



Saimaa canal scanning a case study



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Basic information:

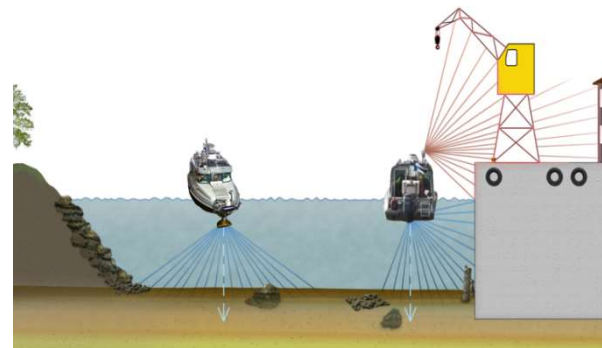
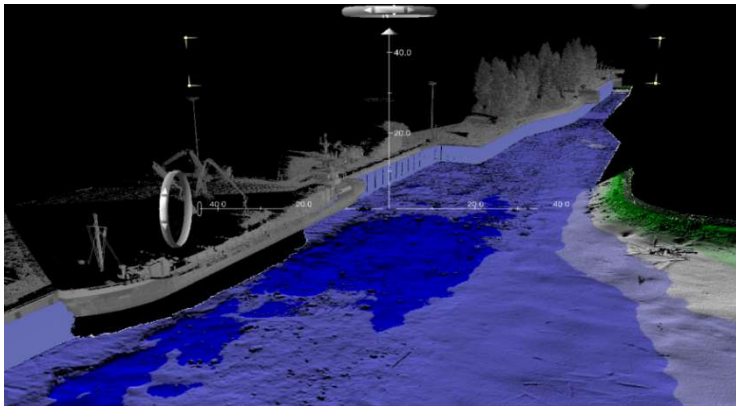
- **Saimaa canal connects lake Saimaa district to the Gulf of Finland**
- **It is partially in Russian side (land area is rented by Finnish government)**
- **Total length of canal route is 43 km and it contains 8 locks and 7 movable bridges.**
- **Difference with water levels in lake Saimaa and Gulf of Finland is 75,7 m.**
- **Ship dimensions at the moment: length/width/draft – 82/12,2/4,35 m**
- **Construction years (infra) 1963-1968 and most of the length is artificial open canal**



