Navit

Open Source Navigation using OpenStreetMap

Manuel Hohmann

Navit Development Team

4 August 2013

Outline

Follow the talk for the next 20 minutes.

Outline

What is Navit?

- Multi-platform offline routing software.
- Open source.
- Usage of free OpenStreetMap data.

What is Navit?

- Multi-platform offline routing software.
- Open source.
- Usage of free OpenStreetMap data.
- Advantages for end users:
  - Low system requirements (tested on 64MB RAM, 400MHz ARMv5).
  - Many supported platforms and devices.
  - Highly customizable:
    - map layout
    - on-screen display
    - routing profiles
  - Several text-to-speech backends.
  - Translations in more than 50 languages.

What is Navit?

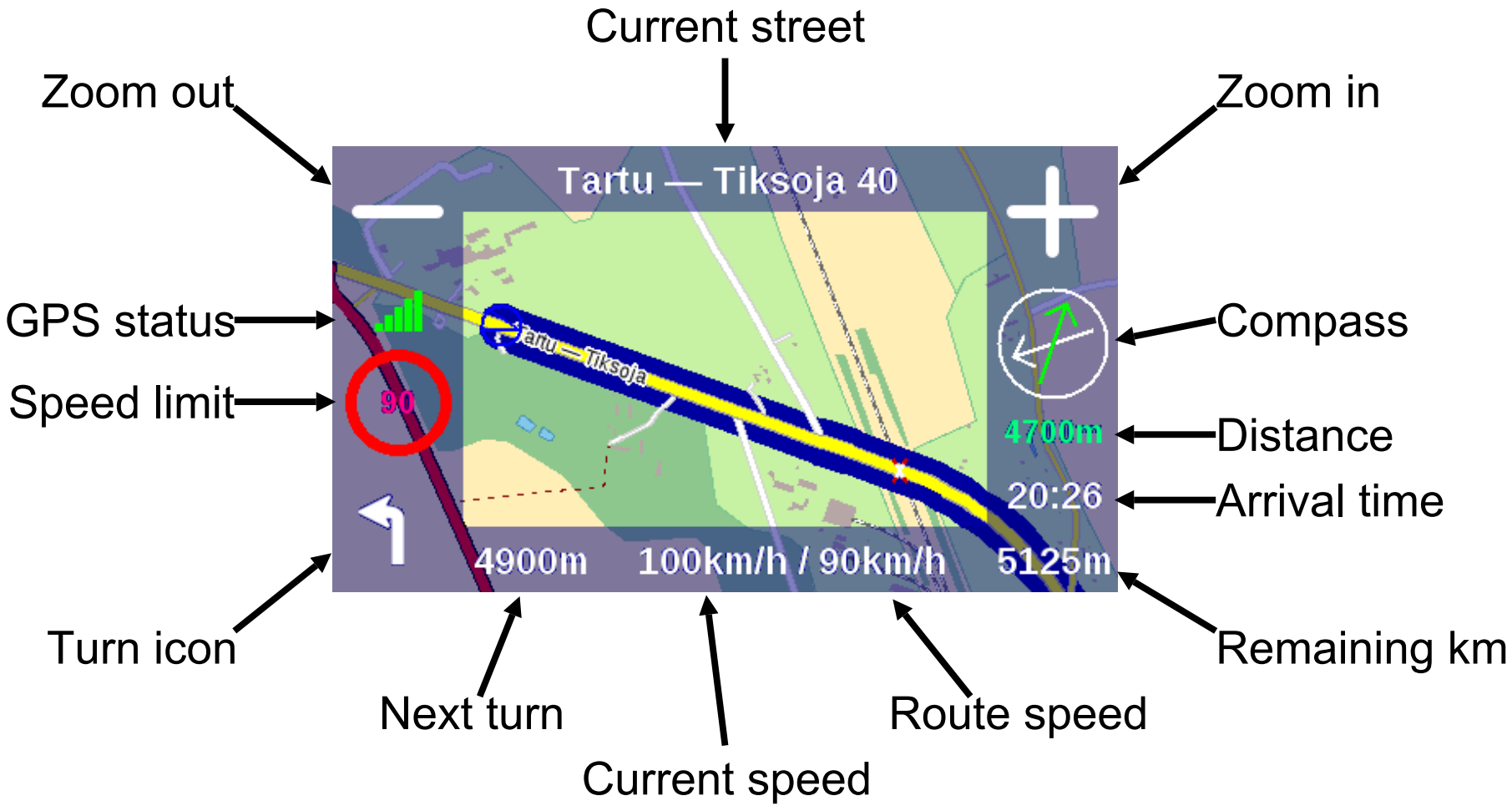
- Multi-platform offline routing software.
- Open source.
- Usage of free OpenStreetMap data.
- Advantages for end users:
  - Low system requirements (tested on 64MB RAM, 400MHz ARMv5).
  - Many supported platforms and devices.
  - Highly customizable:
    - map layout
    - on-screen display
    - routing profiles
  - Several text-to-speech backends.
  - Translations in more than 50 languages.
- Advantages for developers:
  - Interfaces for custom applications (Python, DBUS. . .).
  - Easily portable to new platforms and devices.
  - Extensible using plugin architecture.

