

STRATÉGIA ROZVOJA DOPRAVY A DOPRAVNÝCH STAVIEB MESTA KOŠICE

SPRÁVA O PRIEBEHU ŠKOLENIA PTV VISUM



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OBSAH

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1 IDENTIFIKAČNÉ ÚDAJE PROJEKTU

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- Projekt:** Stratégia rozvoja dopravy a dopravných stavieb mesta Košice
- Časť projektu** Školenie PTV Visum
- Čas plnenia:** 14. – 16. Septembra 2015

2 PROGRAM ŠKOLENIA

14.9.2015

Úvod do dopravného modelovania

Prostredie PTV Visum

Základní princípy tvorby modelu v PTV Visum

Modely dopravného dopytu a ponuky, ich prepojenie

Členenie dopravného modelu mesta Košice

15. a 16.9.2015

Funkcie PTV Visum Viewer

Úprava grafických parametrov

Tvorba a úpravy seznamů

Porovnávanie verzíí

3 OBSAH ŠKOLENIA

3.1 Úvod do dopravného modelovania

Makrosimulácia – dopravný prúd ako celok

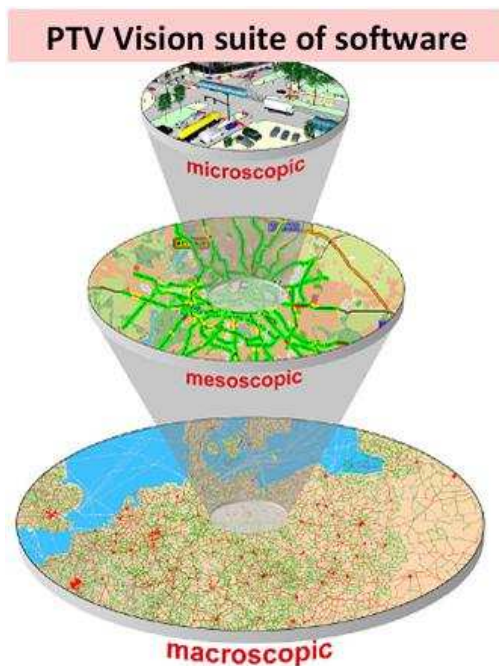
Mikrosimulácia – správanie jednotlivých vozidiel

Dôvody pre tvorbu dopravného modelu

- Rozhodnutie problému
- Výber varianty
- Redukcia negatívnych vplyvov dopravy
- Optimalizácia dopravy