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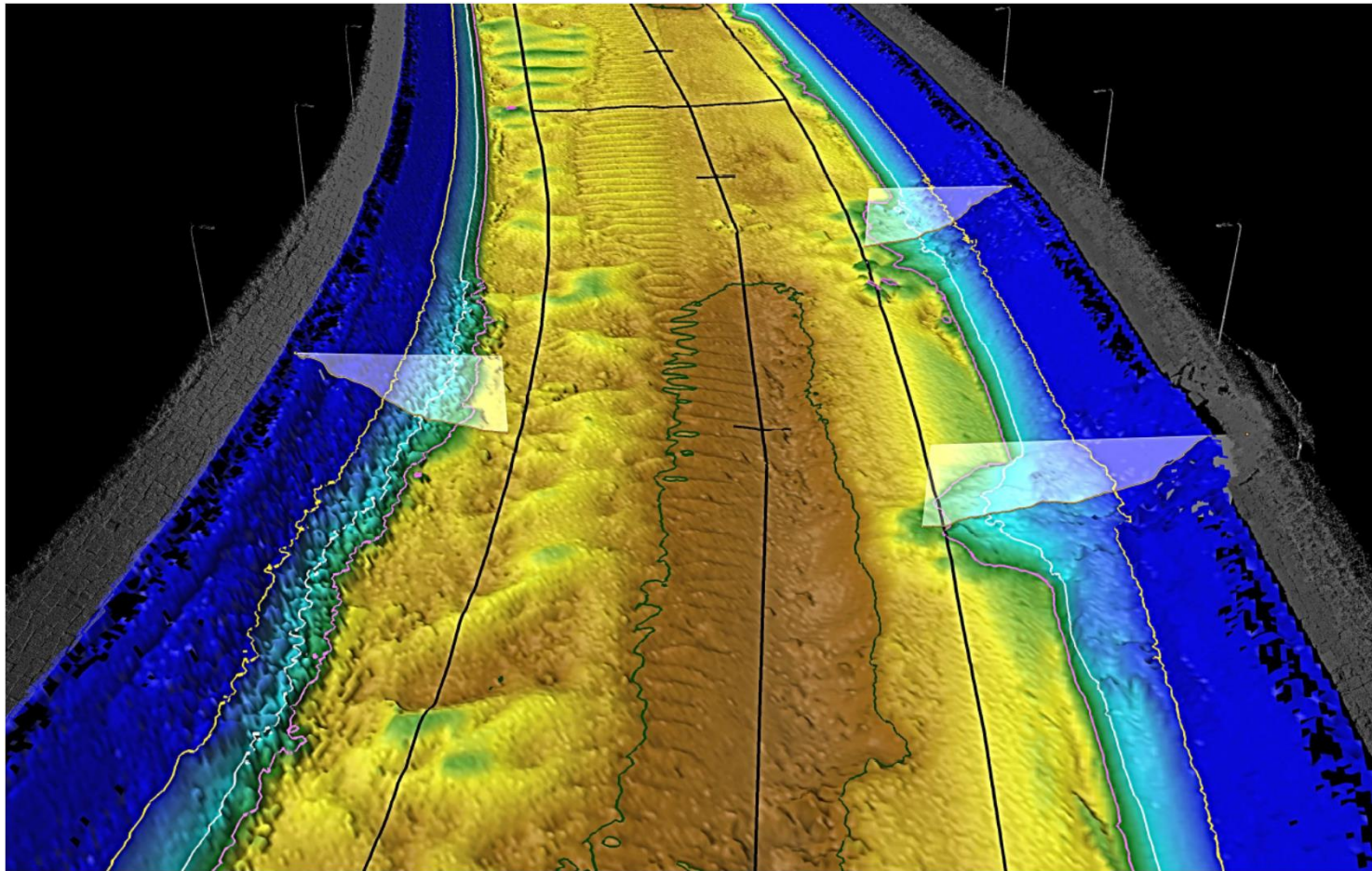
- Work was ordered by Finnish Transport Agency
- Survey, analyze and reporting by Meritaito 2015 -2017
- Survey was conducted with small 6 m long survey launch Keila 1
- Survey included multibeam survey and laser scanning
- Equipment: 400 kHz Reson Seabat 7125 and Riegel laser scanner