Supported platforms

- Laptop:
  - Debian
  - Ubuntu
  - Windows
- Handheld:
  - Android
  - iOS
  - Maemo
  - WebOS
  - WinCE
- Embedded:
  - Ångström
  - ArchLinux
  - TomTom

Outline

On the road


Current street
Zoom out
Zoom in
Tartu — Tiksoja 40
GPS status
Compass
Speed limit
90
4700m
Distance
20:26
Arrival time
4900m
100km/h / 90km/h
5125m
Turn icon
Remaining km
Next turn
Route speed
Current speed

Find points of interest

- Main menu - search at map location or GPS position:

Find points of interest

- Main menu - search at map location or GPS position:

- POI search with categories:

Find an address

- Enter the town:

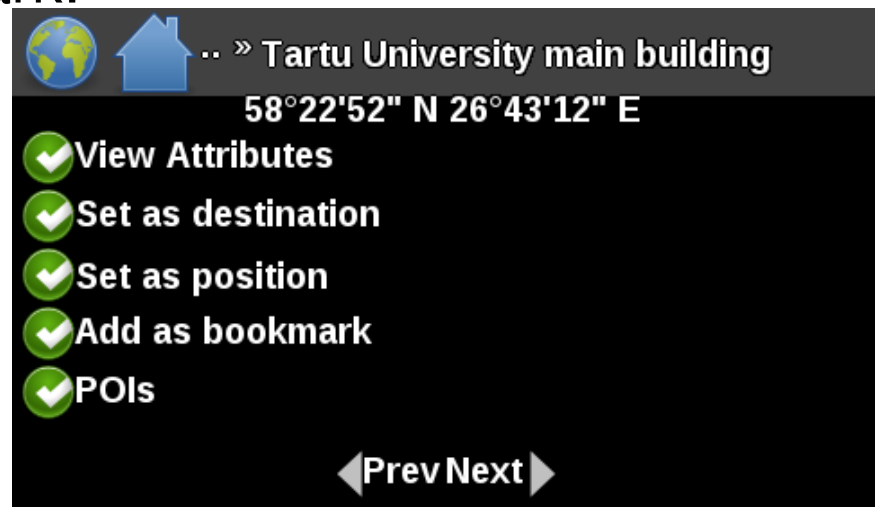
Find an address

- Enter the town:

- Enter the street:

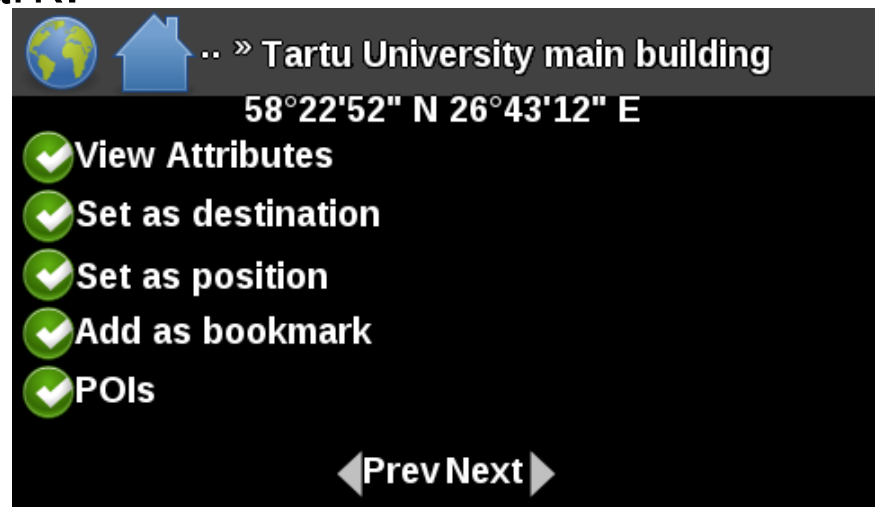
Work with bookmarks

- Add a bookmark:

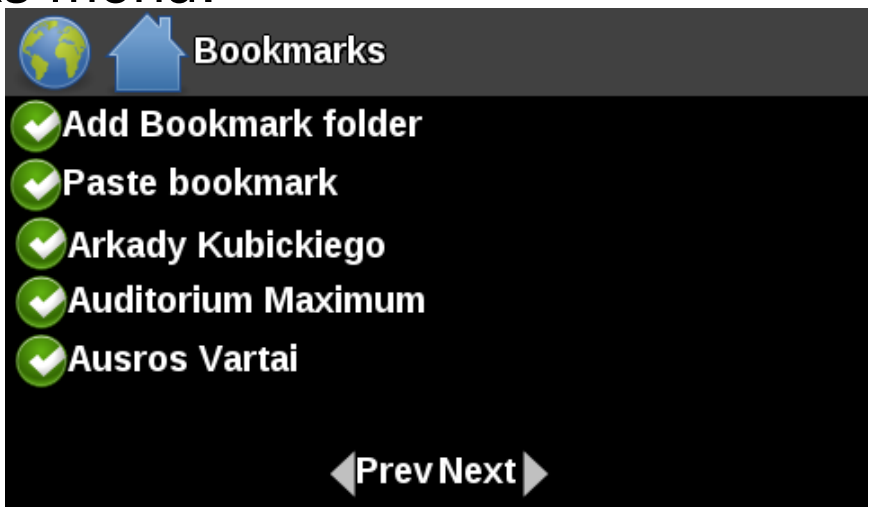


Work with bookmarks

- Add a bookmark:

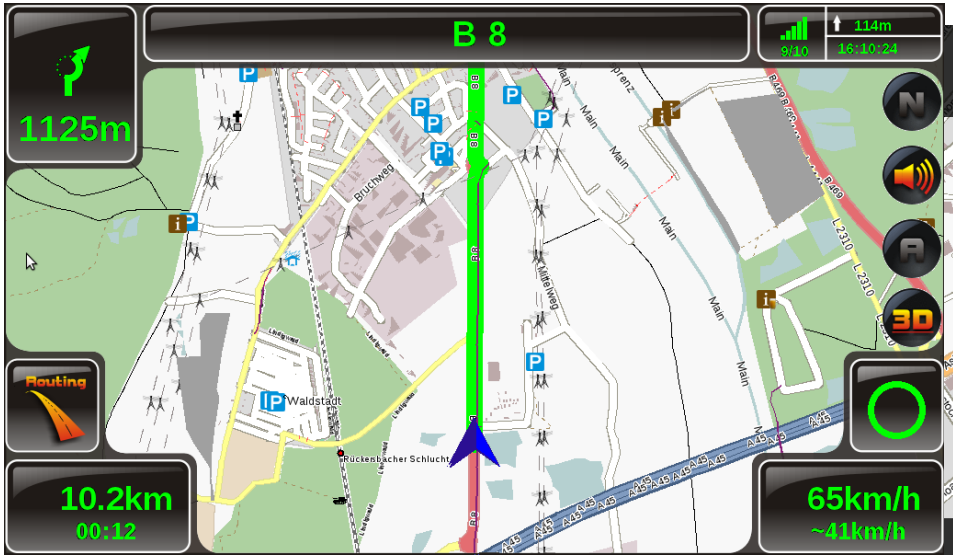


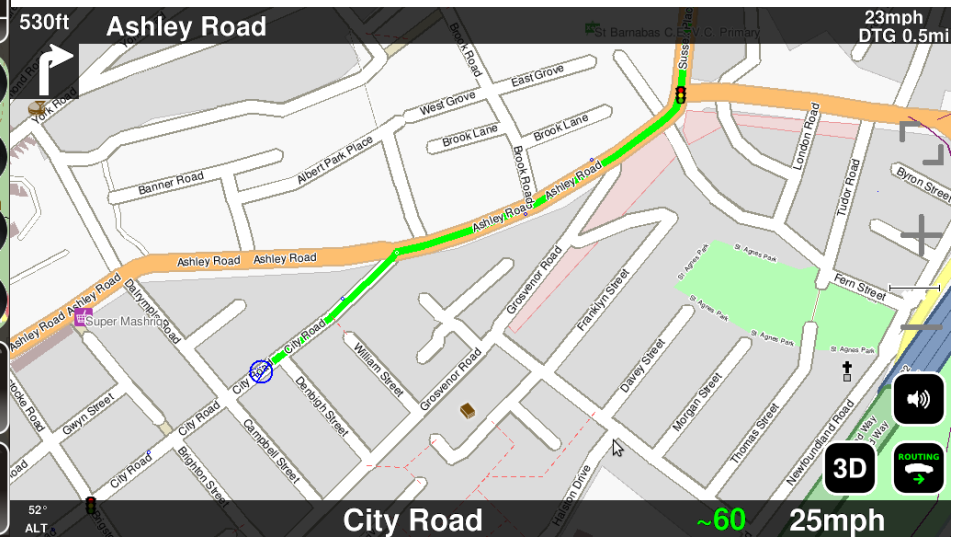
- The bookmarks menu:

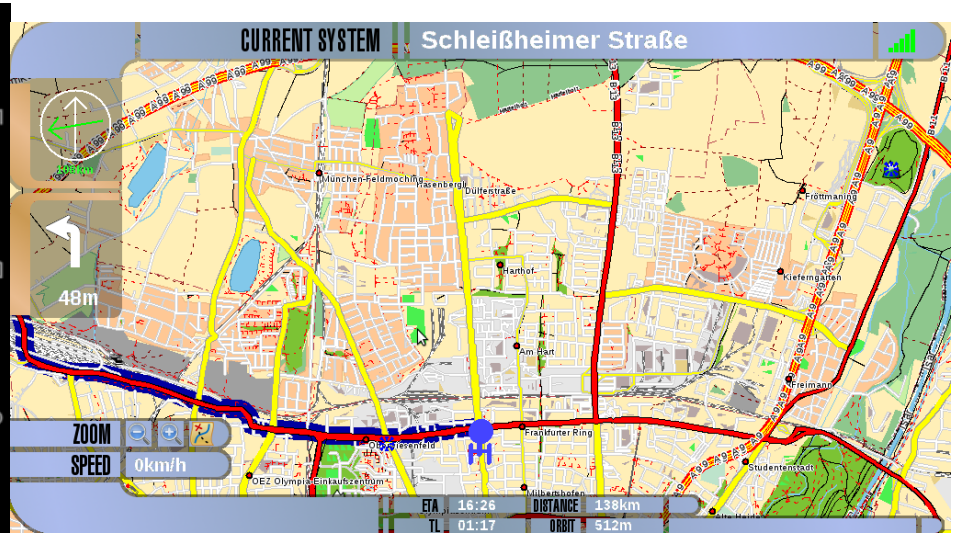


Outline

Custom OSD layouts

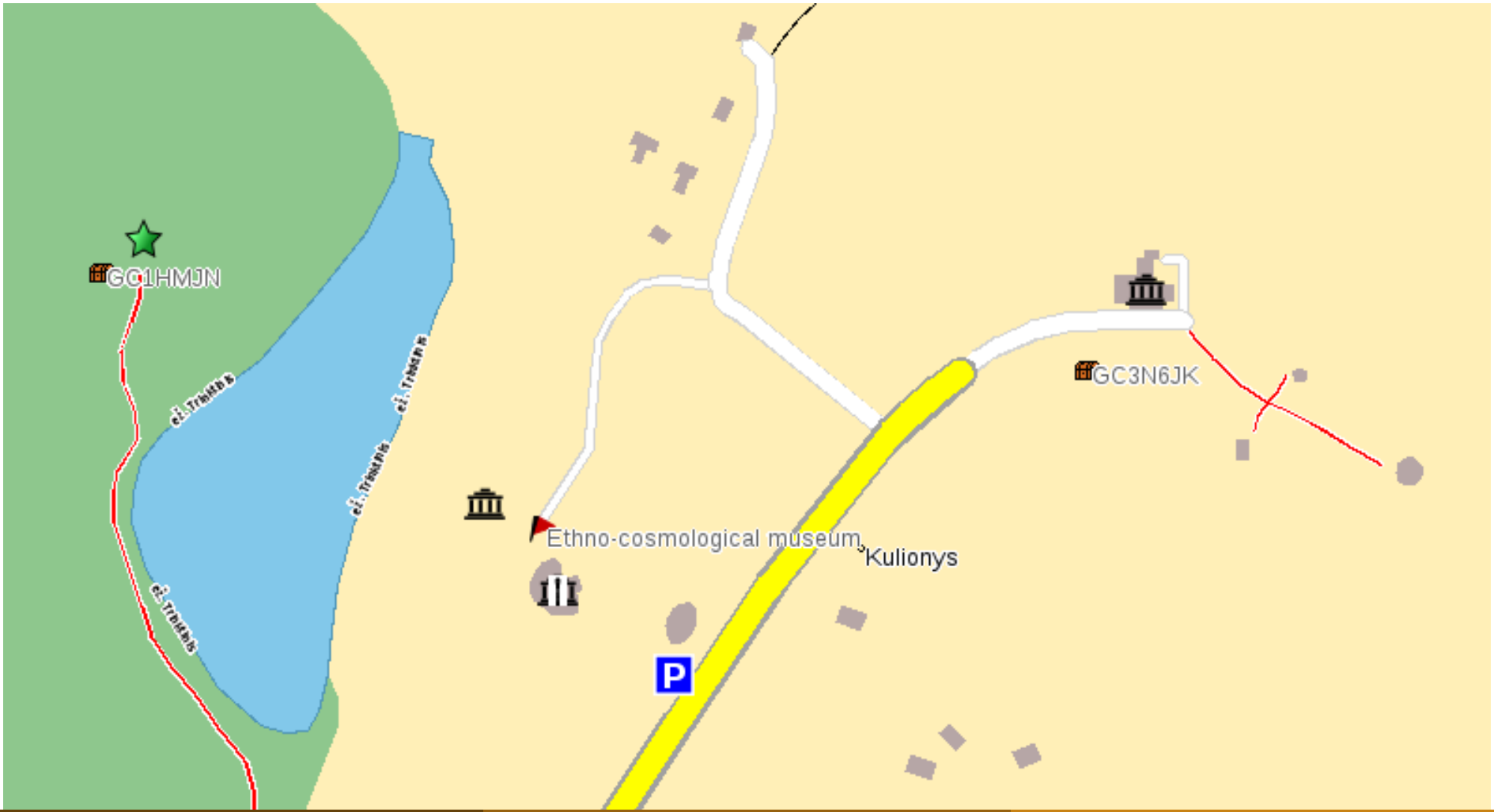






Custom POIs

- Create / download some custom POI icons.
- Create a text file with POI names, coordinates and icon names.
- Add the text file as a map to Navit.



