

# Vissim tutorial



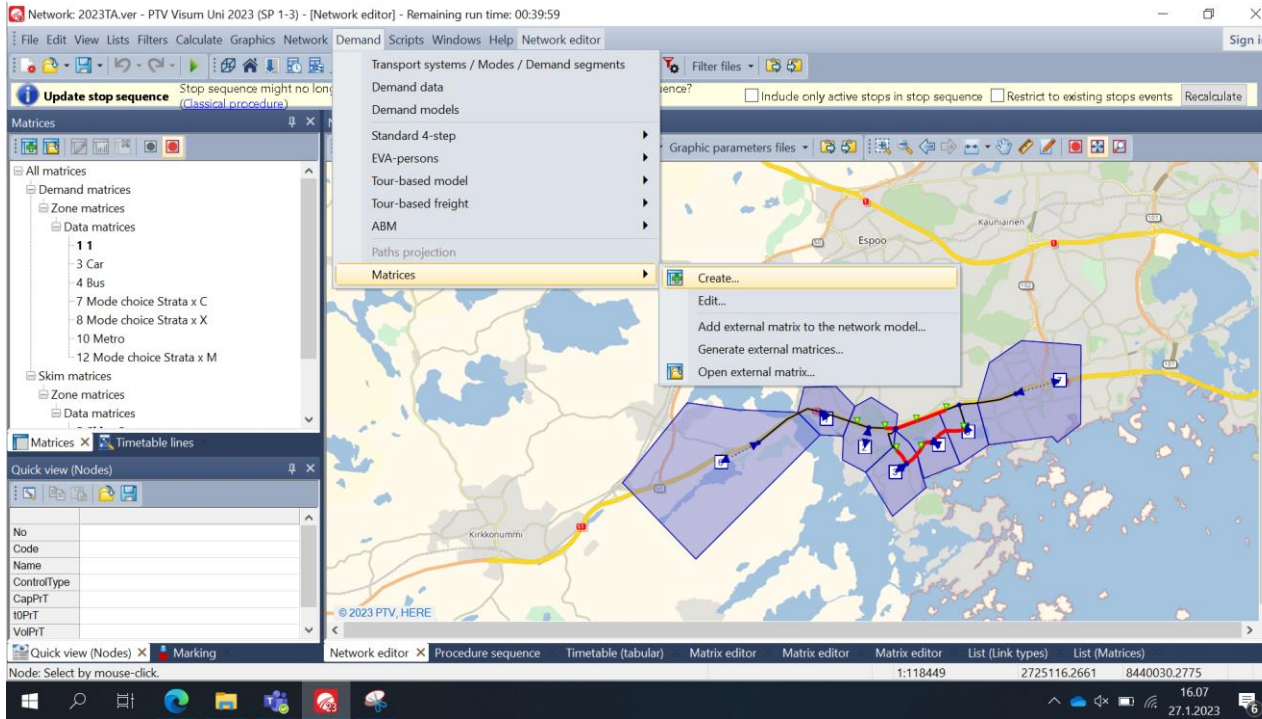
## OD matrix, Modal split and public transport

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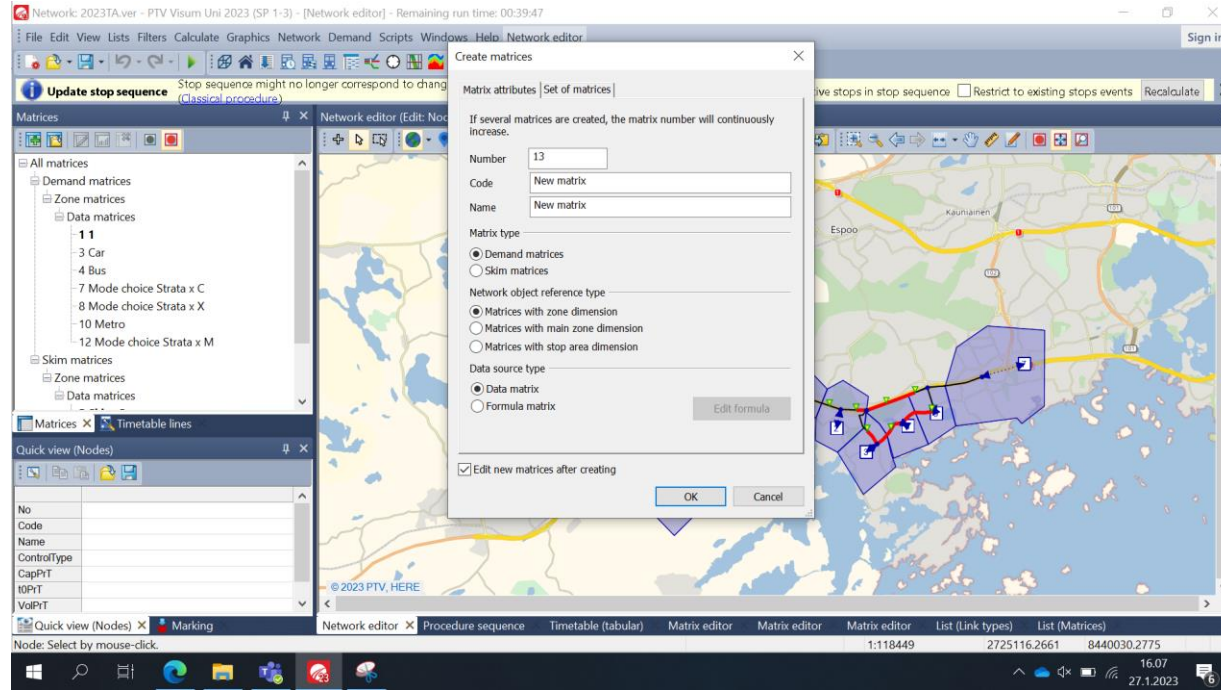


Aalto University  
School of Engineering

# OD matrices



# OD matrices



# OD matrices

The screenshot displays the PTV Visum Matrix editor interface. The main window shows a 7x7 matrix for a 'New matrix'. The matrix is symmetric, with a diagonal of 0.00 and off-diagonal values of 0.00. The rows and columns are labeled with zone names: Kivenlahti, Espoonlahti, Soukka, Kaitaa, Finnoo, West, and East. The status bar at the bottom indicates 'Sum=0.000, diagonal sum=0.000'.

