

Multibeam Upgrade RV Celtic Voyager
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Celtic Voyager Geophysical /Hydrographic systems and status

Celtic Voyager

Multibeam Echosounders:

- EM3002D on bow Mount , High resolution system operational to 300m (Installed May 2007).

Becoming un reliable

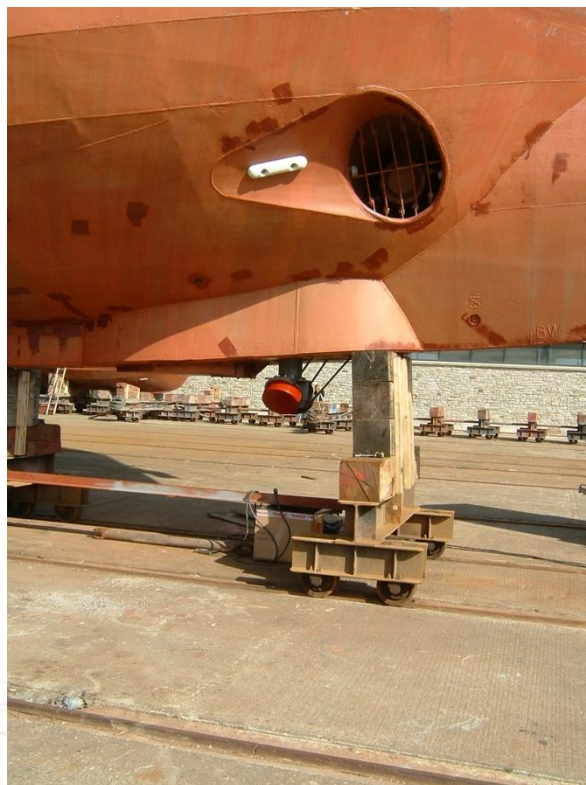
- EM1002 (max c. 900m) on retraction Unit : Installed 1999/2000 *out of service*

- 2X2 3.5 kHz pinger unit on bilge keel

- EA400 38/200 kHz single beam

- Seapath 200 with Seatex MRU5 (Installed 2002)

- C-NAV high precision positioning





Existing Geophysical /Hydrographic systems and status

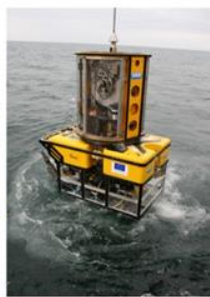




Funding received for upgrade

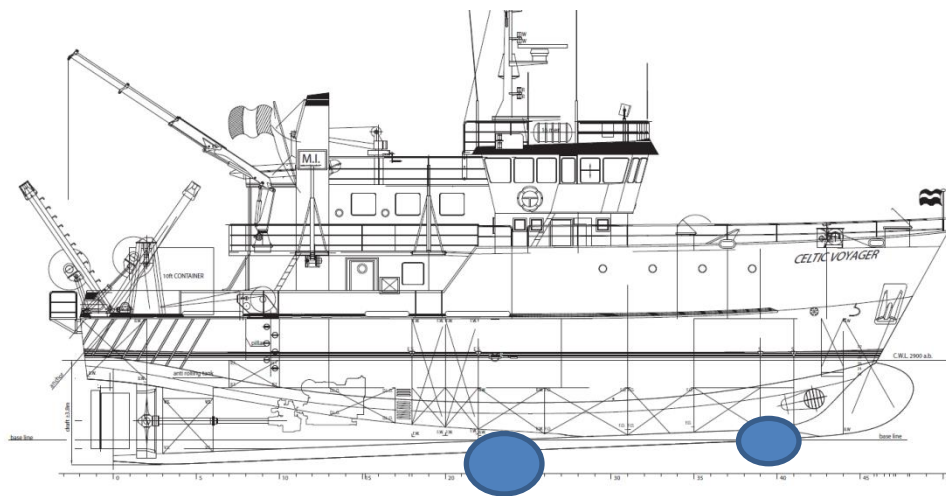
- Funding of c. 350k awarded in 2013 for upgrade of the Vessels multibeam systems
- At this point EM 3002 was suffering frequent failures and was soon not going to be supported any longer/ EM1002 out of service and no longer supported
- Went to tender in later 2013
Tender awarded to Kongsberg for a new EM 2040/Seapath 330+ and MRU 5





