



VIII CLGE Conference of the European Surveyor “BLUE SURVEYING”

How geodetic surveyors contribute to the
offshore wind farm construction process

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Sevilla (Spain) 27th October 2022 Hotel Barceló Sevilla Renacimiento





HidrociBALAE



Zagreb



Vinkovci



Let's keep it simple



- **Geodesy** is the science of accurately measuring and understanding three fundamental properties of the Earth: its geometric shape, its orientation in space, and its gravity field...
- **Geodesy** is the science of measuring and mapping of the Earth's surface...
- **Geodesy** is...



Offshore/onshore renewables – ongoing projects



Princess Elisabeth – world's first artificial energy island, Belgian part of the North sea

Xlinks – from solar panels in Morocco to UK, clean power for over 7 million British homes

Offshore windfarms - Europe



The EU presented its strategy on Offshore Renewable Energy, aiming to increase Europe's offshore wind capacity from its current level of 12 GW to at least 60 GW by 2030 and to 300 GW by 2050.



Offshore windfarms construction - phases



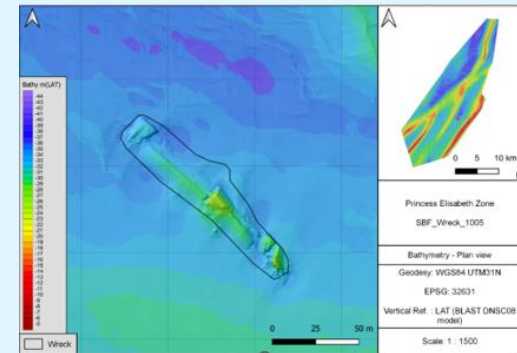
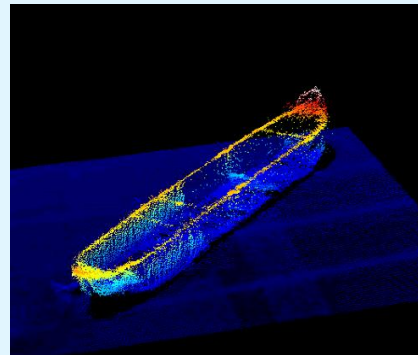
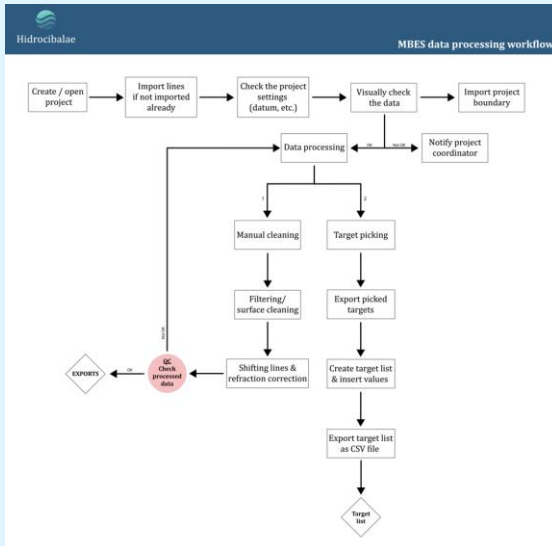
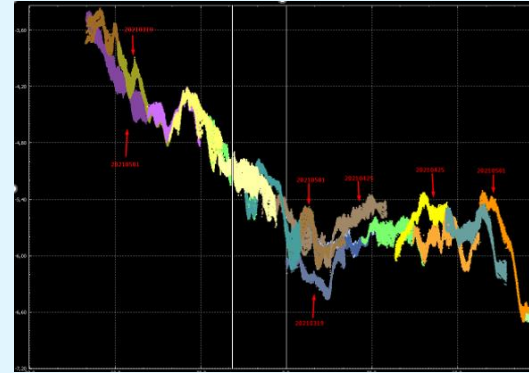
1. Desktop survey (morphology, environmental survey, location and corridors analysis etc.)
2. Geophysical/geotechnical/seismic survey
3. Construction phase - topo and hydrographic survey
4. Hydrographic survey – as built
5. Monitoring
6. Decommissioning phase