	1	2	3	4	5	6	7
Name	Kivenlahti	spoonlah	Soukka	Kaitaa	Finnoo	West	East
Sum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Left sidebar (All matrices):

- Demand matrices
  - Zone matrices
  - Data matrices
    - 11
    - 3 Car
    - 4 Bus
    - 7 Mode choice Strata x C
    - 8 Mode choice Strata x X
    - 10 Metro
    - 12 Mode choice Strata x M
  - 13 New matrix
- Skim matrices
  - Zone matrices

Bottom status bar: Sum=0.000, diagonal sum=0.000

# Modal split

The screenshot shows the PTV Visum software interface. The main window is titled "Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:38:46". The menu bar includes File, Edit, View, Lists, Filters, Calculate, Graphics, Network, Demand, Scripts, Windows, Help, and Matrix editor. A dropdown menu is open over the "Demand" menu, showing options: Transport systems / Modes / Demand segments, Demand data, Demand models, Standard 4-step, EVA-persons, Tour-based model, Tour-based freight, ABM, Paths projection, and Matrices. Below the menu, a table displays data for zones 5, 6, and 7. The table has columns for "Innoo", "West", and "East". The data is as follows:

	5	6	7
Innoo	0.00	0.00	0.00
West	0.00	0.00	0.00
East	0.00	0.00	0.00
6 West	0.00	0.00	0.00
7 East	0.00	0.00	0.00

The left sidebar shows a tree view of matrices under "All matrices", including "Demand matrices", "Zone matrices", "Data matrices", and "13 New matrix". The bottom status bar displays "Sum=0.000, diagonal sum=0.000". The Windows taskbar at the bottom shows the time as 16:08 on 27.1.2023.

# Modal split

The screenshot displays the PTVisum software interface. The main window is titled "Matrix editor (Matrix '13 New matrix)". A dialog box titled "Transport systems / Modes / Demand segments" is open, showing a table with the following data:

Number	Code	Name	Type	Modes	DSeg
1	B	Bus	PuT	X	X
2	C	Car	PrT	C	C
3	M	Metro	PuT	M	M
4	T	Truck	PrT	T	T
5	W	Walk	PuTWalk	M,X	M,X

The dialog box also includes an "Operations" panel with "Create", "Edit", and "Delete" buttons, and "OK" and "Cancel" buttons at the bottom. The background software interface shows a menu bar, a toolbar, and a sidebar with a tree view of matrices and demand segments. The status bar at the bottom indicates "Sum=0.000, diagonal sum=0.000".

# Modal split

The screenshot displays the PTV Visum software interface. The main window is titled "Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:38:33". The interface includes a menu bar (File, Edit, View, Lists, Filters, Calculate, Network, Demand, Scripts, Windows, Help, Matrix editor), a toolbar, and a status bar. A dialog box titled "Transport systems / Modes / Demand segments" is open, showing a table with columns for Number, Code, Name, TSys, Interchangeable, and DSeg. The table contains four rows of data. The dialog also features an "Operations" panel with "Create", "Edit", and "Delete" buttons, and "OK" and "Cancel" buttons at the bottom.

Number	Code	Name	TSys	Interchangeable	DSeg
1	C	Car	C	<input checked="" type="checkbox"/>	C
2	M	Metro	M,W	<input type="checkbox"/>	M
3	T	Truck	T	<input type="checkbox"/>	T
4	X	PuT	B,W	<input checked="" type="checkbox"/>	X

# Modal split

The screenshot displays the PTVisum software interface. The main window is titled "Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:38:29". The interface includes a menu bar (File, Edit, View, Lists, Filters, Calculate, Network, Demand, Scripts, Windows, Help, Matrix editor) and a toolbar. A notification bar at the top indicates "Update stop sequence" with options to include only active stops or restrict to existing stops events. The "Matrices" panel on the left shows a tree view of matrices, including "13 New matrix". The "Matrix editor (Matrix '13 New matrix)" window is active, showing a 7x7 matrix with columns labeled 1 through 7 and rows labeled Name, Kivenlahti, spoonlah, Soukka, Kaitaa, Finnoo, West, and East. A dialog box titled "Transport systems / Modes / Demand segments" is open, displaying a table with columns: Number, Code, Name, Mode, and TSys. The table contains four rows of data:

Number	Code	Name	Mode	TSys
1	C	Car	C	C
2	M	Metro	M	M,W
3	T	Truck	T	T
4	X	PuT	X	B,W

The dialog box also features an "Operations" panel with "Create", "Edit", and "Delete" buttons, and "OK" and "Cancel" buttons at the bottom. The status bar at the bottom of the software shows "Sum=0.000, diagonal sum=0.000".



