

Mermaid Underwater Dataset

[SR202204][LDM-S]#D01

City: Saint-Raphael - Boulouris

Place: Lion de Mer (43.407327, 6.775236)

Area: Sirène (Mermaid)

Date: Submeeting 2022 - 07/04/22 - 9h

Ground Truth: report [SR202204][LDM-S]#D00

Credits: L. Avanthey, L. Beaudoin, SEAL Research Team, EPITA, France

Dataset information

Acquisition:

- **Method:** Acquired by divers
- **Chief of Hyperbaric Operations:** Laurent Beaudoin
- **Operator divers:** Loïca Avanthey & Laurent Beaudoin & Quentin Brateau
- **Covered area:** ~150 m²
- **Average depth:** 18.7m
- **GSD:** (Sub-)Millimeter (~0.5 mm to 4.0 mm)
- **Type:** Single-camera
- **Viewing angle:** Mainly nadiral
- **Lighting:** Natural lighting

Data:

- **Number of images:** 1244
- **Total size:** 3.69 Go
- **Image dimensions:** 3840 × 2880 px
- **Image format:** JPG
- **Pre-processing:** None (raw data)
- **Nomenclature:**
 - SR202204_LDM-S_D01/SR202204_LDM-S_D01_[acquisition_id]

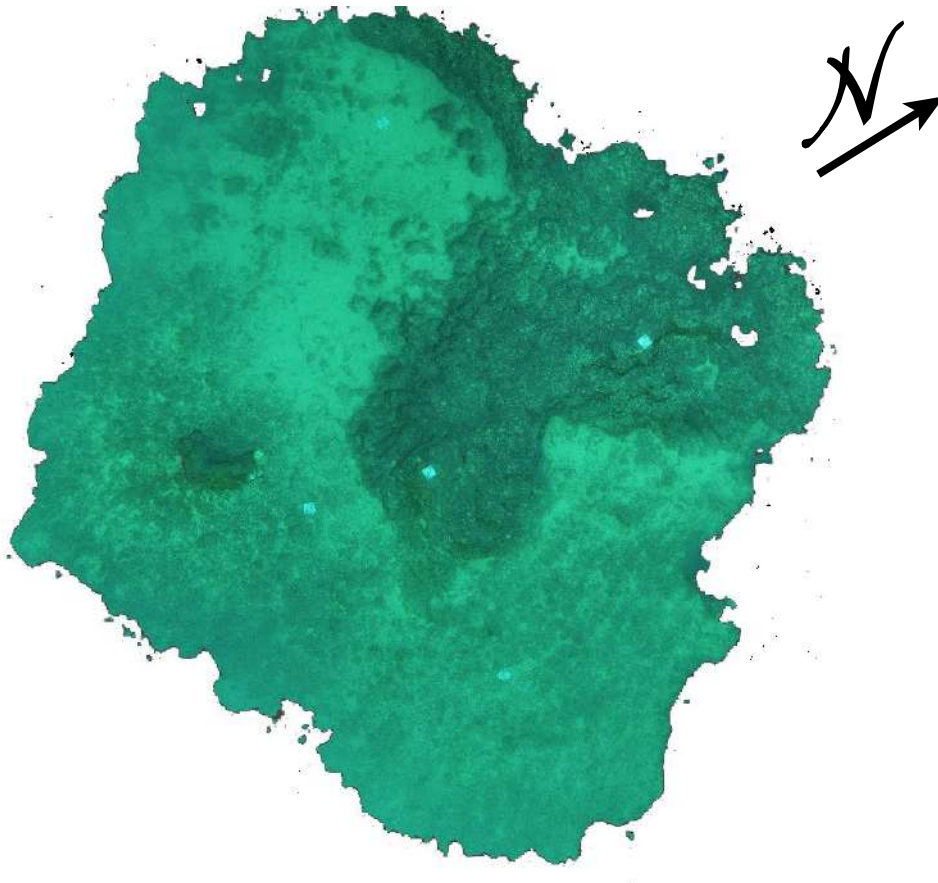
Sensor:

