

A Preview of STAN - Release 6

- Y2K Compliance
- New Licence Sizes
- New Platform
- Enhancements to the Base Network Editor (Module 2.12)
- Other Enhancements and Improvements
 - Matrices
 - STAN Macro Language
 - Miscellaneous

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Is STAN Y2K Compliant?

- The answer was and is *Yes!*
- The date and time are used for time stamps, not for calculations.
The year is displayed using a 2-digit format:
 - example: 99-05-14 14:30

New in Release 6

- An alternative time stamp format using 4 digits for the year is introduced
 - example: 1999MA14 14:30
- New switch 25 allows date format selection in either 2-digit or 4-digit format

New Licence Sizes

- Two new licence sizes: size 7 (1 400 zones) and size 8 (1 600 zones)

| Size | Zones | Nodes | Links | Transfers | Function sets |
|----------|--------------|--------------|---------------|---------------|---------------|
| 1 | 200 | 1 200 | 4 000 | 4 000 | 300 |
| 2 | 400 | 2 400 | 8 000 | 8 000 | 600 |
| 3 | 600 | 3 600 | 12 000 | 12 000 | 900 |
| 4 | 800 | 4 800 | 16 000 | 16 000 | 1 200 |
| 5 | 1 000 | 6 000 | 20 000 | 20 000 | 1 500 |
| 6 | 1 200 | 7 200 | 24 000 | 24 000 | 1 800 |
| 7 | 1 400 | 8 400 | 28 000 | 28 000 | 2 100 |
| 8 | 1 600 | 9 600 | 32 000 | 32 000 | 2 400 |

When will STAN be available for Windows NT?

- The port is now complete for Windows NT 4.0
 - tests are in progress
 - distribution with Release 6.0
- No new INROkey necessary

New binaries

- NT version \Rightarrow new compiler was needed
- 10 to 12% faster
- Numerical results may be **slightly** different
 - improvements to Module 5.21
- No need to transform the STAN data bank using STXFBANK

Enhancements to the Base Network Editor (Module 2.12)

Attribute table for editing node and link attributes

Up to now

- Sequential access to node and link attributes only
- **No access** to extra attributes

New in Release 6

- Attribute table editing mode
- Used to access and edit node and link attributes, including **extra attributes**
- All attributes of selected element are displayed immediately
- Modify operation:
 - Values can be changed by clicking on an attribute
- Add operation:
 - USE SAME DATA supported
 - Once the element is defined, its attributes can be modified in the attribute table

Attribute table in Module 2.12...

- Activated by:
 - New option command ATTR.TABLE, which replaces STATUS command
 - New module parameter *Display attribute table by default?*
 - New **t** command
- Attribute table not activated.
(Same functionality as before)
- If option “two-way links” is active, modifications in attribute table apply to both directions (if return link exists)
(Arrow → or ↔)
- Modified values appear in red
- Transcript file is supported
- If no element is selected for the attribute table, network usage summary is displayed instead

Interactive Graphic Worksheet - Attribute table activated

LL
GCMD:1...DONE

| TABLE: | OPERATION: | NODES: | LINKS: | OPTIONS: | STAN | |
|--|--|---|--|---|--|---|
| <input type="checkbox"/> CENTROIDS <input type="checkbox"/> REG. NODES <input checked="" type="checkbox"/> LINKS | <input type="checkbox"/> ADD <input type="checkbox"/> DELETE <input type="checkbox"/> MODIFY <input checked="" type="checkbox"/> LIST | <input type="checkbox"/> ALL DATA <input type="checkbox"/> COORDINATES <input type="checkbox"/> USER DATA 1 <input type="checkbox"/> USER DATA 2 <input type="checkbox"/> USER DATA 3 <input type="checkbox"/> LABEL | <input type="checkbox"/> ALL DATA <input type="checkbox"/> LINK TYPE <input type="checkbox"/> LENGTH <input type="checkbox"/> FUNCTION SET <input type="checkbox"/> CAPACITY <input type="checkbox"/> BETA COEFF. | <input type="checkbox"/> PHI COEFF. <input type="checkbox"/> MODE SET <input type="checkbox"/> USER DATA 1 <input type="checkbox"/> USER DATA 2 <input type="checkbox"/> USER DATA 3 <input checked="" type="checkbox"/> TWO-WAY LINKS | <input checked="" type="checkbox"/> ATTR. TABLE <input type="checkbox"/> NUMERIC INPUT <input type="checkbox"/> USE SAME DATA <input type="checkbox"/> UPDATE PLOT <input type="checkbox"/> RESTART <input type="checkbox"/> QUIT | DATE: 99-05-25 MODULE: 2.12 INRODEMO...INRO SCENARIO: 1001 LL:53.366/57.86 UR:61.804/65.28 |