Klasický štvorstupňový dopravný model

1. Trip generation
2. Trip distribution
3. Mode choice
4. Assignment

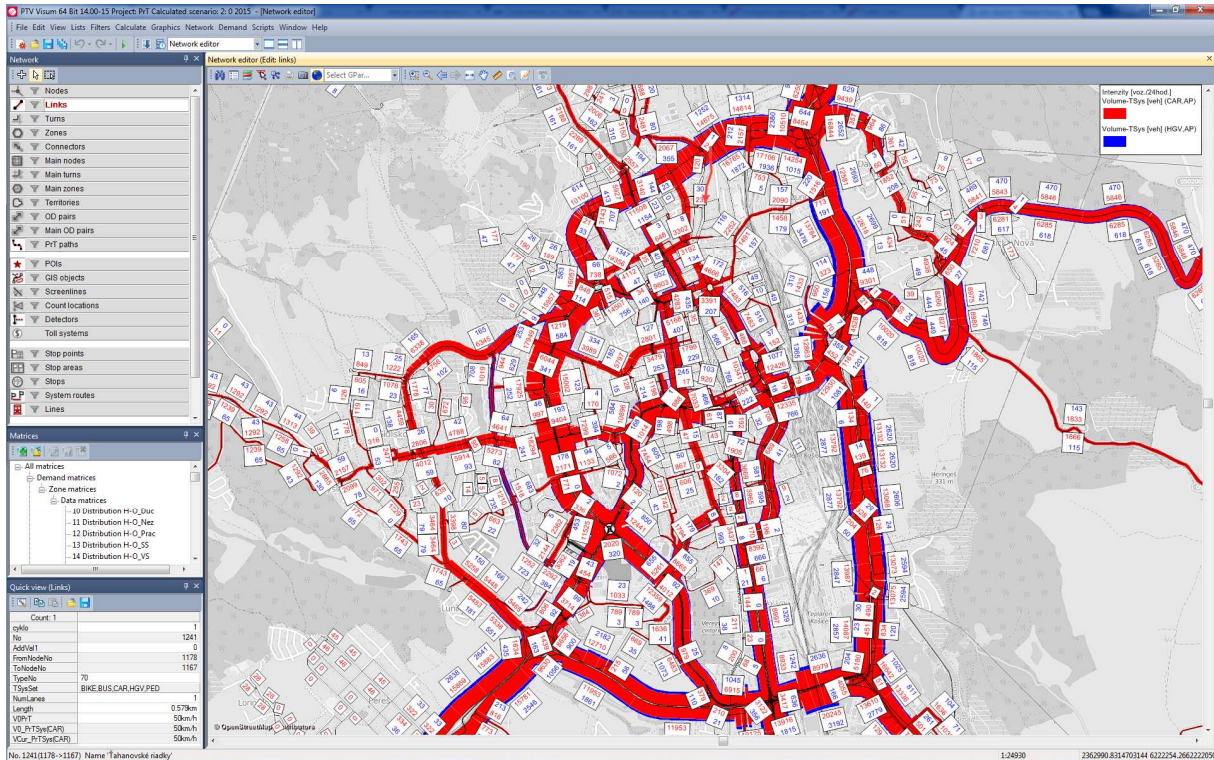


3.2 Prostredie PTV Visum



PTV Visum – software pro makro/mezoskopické modelovanie dopravy

KF - Kohézny fond "Investícia do Vašej budúcnosti"



Network editor

The screenshot shows the PTV Visum List (Links) window, displaying a detailed table of link attributes. The table has columns for Count, No, FrontNode, ToNode, TypeNo, TypeSet, Length, NumLanes, CapT, VGRIT, VoVehP(TAH), VoVehP(AP), VoVehP(TAH), VoVehP(TAH), OSM_ELECTRIFIED, OSM_GAUGE, OSM_LEVEL, OSM_MAXSPEED, OSM_OPERATOR, and OSM_STRUCTURE. The table lists various link types such as BUS CAR.HGV, BIKE.BUS CAR.HGV.PED, and BUS CAR.HGV, along with their respective attributes and values.

