This manual provides a step-by-step guide on how to set up, connect, and perform field surveying using the GLRM GNSS receiver in combination with the Locus GIS application.

# **NTRIP Client Mock Location**

The Mock Location provider replaces the default location data from the internal GPS sensor of the device with high-accuracy, corrected coordinates from the external GLRM GNSS receiver. This allows any location-based application, including Locus GIS, to receive and display these enhanced coordinates without requiring additional configuration within the app.

To ensure proper communication between the GLRM GNSS receiver and Locus GIS, configure the GL Connect app as follows:	GL Connect
1. Open the GL Connect app.	GL Store 🔀
2. Navigate to the "Connection" tab.	BLE Connection
3. Enable the following options:	Background
<ul> <li>Background Execution – Allows the app to run continuously in the background.</li> <li>NTRIP Client – Activates real-time correction data streaming via an NTRIP connection.</li> <li>Mock Location – Enables the app to provide corrected GNSS coordinates to other applications by overriding the internal</li> </ul>	Configure ndiridual parts of this app to run in the background. background execution: Intrip client: Mode location: selected forder: no folder selected Map Control Configuration Connection Map Control Configuration Connection MTRIP Terminal
GPS location. Enabling Developer Options on Your Android Device	
<ul> <li>To allow the use of Mock Location with external GNSS receivers, you first need to unlock the Developer Options on your Android device:</li> <li>1. Open your device's Settings.</li> <li>2. Scroll down and select About Phone (or About Device, depending on your Android version).</li> <li>3. Locate the Build Number entry.</li> <li>4. Tap the Build Number repeatedly (approximately 7 times) until you see a message confirming that Developer Options have been unlocked.</li> <li>5. Return to the main Settings menu, where you will now find a new section called Developer Options.</li> </ul>	Settings     Q     Contract information       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent of controls     December of controls     December of controls       Image: Intervent controls     December of controls     December of controls       Image: Intervent controls     December of controls     December of controls       Image: Intervent controls     December of controls     December of controls       Image: Intervent controls     December of controls     December of controls       Image: Intervent controf     December of controls     December
Allowing Mock Location Access After unlocking Developer Options, follow these steps to enable mock location functionality:	Out of the state     Allow Mack Modem       Image: Another Support     Allow Mack Modem       Another Support     Allow fine state for our Mack Modern survey of fine functional state for the state for an Allow for the state for the state for the state for the state for an Allow for the state for the
<ol> <li>Return to the device's Settings menu and open the newly available Developer Options section.</li> </ol>	Tablet nome     Tealet nome     Tealet nome     Developer options     Developer options     Developer options     Wretess display certification
2. Scroll down to find the Allow Mock Modem tab.	
3. Enable the settings.	

To allow your device to use corrected GNSS data from an external NTRIP client, follow these steps:	Settings Q. < Developer options	
<ol> <li>Navigate to Developer Options (previously unlocked).</li> </ol>	Battery and device     Battery and device     Apps     App     Apps     App	
2. Tap on Select mock location app.	Control region with product of the second seco	
<ol> <li>From the list of available apps, select GL Connect.</li> </ol>	Accessibility     Accessibility     Accessibility     Leaster	
	Software update     bombod ard hotal     Trak & diSt constations and     for the state     Trak & dist constations and     for the state of the specifies     (7)     User manual     Security	
	Clean meas         Disable messings candboxing           Or Remote support         Disable messings candboxing	
	About tablet     About tablet     Construction     About tablet     Construction     C	
Once the mock location app is selected and active, all		
applications on your Android device that use location services will automatically receive the high-accuracy positional data streamed from the GLRM GNSS receiver.	Settings     Q       Image: a resurceing were parental controls screen time - App times     GL Connect at general later given, connect       Battery and device     Image: Connect at general later given, connect at general later general later given, connect at general later genera	
You can now open your preferred survey or GIS	Buouge - Menoy - Becking protection B Apps B Com. Softwaraps B Com. Softwaraps	
application — such as Locus GIS — and begin surveying without any additional configuration. The app	General management     Larguage and the factor 4 -     base     the factor 4 -	
will use the corrected coordinates provided by the external receiver instead of the internal GPS.	Constanting     Constanti	
	Software update     Download and mutal	
	User more     Learn more     Remote support     Pernets support	
	About tablet     Tratar - Layal efformation     - Tablet name	
	Developer options     Developer options	
Working with Locu	s GIS	
Locus GIS is a professional mobile GIS application designed for Android devices, enabling efficient collection, editing, and management of geospatial data directly in the field. It supports various industries, including surveying, environmental monitoring, agriculture, forestry, and urban planning.		
To begin working with Locus GIS, you must first create a new project:	🗱 Locus ais 📀 🏑 💲 🗄	
1. Open the Locus GIS app.	Projects Layers	
2. Tap the Menu icon in the top-left corner of the screen.	Map manager GNSS manager	
3. Select the "Projects" tab from the menu.	Locus Store	
<ol> <li>Tap the "+" green (plus) icon to create a new project</li> </ol>	Settings     About app / Helpdesk	
<ol><li>In a new tab, press on "New empty project" in order to access the project settings</li></ol>	Rate it	