| CENTROIDS: | |
|------------|-----|
| TOTAL: | 100 |
| USED: | 91 |
| FREE: | 9 |

| REGULAR NODES: | |
|----------------|-----|
| TOTAL: | 900 |
| USED: | 703 |
| FREE: | 197 |

| LINKS: | |
|--------|------|
| TOTAL: | 4000 |
| USED: | 3828 |
| FREE: | 172 |

| TRANSFERS: | |
|------------|------|
| TOTAL: | 4000 |
| USED: | 2348 |
| FREE: | 1652 |

List Attribute Values for Element

LL
 GCMD:1...DONE
 MOD(rn)=n
 LL:3759n3719

| | | | | | |
|---|---|--|--|---|--|
| TABLE: <input type="checkbox"/> CENTROIDS <input type="checkbox"/> REG. NODES <input checked="" type="checkbox"/> LINKS | OPERATION: <input type="checkbox"/> ADD <input type="checkbox"/> DELETE <input type="checkbox"/> MODIFY <input checked="" type="checkbox"/> LIST | NODES: <input type="checkbox"/> ALL DATA <input type="checkbox"/> COORDINATES <input type="checkbox"/> USER DATA 1 <input type="checkbox"/> USER DATA 2 <input type="checkbox"/> USER DATA 3 <input type="checkbox"/> LABEL | LINKS: <input type="checkbox"/> ALL DATA <input type="checkbox"/> LINK TYPE <input type="checkbox"/> LENGTH <input type="checkbox"/> FUNCTION SET <input type="checkbox"/> CAPACITY <input type="checkbox"/> BETA COEFF. <input type="checkbox"/> PHI COEFF. <input type="checkbox"/> MODE SET <input type="checkbox"/> USER DATA 1 <input type="checkbox"/> USER DATA 2 <input type="checkbox"/> USER DATA 3 <input checked="" type="checkbox"/> TWO-WAY LINKS | OPTIONS: <input checked="" type="checkbox"/> ATTR. TABLE <input type="checkbox"/> NUMERIC INPUT <input type="checkbox"/> USE SAME DATA <input type="checkbox"/> UPDATE PLOT <input type="checkbox"/> RESTART <input type="checkbox"/> QUIT | STAN DATE: 99-05-25 MODULE: 2.12 INRODEMO...INRO SCENARIO: 1001 LL:53.366/57.86 UR:61.804/65.28 |
|---|---|--|--|---|--|

| | |
|---------|---------|
| 3759 n | 3719 |
| → | |
| TYP: | 821 |
| LEN: | 341.00 |
| FCT: | 5 |
| CAP: | 443 |
| BET: | .8 |
| PHI: | 1 |
| MSE: | n |
| UL1: | 0 |
| UL2: | 0 |
| UL3: | 0 |
| @VTRAI: | 32806.1 |
| @VTROA: | 0 |
| @VTMAR: | 0 |

Enhancements Related to Matrices

- List several matrices by zone groups (Module 3.14)
- Display more informative plot titles and legends in histograms (Module 3.16)
- Enhancements to Module 3.22 - Matrix Balancing
- Other enhancements to matrices

List Several Matrices by Zone Groups (Module 3.14)

Up to now

- Module 3.14 allows zone group aggregation for tabulated and in-line reports for a single matrix
- Module 3.14 allows listings of several matrices by O-D pairs, but zone group aggregation is **not** possible

New in Release 6

- New report option in Module 3.14
“4” = list several matrices by zone group
- Allows aggregation by origin and/or by destination
- Dialog remains compatible with existing macros