# Modal split

The screenshot shows the PTV Visum software interface. The main window is titled "Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:38:09". The "Demand" menu is open, showing options like "Demand data", "Demand models", "Standard 4-step", "EVA-persons", "Tour-based model", "Tour-based freight", "ABM", "Paths projection", and "Matrices". The "Demand models" option is selected, and a sub-menu is open showing a table with columns for "West" and "East".

	West	East
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00

The "Matrices" panel on the left shows a tree view of matrices, including "All matrices", "Demand matrices", "Zone matrices", "Data matrices", and "Skim matrices". The "Data matrices" section is expanded, showing a list of matrices including "11", "3 Car", "4 Bus", "7 Mode choice Strata x C", "8 Mode choice Strata x X", "10 Metro", "12 Mode choice Strata x M", and "13 New matrix".

The "Quick view (Matrices)" panel at the bottom left shows a table with the following data:

Number	1
No	13
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

The status bar at the bottom of the window displays "Sum=0.000, diagonal sum=0.000". The Windows taskbar at the bottom shows the time as 16:08 on 27.1.2023.

# Modal split

Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:38:02

File Edit View Lists Filters Calculate Graphics Network Demand Scripts Windows Help Matrix editor

Sign in

Update stop sequence Stop sequ (Classical)

Matrices

All matrices

- Demand matrices
  - Zone matrices
  - Data matrices
    - 1 1
    - 3 Car
    - 4 Bus
    - 7 Mode choice Strata x C
    - 8 Mode choice Strata x X
    - 10 Metro
    - 12 Mode choice Strata x M
    - 13 New matrix
  - Skim matrices
  - Zone matrices

Matrices X Timetable lines

Quick view (Matrices)

Number	1
No	13
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

Sum=0.000, diagonal sum=0.000

Quick view (Matrices) X Marking

Network editor | Matrix editor X | Procedure sequence | Timetable (tabular) | Matrix editor | Matrix editor | Matrix editor | List (Link types) | List (Matrices)

16.09 27.1.2023

to existing stops events Recalculate X

Demand models

Select demand model

Basis | Person groups | Activity pairs | Demand strata |

Number: 1	Code	Name	Type	Modes	Balancing executed (EVA)
1	MO1	DemandModel 1	Standard 4-step	C,M,X	

C.Car,M.Metro,X.PuT

Create Delete Create procedure sequence... Load model template...

OK Cancel

# Modal split

The screenshot displays a software interface for network modeling. The main window is titled "Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:37:41". The interface includes a menu bar (File, Edit, View, Lists, Filters, Calculate, Graphics, Network, Demand, Scripts, Windows, Help, Matrix editor) and a toolbar. A "Demand models" dialog box is open, showing a table of demand matrices. The "Modes" sub-dialog is also open, listing available modes: C Car, M Metro, T Truck, and X Put. The "C Car" mode is selected. The background shows a "Demand matrices" table and a "Quick view (Matrices)" panel.

Number	Code	Name	Type	Modes
1	M01	DemandModel 1	Standard 4-step	C,M,X

Number	No
1	13

Property	Value
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

# Modal split

Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:37:31

File Edit View Lists Filters Calculate Graphics Network Demand Scripts Windows Help Matrix editor

Sign in

to existing stops events Recalculate

Stop sequ (Classical)

Update stop sequence

Matrices

All matrices

- Demand matrices
- Zone matrices
- Data matrices
  - 1 1
  - 3 Car
  - 4 Bus
  - 7 Mode choice Strata x C
  - 8 Mode choice Strata x X
  - 10 Metro
  - 12 Mode choice Strata x M
  - 13 New matrix**
- Skim matrices
- Zone matrices

Matrices X Timetable lines

Quick view (Matrices)

Number	1
No	13
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

Sum=0.000, diagonal sum=0.000

Quick view (Matrices) X Marking

Network editor Matrix editor X Procedure sequence Timetable (tabular) Matrix editor Matrix editor Matrix editor List (Link types) List (Matrices)

16.09 27.1.2023

Demand models

Select demand model

M01 DemandModel 1

Basis | Person groups | Activity pairs | Demand strata |

Number	Code	Name	Demand segment set	Person
1	Strata	Demand split	C,M,X	Person

Create Delete

Productions/attractions...

OK Cancel

DSegSet

- Mode: C| C Car
- Mode: M| M Metro
- Mode: T| T Truck
- Mode: X| X PuT

Exactly one demand segment should be selected for each mode.

Select none Select all OK Cancel

# Modal split

The screenshot displays the PTV Visum software interface. The main window is titled "Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Matrix editor] - Remaining run time: 00:37:18". The "Procedure sequence" menu is open, showing options such as "General procedure settings", "Procedure variables", "Calculation status", "Delete assignment results...", "Assignment analysis", "Network check...", "Environmental parameters", "Calculate environmental impact", "Delete environmental impact results", "Subnetwork generator", "ANM export of a subnetwork...", and "Delete result of the spatial PuT analysis".

The "New matrix" window is active, showing a table with the following data:

	1	2	3	4	5	6	7
Kivenlahti	0.00	0.00	0.00	0.00	0.00	0.00	0.00
spoonlah	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soukka	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kaitaa	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Finnoo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
West	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The "Quick view (Matrices)" window shows the following details for the selected matrix:

Property	Value
Number	1
No	13
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

The status bar at the bottom indicates "Sum=0.000, diagonal sum=0.000". The taskbar shows the system time as 16:09 on 27.1.2023.