- **Device:** GoPro Hero 3 - Silver Edition
- **Sensor:** IMX117
- **Pixel size:** 1.41 μm
- **Optics:** Focal length of 2.5 mm
- **Housing:** GoPro Hero 3 default housing
- **Calibration values** (by auto-calibration) :

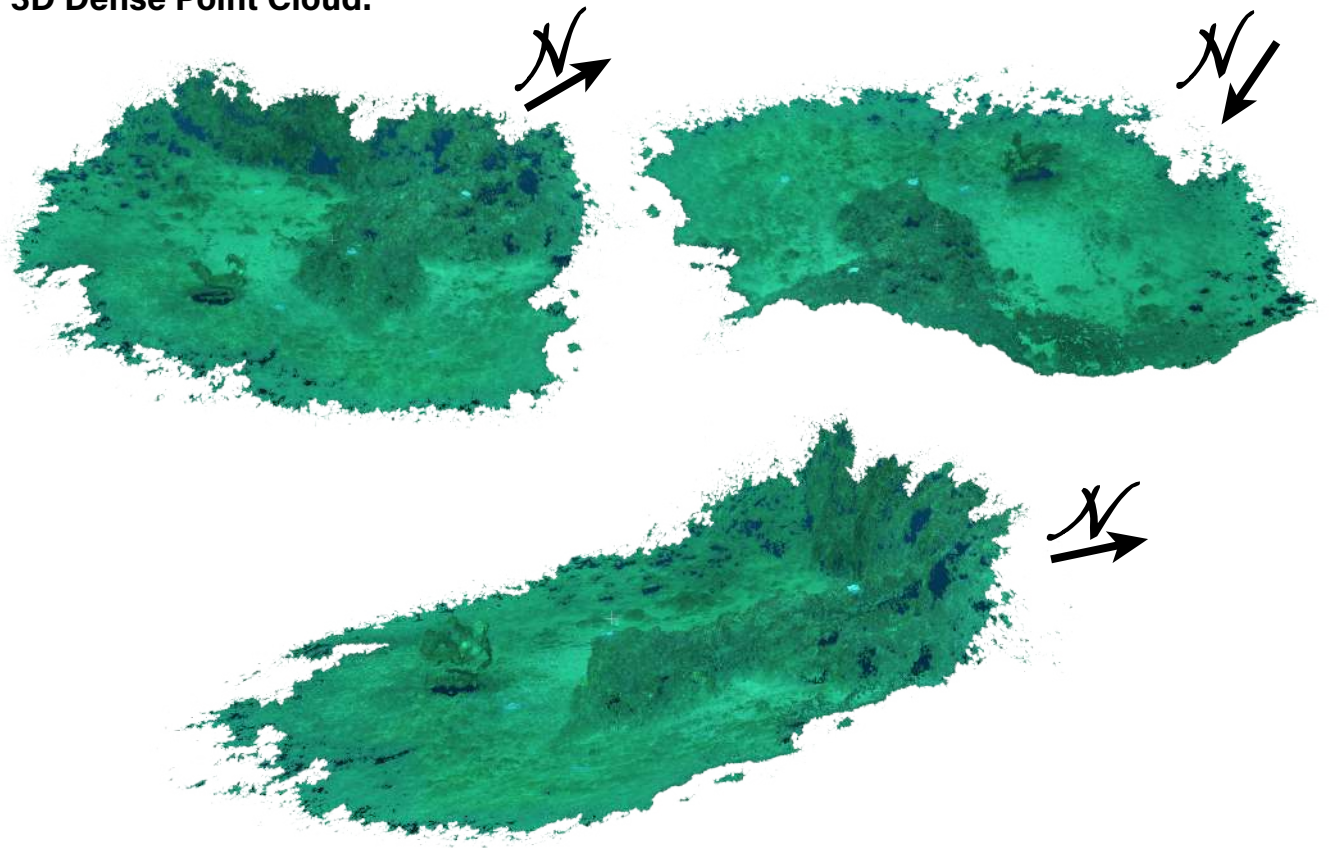
F	2334.29	K₁	-0.222446	P₁	-0.000995472
C_x	-12.752	K₂	0.310621	P₂	-7.8498e-05
C_y	-16.6962	K₃	-0.0835057		

