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smart for mobile mapping

# Using external GPS signals on Android and iOS tablets



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## ABOUT THIS DOCUMENT

In this document, we explain how you can use the position data from an external GPS device instead of the internal GPS signal from an Android tablet.

Baar, January 14, 2026

## BRIEF SUMMARY

Most tablets have a GPS receiver as standard, which provides position data for the OCAD App.

To connect an external GPS device to an Android tablet, you need a third-party app such as "Bluetooth GNSS." The app connects to the external GPS receiver via Bluetooth and forwards the GPS data to the OCAD app.

On iOS devices, you can connect most external GPS receiver via Bluetooth without an additional app.

Internal device GPS (red) vs. external Garmin GPS (blue)

## WHY SHOULD YOU USE AN EXTERNAL GPS?

If your tablet has no internal GPS or only a poor one, it is a good idea to connect an external GPS receiver to display your current position in OCAD with an accuracy of a few meters.

A comparison between internal and external GPS can be found at the end of this document.

## DETAILED INSTRUCTIONS FOR IOS DEVICES

On iOS devices, you can connect an external GPS receiver via Bluetooth without an additional app. However, not all external GPS devices are supported. If you could connect an external

GPS to the OCAD Sketch App via Bluetooth, it will also work for the OCAD App.

Please also note when purchasing an iPad: Only the iPad Air Wi-Fi + Cellular model has internal GPS, whereas the iPad Air Wi-Fi model does not.

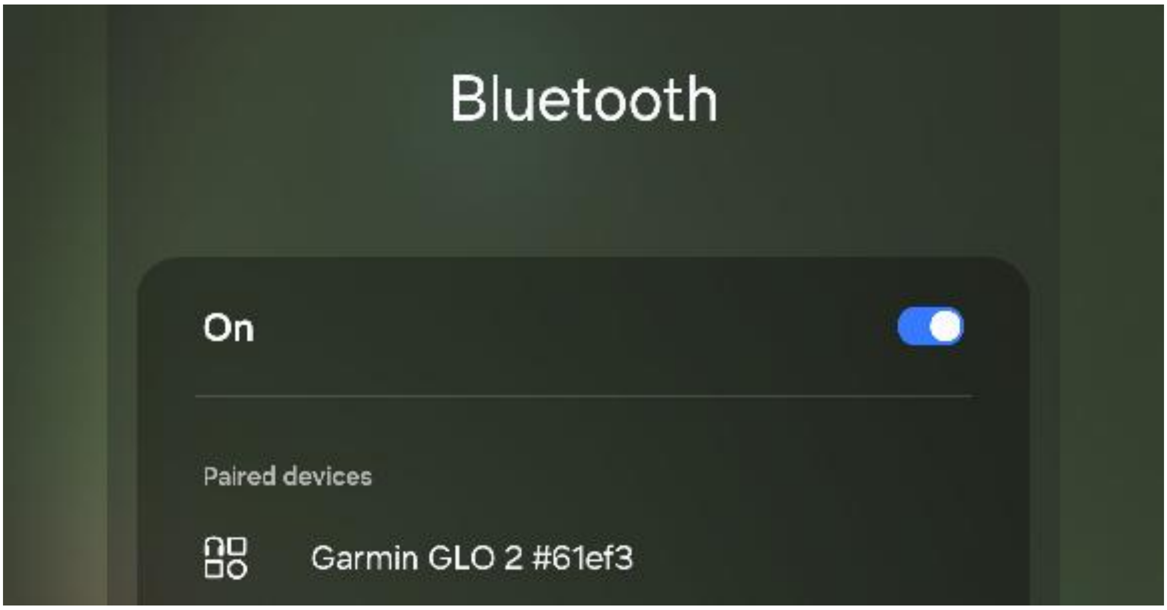
## DETAILED INSTRUCTIONS FOR ANDROID DEVICES

This is how we used the position of a Garmin Glo 2 on a Samsung Galaxy Tab Active5.