- Motivation for survey: Canal is almost 50 years old and Finland and Russian have negotiated 50 years extension for the renting of canal and it's land area.
- To document present situation of canal for infrastructure and risk management purposes: Water depths, scouring, canal slopes, structures, fixed AtoN: maintenance and future development



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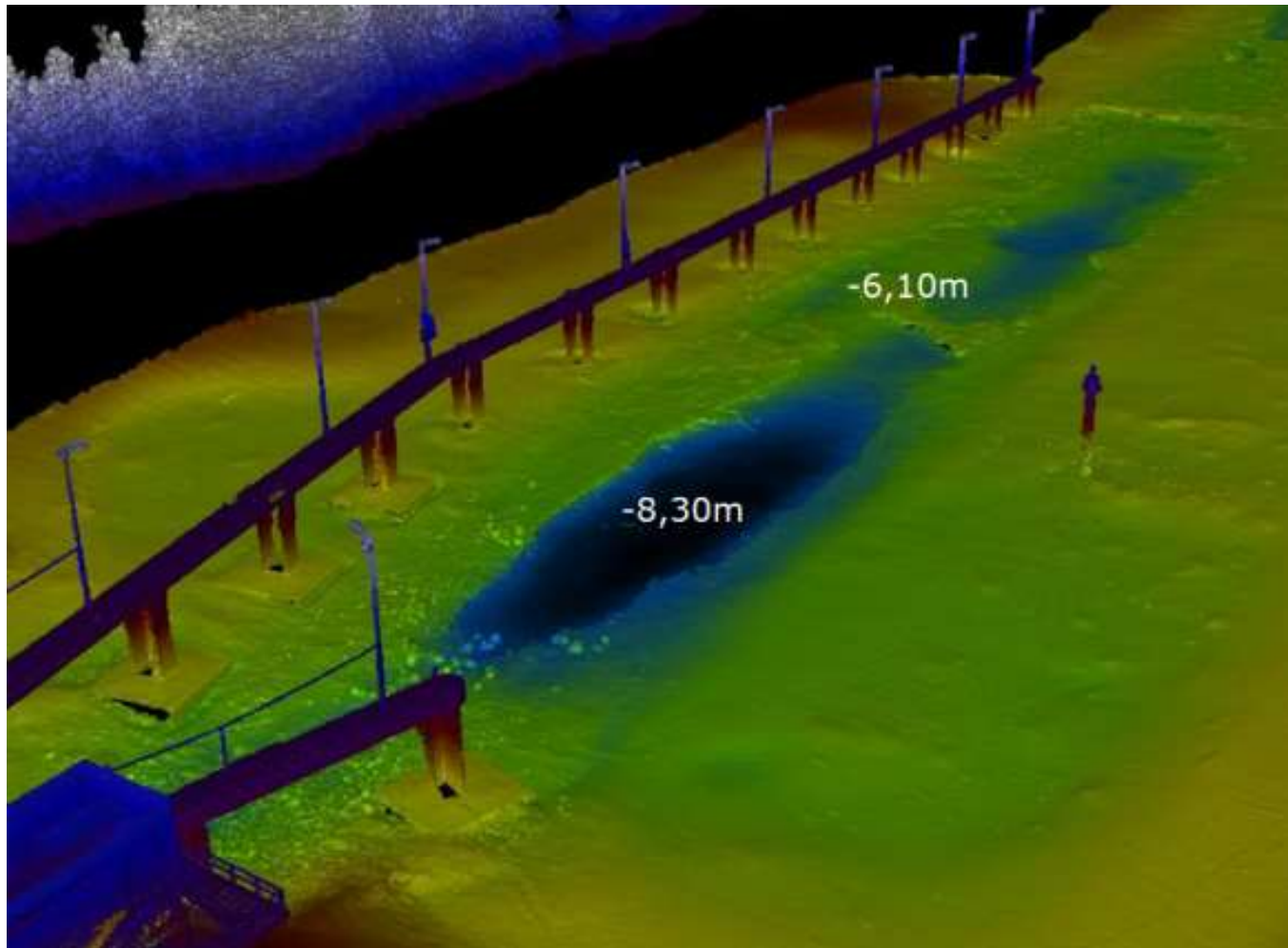
- Scouring, sedimentation, slope conditions



