Industry navigation data making

1 Overview

This document takes Beijing data as an examples to describe how to create business navigation data.

1.1 Introduction of route net data

Dataset name	Dataset type Number of object		Index type	Projection information	Field information		
NG_T	Line dataset	39832	Non index	GCS_WGS_1984			

1.2 Tool

Product name	Version
iDesktop	9.0.0

2 Data process

- 2.1 Topology checking/Processing data in topology
- 2.2 Constructs network dataset
- 2.3 Adds turn table(Optional)
- 2.4 Adds traffic rules (Optional)
- 2.5 Sets road name
- 2.6 Creates network analysis index
- 2.7 Creates network model file

2.1 Topology checking/Processing data in topology Contents

For detail operation about processing line data in topology, please reference iDesktop help document.

2.2 Construct network dataset Contents

D ■ ● ● ♦ ● ● Q □	Build Network Dataset	\times
File Start Data Traffic Analysis		
Network by Popology * Optimal Path TCD Analwric Structure 2D Network Structure 3D Network Customize 3D Network	Dataset Datasource 1 MG_T Image: beijing Image: beijing Output Split Settings Datasource Image: beijing Dataset BuildNetwork Result Fields: Set Fields	
Layouts	OK Canc	el

Figure 2-2-1 Construct network dataset

Detail steps:

- 1. Select a line dataset to create network dataset.
- 2. Click "Data" tab.
- 3. Click "Network by Topology" > "Structure 2D Network"

4. The dataset name can be modified, but checkbox "Split Line by Point" and "Spilt lines at Interaction" can't be checked.

For other parameters, you can modify them according to your needs.

There are some field information added after constructing network dataset successfully.

	Name	Alias	Туре	Length	Default	Required	
7	*SmResistanceA	SmResistanceA	Double	8	1	Yes	
8	*SmResistanceB	SmResistanceB	Double	8	1	Yes	
9	*SmLength	SmLength	Double	8	0	Yes	
10	*SmTopoError	SmTopoError	Int	4	0	Yes	
11	*SmFNode	SmFNode	Int	4	-1	Yes	
12	*SmTNode	SmTNode	Int	4	-1	Yes	
13	*SmEdgeID	SmEdgelD	Int	4	0	Yes	

Figure 2-2-2 New added fields

2.3 Add turn table(Optional) Contents

Create turn table

Add: 6/F, Building 107, No. A10, Jiuxianqiao North Road, Chaoyang District, Beijing, 100015, CHINA, 100015 E-mail: request@supermap.comWebsite: www.supermap.com

Detail steps:

- 1. Open a network dataset to create turn table
- 2. Click "Traffic Analysis" tab.
- 3. Click "Environment Settings"
- 4. Click "Create Turn Table".
- 5. Click "OK".



Figure 2-3-1 Create turn table a

En	viro	nment Settings	×	
¢	1	÷ [+ • từ • ⇒ ·	• 📧 🏗 • 🛟 🔯	
Ro	adNe	Create Turn T	able 🗸	
~	1. N	et Set Turn Tabl	e	
	Netv	vork Dataset Roa	dNetwork@beijing	
	Forv	vard Weight Field Sml	.ength	
	Bark	word Weight Fig. Cml	anath	
	No	Create Turn Table		×
	Ed			
	Sti	Source Dataset —		
	En	Datasource	🔜 beijing	*
	Ed	Datacat		
	Ти	Dataset	X ROBUINELWOIK	
~	2	Node Filter:		
	Re			
	No	Result Data		
	Ed	Datasource	🔒 beijing	*
~	3.	dag Analysis		
	FIC	Dataset	TurnTable	
			ок с	ancel

Figure 2-3-2 Create turn table b

All of the value of TurnCost are 0 when a turn table is created successfully. You need to define them.

Edit value of field TurnCost.