Count	No	FrontNode	ToNode	TypeNo	TypeSet	Length	NumLanes	CapT	VGRIT	VoVehP(TAH)	VoVehP(AP)	VoVehP(TAH)	VoVehP(TAH)	OSM_ELECTRIFIED	OSM_GAUGE	OSM_LEVEL	OSM_MAXSPEED	OSM_OPERATOR	OSM_STRUCTURE
1	1	2	2	21	BUS CAR.HGV	0.123m	3	40000	30km/h	19495	19495	0	0	0	0	100			
2	1	2	21	21	BIKE.BUS CAR.HGV.PED	0.123m	2	40000	30km/h	0	0	0	0	0	0	100			
3	2	4	5	41	BIKE.BUS CAR.HGV.PED	0.096m	1	5333	30km/h	1101	1101	1	0	0	0	50			
4	2	5	4	40	BUS CAR.HGV	0.096m	1	5333	30km/h	0	0	0	0	0	0	50			
5	4	8	3	21	BUS CAR.HGV	0.042m	2	40000	100km/h	15674	15674	0	0	0	0	100			
6	4	9	8	21	BUS CAR.HGV	0.042m	2	40000	100km/h	0	0	0	0	0	0	100			
7	5	10	11	32	BIKE.BUS CAR.HGV.PED	0.045m	1	52000	30km/h	6903	6903	1	0	0	0	50			
8	5	11	10	32	BIKE.BUS CAR.HGV.PED	0.045m	1	52000	30km/h	6316	6316	1	0	0	0	50			
9	11	14	15	70	BIKE.BUS CAR.HGV.PED	0.040m	1	10666	70km/h	316	316	1	0	0	0	100			
10	11	15	14	70	BIKE.BUS CAR.HGV.PED	0.040m	1	10666	70km/h	0	0	0	0	0	0	100			
11	12	15	16	70	BIKE.BUS CAR.HGV.PED	0.030m	1	10666	70km/h	1839	1839	1	0	0	0	100			
12	12	16	15	70	BIKE.BUS CAR.HGV.PED	0.030m	1	10666	70km/h	0	0	0	0	0	0	100			
13	13	17	2302	39	BUS CAR.HGV	0.004m	2	13333	50km/h	12815	12815	0	0	0	0	100			
14	13	17	2302	39	BUS CAR.HGV	0.004m	2	13333	50km/h	0	0	0	0	0	0	100			
15	14	18	2922	39	BUS CAR.HGV	0.016m	2	13333	40km/h	0	0	0	0	0	0	100			
16	14	18	2922	39	BUS CAR.HGV	0.016m	2	13333	40km/h	11736	11736	0	0	0	0	100			
17	16	21	22	31	BIKE.BUS CAR.HGV.PED	0.070m	2	21333	50km/h	1849	1849	1	0	0	0	100			
18	16	22	21	31	BIKE.BUS CAR.HGV.PED	0.070m	2	21333	70km/h	0	0	0	0	0	0	100			
19	17	23	6086	70	BIKE.BUS CAR.HGV.PED	0.113m	1	5333	20km/h	13	13	1	0	0	0	50			
20	17	23	6086	70	BIKE.BUS CAR.HGV.PED	0.113m	1	5333	30km/h	847	847	1	0	0	0	50			
21	18	19	1097	6086	70	BIKE.BUS CAR.HGV.PED	0.026m	1	5333	30km/h	923	923	1	0	0	100			
22	18	19	1097	1097	70	BIKE.BUS CAR.HGV.PED	0.026m	1	5333	20km/h	13	13	1	0	0	50			
23	19	1097	1249	70	BIKE.BUS CAR.HGV.PED	0.072m	1	5333	20km/h	13	13	1	0	0	0	50			
24	19	1249	1097	70	BIKE.BUS CAR.HGV.PED	0.072m	1	5333	30km/h	523	523	1	0	0	0	50			
25	20	1129	1249	70	BIKE.BUS CAR.HGV.PED	0.089m	1	5333	30km/h	193	193	1	0	0	0	50			
26	20	1249	1129	70	BIKE.BUS CAR.HGV.PED	0.089m	1	5333	20km/h	63	63	1	0	0	0	50			
27	21	24	1128	70	BIKE.BUS CAR.HGV.PED	0.053m	1	5333	50km/h	153	153	1	0	0	0	100			
28	21	1128	24	70	BIKE.BUS CAR.HGV.PED	0.053m	1	5333	20km/h	63	63	1	0	0	0	50			
29	23	27	29	31	BIKE.BUS CAR.HGV.PED	0.070m	2	15333	30km/h	14003	14003	1	0	0	0	100			
30	23	28	27	41	BIKE.BUS CAR.HGV.PED	0.089m	2	26666	80km/h	0	0	0	0	0	0	100			