MATRICES BY ZONE GROUPS

Data matrices: mf24: WoodOD Interzonal wood demand for all modes (1999FE05 11:16)
 mf25: Wood2D 2-d balancing - Wood (1999FE05 11:16)

Constraint matrix: none

Ensemble: ga: CANADIAN PROVINCES (1997JN20 12:26)
 Aggregation: sum

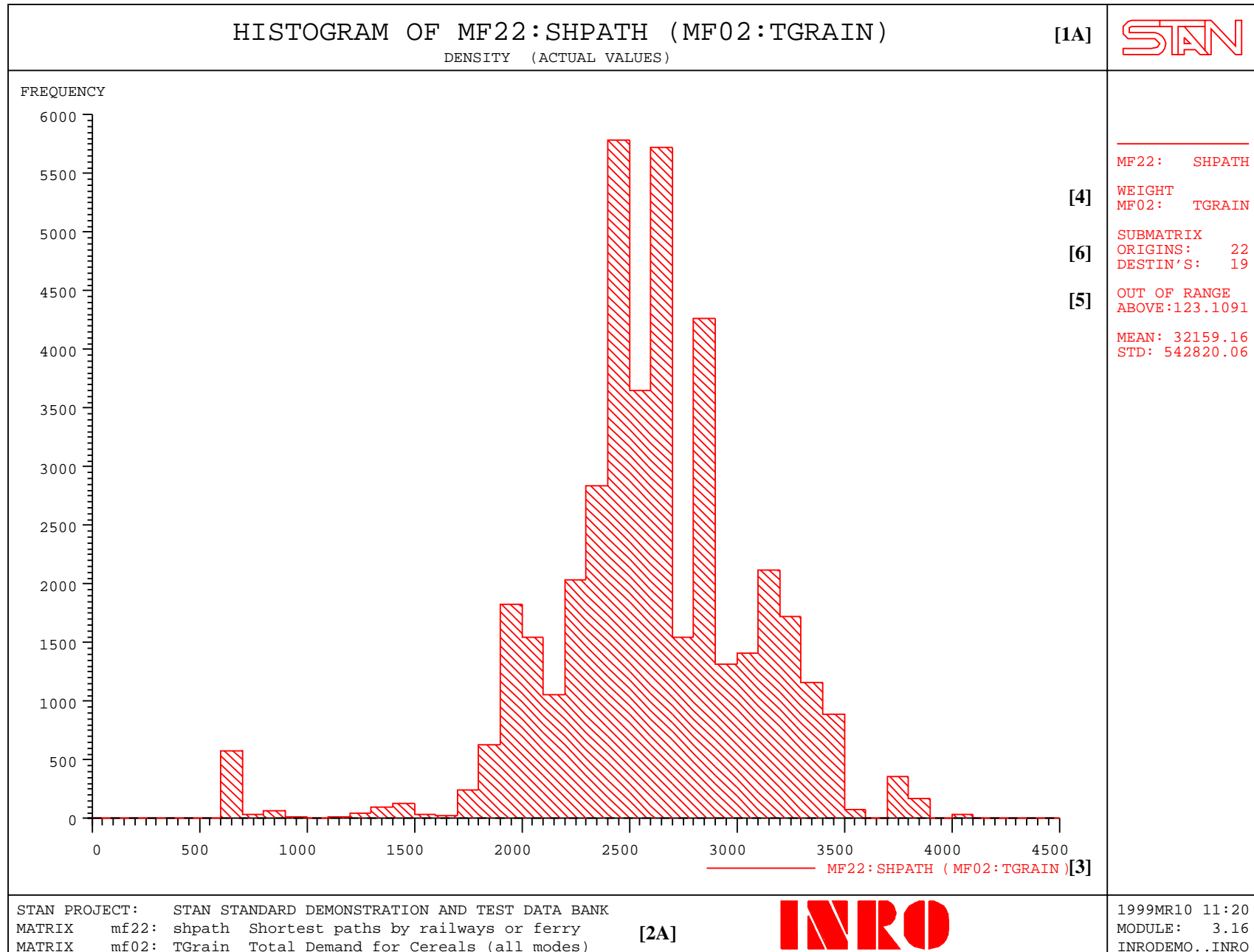
Submatrix: all origins all destinations

| origin | destin | mf24 | mf25 |
|--------|--------|----------|----------|