#01: Pair devices

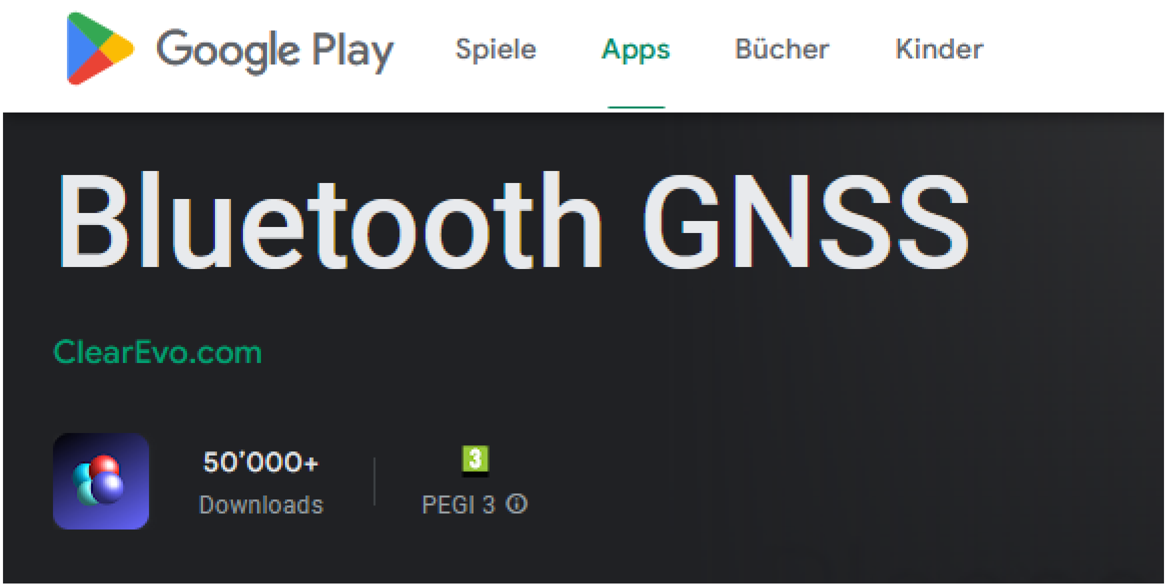
– Turn on both the external GPS device and Bluetooth on your Android device.

– Go to the Bluetooth settings on your Android device and pair the GPS device.