31	24	29	2227	41	BIKE.BUS CAR.HGV.PED	0.051m	2	26666	50km/h	4053	4053	1	0	0	0	50			
32	24	2227	29	41	BIKE.BUS CAR.HGV.PED	0.051m	2	26666	80km/h	0	0	0	0	0	0	100			
33	25	30	2227	41	BIKE.BUS CAR.HGV.PED	0.070m	2	26666	80km/h	0	0	0	0	0	0	100			
34	25	2227	30	41	BIKE.BUS CAR.HGV.PED	0.070m	2	26666	50km/h	5751	5751	1	0	0	0	100			
35	26	31	32	29	BUS CAR.HGV	0.127m	2	16000	90km/h	5135	5135	0	0	0	0	100			
36	26	32	31	29	BUS CAR.HGV	0.127m	2	16000	90km/h	0	0	0	0	0	0	100			
37	29	34	35	31	BIKE.BUS CAR.HGV.PED	0.163m	1	34666	50km/h	6313	6313	1	0	0	0	50			
38	29	35	34	31	BIKE.BUS CAR.HGV.PED	0.163m	1	34666	50km/h	6888	6888	1	0	0	0	50			
39	29	36	1253	31	BIKE.BUS CAR.HGV.PED	0.080m	2	34666	80km/h	9720	9720	1	0	0	0	100			
40	29	1253	36	31	BIKE.BUS CAR.HGV.PED	0.080m	2	34666	70km/h	9726	9726	1	0	0	0	100			
41	30	37	1253	31	BIKE.BUS CAR.HGV.PED	0.588m	2	34666	70km/h	10838	10838	1	0	0	0	100			
42	30	1253	37	31	BIKE.BUS CAR.HGV.PED	0.588m	2	34666	80km/h	10828	10828	1	0	0	0	100			
43	31	28	38	31	BIKE.BUS CAR.HGV.PED	0.041m	2	26666	50km/h	12002	12002	1	0	0	0	100			
44	31	38	28	41	BIKE.BUS CAR.HGV.PED	0.041m	2	26666	80km/h	0	0	0	0	0	0	100			
45	32	39	40	70	BIKE.BUS CAR.HGV.PED	0.058m	1	5333	20km/h	57	57	1	0	0	0	100			
46	32	40	39	70	BIKE.BUS CAR.HGV.PED	0.058m	1	10666	30km/h	139	139	1	0	0	0	100			
47	33	41	42	41	BIKE.BUS CAR.HGV.PED	0.029m	2	26666	50km/h	4987	4987	1	0	0	0	100			
48	33	42	41	41	BIKE.BUS CAR.HGV.PED	0.029m	2	26666	80km/h	0	0	0	0	0	0	100			
49	35	28	46	28	BUS CAR.HGV	0.030m	1	7333	30km/h	2001	2001	1	0	0	0	100			
50	35	45	28	28	BUS CAR.HGV	0.030m	1	14666	30km/h	0	0	0	0	0	0	100			
51	36	46	47	21	BUS CAR.HGV	0.094m	2	40000	100km/h	15470	15470	1	0	0	0	100			
52	36	47	46	21	BUS CAR.HGV	0.094m	2	40000	100km/h	0	0	0	0	0	0	100			
53	37	48	48	21	BUS CAR.HGV	0.144m	2	40000	100km/h	16834	16834	1	0	0	0	100			
54	37	48	48	21	BUS CAR.HGV	0.144m	2	40000	100km/h	0	0	0	0	0	0	100			
55	38	50	51	28	BUS CAR.HGV	0.129m	1	14666	80km/h	5384	5384	1	0	0	0	100			
56	38	51	51	28	BUS CAR.HGV	0.129m	1	14666	80km/h	0	0	0	0	0	0	100			
57	39	52	53	28	BUS CAR.HGV	0.129m	1	14666	50km/h	5384	5384	1	0	0	0	100			
58	39	53	53	28	BUS CAR.HGV	0.129m	1	14666	70km/h	4221	4221	1	0	0	0	100			
59	40	54	55	21	BUS CAR.HGV	0.110m	2	40000	100km/h	23437	23437	1	0	0	0	100			
60	40	55	54	21	BUS CAR.HGV	0.110m	2	40000	100km/h	0	0	0	0	0	0	100			
61	41	56	61	21	BUS CAR.HGV	0.151m	2	40000	100km/h	16669	16669	1	0	0	0	100			
62	41	57	56	21	BUS CAR.HGV	0.151m	2	40000	100km/h	0	0	0	0	0	0	100			