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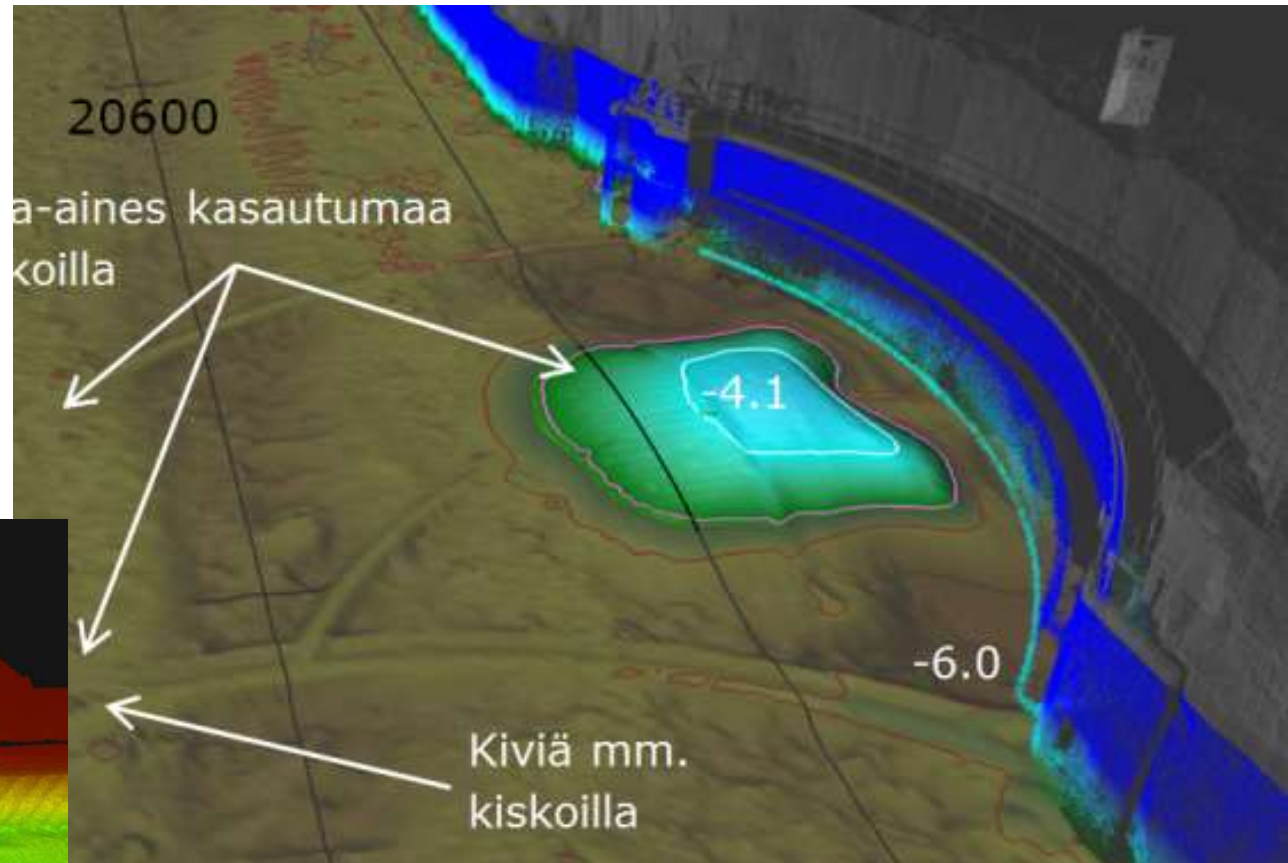
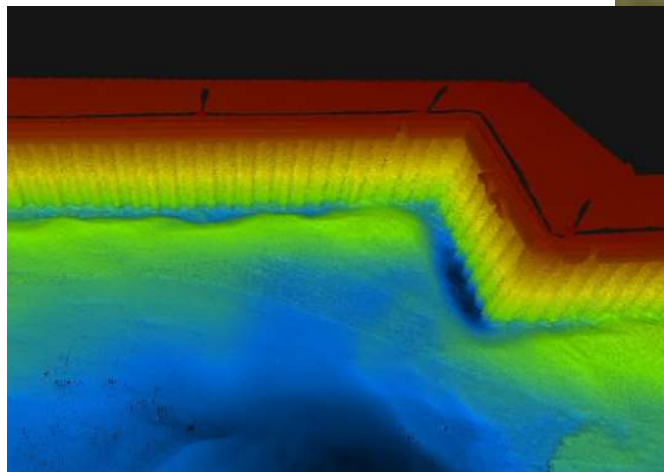
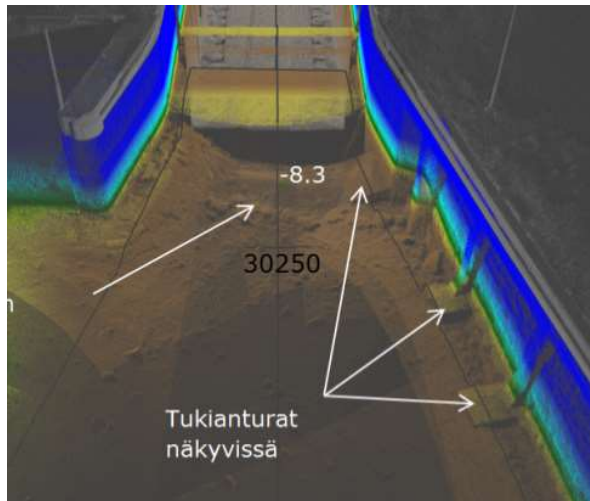


