SuperSurv 10.2 (for Android) Specification

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Overview

SuperSurv, the mobile survey system, is designed for field data collection, which integrates GIS and GNSS technologies and works on Android platform. The main functions include data collection, real-time positioning, map display, and guidance. With GNSS signal and hand drawing function, point, line, and polygon data can be collected quickly. Moreover, the waypoint and track can be recorded and managed while manipulating. The most important are that the system supports global coordinate system, and the collected data can be saved in SHP and GEO format for further use.

Function and Specification

I. Manipulating and settings

1. Support to pan and zoom map to the full extent; a map can be quickly zoomed in/out by multi-touch.
2. Users can arrange personal manipulation environment by dragging the Measure, Search and Track toolbars as they like.
3. Use SPP project file to save the settings of features, layers, and preferences.
4. The previous project environment, including scale, can be set as system default settings.
5. Support to switch the basemaps. Pre-generated map (STP format, cached map format) is supported; and support to connect to the web server to access the map services, like OGC services and the map layer published by SuperGIS Server.
6. Measurement result can be dynamically displayed by the measure geometry users created.
7. Support open or hide the information bar according to needs of guide information bar and GNSS status bar display.
8. Support to set the code page when creating a new layer.
9. Assist users to create a new project with Online Map Tool to utilize OpenStreetMap as the reference basemap.
10. Support OpenStreetMap and Google Map as the reference basemap

service.

11. Support on-the–fly projection, allow user use data with different coordinate system in the same project folder.

II. GNSS and Positioning

1. Signals of GNSS and E-Compass can be received and displayed in real-time with GNSS icons and view angle on the map.

2. GNSS track and the precision range can be displayed on the map.

3. As GNSS is turned on, the current GNSS position of the mobile device can be transferred to coordinates and corresponded to the coordinate system of the base map. In addition, the current GNSS position can be panned to the center of the screen.

4. GNSS status bar shows the dynamic GNSS info, including latitude, longitude, and altitude. It can be set as shown or hidden.

5. Location information shows the current GNSS information, including satellite data, longitude, latitude, altitude, speed, date & time, direction, accuracy, etc.

6. Support to display E-Compass to help users recognize the direction the user is heading.

7. Support to display the level bubble to help users accurately measure whether the device is in a horizontal status.

8. Support external Bluetooth GNSS devices which embedded configuration sets of major manufacturers.

9. Support to receive RTCM differential information through NTRIP protocol, and perform the differential analysis by the chip.

III. Track

1. When GNSS is on, the system can display the mobile device's track on the map.

2. Users can record, pause and stop recording the track as they need.

3. The length of GNSS track can be recorded and displayed after GNSS tracklog recording is finished.

4. Update recording item: Latitude, Longitude, Height, Time, Accuracy, Fix Mode, Number of Satellites, XY Coordinates, HDOP, VDOP, PDOP, speed, azimuth.

5. The track can be saved in SHP, KML and GPX format.

6. "Reference Track" can be activated for surveyor's reference. The supported file formats are SHP, KML and GPX.

IV. Adding, managing waypoints and guidance

1. The waypoints can be added by GNSS signal or manually; the waypoint name is displayed on the map as well.

2. Allow editing and removing waypoints as well as panning the specific waypoint to the center of the map.

3. Allow to set a waypoint as a destination, and show the direction guidance as well as the shortest distance to real-time GNSS position.

4. Allow to record waypoint information with different coordinate system.

5. Waypoints can be exported and imported as TXT, CSV, and KML file.

6. When GNSS is on, the real-time guidance info will be shown, including waypoints, distance, and direction. Users can set the guidance status bar as shown or hidden.

7. Support to show the direction and the straight distance between the current position and the waypoint.

V. Data collecting

1. Point, line, and polygon data can be collected and saved as SHP and GEO format.

2. Support to record Z value.

3. Support photo layer.

4. With quick data collecting toolbar, the data of point, line, and polygon features can be collected and drawn by GNSS and hand drawing; the collected data can be saved into the corresponding layer.

5. Allow undoing and redoing when collecting features; support to pan, move, edit and remove features and edit attributes.

6. Users can set the anchor to rotate the feature.

7. The attribute table which is used to enter data can be set whether to pop-up automatically after a feature is created.

8. Support to set the time interval to receive GNSS signal for collecting data.

9. Customizing attribute table enables users to customize the form of attribute table to quickly enter attributes while collecting data. The supported field formats of the table are text, numeric, menu, date, time, GNSS and photo. Update item: XYZ Coordinates, Latitude, Longitude, HDOP, VDOP, PDOP, Fix Mode.

10. The real-time GNSS position value can be recorded and saved in the EXIF after taking a picture. The value can be adjusted manually.

11. Support to access Feature Service published by SuperGIS Server and allow users to edit the features and attribute data. After editing, users can synchronize the data with SuperGIS Server through the Internet.

VI. Layer Management

1. Allow to set the project layers to display and adjust the overlay order as well as layer transparency.

2. Allow to set the color, style and size of the feature.

3. Support to label point, line, and polygon features with the specified attributes. Users can choose whether to overlap or duplicate.

4. Enable users to view attribute table, and edit/search a certain attribute field in the attribute table.

5. Allow users to upload/download feature layers from Google Drive and Dropbox.

VII. OGC Service

Support the OGC service as below :

- Web Map Service (WMS)1.1.0、1.1.1、1.3.0
- Web Map Tile Service (WMTS)
- Web Feature Service (WFS) and transactional Web Feature Service

(WFS-T)

VIII. Query

1. Support to query by filtering conditions or query by tapping map. Allow to specify the layer to query and specify query fields
2. Querying by tapping map supports querying multiple layers at once. Users can tap the map to query, and the result would be shown dynamically.
3. Users are allowed to query a single layer by filtering conditions. The corresponding filtering condition page will be shown according to the field formats, and the result would be shown dynamically.

IX. Measure

1. Allow to draw a line or a polygon to measure the distance or area.
2. The units of distance are kilometer, meter, foot, and mile; units of area are square kilometer, hectare, square meter, square foot, square mile, and acre.
3. Feature Measurement is supported; SuperSurv can show the XY coordinate of point feature, the length of a line feature, perimeter and area of polygon feature when users tap the map with the tool.

X. User interface and language

- User interfaces are available in Traditional Chinese, Simplified Chinese, English, Italian, French, Turkish, Spanish, Indonesian, Lithuanian and Thai.

XI. Support format

- Vector data: SHP, GEO, DXF, DWG.
- Raster data: SID, JP2, Geospatial PDF, TIFF.
- Tiles: STP, Mbtiles
- GNSS track: SHP, KML, GPX.
- Waypoint: TXT, CSV, KML, SHP,GEO

- OGC Service: WMS, WMTS, WFS, WFS-T

XII. System Requirement

- System OS: Android 9 and above
- Hardware Sensor: GNSS, Back-facing camera, Gyroscope, Compass.