# Modal split

The screenshot shows the PTV Visum software interface. The main window displays a 'Procedure sequence' table with the following data:

	Active	Procedure	Reference object(s)
3	<input type="checkbox"/>		
1	<input type="checkbox"/>	Trip distribution	Strata Demand split
2	<input checked="" type="checkbox"/>	Mode choice	Strata Demand split
3	<input type="checkbox"/>	PUT assignment	X PUT

The 'Mode choice' row (row 2) is highlighted in blue. To the left, a tree view shows the 'Matrices' structure, including 'Demand matrices', 'Zone matrices', and 'Data matrices'. The 'Data matrices' section lists several matrices, with '13 New matrix' selected. Below the tree view, a 'Quick view (Matrices)' panel displays details for the selected matrix:

Quick view (Matrices)	
Number	1
No	13
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

The right side of the interface features an 'Operations' panel with various actions such as 'Create', 'Switch', 'Edit', 'Up', 'Down', 'Duplicate', 'Delete', 'Cut to clipboard', 'Copy to clipboard', 'Paste from clipboard', 'Set all active', and 'Set all inactive'. The bottom status bar shows the current window is 'Procedure sequence' and the system clock is 16:09 on 27.1.2023.

# Modal split

Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Procedure sequence] - Remaining run time: 00:37:01

File Edit View Lists Filters Calculate Graphics Network Demand Scripts Windows Help Procedure sequence Sign in

Parameters: Mode choice

Set any result demand matrix to 0 prior to calculation

Key	Demand stratum	Mode	Utility function	Function type	a	b	c	Input demand matrix	Input demand matrix			
1	Strata/C	Strata Demand split	C Car	Matrix([CODE]="Skim Car" & [MATRIXTYPE]=4)	Logit	0	0	-1	...	Matrix(1)	1 Tot OD	Matrix([DMoc
2	Strata/M	Strata Demand split	M Metro	Matrix([CODE]="Skim Metro" & [MATRIXTYPE]=4)	Logit	0	0	-1	...	Matrix(1)	1 Tot OD	Matrix([DMoc
3	Strata/X	Strata Demand split	X PuT	Matrix([CODE]="Skim PuT" & [MATRIXTYPE]=4)	Logit	0	0	-1	...	Matrix(1)	1 Tot OD	Matrix([DMoc

Utility definition for demand stratum/mode Strata/M

Demand stratum/mode: Strata/M

Utility U =

The output matrix is defined by the following expression.

```
Matrix([CODE]="Skim Metro" & [MATRIXTYPE]=4)
```

Apply to all DStrata

Number	1
No	13
Code	New matrix
Name	New matrix
MatrixType	OD demand
ObjectTypeRef	Zone
Sum	0.000
DSegCode	

Quick view (Matrices) X Marking Network editor Matrix editor Procedure sequence X Timetable (tabular) Matrix editor Matrix editor Matrix editor List (Link types) List (Matrices)

16:10 27.1.2023

# Modal split

Network: 2023TA.ver\* - PTV Visum Uni 2023 (SP 1-3) - [Procedure sequence] - Remaining run time: 00:36:47

File Edit View Lists Filters Calculate Graphics Network Demand Scripts Windows Help Procedure sequence Sign in

Parameters: Mode choice

Set any result demand matrix to 0 prior to calculation

Key	Demand stratum	Mode	Matrix
1	Strata/C	Strata Demand split C Car	Matrix([C
2	Strata/M	Strata Demand split M Metro	Matrix([C
3	Strata/X	Strata Demand split X PuT	Matrix([C

Apply to all DStrata

Number 1

No	Name	MatrixType	ObjectRef	DSegCode
	New matrix	OD demand	Zone	0.000

Quick view (Matrices) X Marking Network editor Matrix editor Procedure sequence X Timetable (tabular) Matrix editor Matrix editor Matrix editor List (Link types) List (Matrices)

16.10 27.1.2023

Operations

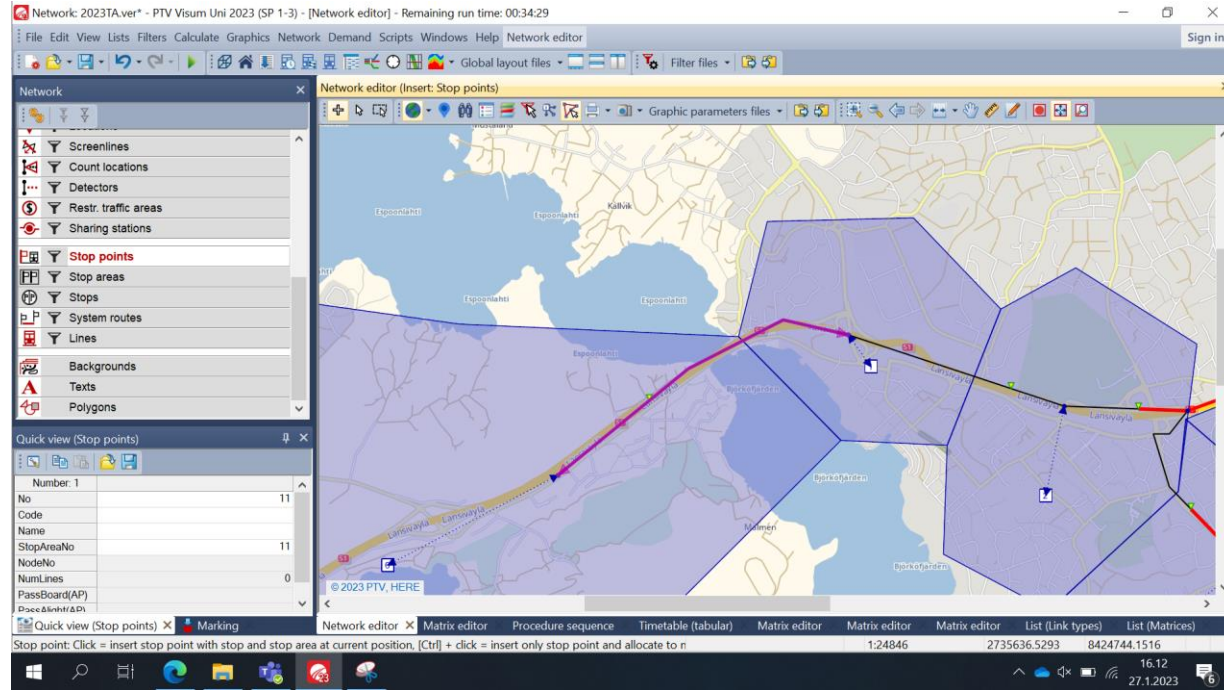
- Create
- Create group
- Switch
- Edit
- Up
- Down
- Duplicate
- Delete
- Cut to clipboard
- Copy to clipboard
- Paste from clipboard
- Set all active
- Set all inactive