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FINDINGS

- Scouring, sedimentation, slope conditions

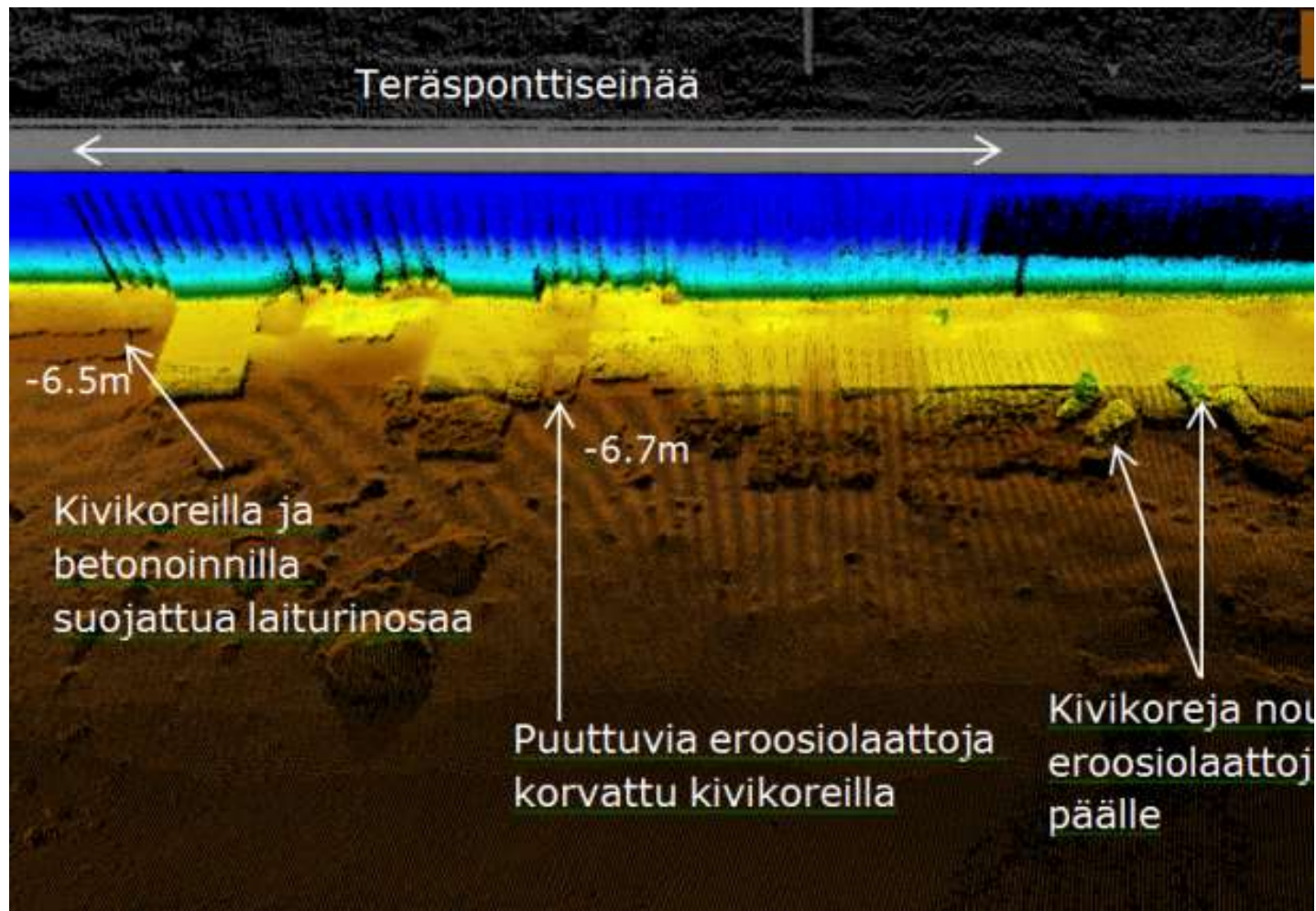


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