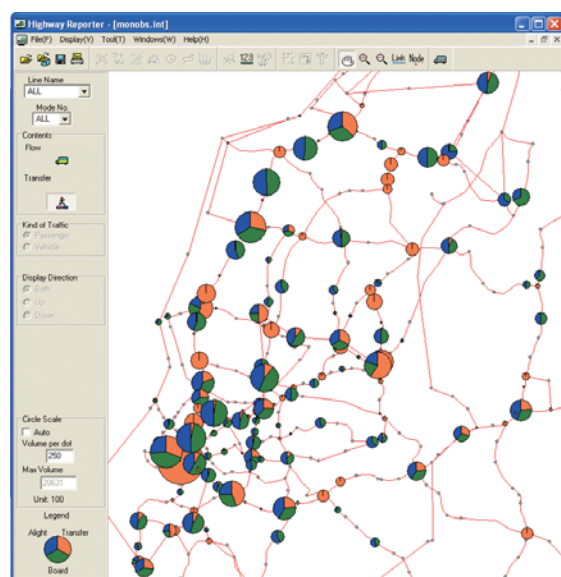Showing Route Information

Showing Transit Assignment Results

The Highway Reporter displays the flows of passengers or vehicular traffic in the line network. You can draw the aggregated flow per link of all lines for passenger or vehicular traffic, or the flow per link of a specific line for passenger traffic.

Showing Boarding and Alighting Passengers

Intersection Analyzer

Intersection plan, intersection design, and intersection employment are very important.

Input Data

The Intersection Analyzer calculates the saturation rate and the queue length at an intersection when you set up the traffic and road conditions. The Program draws the graphic diagram from the results of analysis and can save the results in the formats readable by Excel.

Unit and Adjustments

The Intersection Analyzer applies the default parameters and adjustment factors based on the standard practices in Japan. You can tailor the defaults to suit the transport conditions of your study area and save them in a new parameter file.
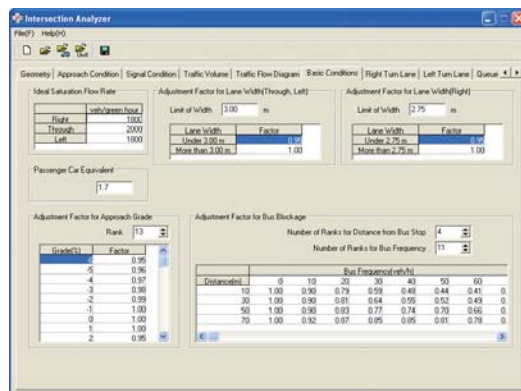
Specifying Basic Units and Adjustments
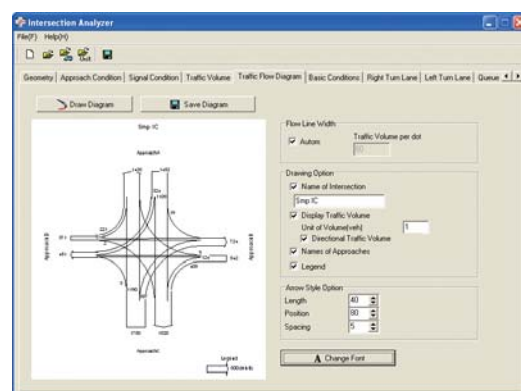
Displaying Flow Diagram

Evaluator

Maintenance of a transportation facility brings big influence to social economy activity of an area. The Evaluator calculates evaluation indices, such indices as the time cost, running cost, loss by accidents and an environmental loss.