| ga(p) | ga(q) | WoodOD | Wood2D |
| ga01 | ga01 | 29935.64 | 1970.35 |
| ga01 | ga02 | 19.29 | 126.10 |
| ga01 | ga03 | 434.05 | 3033.56 |
| ... | | | |
| ga12 | ga11 | .71 | 11.34 |
| sum | | 1554885. | 1554885. |
| avg | | 9200.50 | 9200.50 |
| min | | .00 | .00 |
| max | | 503765.9 | 240013.0 |

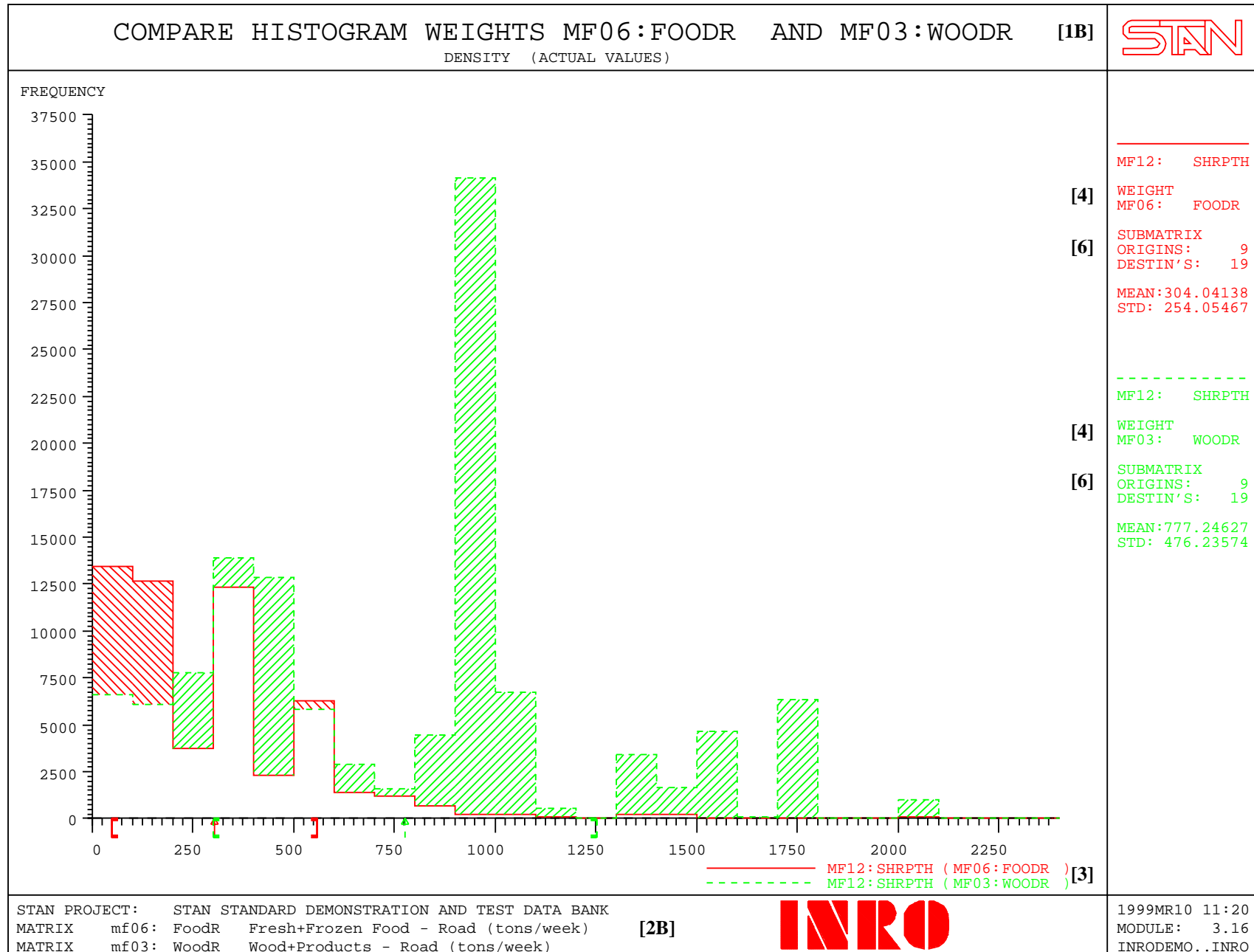
Improved Plot Titles and Legends in Histograms (Module 3.16)