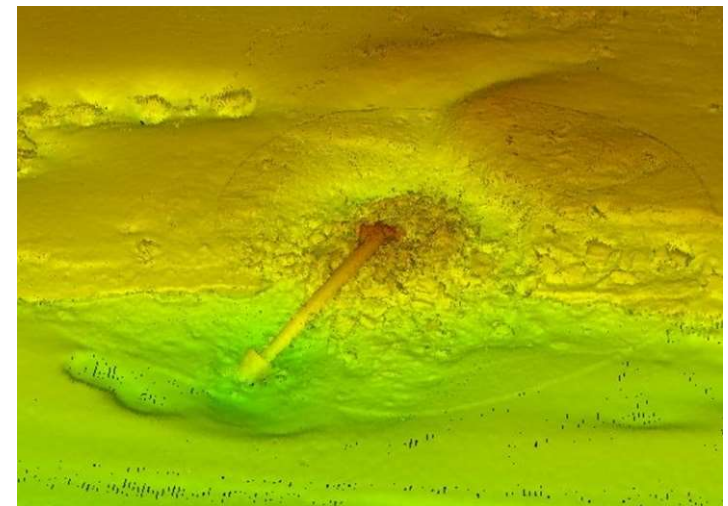
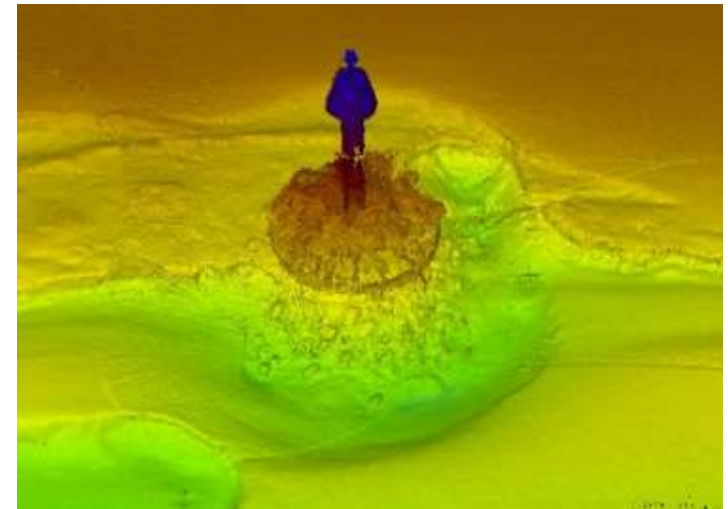
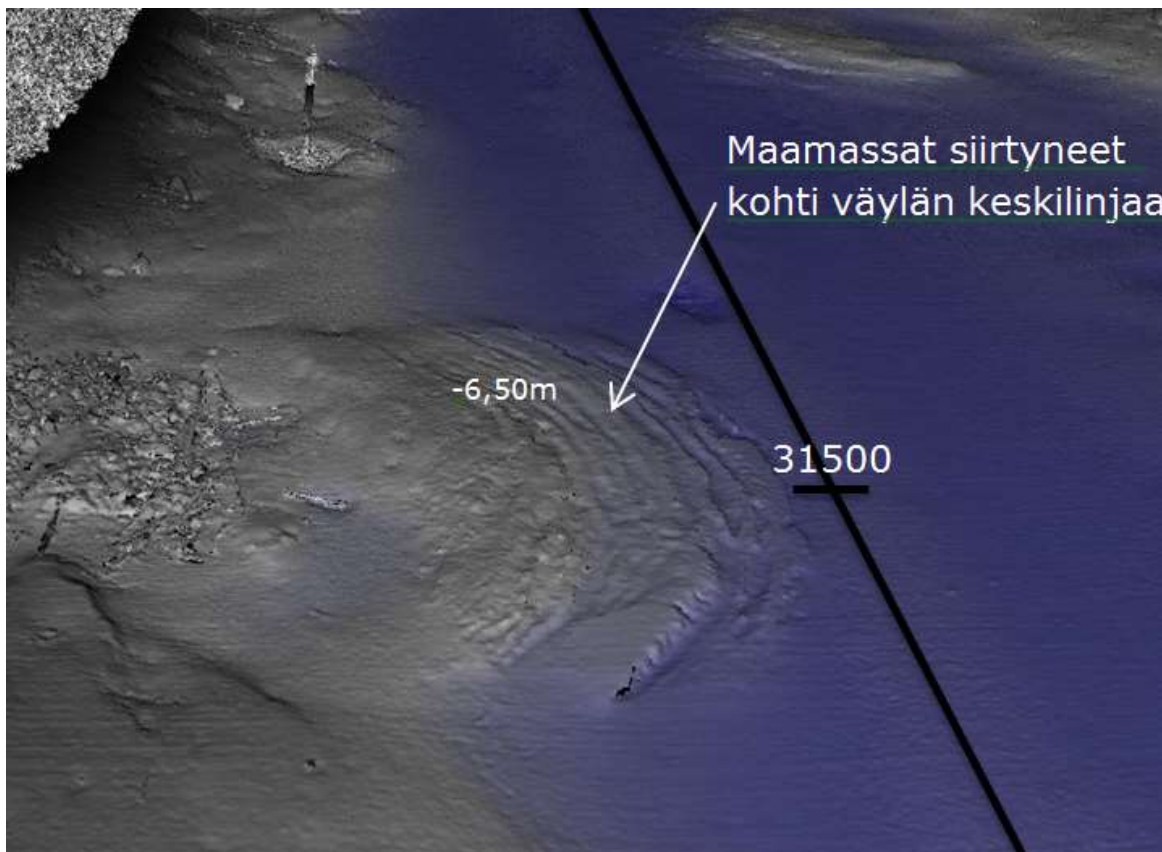
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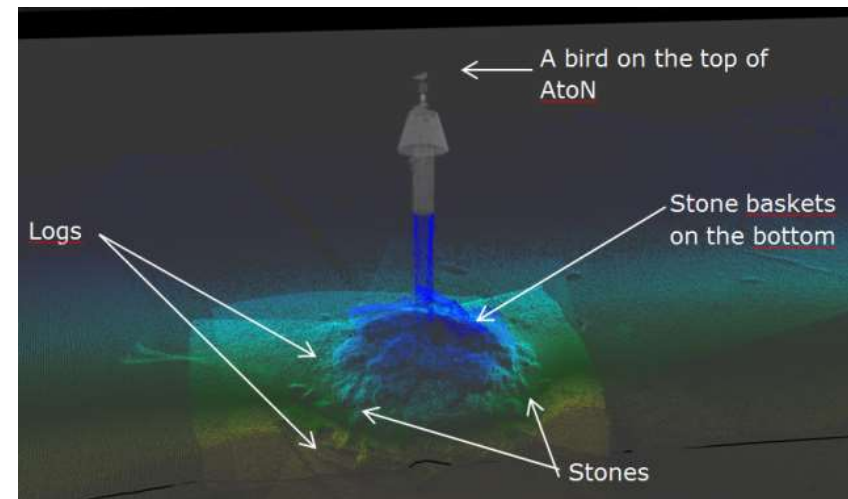