Defining Project Settings	
20	× New project
In the Project Settings window, configure the following basic information for your new project:	Icon & name .
<ol> <li>Project Name – Enter a clear and descriptive name for your project.</li> </ol>	Description Coordinate inference system WGS 84 / Pseudo-Mercator Type of coordinates
<ol> <li>Description (optional) – Provide additional details about the project's purpose, location, or scope.</li> </ol>	type of constants By project •
<ol> <li>Coordinate Reference System (CRS) – Select the appropriate CRS for your project. This defines how geographic data is projected and ensures consistency with your external data sources (e.g., EPSG:31287 – MGI / Austria GK West).</li> </ol>	
Change the Coordinate Reference System (CRS):	
Tap on the name of the predefined CRS to open the list of available coordinate systems. From there, select the CRS that matches your project requirements.	
Quetomize the Duciest leave	
Customize the Project Icon: To personalize your project, tap on the default icon located next to the "Icon & name" field. You can choose from a variety of symbols to visually distinguish the project.	New project      Icon 8 name      GLRM Demo      Description      Coordinate reference system      ETRS99 / Austria Lambert      T
Finalizing Project Creation	Type of coordinates
Once you have configured all necessary parameters (project name, description, coordinate reference system, and optional icon), tap the "Confirm" button to complete the setup and create the new project. You will then be directed to the main project workspace, where you can begin adding layers, collecting spatial data, and managing attributes.	By project ▲ By project ✓ WGS (x.*) WGS (x* x.x) WGS (x* x.x*) WGS (x*
	DISCARD

Creating Layers in Locus GIS		
After setting up your project, the next step is to create vector data layers, which are essential for collecting and presenting spatial information in the field.	← Project 'GLRM Demo'           Basic         :           Acorem         :	
Each layer defines a specific geometry type—such as points, lines, or polygons (areas)—and the associated attributes (metadata) that will be recorded for each feature.	New project layer           +         New empty layer           Define and deviate whole new layer	
To create a new layer:	Create layer(s) defined by template file Files	
<ol> <li>In your open project, tap the Menu icon (top left corner).</li> </ol>	Import SLPP file     Create new layer from imported SLP      Display file     Display file     Display file as upported format - GPX, KML  Maps     Add map as overlay	
2. Select the "Layers" tab.	Audi in by as over lay     Place another map layer as overlay above current base map     CLOSE	
<ol> <li>Tap the green "+" button to create a new vector layer.</li> </ol>		
Configuring the Basic Settings of a New Layer		
When creating a new vector layer in Locus GIS, the Basic tab of the layer creation dialog allows you to define key parameters:	New data layer     CONFIRM       BASIC     ATTRIBUTES       LABELS     STVLE       Name     Iager       Layer status	
<ol> <li>Name of Layer: Enter a clear and descriptive name for the layer that reflects the type of features it will contain (e.g., "Tree Inventory", "Parcel Boundaries").</li> </ol>	Editable         -           GEOMETRY         Trype           Image: Trype         O Point           Protect         Polygon           ETTRS89         EP96: 3416 / Austria Lambert	
<ol> <li>Charset encoding: This defines the character encoding used in the underlying SpatiaLite database.</li> </ol>	OTHER Charact encoding UTF-8	
Note: We recommend using the default UTF-8 encoding for compatibility and multilingual character support.		
3. Type: Select the geometry type for the layer:		
<ol> <li>Coordinate Reference System (CRS): Defines the spatial reference system in which the data will be stored.</li> </ol>		
In the "Attributes" tab of the layer creation dialog, you can define the data fields (form entries) that will be used to describe each collected feature.	New data layer CONFIRM : BASIC ATTRIBUTES LABELS STYLE	
	No attributes	