Specification of Costing Unit

The default file contains the basic units used in Japan. You cannot alter the formulas themselves. However, the formulas are linear to the traffic volume and thus applicable to countries other than Japan by adjusting the basic units. The set-up basic unit can be saved.
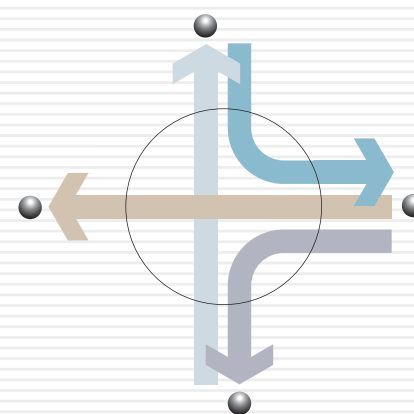
Calculation of Evaluation Indices

The Evaluator reads an assignment results file and calculates, by using the user-specified basic units. The list of the calculated evaluation indices can be saved at the file of CSV format.
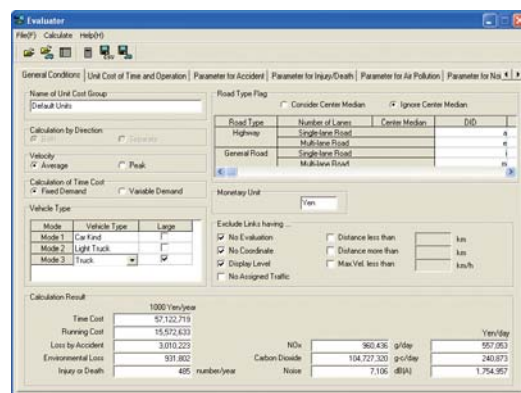
Calculation of Evaluation Indices

System for Traffic Demand Analysis

STRADA version 4

The System for Traffic Demand Analysis (STRADA) packages a number of programs for transport demand forecast that are operated on the Windows.

Japan International Cooperation Agency (JICA) initiated the STRADA program development to provide a common tool of transport planning, and to build up common database thereof, for its technical assistance program in the transport sector for developing countries. The efforts began in 1993 under the leadership of the then Prof. Hideo Nakamura at Tokyo University with participation of some experts in the relevant fields, officials from the Ministry of National Land and Transport (the then Ministries of Construction and Transport) and private-sector consultants. Since 1997, the STRADA program package has been available for the interested general public as well as being used widely in the JICA-financed overseas projects. Continual upgrading efforts since now provide you with Version 4 of enhanced capability, with newly added features and programs.

Multi-lingual Operation

The STRADA Ver.4 automatically sets up one of the two languages (English and Japanese) according to the OS locale setup. In addition, the User Manual is now available in English and Japanese.

Enhanced Ease of Editing by Commercial Applications

In addition to the standard STRADA record formats, Version 4 supports the CSV format for a greater number of file types than the prior versions. Accordingly, many data files can now be edited by some commercial spreadsheet application or GIS application. The results of forecast and assignment can be output in the CSV format or in the metafile to ensure easier convertibility with commercial software applications.

Improved Convertibility of GIS data

Version 4 has substantially upgraded the ease of conversion between the GIS and the STRADA data format.

Faster route search

A route search high-speed logicI is used in the assignment model. Route search time is now less than 1/3 of the Ver.3 by performing parallel processing on a PC there are two or more CPU.
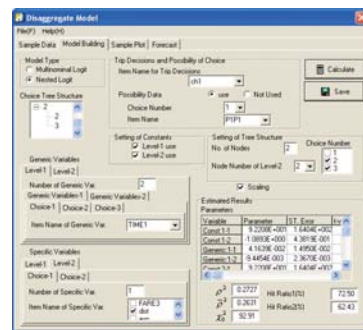
Disaggregate Model

The Disaggregate Model analyzes each person's choice directly. The Disaggregate Model is mainly used for modal split model.

Model Building

The Disaggregate Model performs model building and aggregation thereof either by the multinomial logit (MNL) or the two-level nested logit (NL) model structure. If you choose the NL type model building, you can freely define a tree structure. In order to obtain the maximum likelihood for the undetermined parameters, the Quasi-Newton Method based on the BFCS theorem is applied. The parameter can be applied a statistical test.

The Disaggregate Model can do the model building on trip generation/attraction and trip distribution as well, but it performs aggregation only on its modal split models.


Disaggregate Model Building

OD Calibrator

OD matrix is made based on the results of a person's trip survey or OD traffic survey. However, these investigations cost great time and expense. If you have an existing OD matrix, you can adjust it to be consistent with the results of a traffic count survey by the OD Calibrator.