Multibeam echosounder (MBES)



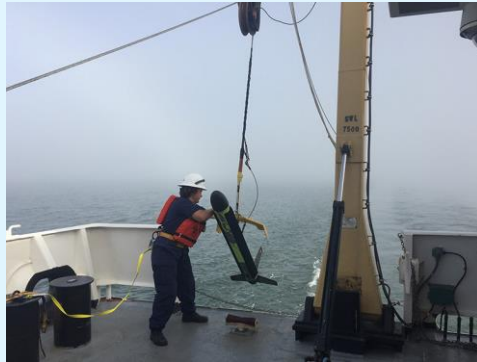
MBES: izmjera dubina, morfologija dna i struktura, kartiranje



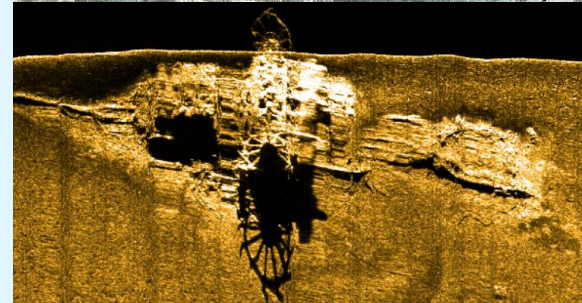
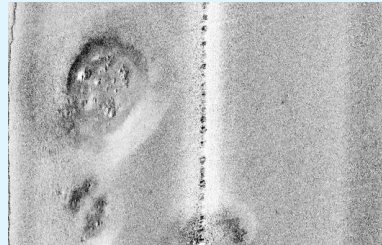
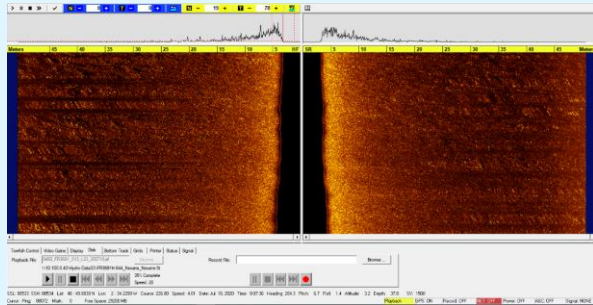
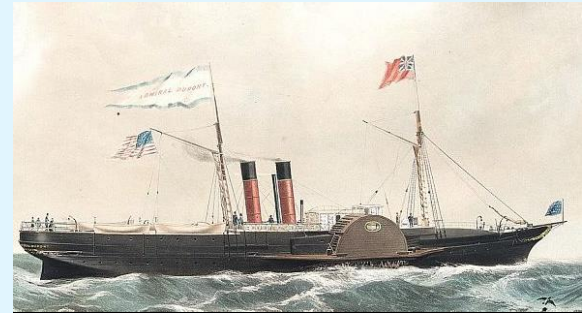
Side Scan Sonar (SSS)



