



# Procedure MEROP (MSC)

## GENERAL INFORMATION

|                        |                          |                 |
|------------------------|--------------------------|-----------------|
| Principal Investigator | Rute Luz                 |                 |
| Author(s)              | Rute Luz, Mariana Campos |                 |
| Version number         | 2.0                      |                 |
| Last edited on         | 08-March-2024            |                 |
| Corresponding SEIF     | File name                | SEIF MEROP v2.5 |
|                        | Version number           | 2.5             |
|                        | Last edited on           | 14-10-2023      |

## MSC (FP AND RSSI) PROCEDURES:

- **A - PROCESS EXPERIMENT OUTPUT: QGIS PROJECT,** *Process GIS layers from experimental runs remotely operated by the AAs*

## SHORT EXPERIMENT DESCRIPTION:

### Experiment Definition

The assigned or interested MSC member should retrieve the MEROP layers GIS from the mission MSC Server, review the provided information, and report their conclusions to the exploration cascade responsible.

After using the QGIS Project, answer the online questionnaire: <https://forms.gle/UPmXqBftfgSVjpK77> :  
**This one will extract the experimental metrics for the MSC component of the MEROP experiment.**

These procedures should be executed within the Exploration Cascade context, where the data in the provided GIS layers, generated by the AAs during the teleoperation of the rover, can contribute to consequent decision-making of activities. This includes identified POIs (photos and text annotations) within ROIs and wireless signal information in those regions.

## **Output of the field experiment run (AAs send this through the MSC server):**

### QGIS project name:

Amadee24\_MEROP\_allRuns\_signalStrength\_textPhotoAnnotations.qgs

### Project's layers nomenclature:

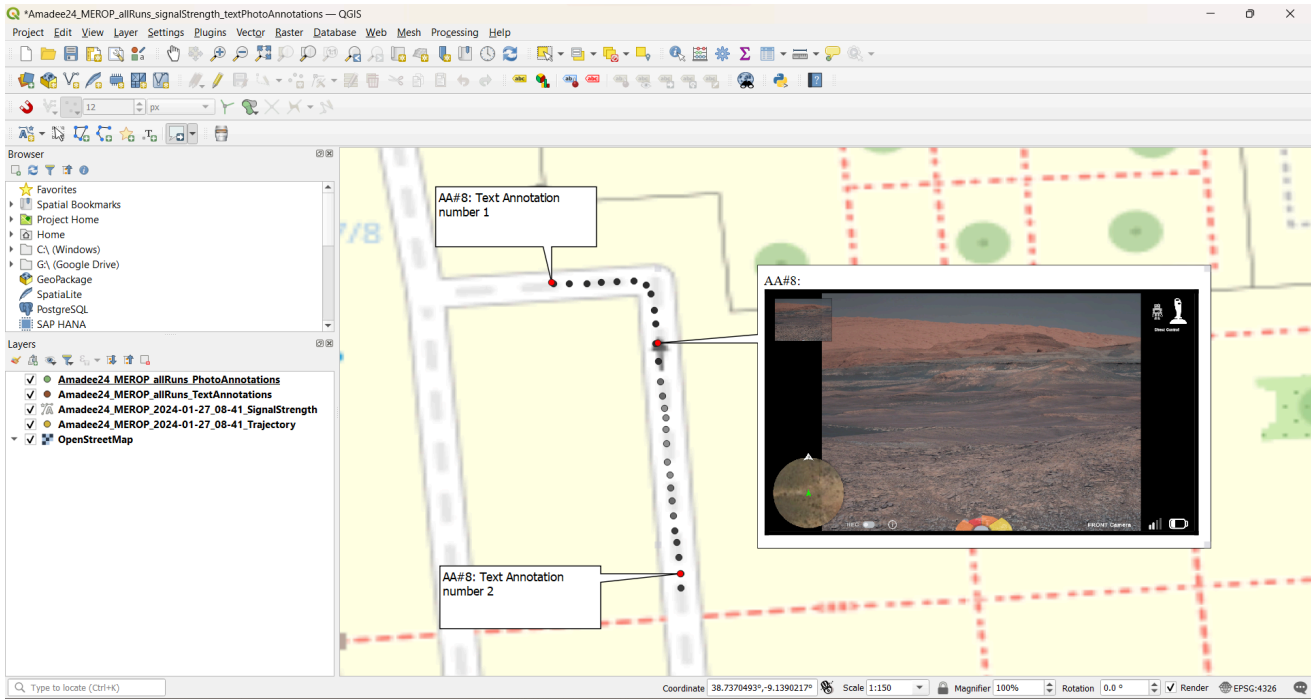
Amadee24\_MEROP\_allRuns\_PhotoAnnotations

Amadee24\_MEROP\_allRuns\_TextAnnotations

Amadee24\_MEROP\_<date>\_SignalStrength

Amadee24\_MEROP\_<date>\_Trajectory

Example of the expected Outcome:



REQUIREMENTS CHECKLIST:

Computer with access to the following tools:

- ☐ Mission data transfer platform
- ☐ Software to open GIS layers (shape files) - e.g., QGIS
- ☐ Web browser with Internet access (to answer the questionnaire)