- Plot titles for histograms with weight matrices:
 - simple histogram
 - data and weight matrices included in plot title [1A]
 - comparison and difference histogram
 - two different weight matrices in plot title, if same data matrix [1B]
 - two different data matrices in plot title, if same weight matrix
- Matrix names and descriptions at bottom of plot:
 - simple histogram with weight matrix
 - data **and** weight matrix names and descriptions now included [2A]
 - comparison and difference histogram with weight matrix
 - as for plot titles [2B]
- Legend below X-axis:
 - all histograms with weight matrix
 - shows identifier and name of **both** data and weight matrices [3]
- Legend in right margin:
 - weight matrix legend entry now appears directly **after** the data matrix legend entry [4]
 - **Out of Range** section appears **only** if there are values that are out of range [5]
 - new legend entry: **Submatrix** (size, if submatrix specified) [6]

Simple Histogram



Comparison Histogram



Enhancements to Module 3.22

- New maximum for third dimension constraints interval \Rightarrow 250
- Saving third dimension coefficients

End of three-dimensional balancing

Select: 1= save balanced matrix
2= save balancing coefficients
3= save balanced matrix and balancing coefficients
4= no saving
5= save third dimension coefficients in g-registers

- Matching constraint totals by scaling

Totals do not match - scaling is required.

Select: Total to use for balancing
1= average of all totals
2= origin total
3= destination total
4= third dimension total

Display Scalar Values Instead of Time Stamps

Up to now

- Available in modules 3.12 and 3.14 only

Release 6

- Time stamp of scalar matrix has been replaced by its value:
 - in the on-line help for the **Enter: Matrix** question
 - in the *Data Matrices* section of the matrix calculator report (Module 3.21), if a scalar matrix is used in the expression

Enhancements to the STAN Macro Language

- New text substitutions
 - **%tp%** project title
 - **%ts%** scenario title
 - **%tl%** unit of length
 - **%tc%** unit of cost
 - **%tw%** unit of weight
 - **%tu%** user initials (similar to **%u%**)
- Field width with explicit left/right adjustments
 - default adjustment:
 - **%textreg_W%**: text substitution **left** justified in W characters
 - **%numreg_W%**: numeric substitution **right** justified in W characters
 - new explicit adjustment using **>** and **<**
 - **%reg_>W%**: any substitution (numeric or text) **right** justified in W characters
 - **%reg_<W%**: any substitution (numeric or text) **left** justified in W characters
- Matrix names, descriptions and time stamps
 - Name: **%mTx.n%**
 - Description: **%mTx.d%**
 - Time stamp: **%mTx.t%**
 - $T = \mathbf{f}, \mathbf{o}, \mathbf{d}$ or \mathbf{s}
 - $x = 1 \dots 99, \mathbf{x}, \mathbf{y}$ or \mathbf{z}

- **Append to file** command: $\sim\>>filename$
 - all following commands are appended to *filename* until the next $\sim\>$ or $\sim\>>$
 - equivalent to $\sim\>filename$ if *filename* does not exist
- **Quoted output** command: $\sim"$
 - no immediate effect on the macro currently running
 - used in combination with $\sim\>filename$ or $\sim\>>filename$ commands
 - **only** the characters following the leading $\sim"$ are written to *filename*
 - system independent mechanism to write to files from macro (avoids problems with $\sim!echo \dots$)
- **Open read file** command: $\sim\<\<filename$
 - opens file for subsequent reading with the new $\sim@$ command
 - remains open until an empty open macro file command is executed ($\sim\<\<$) or a new file is opened ($\sim\<\<newfilename$)
- **File read** command: $\sim@$
 - reads one line from the file previously opened with $\sim\<\<$
 - similar to $\sim*$
 - $\sim\mathbf{t4}=\sim@$ \Rightarrow read next record and store it in text register $\mathbf{t4}$
 - each macro level can have its own separate file open for reading

