

A map of the Legmeer area in the Netherlands, showing a network of roads and waterways. A prominent yellow line highlights a specific route that starts from the top left, moves south, then east, then south again, and finally east towards the bottom right. The map includes labels for various locations: Legmeer, Zijdelwaard, Thamer-Dal, Urthoorn, De Kwakel, Noorddammerweg, Koningin-Maximale, Nes aan de Amstel, and Nessersluis. The text 'Modelit Mapviewer Component' is overlaid in the center of the map.

Modelit Mapviewer Component

Enable usage of Web Map Tile Services (WMTS) in Matlab GUI's

Example of final product

The screenshot displays the TRIP software interface. The main window shows a map of a road network with several sections highlighted in yellow. The interface includes a menu bar (Files, Tools, TRIP indicators, Resources, Map, Zoom, Help, Debug), a toolbar, and several panels on the left and bottom.

Layers Panel:

- NWB
 - Road sections: **Wegvakken**
 - Nodes
 - Hectopoints: no file specified
 - Speed limits: no file specified
 - Number of lanes: no file specified
- Modelled network
 - Road sections: **60217 links**

Day table overview Panel:

- Day report directory: browse
- Day report files (0) Aggregation: 15 min
- Daytables: No daytables available for selected timestep

Legend:

- Bidirectional NWB links
- Unidirectional NWB links
- Marked NWB link (ID=307319011)

NWB secities Panel:

NWB road sections											
WVK_ID	WBHR	WNR	POSWOL	BEGINKM	EINDKM	DVK	BAANSUB...	ADMRICH...	RJR	RPE	WLTR
307319011	P	N227	R	0.779	0.523	HR	T	T	R	R	
321179038	R	050	L	97.12	97.175	c	AFR	H	T	L	R
421518001	P	N380	M	20.443	20.584		HR	H			R
514504006	P	N379	M	5.684	5.874		HR	H			R
518500004	P	N379	R	8.461	8.473	a	MRB	H	H	R	R

Model!T



Layers

NWB

Road sections: **Wegvakken**

Nodes

Hectopoints: **no file specified**

Speed limits: **no file specified**

Number of lanes: **no file specified**

Modelled network

Road sections: **60217 links**

Day table overview

Day report directory

h:\TripRoot\Werk\day15\

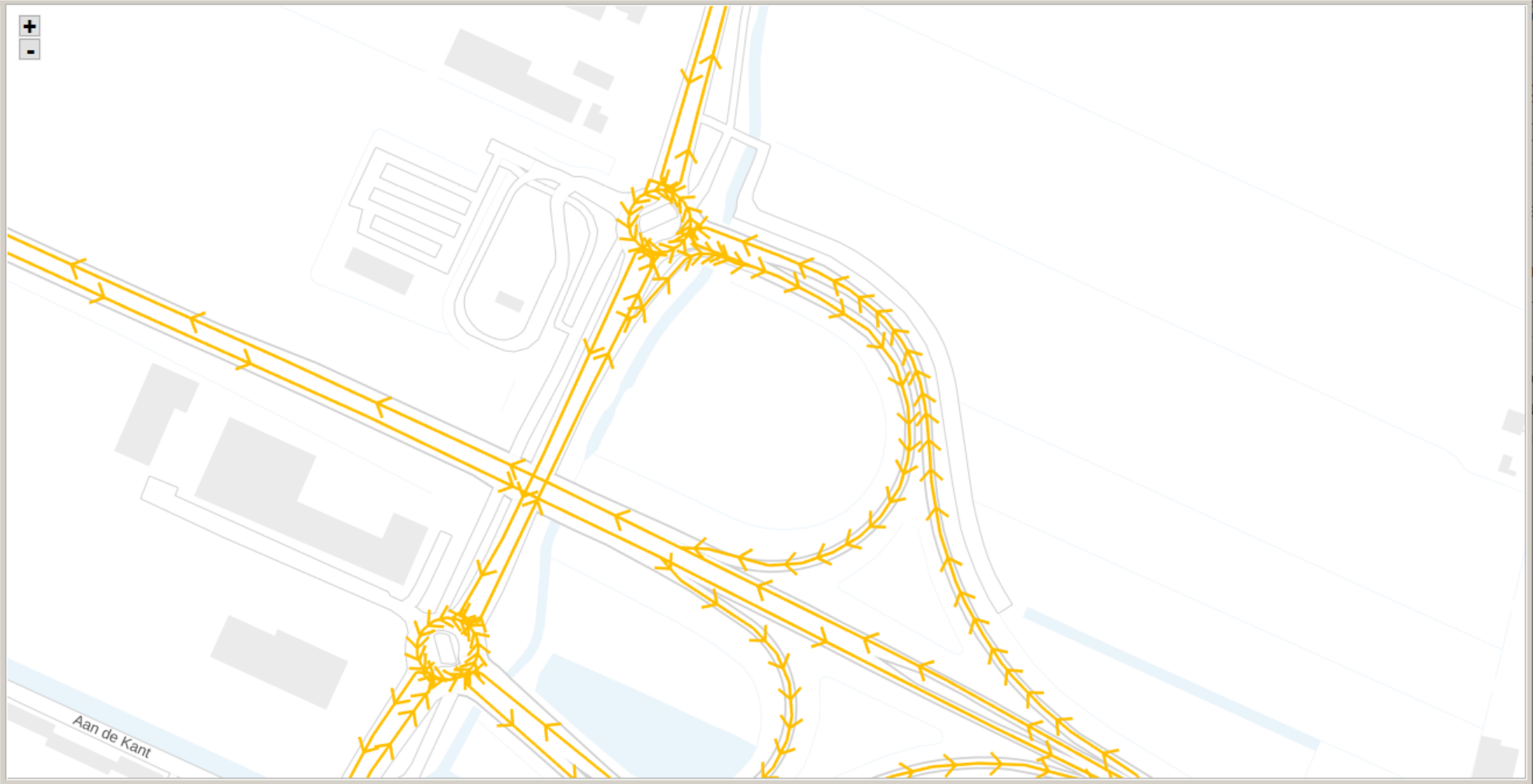
Day report files (0) Aggregation: 15 min