View

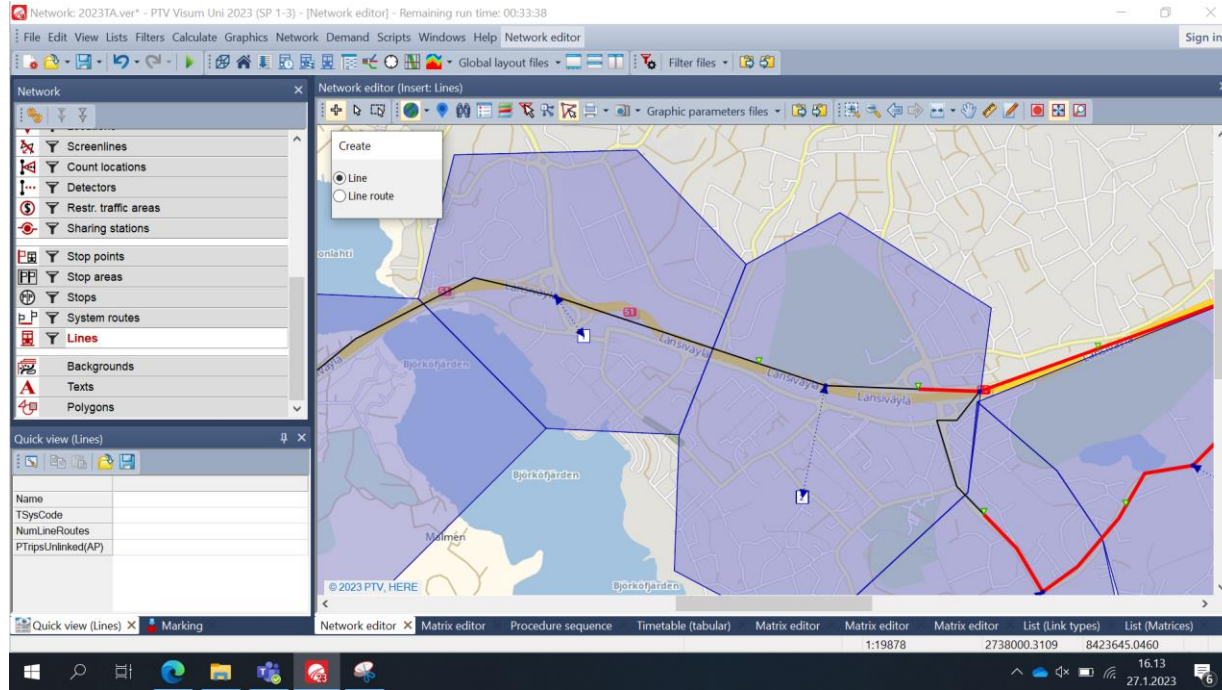
- Collapse all groups



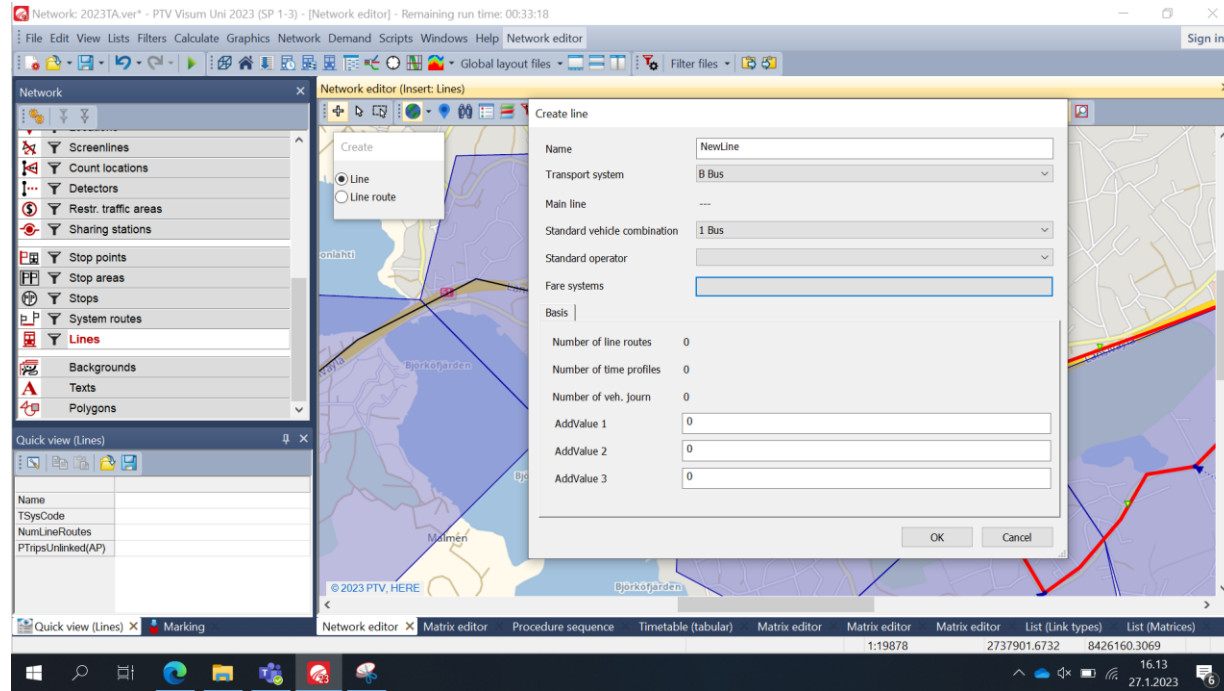
# Defining PT line and Line Route



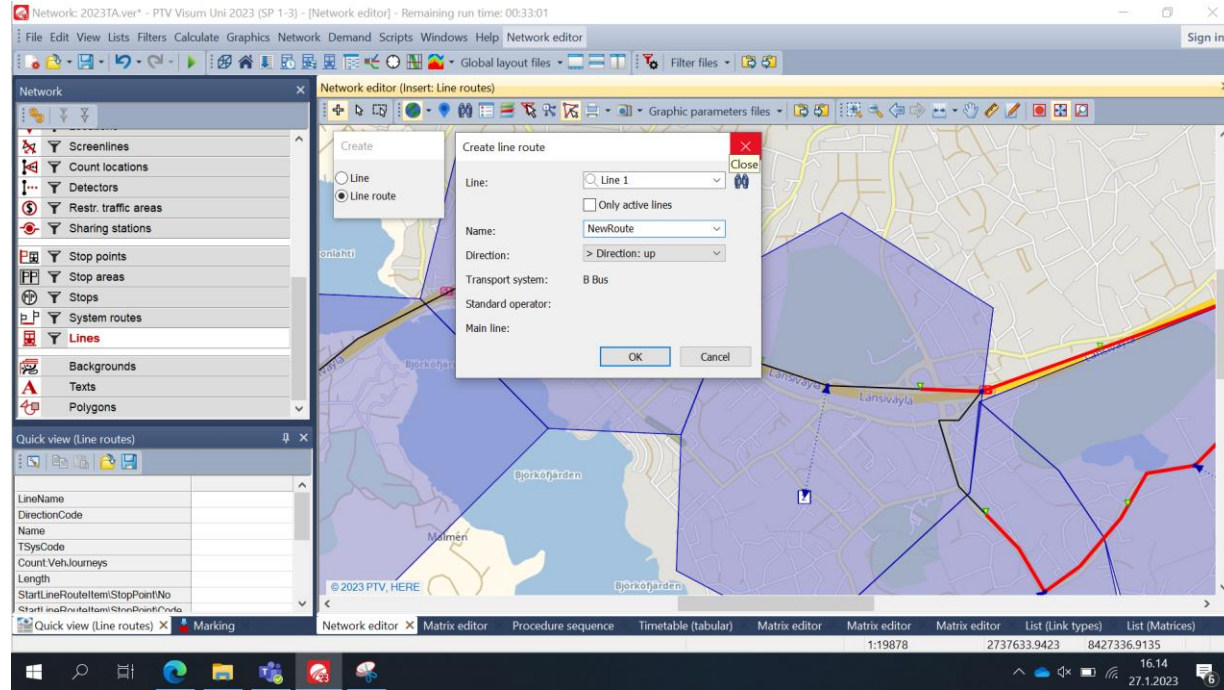
# Defining PT line and Line Route



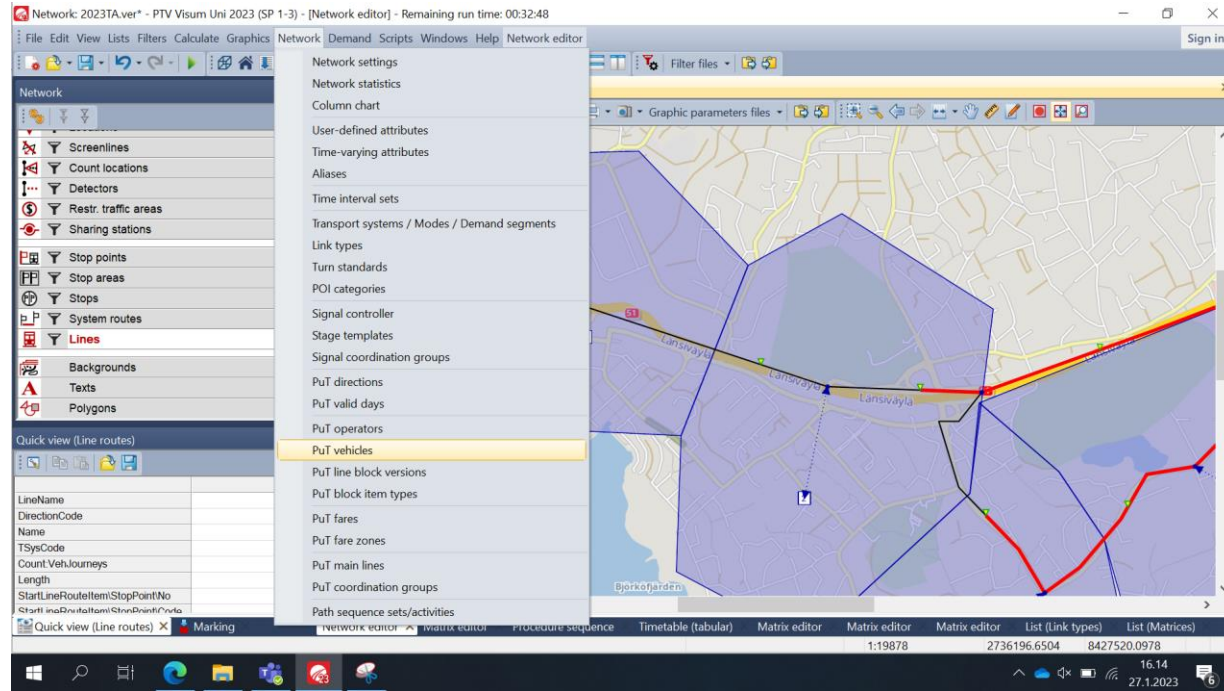
# Defining PT line and Line Route



# Defining PT line and Line Route



# Defining PT line and Line Route



# Defining PT line and Line Route

Network editor (Insert: Line routes)

PuT vehicles and PuT vehicle combinations

Vehicle units	Vehicle combinations	Number	Code	Name
1	1	1	Bus	Bus
2	2	2	Metro	Metro
3	3	3	S	Shuttle

Operations

- Create
- Edit
- Delete
- Renumber

OK Cancel

2023 PTV, HERE

Network editor Matrix editor Procedure sequence Timetable (tabular) Matrix editor Matrix editor Matrix editor List (Link types) List (Matrices)

1:19878 2739402.3750 8426012.3504

16:14 27.1.2023



# Defining PT line and Line Route

Network: 2023TAver\* - PTV Visum Uni 2023 (SP 1-3) - [Network editor] - Remaining run time: 00:32:16

File Edit View Lists Filters Calculate Graphics Network Demand Scripts Windows Help Network editor

Network editor (Edit: Lines)

Lines

Lines  Line routes