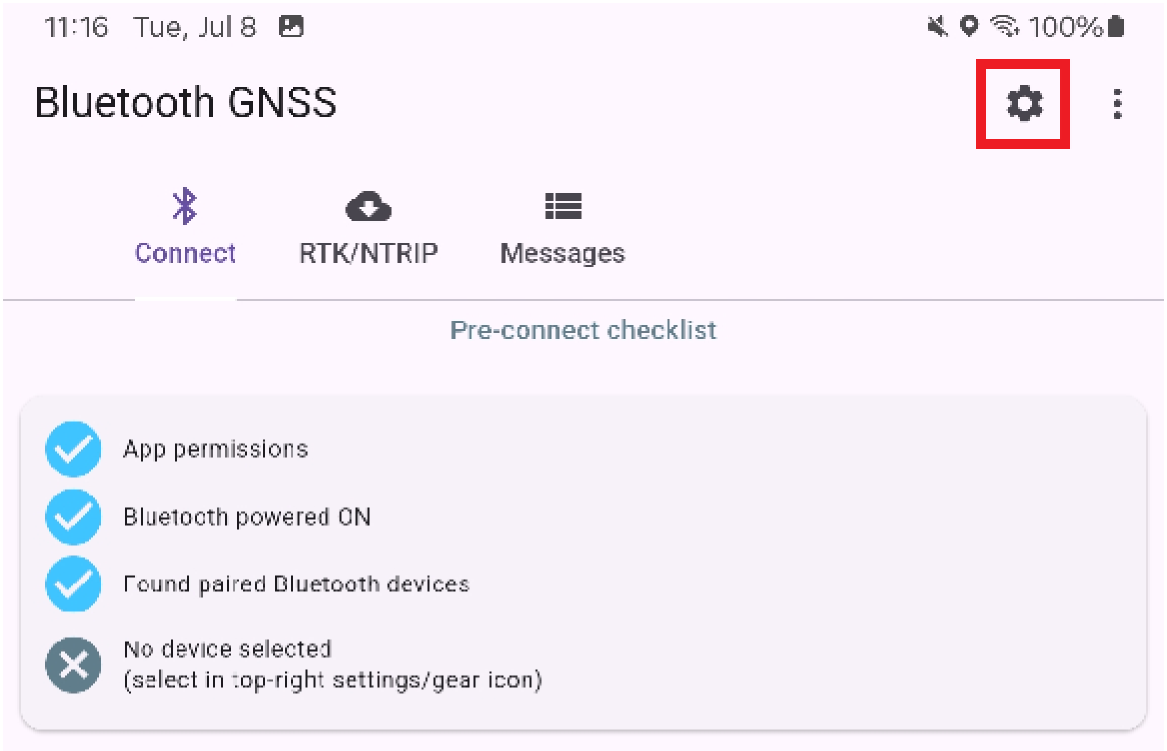


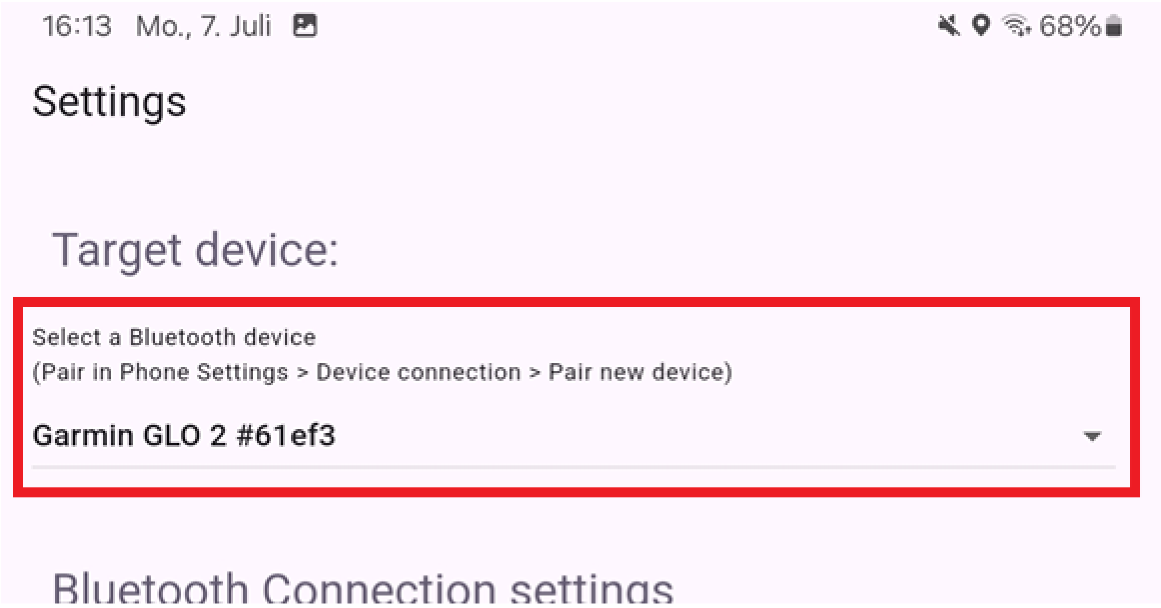

#02: Install the "Bluetooth GNSS" app

– Download the "Bluetooth GNSS" app from the Google Play Store on your Android device and install it.




#03: Configure the app
- Open the "Bluetooth GNSS" app on your Android device.
- Grant the permissions requested by the app.
- Select the paired GPS device from the list in the settings (top right).