Characteristic Functions

When User Equilibrium Assignment is carried out based on the existing OD matrix, this program rectifies OD matrix so that observation traffic may be obtained. As the method of adjustment, the Route Mean square Error Minimizing Model and the Entropy Maximizing Model are applicable. The OD Calibrator handles only one mode. But it can apply also to the conventional screen compensation and distortion of OD matrix can be removed.
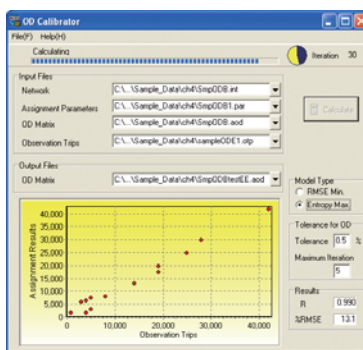

Matrix Manipulator

The Matrix Manipulator can perform edit and display of an OD matrix and zone indices data.

Data Edit Functions

Process of the unique data structure on traffic demand forecast, and adjustment calculation like the Fratar technique can be easily performed. The index by a zone can calculate the data which became a matrix format. According to division/integrated parameter of a zone, division and integration of OD matrix or zonal indices can be done.

View Edit Functions

Zone coordinates file and OD matrix file are read, and it can display, being able to use arbitrary OD traffic as the desired line diagram. Zone coordinates file and the attributes value classified by zone are read, and on a zone figure, it can graph-display. By a figure ornamentation function, you can change a setup. The line figure of the displayed graph and the desired line diagram by the metafile can be outputted.
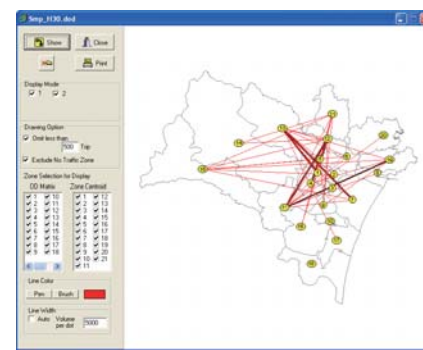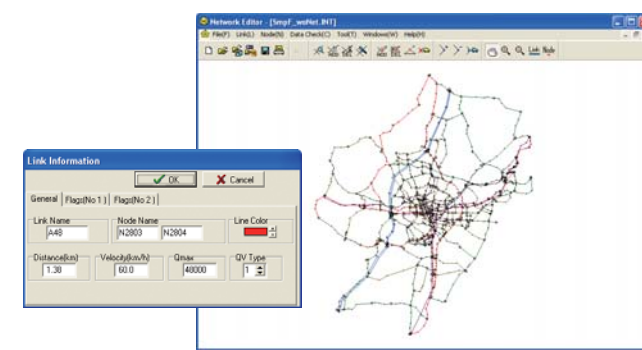

Desired Line

GIS Converter

The GIS Converter performs the file conversion between the data prepared by two GIS commercial applications, viz., ArcGIS and MapInfo, and the data used by the STRADA program modules.
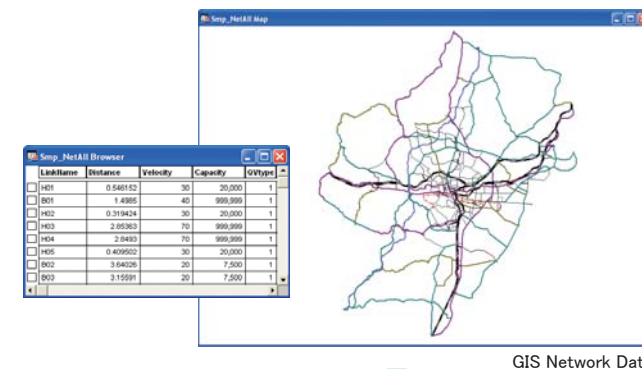
GIS Network Data

**GIS Converter**

STRADA Network Data

Network Editor

The network editor, you can build and edit even a large-scale road network.

Characteristic Functions

It supports not only the standard STRADA format, but also CSV file format. The function of the continuous operation of package correction convenient for correction of link information and correction, deletion, and an addition can perform editing work easily. Moreover, since network editor is uniting with assignment parameter editor, data required for assignment can be created simultaneously.

