

## SuperGIS Network Analyst 2.0

### Specification Description

#### Network Analysis

- Provide eight types of network analysis including Shortest Path, Closest Facility, Service Area, Superior Route Planning, Minimum Spanning Tree, Center Problem, Median Problem and Vehicle Routing Problem.

#### Shortest Path

- Support One to One, One to All, and All to All.
- Support users to set up Start, flags and End on the map straightly.
- Support to assign order, including return or not.
- Support users to calculate by time or distance unit cost.
- Support to present the result in table, containing road name, cost of each segment, and direction.
- Support to assign Time Windows and whether or not to consider Time Windows in calculation.
- Support to search the superior route of two flags by Dijkstra and A\* algorithm, and provide an adjustable parameter to generate other replacement road.
- Support to import files of different Weight settings.
- Support to set up the connectivity of two intersected segments.
- Support users to set up barriers on the map straightly.

#### Closest Facility

- Support users to mark the point (event) used to search the closest facilities with curse on the map.
- Support users to type quantity of facility to search.
- Support users to perform searching by time or distance unit.
- Present in table the relevant attribute data of facility searching result.

#### Service Area

- Support users to mark the point on their own.
- Support users to set up searching range.

- Support to present the result in road tree for demonstration.
- Support to calculate by time or distance unit.

#### Superior Route Planning

- Support users to mark the Start with curse on the map.
- Support users to set up whether or not to assign terminal.
- Support users to set up whether or not to return.
- The Superior Route Planning supports Nearest Neighbor, Farthest Insertion, Sweep, Simulated Annealing and Genetic Algorithm.
- Support to set up distance, time, and weight values of early arrival time and late arrival time.

#### Minimum Spanning Tree

- Support users to mark with the curse the Flags and Barriers on the map.
- Support to present in table the searching result.

#### Center Problem

- Support users to analyze the market location by Center.
- Support users to set up cost calculation of go there or go there and back.

#### Median Problem

- Support users to analyze market location by Median.
- Support users to set up cost calculation of go there or go there and back.

#### Vehicle Routing Problem

- Support users to straightly mark vehicles and flags on the map.
- Support to assign Time Windows, stay time and cargo weight of flag.
- Support to set up Time Windows and maximum loading of vehicle.
- Superior Route Planning supports Simulated Annealing and Genetic Algorithm.
- Support users to calculate by time or distance unit cost.
- Support to present in table the searching result, containing road name, segment cost and direction of each vehicle coming over, total

distance and time of the vehicle.

- Support to set up weight values of travel time, early arrival time, late arrival time and overloading.

#### File Format Supported

- Support vector format in GEO (SuperGeo GEO Format) and Shapefile.

#### User Interface and Environment

- Conforming to SuperGIS COM structure.
- Support general vector format in GEO and Shapefile formats.
- Install in SuperGIS.
- Chinese and English manipulation interface.
- Complete Chinese and English manual.

#### System Requirement

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