	TEdgelD	TurneConst
No Smuserio Nodelo FEdgelo		TurnCost
1 0 1 43144	43144	-1
2 0 2 42162	42162	-1
3 0 3 42355	42355	-1
4 0 4 41519	41519	-1
5 0 5 41518	41518	2
6 0 6 42578	42578	2
7 0 7 42587	42587	2
▶ 8 0 8 42375	42375	3
9 0 9 42376	42376	3
10 0 10 42557	42557	-1

Figure 2-3-3 Edit TurnCost value

According to actual situation to assign value to TurnCost. -1 means turning direction is forbidden. For details, please read iDesktop help document.

2.4 Add traffic rules (Optional) Contents

Add	traffic	rule	field	for	Network	dataset
-----	---------	------	-------	-----	---------	---------

Field name	Field value
	0: Forbidden lines 1: Two-way 2: One way forward direction 3: One-way reverse direction
Direction	Note: The field is defined by users with the field name and value can be defined. The value can either be text or number.

Such as:

Direction
3
1
1
1
1
1
1
1
1
1
1
2
2

2.5 Set road name <u>Contents</u>

Set road name field for Network

Field name	Field value
PathName	Text Note: The field is required by network dataset with its name can be
	defined by user.

2.6 Create network analysis index Contents

Before performing analysis, creating spatial index and field index for network dataset and its child dataset is suggested to improve analysis performance, otherwise, the analysis operation will be very slow because of device.

Create spatial index



Select "Rebuild Spatial Index" by right clicking a selected network dataset

Figure 2-6-1 Create spatial index

Set the index type as R-tree index, and then click "OK".

Spatial Index Ma	mager					×
	ĪĪ			Index Type:	R-tree Index	-
Dataset RoadNetwork	Datasource	Original Index R-tree Index	Index Type R-tree Index	R-tree index is t containing geo target objects. I these rectangle spatial objects i tree firstly find contained with further find the R-Tree method of speed.	to design some rectang graphically neighborir Regarded as spatial in s contain pointers of a in them. During a quer all rectangles that are in the query window, f targets to be retriever could increase the que	gles ng dexes, all ry, an R- then d. The try
					ОК	ancel

Figure 2-6-2 Create spatial index

Create field index

Click on "Start" tab, then select "Field Index"

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File	5	Start	Data	Traffic	Analysis - S	petial Analy	is 065	que Photog	anety	Neu (kiine												
File ,	Deta	sbase	iii Save	019 業・	Databese.	Web ·	4. ⁸ •, Dort	N/ line	Danina	A	4 4 4	Mas •	() Scane	layout	Attributes Table	Data Import	Data Export	Projection Settings *	X Transform Projection *	Registration	and Spatial Index	ID Field Index	аре Рутаті.
	Work	kspace			Deterource			New	Dataset		17		5	rowse					Data Processin	9		-	

Figure 2-6-3 Create field index

Select network dataset and field creating index. The field should identify arc ID (SmEdgeID). Finally click "OK".

Dataset Field Index	×
Data Source Dataset 💥 RoadNetwo	rk 🔹
Index Name Fields That Created Index	OK
1 SmEdgelD_f122361ebadb44 SmEdgelD 2 RoadNetwork_FieldIndex SmEdgelD	Delete Modify
	Close

Figure 2-6-4 Create field index

And then select child dataset of network dataset and field creating index. Also, the field should identify arc ID (SmEdgeID). Finally click "OK".

Data So	urce	- Datacet	BoadNetwork Node
Create	e Field Index		
Index Road	Name: Network_Node_FieldIndex		ОК
Index	Field:		Delete
	Field	Туре	Modify
	SmID	Int	
	SmX	Double	
	SmY	Double	
	SmLibTileID	Int	
	SmNodelD	Int	
	SmUserID	Int	
	SmGeometrySize	Int	

Figure 2-6-5 Create field index

2.7 Create network analysis index Contents

Detail steps:

- 1. Open a network dataset to create index.
- 2. Click "Traffic Analysis" tab
- 3. Click "Environment Settings" button.
- 4. Set traffick rules(Optional), turn table(Optional) and arc info field (road name field), in turn.
- 5. Click "Network Model File" button, and specify file path, then click "OK".



Figure 2-7-1 Create network model file