Installation Planning

- Consideration given to installing EM2040 on existing retraction unit
To reduce fuel consumption and risk of damage from debris/Anchor...
- But... Movement present on retraction unit, Kongsberg advice to keep in forward 1/3 of vessel and away from Vibration (engine room)
- Decision made to locate em2040 at same location as EM 3002 and move em3002 (single head) to old mid ships retraction unit
- SVP probe to be located in tube adjacent to transducers





Installation

- Installation completed by P&O Maritime services at Dept of Marine Yard in Killybegs, with support from Mooney Boats Ltd and Kongsberg personnel.
- Vessel re survey by Parker Survey.
- Work completed on schedule in a 2 week period between 13th -27th March 2014
- Trials period followed immediately afterwards



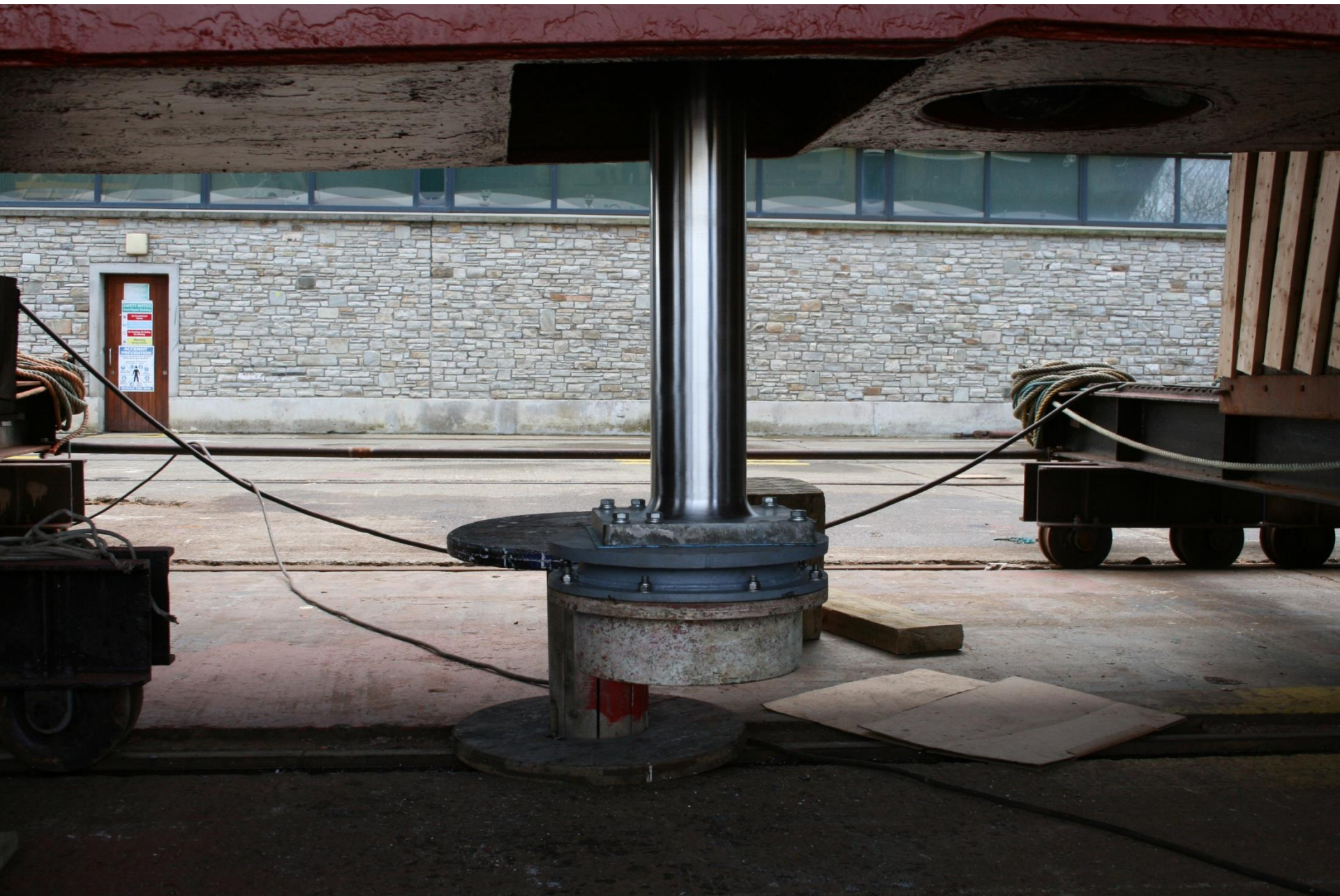














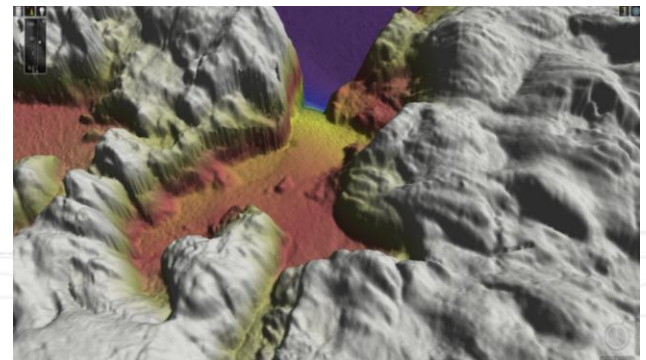
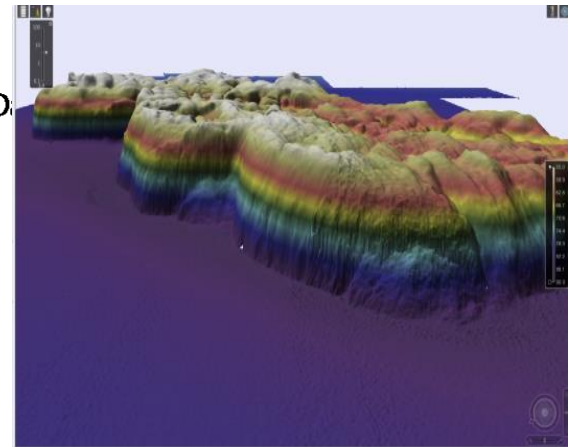
Outcome of Trials

Initial trials very successful...
But... PU problems in shallow water occurred and data drop out when steaming at over 4 knots.....

PU problem solved eventually by replacement with new "slim pu's)
Data drop out due to cable connections making and breaking as cables not secured correctly with plastic brackets