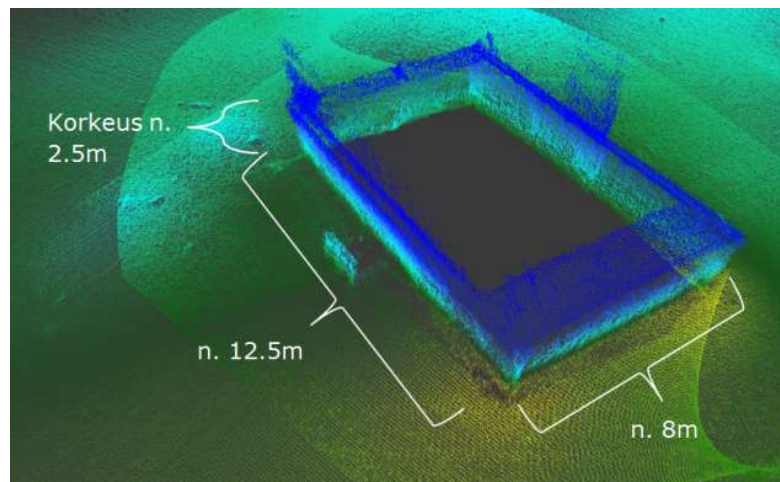
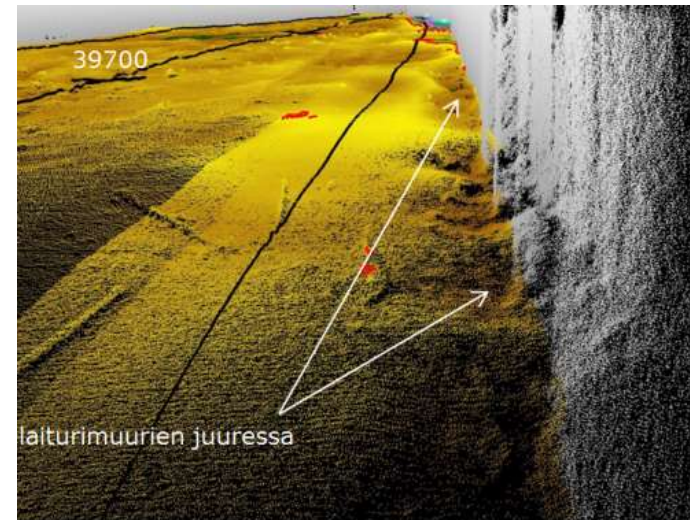
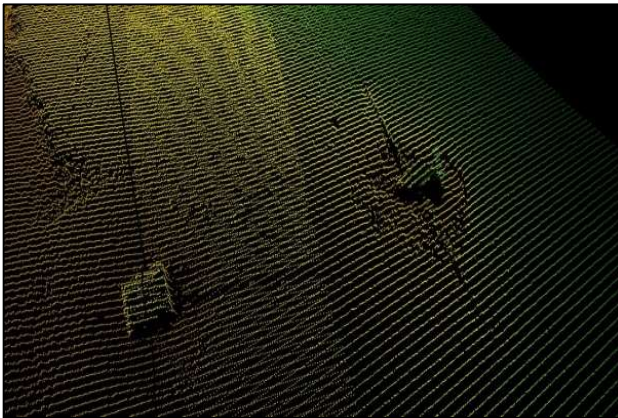
- Structural damages, fixed AtoNs, Hazardous objects



