# AquaVitae

On The Horizon
EATiP Aquaculture Project Dissemination Service

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# 3D image reconstruction in aquatic environments

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(can’t make it, Substitute: Patrizio Mariani)

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# INDUSTRY NEED

- There is a need for accurate 3D images from underwater environments
- Offshore industry, coastal management, environmental monitoring, aquaculture, ….
- Different technologies exist based on acoustic or optical sensing
- Bottleneck: those solutions are generally expensive, not scalable (specific), designed for expert users

# SOLUTIONS

We have concentrated on developing flexible solutions for different underwater applications

- Stereoscopic
- UTOFIA
- BlueAtlas
- OAK D Lite

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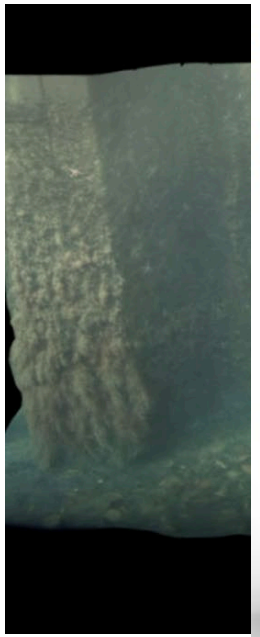

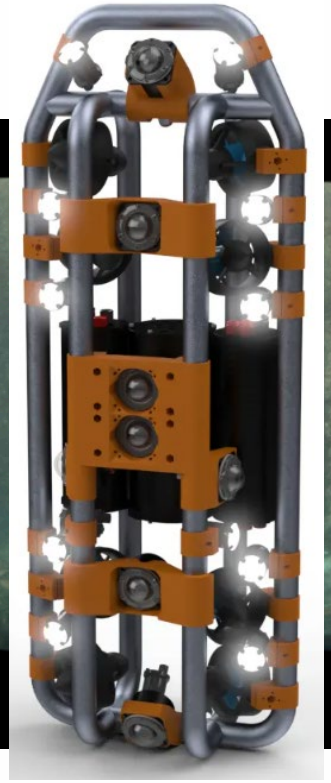

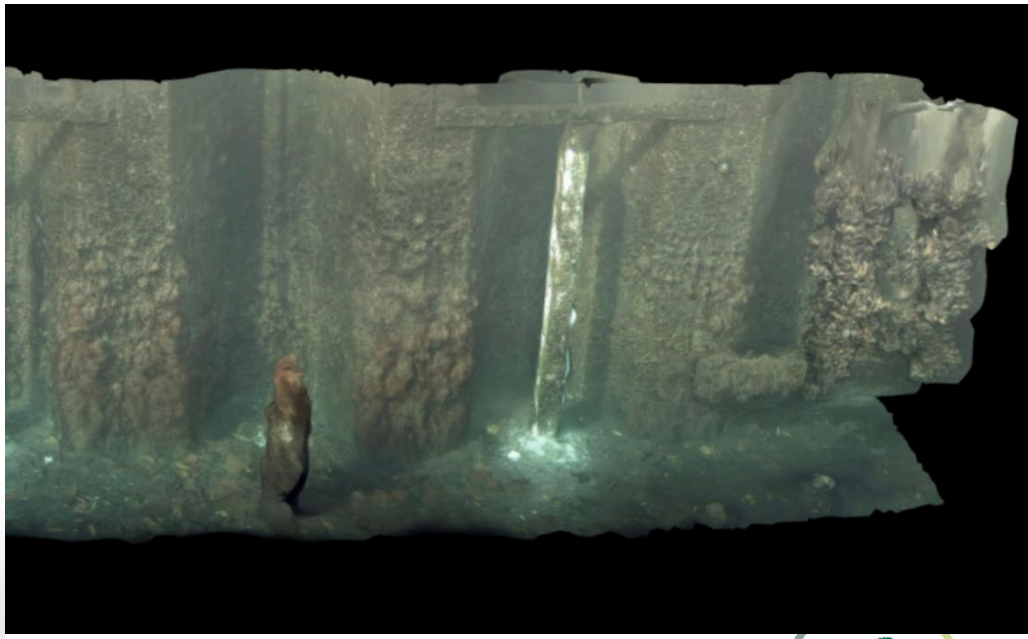

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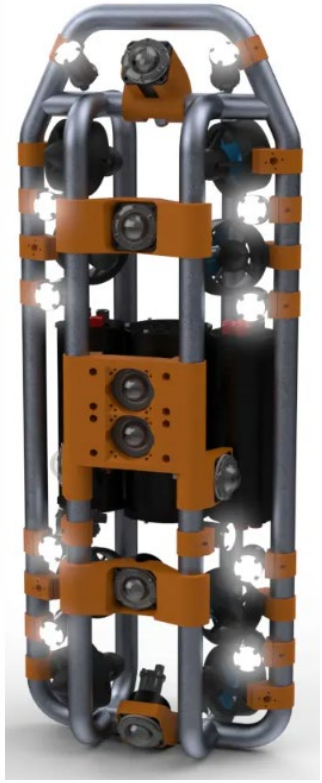
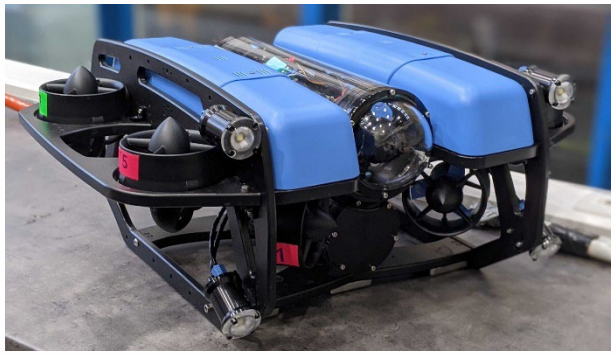


# Development

- OAK D Lite
- Advantages: all in solution, cost optimized, compact housing (28x91x18mm)
- HFOV: 72.9 VFOV: 57.7
- 300k depth points up to 5m
- Fast processing
- Fully integrated on BlueROV2
- nRT data transmission + local storage



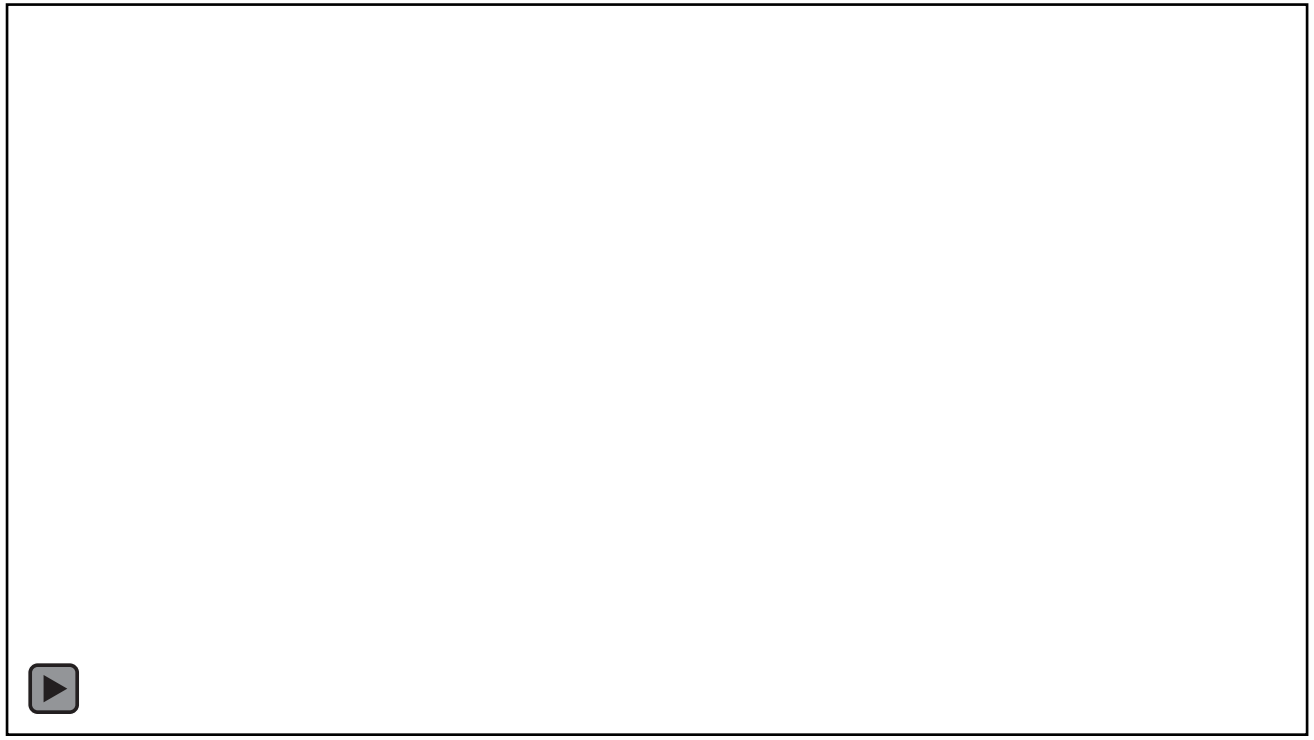
| Component | Cost (€) |
|---|---|
| OAK-D Lite Camera* | 250,00 |
| Raspberry Pi 4* | 150,00 |
| Enclosure | 100,00 |
| **Total** | **500,00** |