Name	Vehicle journeys	In selection
Line 1	14	<input checked="" type="checkbox"/>
Line 2	10	<input checked="" type="checkbox"/>

Only active ones 0 (2)

Reset selection

Zoom

Remove zigzags

Timetable

- Timetable (tabular)
- Timetable (graphical)
- Both timetables
- Set timetable line selection

Quick view (Lines)

Name	TSysCode	NumLineRoutes	PTripsUnlinked(AP)

Click stop point = select Line or limit selection further

1:19878 2738155.3129 8426392.8100

16.14 27.1.2023

# Defining PT line and Line Route

Network: 2023TAver\* - PTV Visum Uni 2023 (SP 1-3) - [Timetable (tabular)] - Remaining run time: 00:32:11

File Edit View Lists Filters Calculate Graphics Network Demand Scripts Windows Help Timetable (tabular) Sign in

Global layout files Filter files

Network

- Screenlines
- Count locations
- Detectors
- Restr. traffic areas
- Sharing stations
- Stop points
- Stop areas
- Stops
- System routes
- Lines
- Backgrounds
- Texts
- Polygons

Quick view (Lines)

Timetable (tabular)

10 veh

Create vehicle journey(s)...

No	20	18	21	17	22	18	23	19	24
Name	Line 2	Line 2	Line 2	Line 2	Line 2	Line 2	Line 2	Line 2	Line 2
DirectionCode	>	>	>	>	>	>	>	>	>