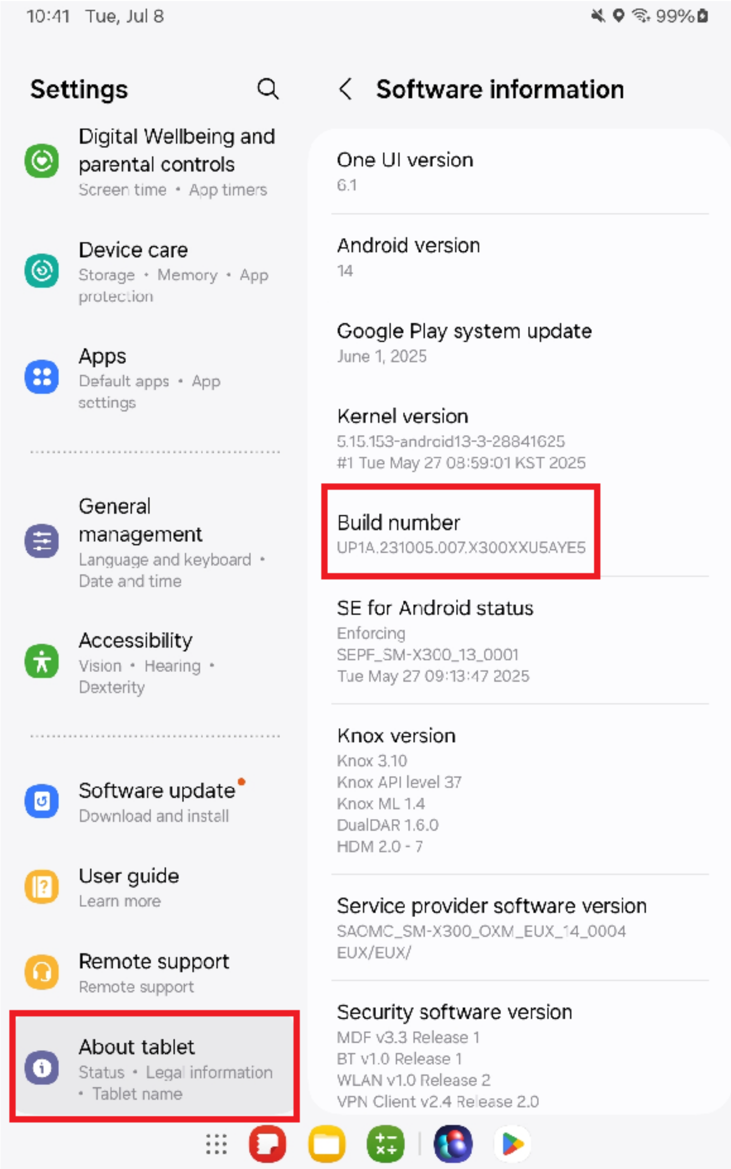



#04: Enable developer options

The following description may vary depending on your device and Android version.

If necessary, search the internet for your device and the term "enable mock location" (e.g., "Galaxy Tab Active5 enable mock location").

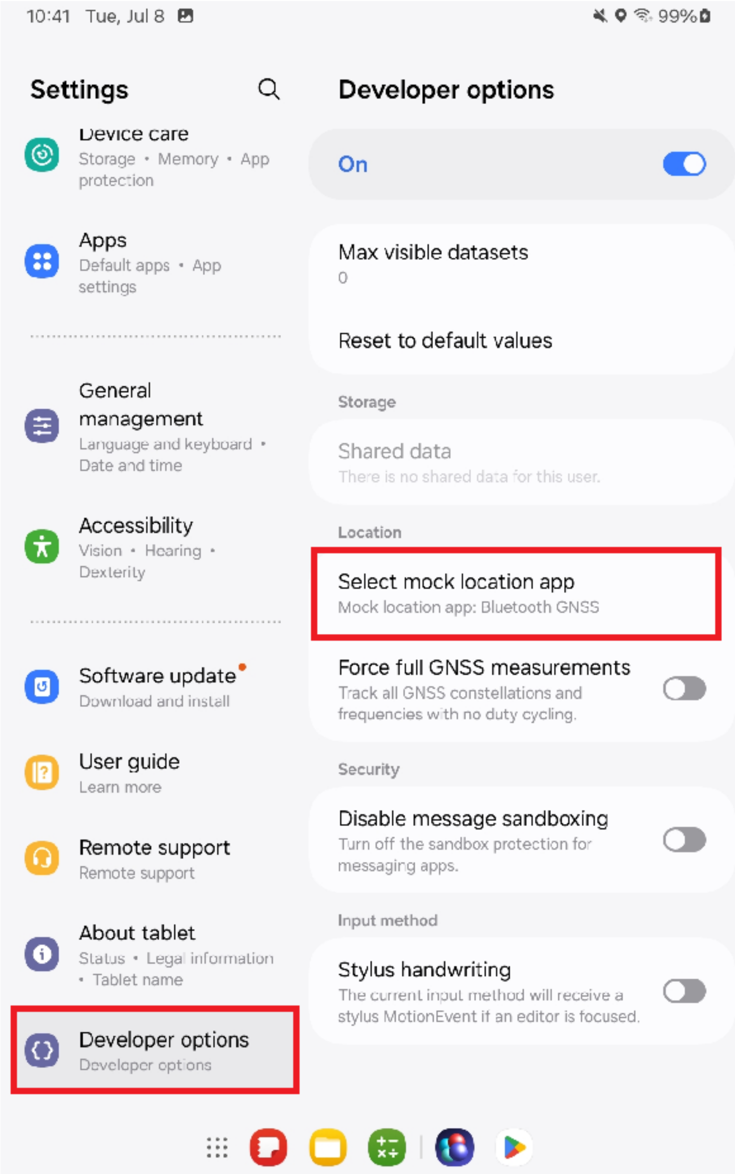
- On your Android device, go to Settings > Tablet info / About tablet > Software information.
- Find the "Build number" and tap it seven times in quick succession.
- A message will appear confirming that developer mode has been activated.