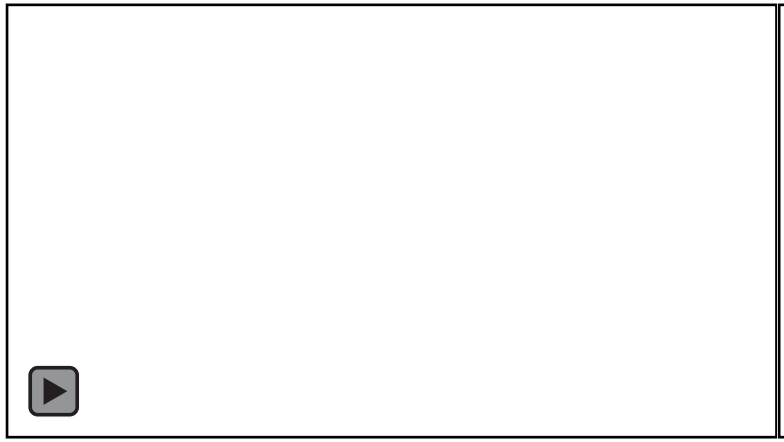
# TARGET MARKET

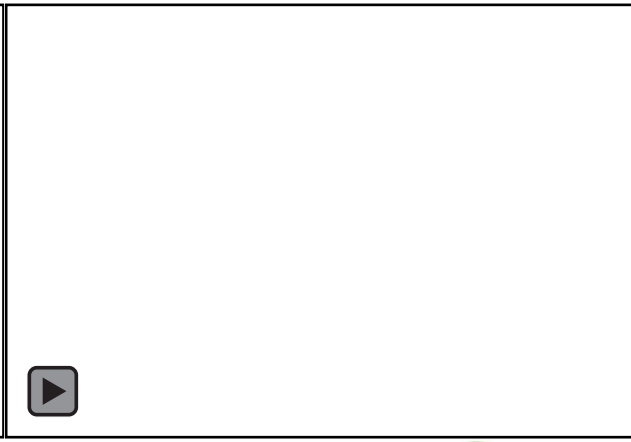
- Offshore industry
- Fishery
- Aquaculture
- Leisure and tourism
- Wide users range

# RESULTS and IMPACT

- Preliminary results (version 1) gives good results in reconstruction of complex objects
- System should be optimized for routine inspection operations
- Once finalised, it will enable for automatic biovolume measurements in mussels farms







# CURRENT STATUS

- Version 2 tested in the pool
- Camera able to eliminate distortion and enable faster processing
- System fully integrated on BLUEROV2
- next phase focus on tailoring to the needs of end-users (scheduled 2022)
- Stereo payload: opportunity to be integrated with IoT platforms within AQUAVITAE as part of a static monitoring tool

# THANK YOU!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