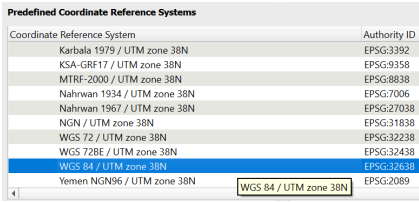
Procedures

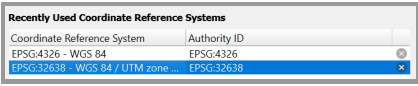
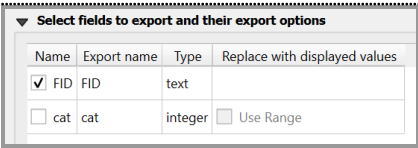
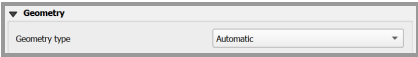
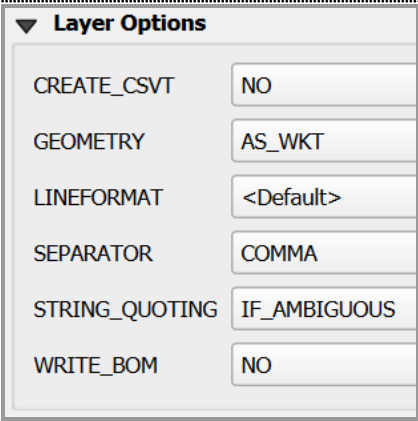
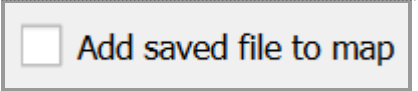
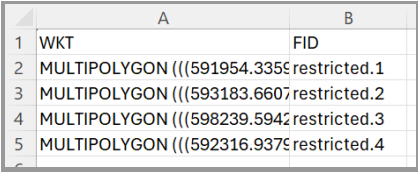
A - PROCESS EXPERIMENT OUTPUT: QGIS PROJECT

| Step | Action                                                                             | NOTES                                                                                                                            | Duration | Check |
|------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------|-------|
| A.1. | Retrieve MEROP data sent by AAs on the habitat through the MSc Server (Work Bench) | Folder name:<br><br>Amadee24_MEROP_GIS.zip<br><br><u>Note:</u><br>MSC server requires login credentials (confirm this with OEWF) | 5 min    |       |
| A.2. | Unzip the retrieved file                                                           |                                                                                                                                  | 5s       |       |
| A.3. | Open the unzipped "Amadee24_MEROP_GIS" folder to see all files                     |                                                                                                                                  | 5s       |       |
| A.4. | Run the executable:                                                                | <u>Note:</u>                                                                                                                     | 15s      |       |

|      |                                                                                                                                                         |                                                                                                                                               |       |  |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------|--|
|      | <p>“Double_click_before_opening_project.exe”</p> <p>(Double-click on the file to run)</p>                                                               | <p>The first time you run this, a pop message will appear to allow the file's execution.</p> <p>If the folder's path changes, repeat A.4.</p> |       |  |
| A.5. | <p>Open (double-click):</p> <p>“Amadee24_MEROP_allRuns_signalStrength_textPhotoAnnotations.qgs”</p>                                                     | this will open the QGIS application                                                                                                           | 10s   |  |
| A.6. | <p>check if the image annotation layer displays “NaN”. if so, execute A.4.</p>                                                                          | <b>TODO: add an image with Nan on the images</b>                                                                                              | 15s   |  |
| A.7. | <p>After using the QGIS Project, answer online questionnaire: <a href="https://forms.gle/UPmXqBftfqSVjpK77">https://forms.gle/UPmXqBftfqSVjpK77</a></p> |                                                                                                                                               | 5 min |  |

## B - EXPORT EXPERIMENT INPUT: ROIs AND SAFE PATHS SHAPEFILES

| Step | Action                                                                                                                                                                                                                              | NOTES                                                                                | Duration | Check |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------|-------|
| B.1. | In the QGIS top menu, click on 'Project' and then 'Properties'                                                                                                                                                                      |                                                                                      |          |       |
| B.2. | In the popped window, click on 'CRS' in the left menu                                                                                                                                                                               |                                                                                      |          |       |
| B.3. | <p>In 'Predefined Coordinate Reference Systems', if not, expand 'Projected' and then expand 'Universal Transverse Mercator (UTM)' and look for the option 'WGS 84 / UTM zone 38N' and select it</p> <p>Do 'Apply' and then 'OK'</p> |  |          |       |
| B.4. | Right-click the MEROP Path (or ROI if it is the case) in the 'Layers'                                                                                                                                                               |                                                                                      |          |       |
| B.5. | Go to 'Export' and click on 'Save Features As...'                                                                                                                                                                                   |                                                                                      |          |       |
| B.6. | Select the Format: 'Comma Separated Value [CSV]'                                                                                                                                                                                    | <p>Format</p> <p>Comma Separated Value [CSV]</p>                                     |          |       |
| B.7. | 'File name': "MEROP_Path" (or MEROP_ROI" if it is the case) and choose the desired file destination                                                                                                                                 |                                                                                      |          |       |

|       |                                                                                                                                                                                        |                                                                                      |  |  |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--|--|
| B.8.  | To select the CRS, click on the icon  , select 'EPSG:32638 - WGS 84 / UTM zone 38N' and do 'OK'       |    |  |  |
| B.9.  | Expand 'Select fields to export and their options' and deselect the last row                                                                                                           |    |  |  |
| B.10. | Expand 'Geometry', and for the 'Geometry type', select 'Automatic'                                                                                                                     |    |  |  |
| B.11. | Expand 'Layer Options' and select the correct options as shown in the image<br><br>If you end up having the wrong format in the past (in B.14.), now in 'SEPARATOR' select 'SEMICOLON' |   |  |  |
| B.12. | Deselect 'Add saved file to map' and do 'OK'                                                                                                                                           |  |  |  |
| B.13. | Check if the file has the correct form as it is shown in the image (2 columns, 'WKT' as the first column and 'FID' as the second)<br><br>If not, go back to B.4.                       |  |  |  |
| B.14. | Go back to B.4. to repeat the process for the MEROP ROI                                                                                                                                |                                                                                      |  |  |