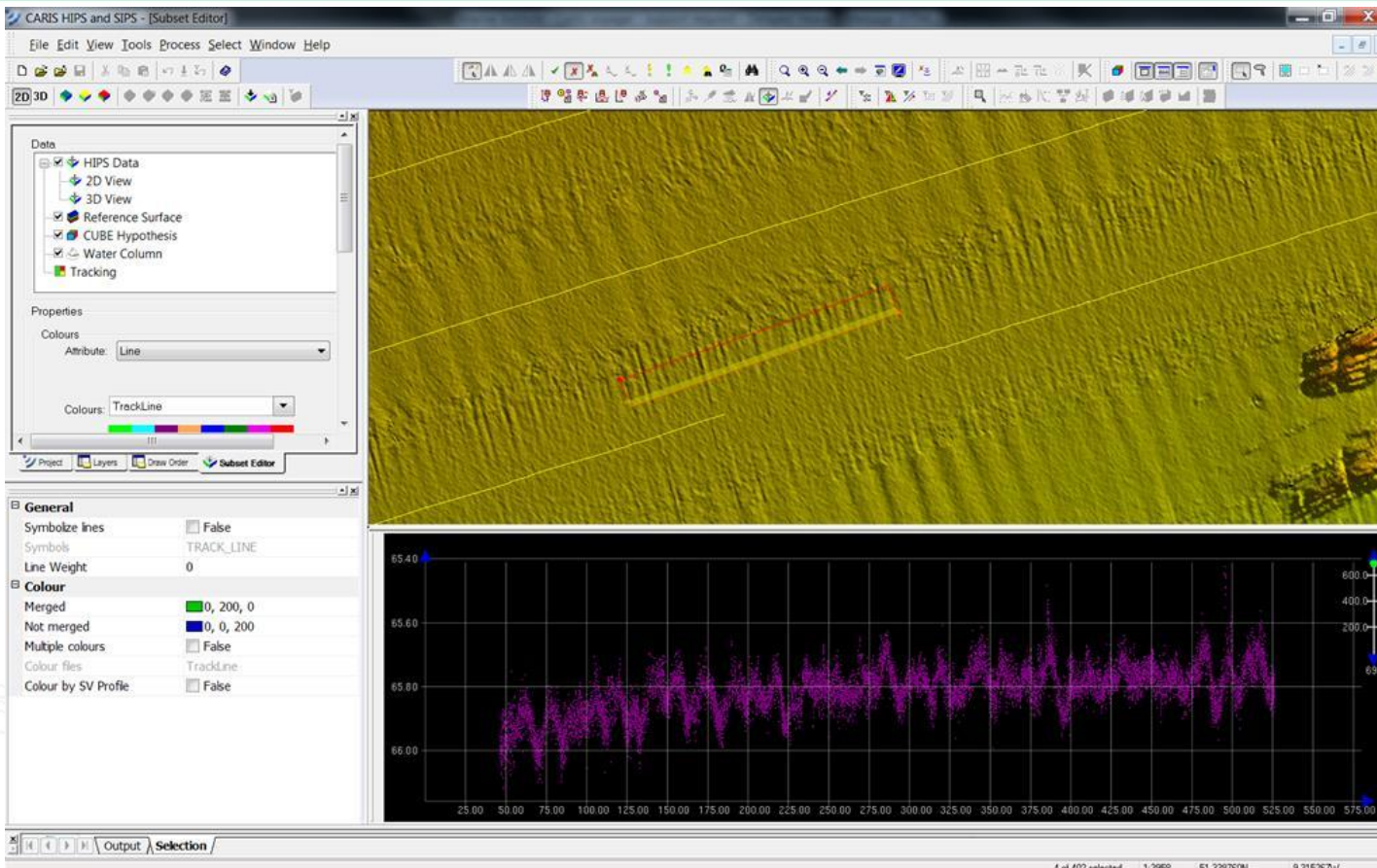


Teelin Knowl 2040 D.





Other issues



Outer Beam wobble....
Attributed to rapidly
changing SV as vessel
pitches.... In water
column with rapidly
changing SV profile

Vessel issue High Fuel
consumption



Summary /Conclusions

- Good mechanical Installation
- Issues caused by manufactures problems only
- Worth spending money on the best possible survey company