The shortest path search is possible without using the assignment model. In addition to the calculation of travel time or distance between any two points, the calculation of the impedance between zones is possible.
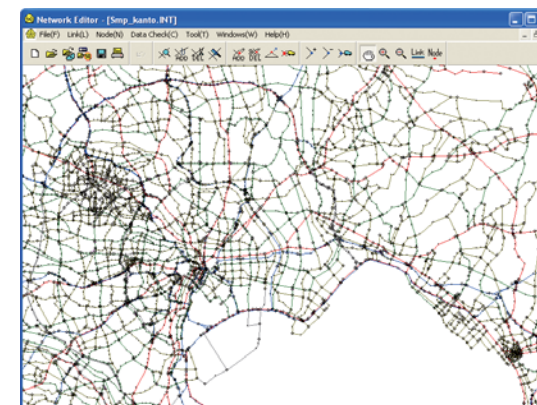
Large-scale Network

Transit Line Edit Functions

Public traffic line data is required for transit assignment. The Network Editor builds/edits the public transportation line. The line which passes a specific link and a specific node is extracted, and there is a function which carries out a data check visually by displaying line data information on a screen.

Assignment

Incremental Assignment

With the incremental assignment program, you can choose from the alternatives of assignment, such as the All-or-nothing method, the diversion-rate, and the variations of incremental assignment with capacity restraint.

User Equilibrium Assignment

The STRADA has two models, user equilibrium assignment and stochastic user equilibrium assignment.

The Stochastic User Equilibrium Assignment is the logit-type model for multi-modal link flow assignment. It offers three alternative algorithms: the successive average and the partial linear approximation methods by Dial loading, and the simplicial decomposition method.

Transit Assignment

The Transit Assignment is the assignment which estimates the user of public traffic (bus, train, etc.).

Characteristic Functions

Separated by direction link traffic volumes, congestion, velocity, OD details, directional analysis and route information can be taken out from assignment result and can be displayed.

Link Cost Function

The program provides two options for expressing the relationship between traffic volume and travel time, and you can try to very specifications on the road conditions.
- QV formula
- BPR function

Notes: Please use a BPR type in Equilibrium Assignment.

Highway Reporter

The Highway Reporter retrieves the link information from the assignment results and converts them into visual presentation.

Showing Link Results

The Highway Reporter shows link assignment results in various graphic forms. The information outputted to the assignment result file can be chosen and displayed. You can specify the display direction of traffic (Both or Separate). Moreover, you can set up the display color of a link. The metafile output of a display screen is possible.
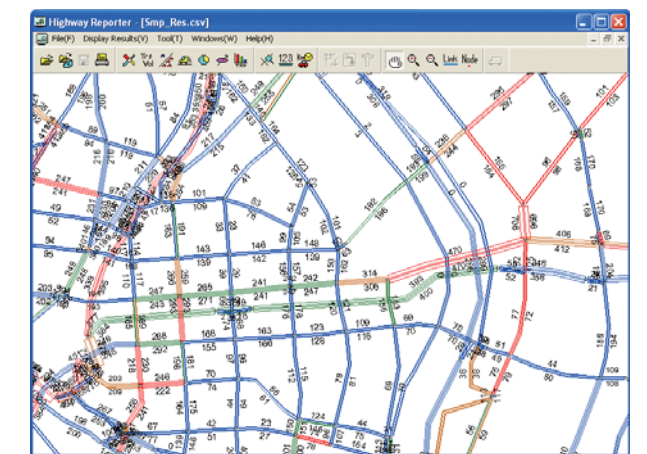
Showing Link Assignment Results separated by direction

Displaying Some Assignment Results

The Highway Reporter can display the traffic volume per direction of flow at a user-selected node (intersection). You can set up display conditions. Moreover, the traffic of an object crossing can be checked by tabular form. It can output to the file of CSV file format.

The Highway Reporter can display the route information for zone pairs and for the user-specified links. You can set up display conditions and candidates freely. When you have opened a route information file with user specification of links, the Highway Reporter can output an OD matrix between the link pairs.