



Enabling smartphone users to become surveyors and map creators

Data and hardware interoperability using multiple standards

N.º del tema de las jornadas: 1. Herramientas y tecnologías

Resumen:

GPS Waypoints is a fast-growing surveying and mapping application for Android devices that enables smartphone users to become surveyors and map creators. It has been supporting professionals from various sectors (agriculture, forest, utilities, etc...) and also enterprises.

Interoperability has always been a product development motivation, with the goal of supporting both data integration with third parties' tools and hardware integration with multiple receivers.

Since the beginning, the tool is handling GPX, KML and CSV files to import and export of geo data with other tools. The exports use extended metadata but using multiple levels to maximize interoperability with GIS tools. Additionally, the import mechanism is flexible enough to accommodate various GPX and CSV export formats. The recent inclusion of datum conversions answered to the demand from professional users to get regional transformations from WGS84. Currently, the tool allows Iberian users to get their surveying data in ETRS89, Datum73 and ED50.

In terms of hardware interoperability, the current support of NMEA standard, widely accepted by most manufacturers, enables the product integration with external receivers. Multi-constellation receivers compatible with NMEA can be used by the APP via Bluetooth or USB connection. The high-precision RTK receivers, using our NTRIP client, are also supported. The usage of NTRIP and RTCM3 standards allows to extend the interoperability with professional devices, enabling to reduce costs of precise positioning solutions and thus making the surveying world more democratic.

The Enterprise solution allows the cooperation between mobile devices for automating the surveying activities. It merges surveyors' uploads keeping the resulting datasets interoperable with other tools. This solution is adequate for organizations with teams of professionals or volunteers (ex. emergencies, environment).

The tool has continuous updates and support since 2015 with a free and paid version. It is being used by cross sector professionals and also personal users



with hundreds of thousand installs. Although it is not open source, the support of multiple standards makes it open and enough flexible for professional field surveying with integration with multiple existing tools and receivers.

Palabras claves

Interoperability, NMEA, NTRIP, RTCM3, GPX, KML

Autores

Nuno Duro Santos

nduro@bluecover.pt

Bluecover Technologies

João Borralho

jborralho@bluecover.pt

Bluecover Technologies