Concatenate VehJ	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
FromStopPointCode									
Dep	08:00:00	08:00:00	08:15:00	08:15:00	08:25:00	08:25:00	08:40:00	08:40:00	08:50:00
Arr	08:02:59	08:02:59	08:17:59	08:17:59	08:27:59	08:27:59	08:42:59	08:42:59	08:52:59
ToStopPointCode									
OperatorNo									

vehicle journey sect

VehCombNo	1	1	1	1	1	1	1	1	1
ValidDaysNo	1	1	1	1	1	1	1	1	1
FromTPProfileInd	1	1	1	1	1	1	1	1	1
FromTimeProfileInd									
Dep	08:00:00	08:00:00	08:15:00	08:15:00	08:25:00	08:25:00	08:40:00	08:40:00	08:50:00
Arr	08:02:59	08:02:59	08:17:59	08:17:59	08:27:59	08:27:59	08:42:59	08:42:59	08:52:59

Obj	Obj	Obj	Obj	Obj	Obj	Obj	Obj	Obj	Obj	Obj	Obj
Min	Code	Min	Code	Min	Code	Min	Code	Min	Code	Min	Code
6		8:00:00	8:02:59	8:15:00	8:17:59	8:25:00	8:27:59	8:40:00	8:42:59	8:50:00	8:52:59
7		8:01:27	8:01:32	8:16:27	8:16:32	8:26:27	8:26:32	8:41:27	8:41:32	8:51:27	8:51:32
9		8:02:59	8:00:00	8:17:59	8:15:00	8:27:59	8:25:00	8:42:59	8:40:00	8:52:59	8:50:00

Quick view (Lines) X Marking

Network editor Matrix editor Procedure sequence Timetable (tabular) X Matrix editor Matrix editor Matrix editor List (Link types) List (Matrices)