SSS: seabed sediments, object detection



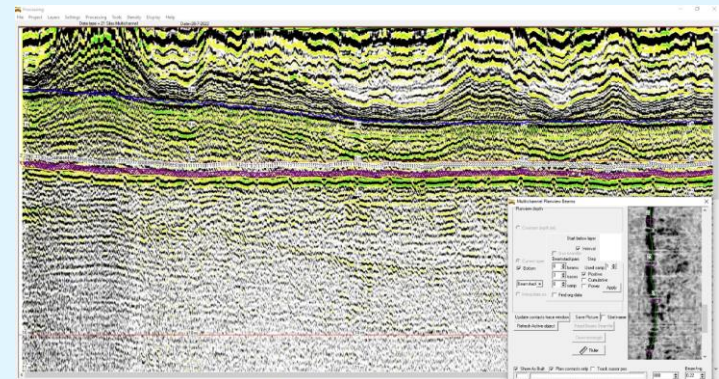
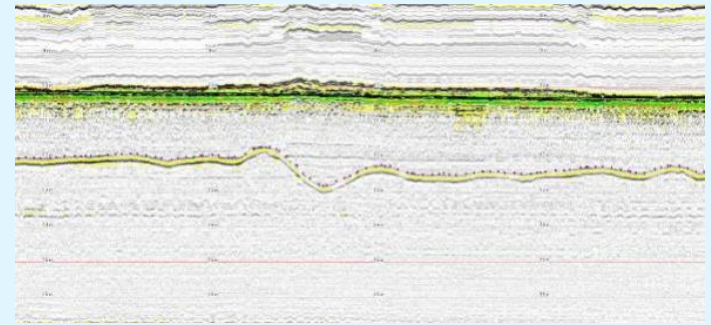
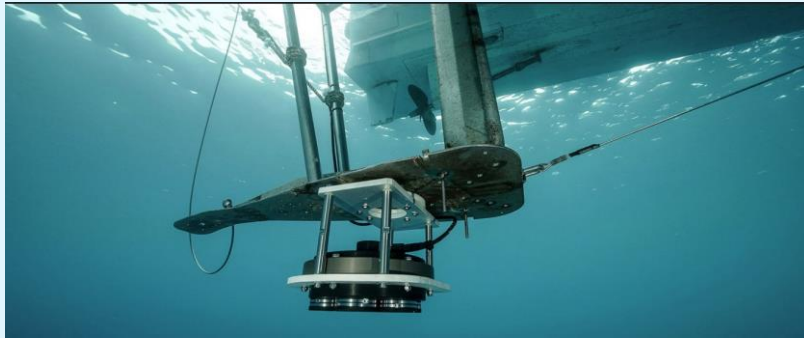
Admiral Dupont



Sub-bottom profiler (SBP)



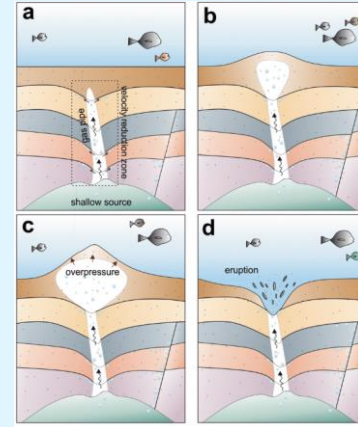
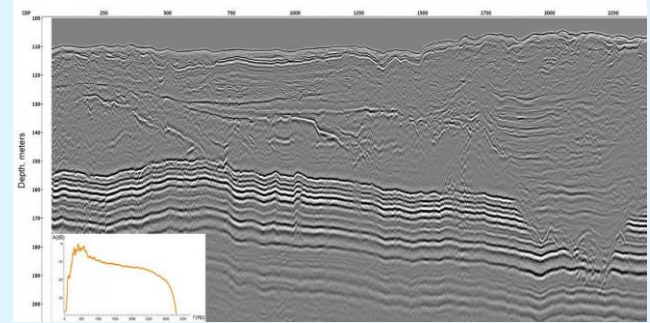
SBP: detekcija plitkih slojeva dna, komunikacijskih vodova

