SuperGIS 2.2 Desktop GIS Specification

Specification Description

Basic Map Manipulation Function

- With the browsing and interactive data selecting tool, users can configure the displaying color for each layer when it is selected.
- Select by features refers to selecting features conforming to spatial object relation, such as contain and intersection.
- Perform SQL syntax analysis and selection based on attribute data.
- Pan/zoom/query tools.
- Quickly position to the central X and Y coordinates of the map window.
- Supports Go to X, Y, which now includes the functions flashing the assign coordinates, adding markers, recording the recent query and changing the units.
- Supports the manual definition of Map Scale on the standard toolbar, allowing user-defined scales to be added.
- Hyperlink function.
- Displays attribute data with floating window.
- Magnifier Window and Index Map Window.
- Spatial bookmark function.
- When a new layer is created, its coordinate system can be assigned, allowing layers of different coordinates to be created.
- Group Layer allows users to gather the layers with similar properties or the layers that are going to be processed together, so that all layers can be manipulated in accordance at once.
- The source data path of each layer can configure and through saving the data's relative path, users can move the entire project to another location without losing layer information.
- Supports layers to be opened by Drag & Drop method, which allows spatial data from file manager to be added quickly into the map window for display.
- Supports the mouse wheel to be used along with the ctrl key to zoom in/out or the Shift key to pan map.
- Exporting and importing Layer Files enable users to save the current layer data settings and import for future use. Interoperable with the

layer files of SuperPad and SuperViewer.

- When the features are exported, the coordinate system of the exported layer can be assigned to be the “same as the source layer” or the “same as the map environment”.

Edit File Function

- Provides map digitizing function.
- Provides move, remove, copy and paste functions for features.
- Provides move, rotation, remove, copy and paste functions for graphic objects.
- Generates and edits GEO and Shapefile (SHP) files.
- Provides attribute table editing functions.
- Supports the import of X and Y coordinates from CSV and TXT files.
- Image rectification.
- Enables the editing and modification of various layers together.
- Undo/redo functions.
- Supports poly-polygon, grouping and feature position data.
- With the Rotate Features Tool, users can rotate features by typing in the rotation degrees or by rotating the center of the selected features (including single feature).
- Mirror Features Tool can quickly insert the symmetric feature of a selected feature on the opposite side of a polyline. This function is used when features are symmetric on the two sides of a polyline.
- Editing tools including: Sketch Tool, Midpoint, Nearest Distance, Rectangle Tool, Circle Tool, Extend/Trim Feature, Auto-Complete Polygon and Separate part.
- Provides the function to allow the map in the map window to be directly copied to the clipboard.
- With Snap Setting, users can set up snap among vertex, edge, mid and end points. The tolerant value and the unit for snap can also be configured. When digitizing the vertices, the Snap Cursor will also show a snap tip.
- Allows a new vertex to be inserted directly or be added by taking the previous vertex as a reference point and enter the offset coordinate, distance, direction and deflection angle.
- Provides functions to offset or remove a single vertex or multiple vertices at once.

- Provides vertex editing functions.
- Provides three types of measuring tools: Line Measurement, Area Measurement and Feature Measurement. The measure results will be displayed in a float window, and this window will provide Show Sum, Change Units, Snap to Features and Clear Results functions.

Map Demonstration Function

- Transparent setting for multi layers data.
- Data classification display.
- Provides single symbol, graduated color, graduated symbol, unique symbol, spot chart, bar chart, and pie chart for vector file display.
- Supports the display of point data using animation GIF icons.
- Built-in Ministry of the Interior 1/1000 basic topography legends, including the common point, polyline and polygon legends.

Raster Data Processing Abilities

- Raster data classification display.
- Image clipping.
- Provides the adjustment of transparency, contrast and brightness of raster images.
- To strengthen the display of image files, pixel value classification, stretched, inverse and band sequence adjustment are enabled for the users to display the images.
- For Stretched Color display, none, Min – Max, Histogram Equalized, Standard Deviation and Custom are provided.
- For images with multiple bands, each band can perform Stretched Color individually.
- Nearest Neighbour, Bilinear Interpolation and Cubic Convolution provided for image resampling.
- Provides statistical information for the raster images, where the Minimum, Maximum and Standard Deviation can be viewed for each band, also including the grey value and pixel count. Can also be displayed via Cumulative.

Coordinate Systems

- Provides coordinate system transformation on-the-fly.
- Provides Select, New, Edit, Clear and Save As functions for the

coordinate systems of each layer.

- Other than the Select, New, Edit, Clear and Save As functions, the coordinate system of a layer can be appointed to be the same as one of the existing layers in the map.
- Supports the datums and ellipsoid configurations of hundreds of map coordinate systems and also tens of map projections, allowing layers of different coordinate systems to be overlaid at ease.