List (links)



KF - Kohézny fond "Investícia do Vašej budúcnosti"

PTV Visum 64 814 1400:15 Project: P7 Calculated scenario: 2.0 2025 - Matrix editor (Matrix: 2.JRT (Pt Public Transport))

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

Matrix editor (Matrix: 2.JRT (Pt Public Transport))

487x487

	Name	27062	27020	27012	27015	27050	27011	27030	27042	450102	43012	43041	41500	27041	43012	44073	41013	41012	44081	41014	41060	44033	44081		
1	27062	102628.00	99999.00	75.30	77.01	57.60	51.42	40.34	56.29	100.78	94.81	86.47	57.74	97.58	85.07	74.78	70.12	86.10	76.58	107.15	74.32	107.17			
2	27020	101015.02	72.58	99999.00	28.83	18.70	28.10	22.16	19.76	19.09	27.28	62.50	57.15	51.12	70.57	49.39	48.87	47.84	52.20	50.71	47.44	50.72	66.43	47.23	51.18
3	27012	102221.50	75.61	27.96	99999.00	21.08	30.65	21.86	22.52	21.84	30.19	65.01	59.88	53.66	70.89	45.03	51.43	59.36	54.73	53.24	58.14	59.26	68.84	45.76	53.70
4	27015	101705.84	66.23	18.70	21.05	99999.00	21.43	14.48	13.05	12.38	13.62	55.78	50.42	44.34	63.84	41.86	42.14	41.08	45.47	43.89	40.67	44.01	58.63	40.34	44.46
5	27050	102017.14	51.42	28.79	30.55	21.13	99999.00	23.89	19.46	18.56	26.77	61.72	50.52	48.96	67.84	51.11	43.48	43.39	48.96	32.30	43.21	44.92	62.03	40.78	43.90
6	27011	101480.91	48.13	22.59	25.47	14.87	19.47	18.17	99999.00	5.25	17.14	48.34	40.82	37.86	55.32	46.04	34.29	31.19	36.52	34.84	31.88	36.62	49.15	30.58	35.14
7	27030	101391.50	44.87	21.93	24.77	14.21	18.56	18.10	15.25	99999.00	16.24	47.44	39.89	37.07	54.41	45.34	33.33	30.23	35.58	33.50	30.89	34.66	48.20	29.42	34.25
8	27042	101876.88	64.74	27.42	30.10	13.62	26.46	23.30	15.57	99999.00	59.10	50.36	46.33	66.43	50.99	41.14	41.89	47.93	45.59	40.79	42.73	60.55	40.71	41.88	
9	450102	1019452.83	96.31	64.29	66.01	56.60	60.41	59.37	47.43	46.52	57.95	99999.00	37.47	37.58	29.62	86.56	34.26	29.13	17.25	21.41	30.50	38.43	35.26	28.89	31.83
10	43012	1017338.72	62.13	59.24	60.37	51.53	51.76	54.27	39.84	37.54	50.20	39.01	99999.00	19.08	45.47	61.64	14.96	11.81	26.82	27.07	16.19	12.73	41.84	15.63	19.76
11	43041	1015962.25	79.01	57.05	58.80	49.41	53.23	52.16	39.89	38.97	51.94	37.95	14.27	99999.00	44.25	79.31	3.08	8.10	25.65	23.83	13.10	11.09	38.76	11.59	18.65
12	41500	102427.75	102.31	72.81	74.61	65.13	68.96	67.90	59.99	55.03	67.39	29.62	45.81	48.88	99999.00	95.12	42.80	37.75	25.77	30.14	39.19	40.96	38.43	37.56	40.41
13	27041	102090.96	97.87	50.36	50.05	43.48	53.05	40.37	44.69	44.13	52.48	47.39	52.38	70.85	86.45	99999.00	76.96	72.77	77.08	76.81	72.50	75.74	81.49	72.15	78.17
14	43012	101459.97	74.86	52.96	54.69	45.34	50.48	48.07	36.88	35.92	48.43	34.11	10.23	9.08	40.36	75.16	99999.00	4.21	21.78	21.11	8.88	7.40	39.97	7.45	14.59
15	44073	101297.40	72.59	45.57	51.37	41.69	42.78	44.70	29.63	28.73	41.23	29.53	11.03	9.43	36.19	71.50	5.48	99999.00	17.58	17.47	5.34	7.95	32.89	3.76	10.38
16	41013	101437.76	80.13	54.05	56.02	46.39	49.44	49.18	36.32	35.41	45.13	18.47	26.09	26.19	26.38	76.50	23.99	18.47	99999.00	11.58	20.42	24.80	23.92	18.75	21.74
17	41012	101394.91	68.70	46.30	50.46	38.69	32.47	43.75	29.24	27.31	39.85	24.39	25.93	29.62	32.08	71.11	22.84	18.25	12.89	99999.00	19.89	24.39	24.93	18.53	22.22
18	44081	1012722.10	73.86	51.48	53.24	43.77	45.31	46.58	32.17	31.27	43.24	32.86	15.58	10.67	39.22	73.79	6.73	4.82	20.47	19.79	99999.00	6.68	35.97	5.42	13.90