Daytables

No daytables available for selected timestep

Legend

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NWB secties

NWB road sections

WVK_ID	WBHR	WNR	POSWOL	BEGINKM	EINDKM	DVK	BAANSUBSRT	ADMRICHT...	RIJR	RPE	WLTR	STT_NAAM	WPSNAAM...	WVK_BEGDAT
307319011	P	N227	R	0.779	0.523		HR	T	T	R	R	Doomseweg	LEUSDEN	20151201
321179038	R	050	L	97.12	97.175	c	AFR	H	T	L	R	IND.EKKER...	SON EN BR...	20170301
421518001	P	N380	M	20.443	20.584		HR	H			R	t West	DONKERBR...	20170301
514504006	P	N379	M	5.684	5.874		HR	H			R	DRENTSE M...	NIEUW-BUI...	20170601
518500004	P	N379	R	8.461	8.473	a	MRB	H	H	R	R	DRENTSE M...	1E EXLOER...	20170601
322195031	R	050	R	105.715	106.568		HR	H	H	R	R	RYKSWG	SINT-OEDE...	20170101

Objective

- Create object that behaves like Matlab axes but displays map sourced by Web Map Tile Service (WMTS) on the background
- Support public WMTS resources, like Open Street Map and PDOK
- Use native matlab commands to overlay application specific text, (2D) lines, points and patches on map

Reason for developing this component

- Many legacy Matlab GUI's display geographical data but lack a true zoomable background map for these data;
- Usage of “true” maps provides extra feedback that helps users to quickly check and interpret geographical data;
- A variety of public WMTS's is available. These provide relevant contextual information for many disciplines;
- WMTS tile services offer great speed and allow local caching;
- Creating a zoomable map that is fast and robust on a one-off basis is complex and labour intensive.
- With a reusable WMTS component map functionality can be added to new or existing Matlab GUI's with minimal coding changes

Features

- Supports WGS coördinaties (EPSG:3857) and carthesian coördinate systems (like EPSG:28992)
- Interactive Pan with mouse or Zoom with +/-, area selection by mouse or mousewheel
- Multithreaded download of tiles from WMTS
- Automatic tile-caching

Typical usage

- Create mapView object:

```
mapviewer = modelit.mapviewer.MapViewer(HWIN, 'units', 'normalized', ...  
    'position', [0 0 1 1], ...  
    'tilesource', modelit.mapviewer.OSMTileSource);
```

- Create line, patch or text objects (specify WGS coordinates if tilesource uses WGS)