Other Improvements

- Two-way link operations
- Copy extra attributes from other scenarios
- On-line help
- Reports
- Graphic commands

Two-Way Link Operations for Batch Input/Output

Up to now

- 2-way link operations supported for interactive editing in Module 2.12
- Only 1-way link operations accepted for batch input

New in Release 6

- New 2-way link command for batch input

```
a= 1507 p 1524 76.00 2.31 36 254. 1.000 1.000 p 0. 1. 0.  
d= 1779 h 2093  
m= 21 c 2096 u11=15
```

- Module 2.11: Accepts 2-way link commands

- Module 2.14: New module parameter allows punching of links using 2-way commands where possible

```

c STAN Module:      2.14(v5.03)  Date: 99-05-20 11:53   User: S900/INRODEMO...gd
c Project:         STAN STANDARD DEMONSTRATION AND TEST DATA BANK
c Scenario 1001:   CANADIAN MULTIMODAL TRANSPORTATION NETWORK - WORKING COPY
t nodes

```

```
t links
```

```

a  1001 f    1326 400.00  50    42  1000M  1.000  1.000 #    .00    .00    .00
a  1013 f    1326 150.00  50    42  1000M  1.000  1.000 #    .00    .00    .00
a= 1201 f    1321  15.00  150   42  1000M  1.000  1.000 #    .00    .00    .00
a  1202 f    1516  15.00  150   42  1000M  1.000  1.000 #    .00    .00    .00
a  1326 f    1001 400.00  150   42  1000M  1.000  1.000 #    .00    .00    .00
a  1326 f    1013 150.00  150   42  1000M  1.000  1.000 #    .00    .00    .00
a  1516 f    1202  15.00  250   42  1000M  1.000  1.000 #    .00    .00    .00
a= 1703 f    1742   1.00  350   42  1000M  1.000  1.000 #    .00    .00    .00
a= 3726 f    3748  25.00  850   42  1000M  1.000  1.000 #    .00    .00    .00

```

Copy Extra Attributes from Other Scenarios (Mod. 2.41)

- Now possible to copy extra attributes from other scenarios
- Extra attribute selected \Rightarrow the type name, description and time stamp of the attribute are displayed

```
Enter: Attribute of scenario 3000 to copy from=@vtrai  
L: @vtrai Total volume by rail - scenario 3000 99-05-25 14:24
```

- ? command \Rightarrow the attribute list now includes extra attributes

On-Line Help for Enter: Scenario Question

- New help commands:
 - ? -list of all existing scenarios
 - ?scen_no -scenario summary for specified scenario, if the scenario exists.

-error message *Scenario scen_no does not exist* if the scenario does not exist.

```
Enter: Scenario to be copied=?3000
Scenario 3000 does not exist.
```

```
Enter: Scenario=?
```

```
The following scenarios are currently defined:
Scen. 1000(DM- A-):>CANADIAN MULTIMODAL TRANSPORTATION NETWORK
Scen. 2000(--- A-): CANADIAN MULTIMODAL TRANSPORTATION NETWORK - EXTRA ITERATION
Scen. 4000(--- A-): PATH ANALYSIS
```

Reports

- Batch input file name included in report page header:

Examples:

```
STAN Module: 4.11      Date: 99-02-05 14:10      User: S900/INRODEMO.INRO      Page: 13
Project:      STAN STANDARD DEMONSTRATION AND TEST DATA BANK
Input file:   d411new.in
```

```
STAN Module: 2.11      Date: 99-05-25 12:32      User: S900/INRODEMO.INRO      Page: 79
Project:      STAN STANDARD DEMONSTRATION AND TEST DATA BANK
Scenario 3000: Unprotected copy of scenario 2000
Input file:   c:\stan\banks\canada\data\d211-can.in
```

Graphic Commands (& Windowing)

- Up to 40 consecutive graphic commands can be entered on a single line
- New window command **0** (zero) \Rightarrow return directly to the initial window
- Support for window commands in Module 2.43 has been added
 - graphic command **w** available
 - window commands **n**, **>**, **<** not available