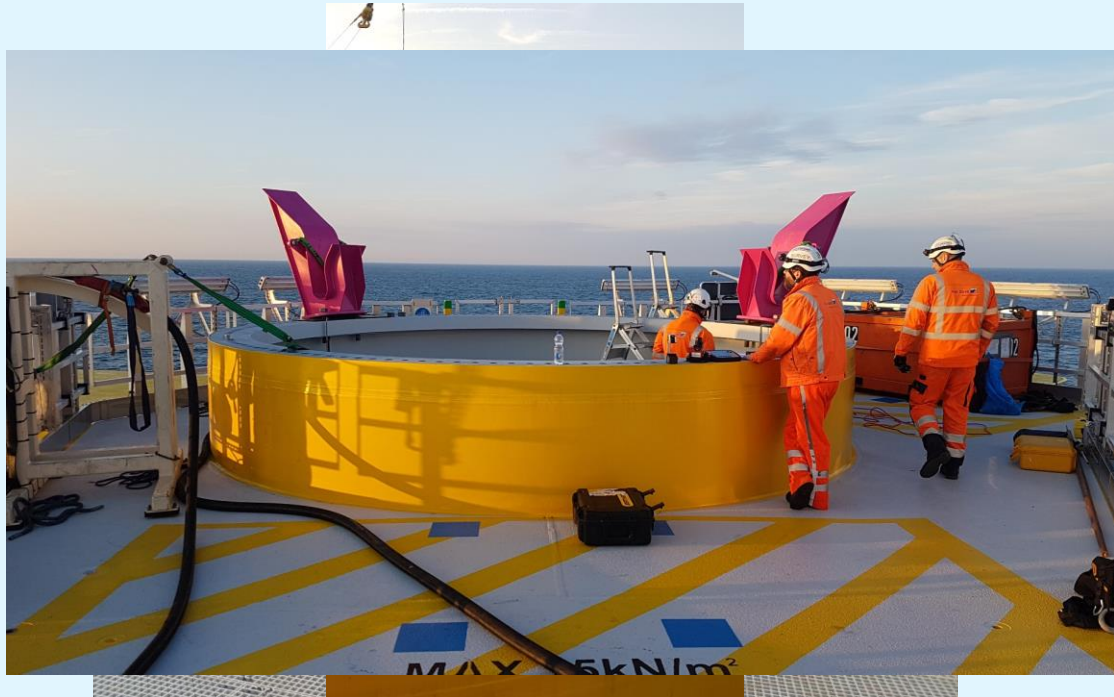


High/Ultra High resolution seismic (HRS/UHRS)



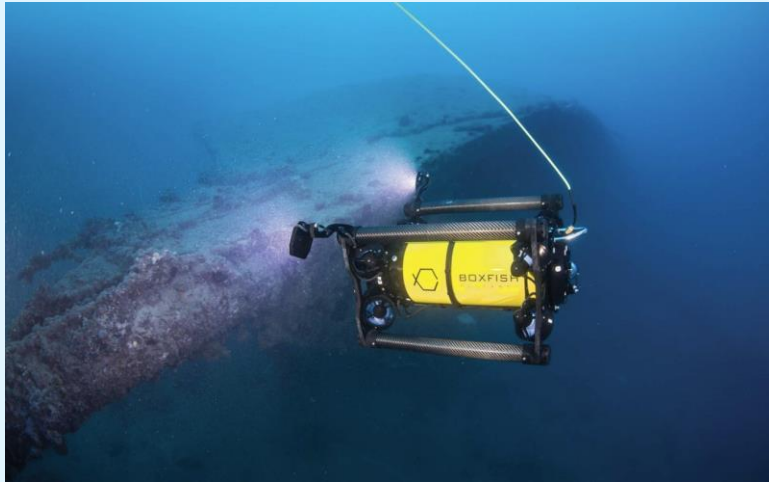
HRS/UHRS: dublji slojevi dna, 'shallow gas'