Click stop point = select Line or limit selection further

1:19878 2738155.3129 8426392.8100

16.14 27.1.2023



# Defining PT line and Line Route

The screenshot displays the PTV Visum software interface. The main window is titled "Network: 2023TAver\* - PTV Visum Uni 2023 (SP 1-3) - [Timetable (tabular)]". The "Create vehicle journey(s)" dialog box is open, showing the "Basis Regular services" tab. The dialog includes options for creating regular services, such as "Create regular services" (checked), and options to prepend attribute values, departure times, vehicle journey numbers, or consecutive numbers to the name of the vehicle journey. The "Starting at" field is set to 1, and the "Increment in steps of two" option is unchecked. A "Check names for uniqueness" button is present. The "Time interval for regular service" section shows "Headway start" at 08:00:00 and "Headway end" at 09:00:00. The "Time difference to previous vehicle journey" section shows "Regular service" intervals of 20min, 0min, and 0min. A table lists generated journeys:

Generate	Departure time	Name
<input checked="" type="checkbox"/>	08:00:00	New Schedule
<input checked="" type="checkbox"/>	08:20:00	New Schedule
<input checked="" type="checkbox"/>	08:40:00	New Schedule
<input checked="" type="checkbox"/>	09:00:00	New Schedule

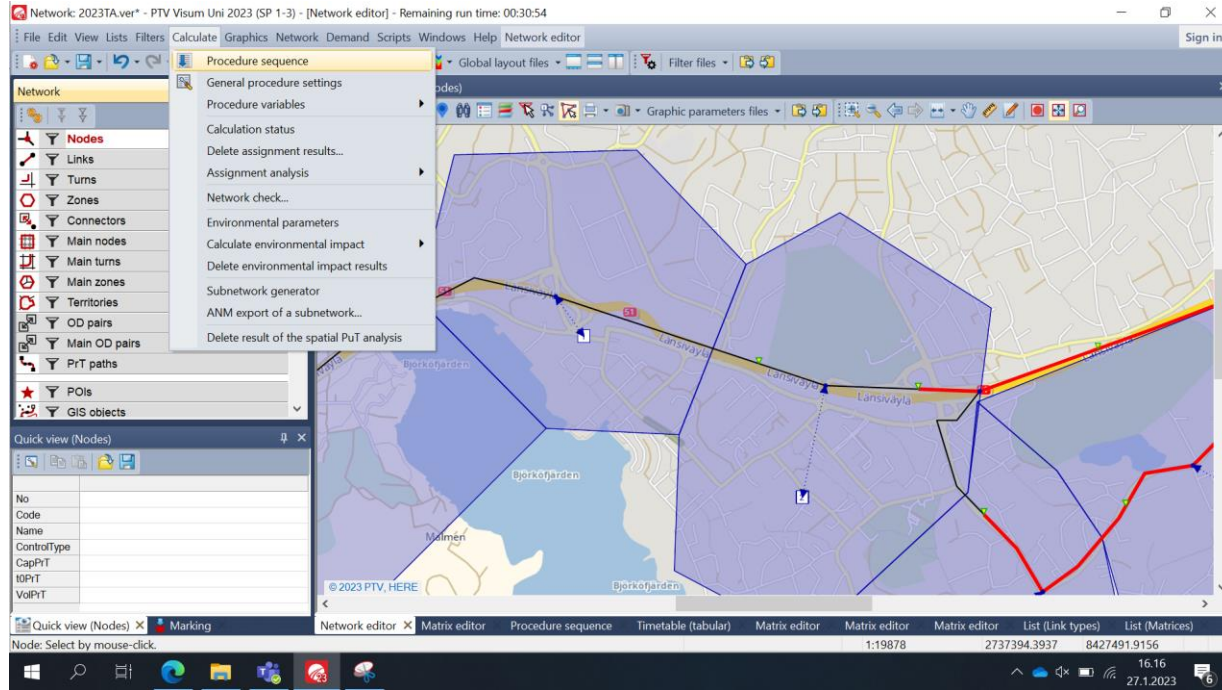
At the bottom of the dialog, there are "Check all", "Uncheck all", and "Number of generated veh. Journeys: 4" buttons, along with "OK" and "Cancel" buttons.

The background shows the "Timetable (tabular)" view with a table of arrivals and departures:

	19	24	25
Line 2	Line 2	Line 2	New Schedt
>	<	>	
Daily	Daily	Daily	
0	08:50:00	08:50:00	08:00:00
9	08:52:59	08:52:59	08:02:59

The bottom status bar shows the current time as 16:15 on 27.1.2023.

# Defining public transport capacity



# Defining public transport capacity

The screenshot displays the PTV Visum software interface. The main window is titled "Procedure sequence" and contains a table with the following data:

	Active	Procedure	Reference object(s)
3	<input type="checkbox"/>	Trip distribution	Strata Demand split
1	<input type="checkbox"/>		
2	<input checked="" type="checkbox"/>	Mode choice	Strata Demand split
3	<input checked="" type="checkbox"/>	PuT assignment	X PuT

The table is part of a larger window with a left-hand navigation pane containing a tree view of network elements such as Nodes, Links, Turns, Zones, Connectors, Main nodes, Main turns, Main zones, Territories, OD pairs, Main OD pairs, PrT paths, POIs, and GIS objects. A "Quick view (Nodes)" pane is also visible at the bottom left. The right-hand side of the interface features an "Operations" menu with options like Create, Edit, Duplicate, and Delete, and a "View" menu with options like Collapse all groups and Expand all groups. The Windows taskbar at the bottom shows the time as 16:16 on 27.1.2023.

# Defining public transport capacity