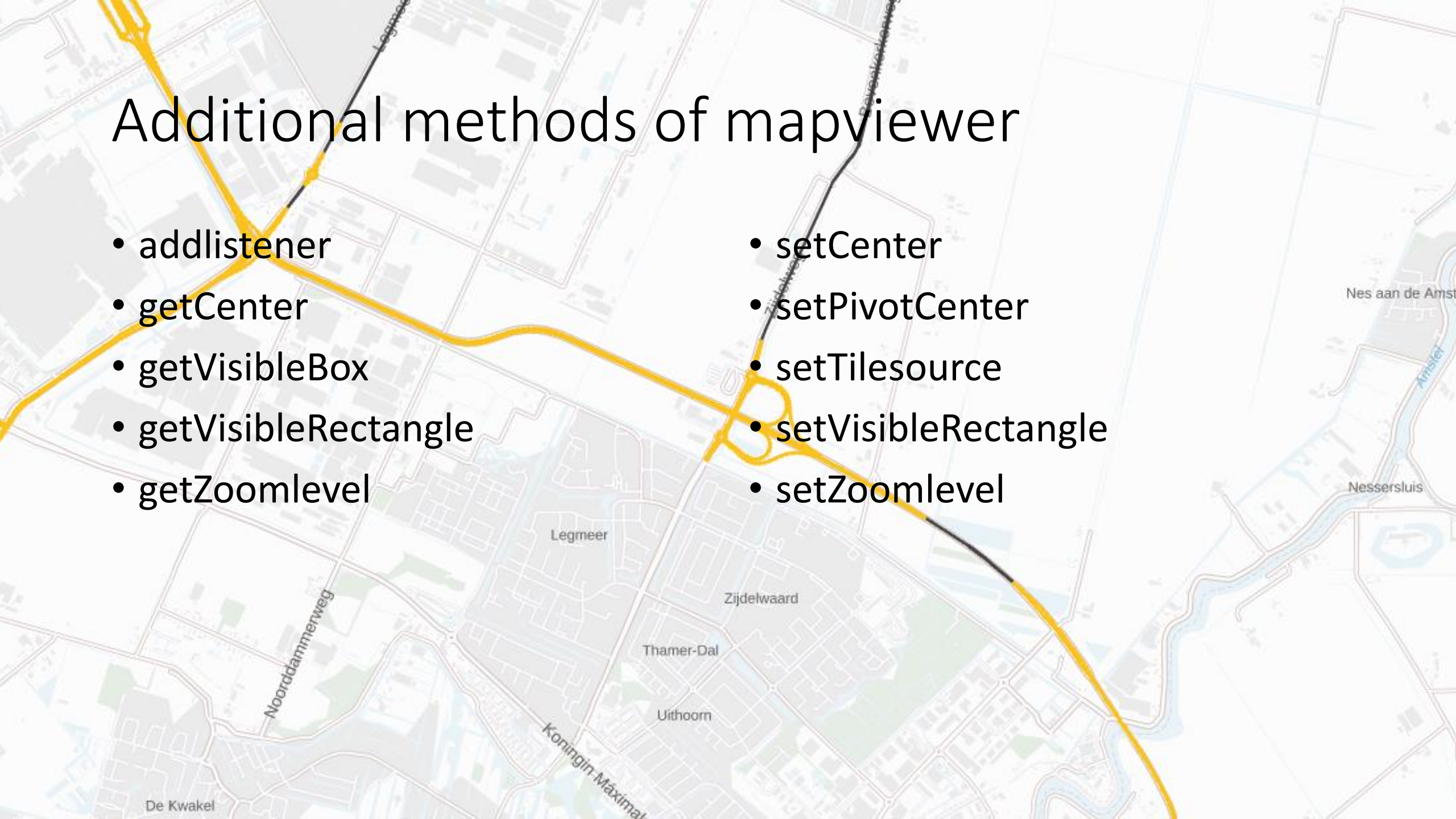
```
lonlat=RD2WGS([xx(:), yy(:)]);  
line(lonlat(:,1),lonlat(:,2),'parent',mapviewer);
```

- Set required initial zoomlevel and center and map-center:

```
setZoomlevel(mapviewer, 3);  
setCenter(mapviewer, mean(lonlat(:,1)), mean(lonlat(:,2)));
```

Additional methods of mapviewer

- addlistener
- getCenter
- getVisibleBox
- getVisibleRectangle
- getZoomlevel
- setCenter
- setPivotCenter
- setTilesource
- setVisibleRectangle
- setZoomlevel



Collaborate?

- Drop an email to [zijpp at modelit dot nl](mailto:zijpp@modelit.nl)