19	43014	1015389.27	76.99	54.87	56.60	47.30	50.40	50.03	37.41	36.51	48.46	36.26	5.48	11.20	42.00	77.00	7.35	6.48	23.09	17.00	99999.00	41.32	9.25	16.46	
20	41060	102238.72	116.15	73.47	75.19	65.77	68.46	68.52	59.60	54.68	65.67	38.28	42.00	41.34	38.43	95.76	40.06	33.62	23.20	23.70	35.27	41.07	99999.00	33.52	14.09
21	44033	101297.96	72.11	49.67	51.60	42.00	43.90	44.63	30.42	29.52	41.07	31.28	16.16	13.14	37.51	72.04	8.76	4.82	19.77	18.01	5.83	10.98	34.43	99999.00	11.93
22	44081	1015403.81	77.00	53.96	55.74	46.33	44.51	48.08	35.27	34.35	41.12	38.08	20.07	20.06	42.73	76.17	17.16	12.72	23.42	24.81	14.47	16.84	34.42	13.26	99999.00
23	280102	1015059.43	50.03	25.27	28.21	17.55	26.29	21.58	13.36	12.38	22.86	49.27	44.42	40.35	57.85	48.74	38.08	34.95	39.89	38.26	35.86	39.95	52.75	34.37	26.94
24	41012	1014931.41	82.59	49.77	55.54	46.10	50.38	48.88	37.17	36.26	48.00	19.08	27.17	27.04	27.81	76.02	42.68	18.82	10.78	10.38	18.82	26.41	18.31	20.95	
25	44054	1013833.44	79.81	51.37	53.19	43.72	45.21	46.52	32.12	31.22	42.77	33.06	19.59	16.82	39.21	73.74	12.01	8.48	20.47	19.71	9.33	13.72	36.13	7.73	13.64
26	21013	1017489.80	61.63	31.39	29.35	29.70	36.98	32.14	24.06	23.11	33.42	65.94	47.79	44.28	62.33	59.73	39.27	38.64	43.71	41.88	37.53	41.01	56.25	37.05	29.79
27	41012	101215.29	68.47	44.76	47.02	36.98	38.83	40.30	25.62	24.71	36.17	21.31	23.91	23.00	30.02	67.66	19.15	14.60	19.21	15.20	18.00	20.90	28.32	14.13	18.57
28	420305	1013372.71	67.67	46.47	49.60	37.80	35.36	42.87	27.31	26.34	36.69	26.10	24.68	24.24	31.86	70.38	21.81	16.71	13.05	9.92	19.58	23.17	26.20	16.94	20.72
29	44012	101249.38	71.06	49.69	50.49	41.03	43.90	44.63	30.42	29.50	38.71	29.80	14.70	14.08	36.37	71.01	10.10	7.84	17.62	16.60	7.86	11.98	32.72	6.96	13.28
30	41042	1020194.48	114.78	48.74	50.45	41.04	48.78	47.79	35.49	34.57	44.71	54.85	54.02	52.86	63.36	71.02	51.15	25.85	30.83	44.68	43.84	51.73	65.64	42.09	48.13
31	24012	101259.36	51.62	27.27	29.39	19.89	26.81	22.98	14.06	13.13	23.36	44.74	37.56	33.59	52.19	49.76	28.09	28.00	46.31	31.53	27.58	30.00	46.56	26.96	28.20
32	41041	101429.76	59.01	31.03	38.74	29.97	36.84	32.11	23.75	22.86	33.91	42.40	42.80	37.74	51.40	59.26	39.84	39.97	34.28	34.18	33.83	39.30	49.15	30.05	41.00
33	42162	1013140.25	68.87	45.55	47.81	37.78	39.68	41.11	26.46	25.55	37.01	30.47	25.84	24.73	38.76	68.43	20.27	15.52	20.53	17.80	16.93	21.49	33.74	15.35	20.47
34	44054	101591.89	68.87	45.55	47.81	37.78	39.68	41.11	26.46	25.55	37.01	30.47	25.84	24.73	38.76	68.43	20.27	15.52	20.53	17.80	16.93	21.49	33.74	15.35	20.47
35	44045	1017489.80	61.63	31.39	29.35	29.70	36.98	32.14	24.06	23.11	33.42	65.94	47.79	44.28	62.33	59.73	39.27	38.64	43.71	41.88	37.53	41.01	56.25	37.05	29.79
36	24011	1015389.93	81.72	44.41	46.15	36.57	38.29	39.38	26.39	25.95	27.59	53.43	40.44	39.44	55.84	66.88	35.47	31.84	37.82	35.43	32.85	37.27	61.40	30.66	37.62
37	22020	101596.73	53.72	29.12	31.24	21.96	28.57	24.44	18.13	16.34	25.70	51.46	40.06	37.96	69.22	51.67	33.54	32.09	39.47	37.49	30.34	33.35	50.35	26.74	34.05
38	21012	101789.82	86.58	49.33	51.06	41.53	43.16	44.31	31.69	30.66	32.47	58.27	45.31	44.31	60.81	71.76	40.34	36.82	42.38	40.29	37.72	44.16	62.27	37.53	42.93
39	44012	101297.96	68.61	39.29	41.01	31.96	33.13	34.33	21.78	20.87	29.31	34.43	21.53	18.91	40.76	61.62	14.49	12.55	22.05	19.88	12.20	16.20	35.75	11.85	14.99
40	42012	101177.56	63.81	29.80	42.22	30.84	34.23	35.51	20.90	19.89	31.45	31.84	23.14	22.31	37.72	62.88	17.44	13.37	18.02	16.9					

