Checking, integration in database
- What are the cells that need new edition
- Extraction of new product surfaces and storage in product warehouse.





Updating: Bridge Side

- Automatic update like antivirus software
- ECS or ECDIS software connect to a Web Service to download data
- On each side transaction logs are kept.



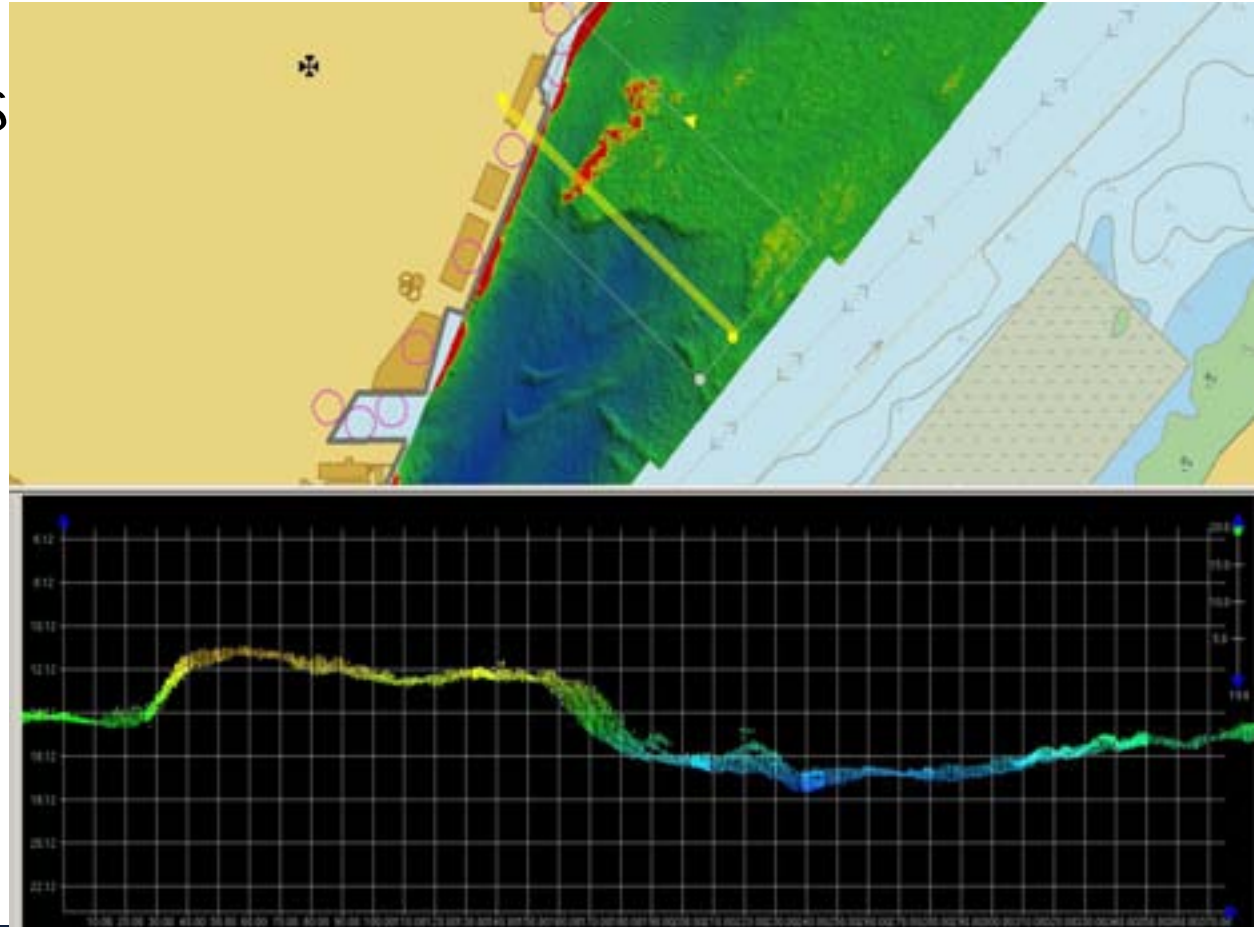
Data distribution

- Web service
- Wired and wireless access
- Software manufacturers are part of the solution



Working with gridded data (training)

- Hydrographic offices have the knowledge
- Need to train mariners on new possibilities
- Don't repeat errors from the past.





Conclusion

- St-Lawrence River is a great test area
- Critical data exist
- Technical issues
- Training issues
- Total solution