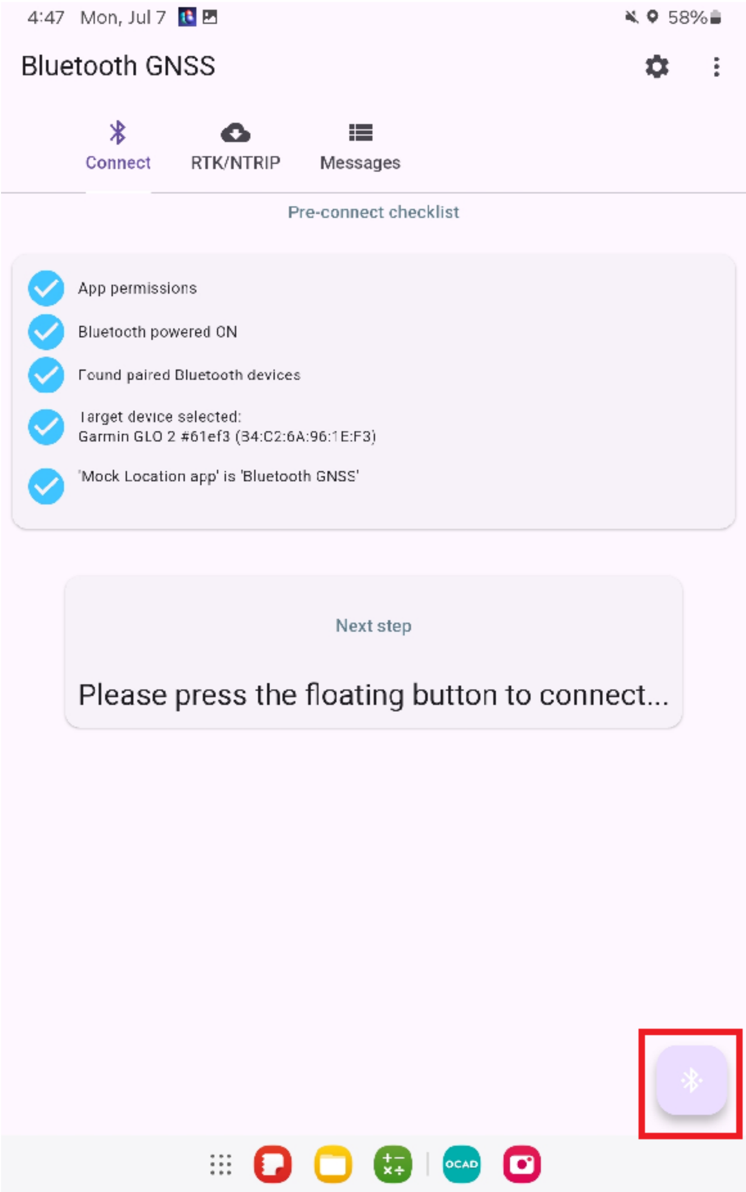

#05: Activate mock location

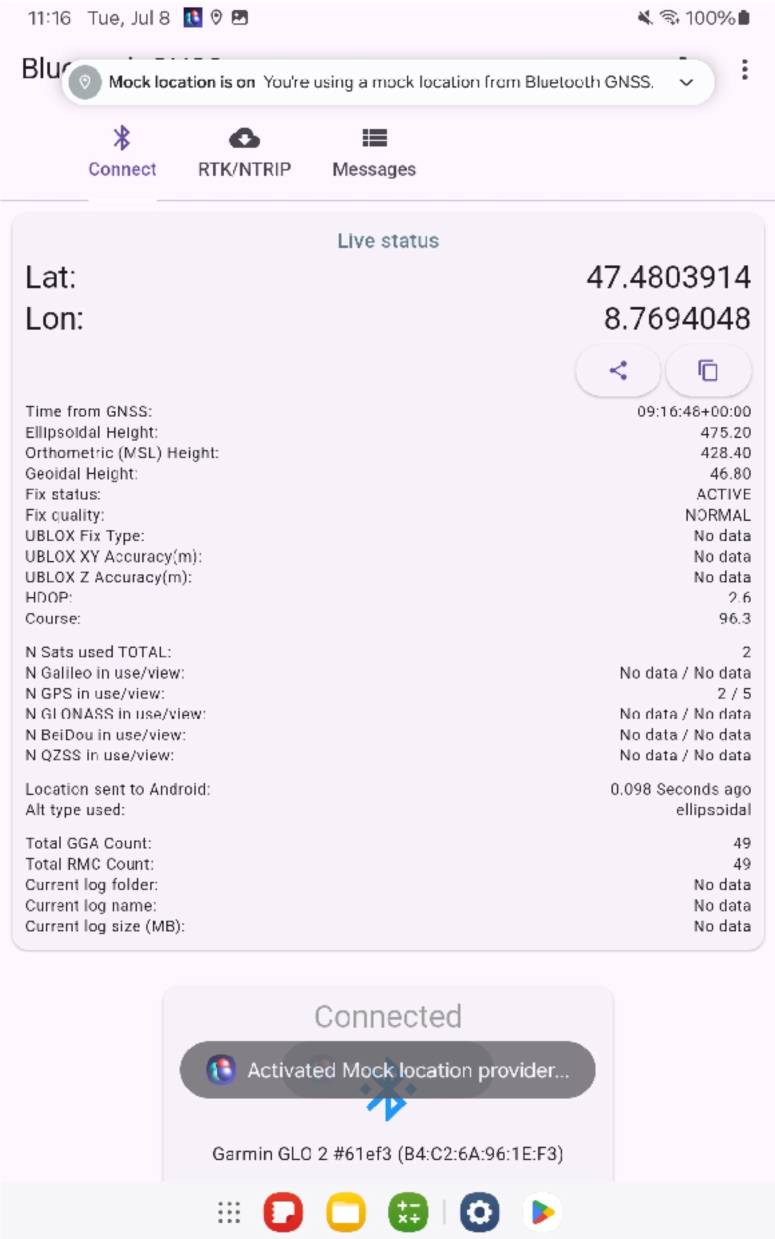
– Go back to Settings on your Android device and open the new menu item "Developer options" at the bottom of the list.

– Find the "Location" section and select the "Bluetooth GNSS" app as the location simulator (select app for simulated locations).




#06: Connect
– Return to the "Bluetooth GNSS" app on your Android device.
– Click the "Connect" button at the bottom right to establish the connection.
– You will receive a notification that you are using a simulated location from Bluetooth GNSS.


4:47 Mon, Jul 7
58%
Bluetooth GNSS
Connect
RTK/NTRIP
Messages
Pre-connect checklist
App permissions
Bluetooth powered ON
Found paired Bluetooth devices
Target device selected:
Garmin GLO 2 #61ef3 (34:C2:6A:96:1E:F3)
'Mock Location app' is 'Bluetooth GNSS'
Next step
Please press the floating button to connect...




#07: Open the OCAD app. It will receive the location information from the external Garmin Glo 2 via the Bluetooth GNSS app.

## COMPARISON

We conducted a small (by no means representative) test to compare the internal Samsung Galaxy Tab Active5 and the external Garmin Glo 2 GPS.

### Urban area

Mainly open terrain, all buildings 15–20 m high.


