

NetVis

The Visualising Tool
Of
MATSIM

NetVis: Our recent Visualiser

- Easy to overload writing methods
- Not so easy implementing new drawing
- Could be called with one line of code
- Could be configured within config.xml
- Net could be exchanged
- Rather slow (some 10k vehs limit)

NetVis: Config Settings

- Enable snapshot writing in simulation module:

```
<module name="simulation">
  <!-- "start/endTime" of MobSim (00:00:00 == take earliest activity time/ run as long as active vehicles exist)
  <param name="startTime" value="00:00:00" />
  <param name="endTime" value="00:00:00" />

  <param name = "snapshotperiod" value = "00:01:00"/> <!-- 00:00:00 means NO snapshot writing -->
  <param name = "snapshotFormat" value = "netvis"/> <!-- netvis, googleearth, transims -->
</module>
```

- Edit netvis specific settings!

NetVis: Config Settings

- This is a possible config modules settings:

```
<module name="vis">
  <param name="logo" value = "(c) 2006 TUB-VSP"/>
  <param name="delay" value = "500"/>
  <param name="linkwidthfactor" value = "10"/>
  <param name="shownodelabels" value = "false"/>
  <param name="showlinklabels" value = "false"/>
  <param name="LinkSetRenderer" value="LinkSetRendererSpeedDiff"/>
  <param name="agentgif" value = "&CVSROOT;/&PROJBASE;/test/gunnar/AgentCar.gif"/>
</module>
```

NetVis: Config Settings

- The `LinkSetRenderer` tag could be:
 - `LinkSetRendererTRANSIMS`
 - `LinkSetRendererVolumes`
 - `LinkSetRendererLanes`
 - `LinkSetRendererStuck`
 - `LinkSetRendererRoutes`

OTFVis

The On-The-Fly Visualiser
Of
MATSIM

OTFVis: What?

- Multifunctional visualiser
- Client-Server Architecture
- Lightweight add-on...
- ... Server does not use any resources, when not connected to a client
- Can connect to any running matsim
- Can read from file
- Can replace gunnar netvis

OTFVis: How?

- Open GL based graphics for client
- Data representation and graphics are separate, could run data with non-GL renderer
- RMI based architecture
- RMI registry might run on a third computer
- SSH based connection
- Goal: Easily extendable

OTFVis: Why?

- Most useful for “Withinday”
- Presentation of information e.g. “COOPERS device”
- For debugging, controlling
- For data mining?
- Please, give input ;-)

OTFVis: Data

- Two different kind of data
 - Constant and dynamic data
 - Constant data needs to be transferred ONCE
 - Dynamic data OFTEN
- Two different way of data exchange
 - On startup (or as bulk data) e.g. all links Ids, lanes..
 - On demand e.g. the plan of an specific agent

OTFVis: Visualisation

- Agent Types represented by icons
- Agents internal state rep. by icons
- Velocity rep. by color
- State changes rep. by InfoText
- Link capacity rep. by color
- Link utilisation rep. by bar/color
- Link/Node/Agent Ids by Text
- Traffic Lights by ... Lights
- Traffic counts by text/bar/color

OTFVis: Problems!

- No AGENT representation in MATSIM
- PositionInfo must be matches against agent Id
- Is agent a Vehicle or a Person?
- Agent Id?
- What do we want to visualise?
- What might be interesting queries?

OTFVis: Representation

- Every Link/Node/Agent/whatever
 - Offers certain Data connectors with a type
 - E.g. Link might offer some TEXT/BAR places and a color
 - Agent might offer TEXT and BAR and COLOR and ICON
 - ...
- Data comes in from the sim
 - as either float, int or String
 - Has a real world name e.g. "PosX" or "Capacity"
- A Drawer has some input of String/float/int and some output of TEXT BAR COLOR ICON, etc.
- So input data gets connected via drawer to the visualised Net

OTFVis: Visual connector