Area Overview

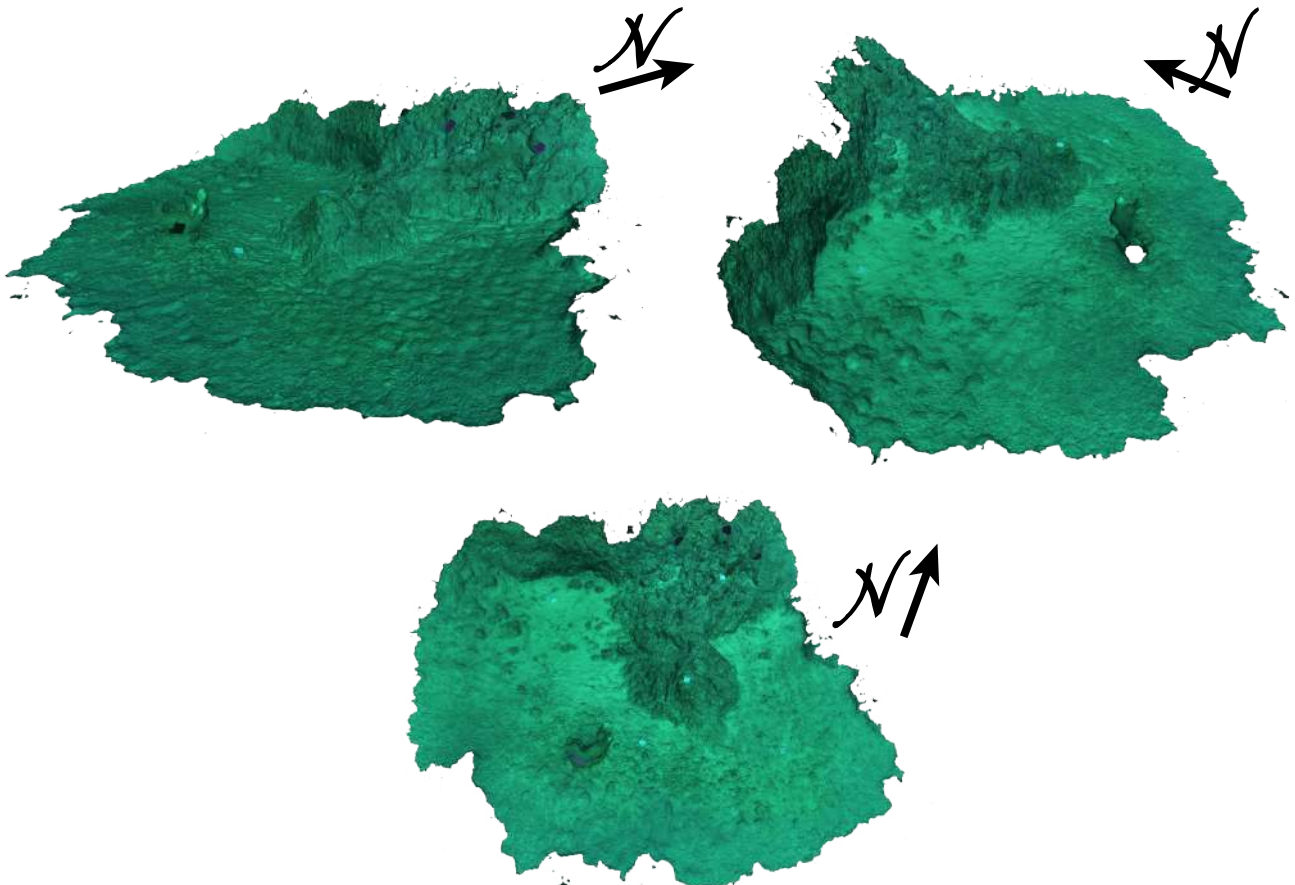
Mosaic:



3D Dense Point Cloud:



3D Textured Mesh:

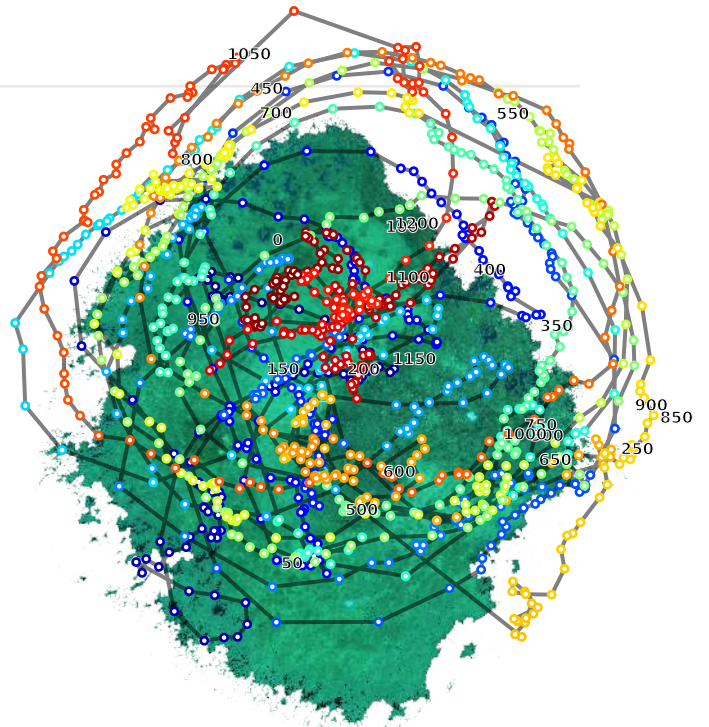


Camera positions

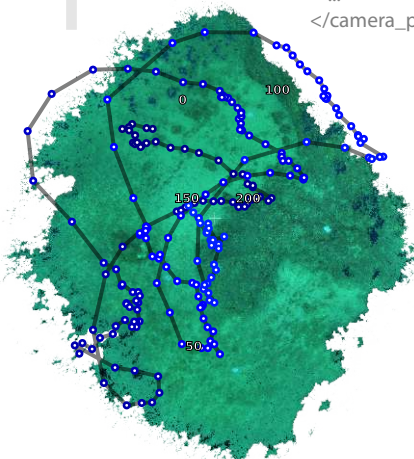
Trajectory:

- **File:** [SR202204][LDM-S]#C01
- **Format (xml):**

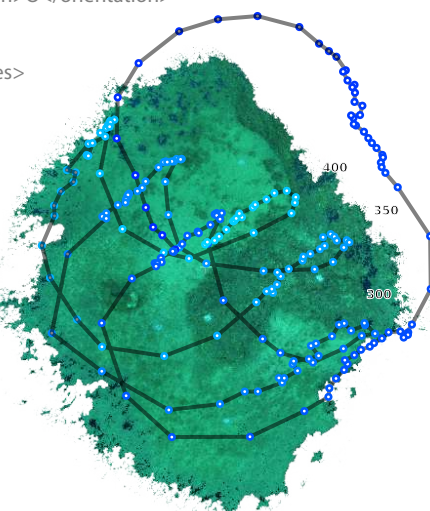
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<transform>  
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  A21 A22 A23 A24  
  A31 A32 A33 A34  
  0 0 0 1  
</transform>  
<rotation_covariance>  
  R11 R12 R13  
  R21 R22 R23  
  R31 R32 R33  
</rotation_covariance>  
<location_covariance>  
  L11 L12 L13  
  L21 L22 L23  
  L31 L32 L33  
</location_covariance>  
<orientation>O</orientation>  
</camera>  
...  
</camera_poses>
```



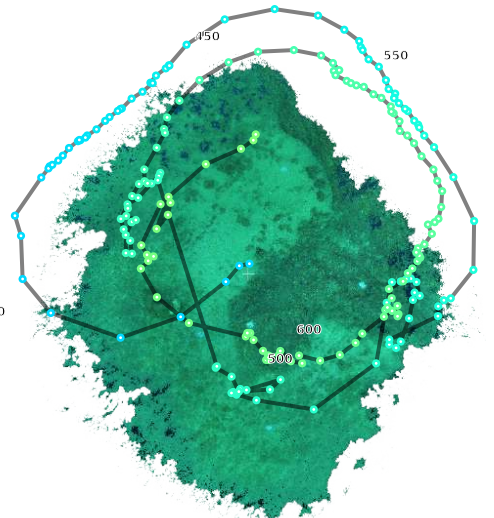
All poses: 0 to 1244



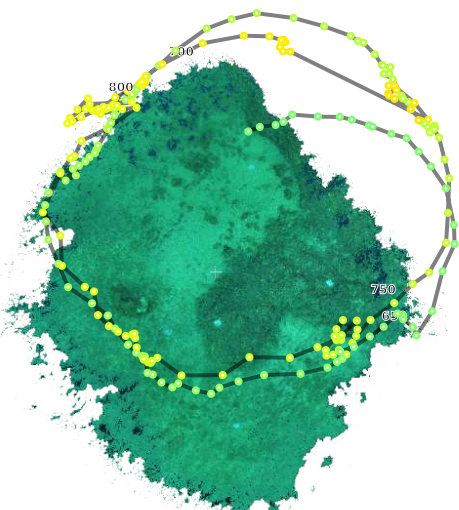
0 to 207



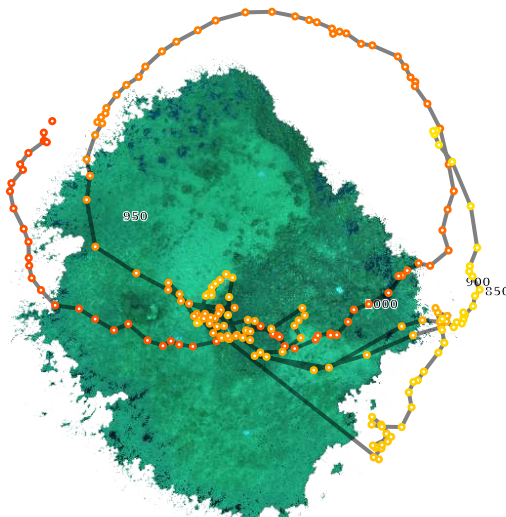
208 to 415



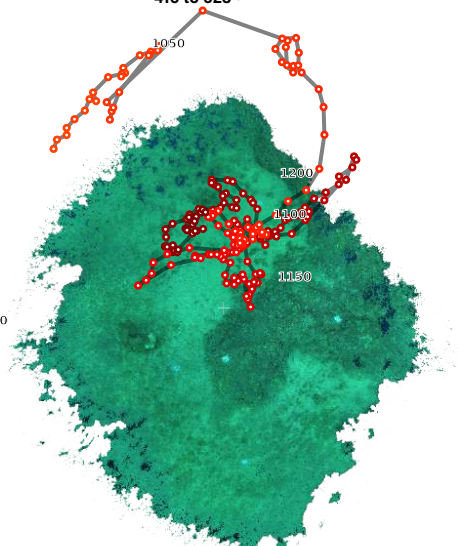
416 to 623



624 to 831



832 to 1039



1040 to 1244