- Learnt a lot in advance of major Celtic Explorer installation in 2015 (EM302,EM2040, IXBlue Echoes, Seapath 330+)
- Installation is relatively exposed and leads to higher fuel consumption

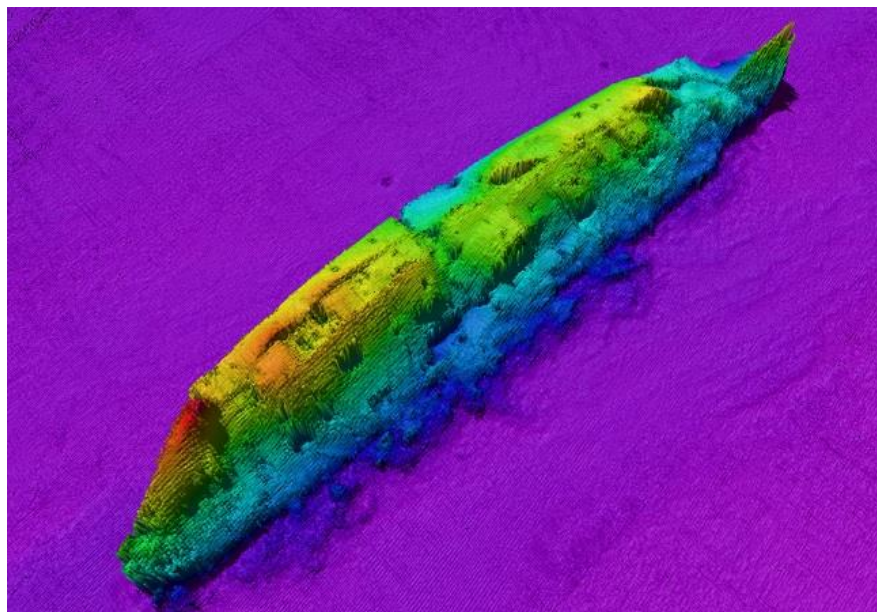
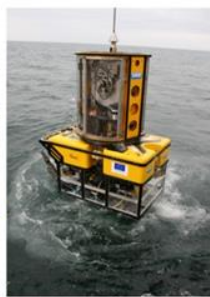


Image of RMS Lusitania, acquired by Celtic Voyager in 2014



A sad ending!!