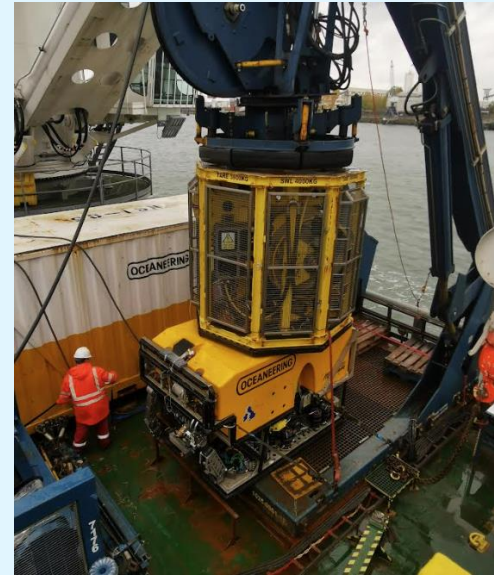




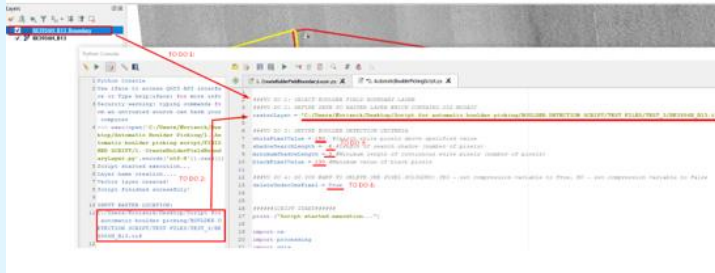
iROV



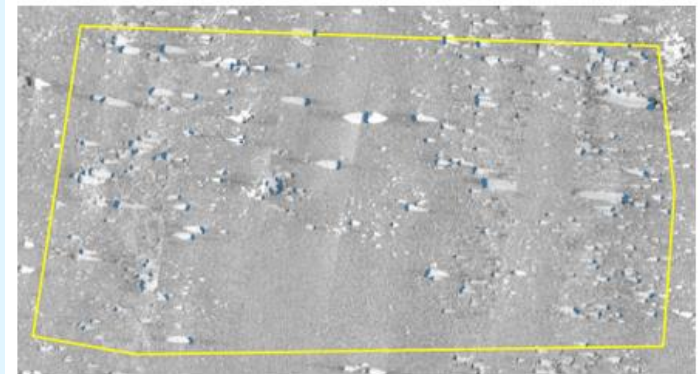
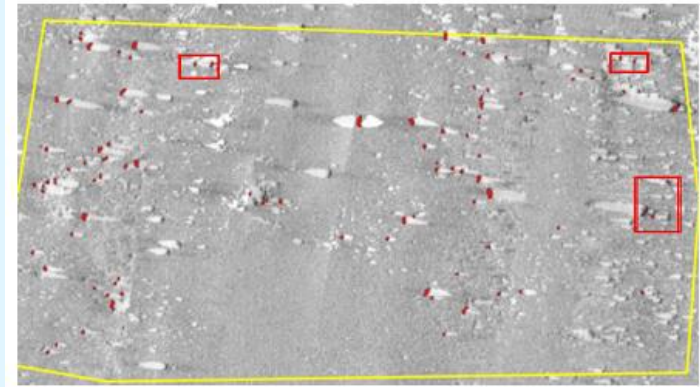
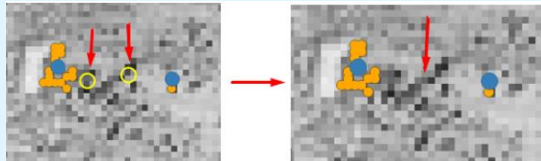
Work class ROV



Where are we today and what tomorrow brings?



UI (AI)



Where are we today and what tomorrow brings?



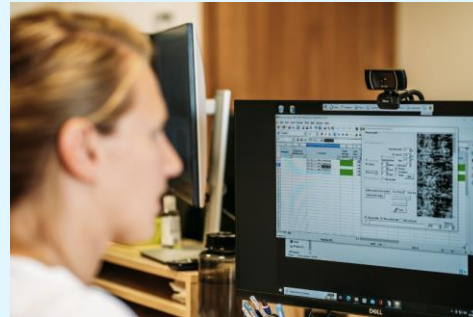
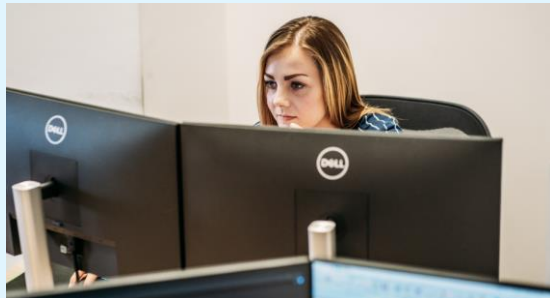
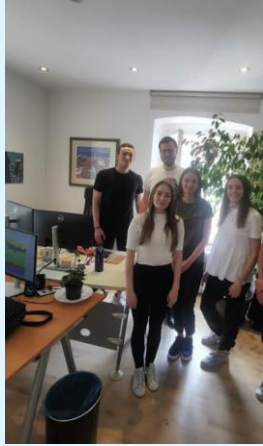
USV



AUV



Future must be bright with this people ;)





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Thank you!



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