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FINDINGS

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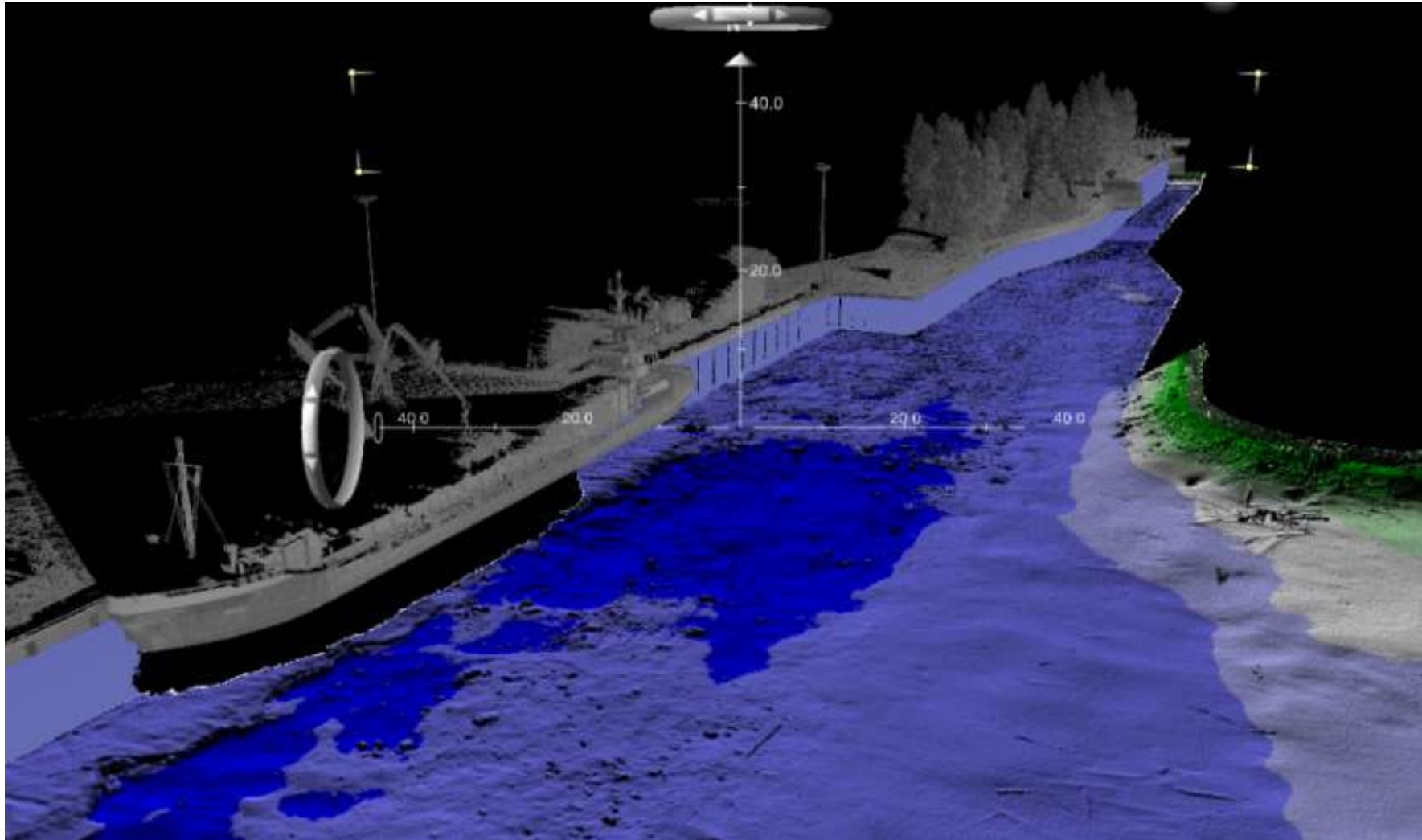
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POSSIBILITIES TO UTILIZE RESULTS PRODUCTIVELY:

- Challenge: To store gathered data in usable format at least 30 years
- (solution possibility: SeaStorage service)
- Base material for most of future activities related to canal infrastructure
- Risk analyze: where and when can you expect damages
- Maintenance planning, future development of canal
- Programming and targeting forthcoming underwater inspection needs
- Excellent material to understand what happens and why under the water in the canal system in use
- Lock operations, ship traffic impacts, environmental impacts, slope conditions, vessel collisions with structures
- Modelling for different purposes f.ex. Intelligent Fairway

Thank you for your attention!
Questions?



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