

Micro Geodesic Network: Mermaid

[SR202204] [LDM-S] #D00

City: Saint-Raphaël - Boulouris

Place: Lion-de-Mer (43.407327, 6.775236)

Area: Sirène (Mermaid)

Date: Submeeting - Avril 2022

Global characteristics

Ground data:

- **Network size:** $\sim 65 \text{ m}^2$
- **Number of GCP:** 5
- **Average depth:** 18.7 m
- **Number of measurements performed:** $9 \times 2 + 5 \times 2$
- **Types of measurements:** Slope distances, Azimuths, Depths (*in situ*)
- **Method:** Acquired by divers
- **Chief of Hyperbaric Operations:** Loïca Avanthey
- **Operator divers:** Loïca Avanthey & Laurent Beaudoin
- **Companion divers:** Quentin Bateau & Briec Treguier

Adjustement:

- **Software:** GaMa
- **A posteriori reference standard deviation $\hat{\sigma}$:** 13.24 mm
- **Average mean position error:** 17.8 mm
- **Max mean position error:** 20.0 mm (on GCP n°33)
- **Confidence level:** 68.3%

GCPs

GCP Name	Measured Depth Z_m (m)	Adjusted Depth Z_a (m)	$\hat{\sigma}_{Z_a}$ (mm)	Adjusted X_a (m)	$\hat{\sigma}_{X_a}$ (mm)	Adjusted Y_a (m)	$\hat{\sigma}_{Y_a}$ (mm)
26	18.0	18.000	6.0	-0.06407	10.6	-0.08387	10.1
28	19.7	19.701	8.4	3.28039	10.2	-1.63141	14.5
29	19.0	19.000	11.7	-5.15501	13.9	4.52866	14.3
30	19.6	19.601	7.3	-1.24796	9.9	-1.85428	13.7
33	17.0	16.998	9.2	1.41022	15.9	3.88981	12.1

Measurements

The measurements provided connect two M corners at the top left of each GCPs (outer corner of the black M box).

From	To	Measured Slope distance sD_m (m)	Adjusted Slope distance sD_a (m)	$\hat{\sigma}_{sD_a}$ (mm)
26	28	4.059	4.059	13.3
26	29	6.994	6.942	20.5
26	30	2.653	2.665	9.8
26	33	4.370	4.355	16.1
28	30	4.575	4.535	15.6
28	33	6.360	6.425	20.4
29	30	7.520	7.508	23.9
29	33	6.851	6.893	24.7

Micro Geodesic Network

Mermaid [SR202204][LDM-S]#D00

L. Avanthey & L. Beaudoin
Submeeting 2022