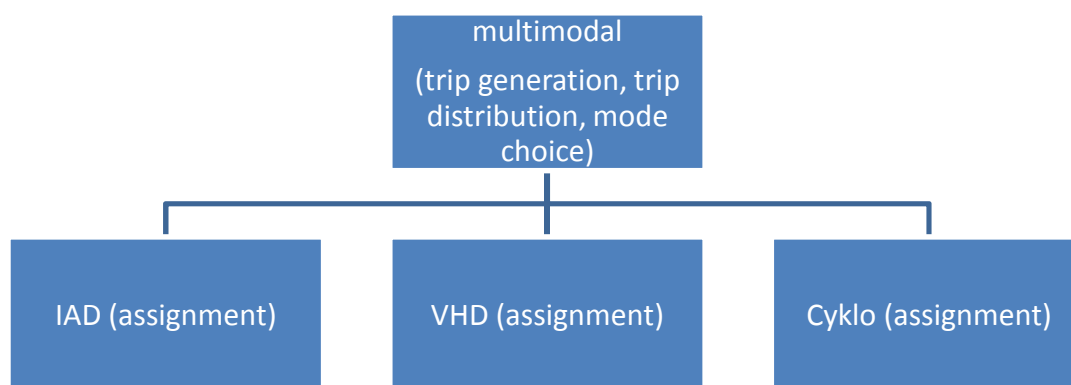
Konektory a ich vlastnosti

PuT x PrT, Absolute x Shared

3.5 Členenie dopravného modelu mesta Košice

Multimodálny model pre prvé tri kroky modelu

Pridelení na sieť v unimodálnych modeloch



Návrhy opatrení = modifikácie existujúceho stavu

Súbor modifikácií + procedúra výpočtu = Scenár

3.6 Funkcie PTV Visum Viewer

Možno upravovať sieť, ale nie je možné spustiť výpočet

Nemožno ukladať ani kopírovať cez schránku

Výstupy možné len cez tlačiareň

3.7 Úprava grafických parametrov

Menu Graphics / Edit graphic parameters...

3.8 Tvorba a úpravy seznamů

Menu Lists

3.9 Porovnávanie verzii

V scenároch

Comparison patterns