Map Label Function

- Auto label function.
- Interactive label tool.
- Management and correction of repeating and conflicting labels.
- Provides various label types, such as label along the line (label along the line and word along the line) and label direction setting (according to different point, polyline or polygon layer types).
- Save label.
- Provides Expression function, enabling users to cross-calculate multiple fields and label the calculation results. The Expression can also be saved, loaded, and Verified.

Map Analysis Function

- Interactive selection tools.
- Provide various selection modes.
- Sift data based on attribute value.
- Sift data based on spatial position.
- Buffer analysis.
- When using the Add X,Y Data, the coordinate system of the source data can be appointed, allowing the point data from different coordinate systems to be imported into the map. Importing from tables also supports Excel (xls) format.
- Spatial data tools enable the performance of Dissolve, Merge, Clip, Intersect and Union of two features to generate a new feature.
- Allows users to search by the units of time and distance.

Table Data Function

- Attribute data editing.

- Dynamically connect to different databases.
- Join and Relate database functions allow the dynamic linkage of attribute data of maps, and also supports Excel tables (xls) as the source data.
- Create and implement of one-to-one or one-to-many Joins.
- Joined attribute data can be examined in a floating window.
- Supports the display of tables as table objects in the layout for printing. The color, text, and starting feature ID of the table object can be configured, and can also show the selected features only.
- Supports the functions Flash, Zoom to and Pan to for the selected features, and also allow the selected features to be copied and pasted onto the clipboard.
- Provides query and substitute attribute data functions.
- Generate statistic results and create statistical graphs.
- Allows sorting of attributes.
- Allows the attribute values or the selected record values to be calculated.

Cartography Function

- Provides relevant manipulation wizards for legends, frame style and layout templates to assist fast exporting of professional map.
- Provides appointed fixed map extent.
- Importing layout template and saving map settings enable different maps to be placed on fixed templates.
- In layout, adding of Longitude and Latitude lines or customized grids onto the map is enabled.
- Equipped with easy-to-use wizard guide tool, enables users to insert map objects.
- Exporting layout object settings enable users to export maps with different ranges and themes in printing, which strengthens the variety of map exporting.
- Provides exporting map ruler function and alignment function.
- Preview function provides map preview.
- Enables the map to be exported to images and also allows users to configure the relevant settings, such as image resolution.
- What you see is what you get (WYSIWYG) printing function.

System Application Structure

- Standard window interface.
- Fixed/floating toolbar.
- Supports multi language data and application program interface.
- Customized user interface.
- Provides an environment which can imply Visual Basic Applications (VBA) for customizing interface and other customizations.
- Provides an environment to use COM structure standard program languages such as C++, Visual Basic and Delphi for customized developing performance.
- Provides Active X control objects.
- The extension module manager enables users to control the license status when using Extensions with floating license.
- Customized toolbar to import image icons; users can change the toolbar button to favored icons.
- Lock Customization enables developers to protect their customization program codes and prevent them from letting out.

Metadata Function

- Generates metadata automatically or manually.
- Export/import metadata.
- Supports various metadata types (FGDC, ISO, XML).
- Provides searching tools for metadata.

Support File Format

- Supports vector files in GEO format.
- Supports various commonly used vector file formats, such as SHP, MIF, DXF, EOO, SEF, DWG and DGN.
- Supports various commonly used image data formats, such as SID, GEOTIFF, BMPM, GIF, JPG, JPG2000, ECW, PNG, LAN and GIS.
- Provides a data conversion tool to convert between SHP, DXF, MIF, E00, SEF, DWG, DGN, GML, KML, DGN, BNP (cadastral format) and Geo.

Support OGC Standard

- Conforms to OpenGIS specifications as below:

- ✓ Web Map Service （WMS）1.1.0、1.1.1、1.3.0
- ✓ Web Feature Service （WFS）1.0.0、1.1.0
- ✓ Geographic Markup Language（GML） 2.0、3.0、3.1.0

- OGC Add-on extensive functions provides users advanced manipulation of GML layers and also supports WMS and WFS Servers that users can query attribute data via GetFeatureInfo.
- Strengthen WMS (Wed Map Service) of OGC. In inquiry WMS layer attribute system can transfer back complete XML inquiry results and display them on the window.
- Strengthen WFS (Web Feature Service) of OGC, and provides users the option of downloading layers in GML format to save reloading time.

User Interface and Environment

- Manipulation interface in Chinese, English and Japanese.
- Complete Chinese and English Online Help.
- Includes several vector and image sample data.
- Provides GPS, OGC and Data Manager Add-on functions.

System Requirement

- CPU: Pentium II 266 or above.
- RAM: 256 MB or above.
- Operating System: Windows 2000/Windows XP/Windows 2003/ Windows Vista.