Blue: External GPS Garmin Glo 2

Red: Internal GPS Samsung Galaxy Tab Active5

Purple: Test track

The external GPS works slightly better than the internal GPS. However, GPS is often unnecessary for sprint maps, as survey plans and orthophotos (if available) provide much more accurate position data.

**Forest**

Mixed forest, trees up to 30 m

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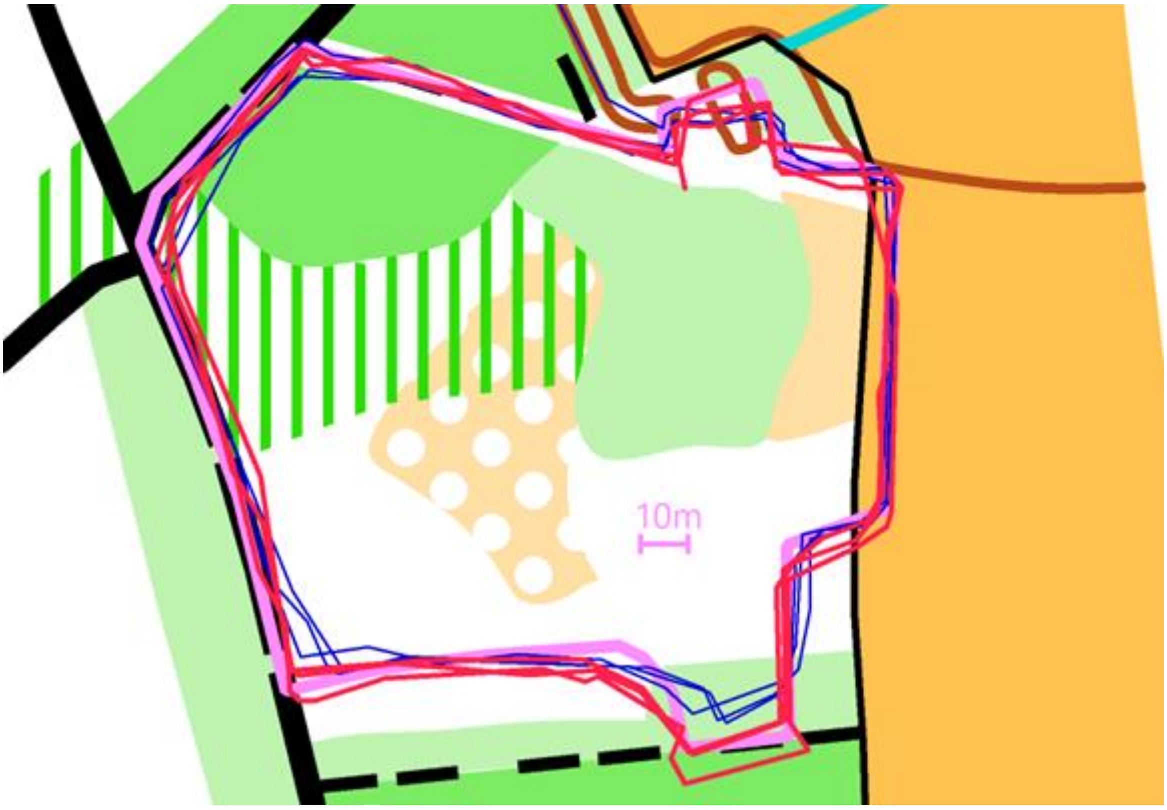


Blue: External GPS Garmin Glo 2

Red: Internal GPS Samsung Galaxy Tab Active5

Purple: Test track

The two GPS devices performed almost identically, with an average deviation of only a few meters from the actual test track. (As a reminder, a GPS deviation of 10 m corresponds to 1 mm on a map with a scale of 1:10,000).

Both GPS devices work well in open terrain, but in dense forest, both GPS devices deviate from the test route.

## CONCLUSION

Using GPS for positioning when mapping can be a great help, especially when the base data is not detailed enough. However, expectations of GPS should not be too high, and GPS positions should never be trusted blindly.

In our brief test, no significant difference was found between the device's internal GPS and the external GPS. Both achieved an average accuracy of a few meters. The accuracy is satisfactory in open areas, but in urban areas, steep terrain, or dense forest, both GPS devices can quickly become unusable.

For better GPS accuracy, more professional devices or the use of an RKT correction service are required.