Suppo	rted Attribute Types in Locus GIS	
When o are ava	creating attributes for a layer, the following types allable:	X Add attribute
1.	Text – For plain text (e.g., names, notes).	Integer number Decimal number Date and time
2.	Integer – Whole numbers (e.g., ID, quantity).	Vec/No Esumention
3.	Decimal – Real numbers with decimals (e.g., measurements).	Automatic numbering Feature properties
4.	Date – Date and time; defaults to current but can be edited.	
5.	Yes/No – Boolean field for binary values.	
6.	Enumeration – Drop-down list with predefined values.	NEXT
7.	Automatic Numbering – Auto-incremented integer (e.g., feature ID).	
8.	Feature Properties – Auto-filled values like coordinates, length, or area based on geometry type.	
Label S	Settings in Locus GIS	
Labels	show feature info directly on the map.	New data layer $\checkmark$ confirm : BASIC ATTRIBUTES LABELS STYLE
To set t	hem up:	Display labels
1.	In Layer Settings, open the Labels tab.	Count  Text color
2.	Enable labels.	- 12 + Outline Draw outline
3.	Choose attribute to display.	Background
4.	Adjust style:	
• •	Text size: use + / – Text color: select via color picker Improve visibility with outline or background	
Save t	he Layer	
Confirm	Il settings and attributes are configured, tap the n button to save the new layer. It will now appear project and is ready for data collection.	<ul> <li>← Project 'GLRM Demo'</li> <li>Trees</li> <li>Basic Asamm</li> <li>E</li> </ul>

## **Starting Field Work**

- 1. Turn on the GNSS receiver.
- 2. Ensure Mock Location is enabled and configured correctly.
- 3. Open Locus GIS it will automatically use the corrected position from the receiver.

You're now ready to begin data collection in the field.



# Mapping new point, lines, or polygons

- 1. Tap the "+" button and select the layer you want to use for saving the new feature.
- 2. Choose how to set the feature's location:

### For Point Layers:

- My Location Uses the current GNSS position.
- Screen Center Uses the coordinates at the center cross of the map view.
- Coordinates Manually enter specific coordinates.



# Adding Attachments to Features

You can enrich a mapped feature with additional media or notes:

- 1. Tap "Add attachment" in the feature form.
- 2. Choose from the available options:
- Take photo / Select photo
- Record audio / Select audio
- Record video / Select video
- Draw a sketch

These attachments are saved with the feature and can be viewed later directly in the project.



- Select photo
- Record audio
- Select audio
- H Record video
- Select video
- Jraw a sketch

#### Mapping Lines or Polygons Train track . When adding a new line or polygon feature, you can Coordinates 623320.518 | 481339.741 0 Sateliter 0 | 0 × define vertices using one of the following methods: - 0.000 m @ 2.655 ∞ Record new line/polygon - Automatically • 0 records the geometry by tracking your device's movement. My Location - Adds each vertex based on your current GNSS position. Screen Center - Adds vertices using the coordinates at the center cross of the map. (0) Coordinates - Manually enter precise • coordinates for each vertex. ©Γ • 1 • ## 3 Middle point Positi Screen Choose the method that best suits your mapping scenario. **Recording Profiles for Lines and Polygons** Lines and polygons are recorded using a recording profile, which defines how the geometry is captured. Length (km) → 0.0000 - 🔊 0:06 To access or edit a profile: 2.667 ... N 0 1 Speed Go to App Settings > Recording > [select profile] 0 0.1<sup>km</sup> Here you can: + Add attachment Edit the profile name • Delete the profile if no longer needed To create a new profile, go back to App Settings > Recording and tap the add (+) button. Recording profiles control parameters like logging intervals, trackpoint recording conditions, and moreensuring flexible data capture based on your needs. **Exporting a Project in Locus GIS** To export your current project: GLRM Demo 2 1. Open the Menu tab. Close Export 2. Tap on the name of the active project to select it. Edit Free monitoring Sample project mo Delete 3. Press the settings icon, next to the project name to open project settings. From there, you can proceed to export your project in supported formats.

Choose your preferred export format from the list:	X Projects Q
• SHP (Shapefile)	Openned project GLRM Demo 3 layers :
• CSV	Sample projects Power network Sample project with power lines and elements
• KML	Tree monitoring     Sample project monitoring trees
• ZIP	
QGIS 3 project format	Export project
Template (to reuse the project structure)	Export as SHP Export as CSV
Select the format that best suits your workflow or target application.	Export as KML      Export as ZIP      Export to QGIS 3
	Export as template