Modify routing behavior

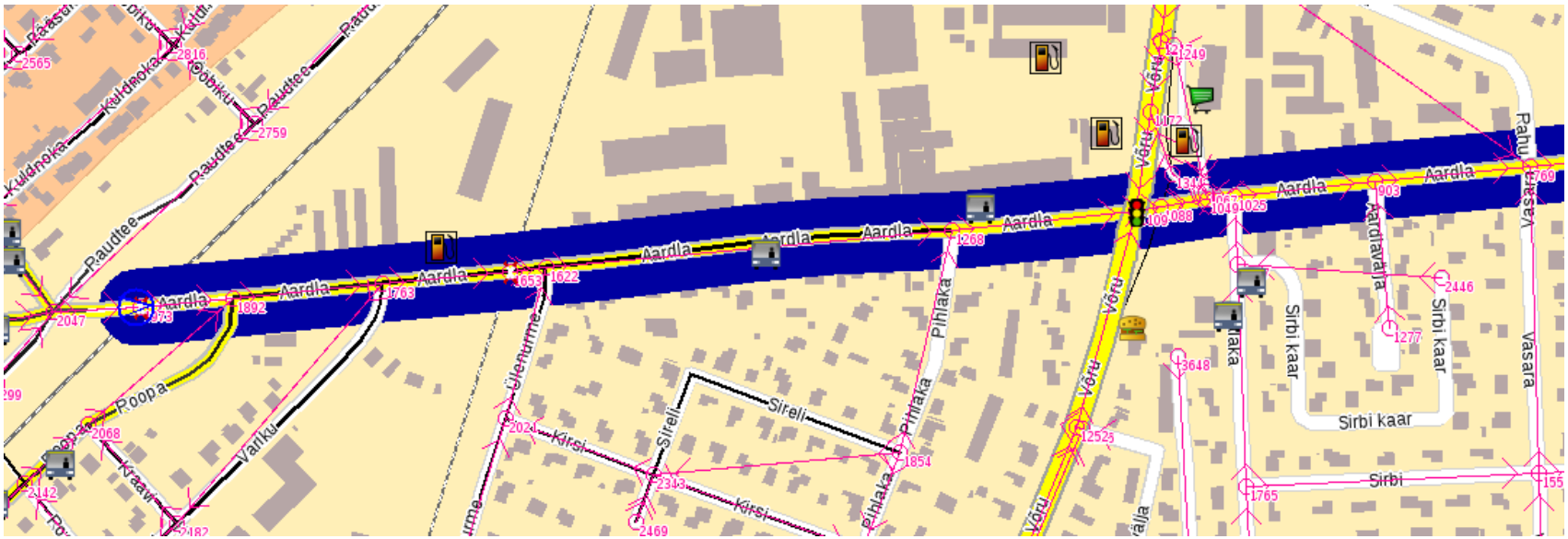
- Routes are calculated using Dijkstra algorithm.
- Route preferences defined by customizable routing profiles: car, truck, bike, pedestrian, horse are already included.

Modify routing behavior

- Routes are calculated using Dijkstra algorithm.
- Route preferences defined by customizable routing profiles: car, truck, bike, pedestrian, horse are already included.
- Customizable large-distance speedup mode:
  - Use smaller roads only around start and destination.
  - Consider only major roads between those areas.
  - Better performance on embedded devices.

Modify routing behavior

- Routes are calculated using Dijkstra algorithm.
- Route preferences defined by customizable routing profiles: car, truck, bike, pedestrian, horse are already included.
- Customizable large-distance speedup mode:
  - Use smaller roads only around start and destination.
  - Consider only major roads between those areas.
  - Better performance on embedded devices.
- Routing graph can be displayed on the map:



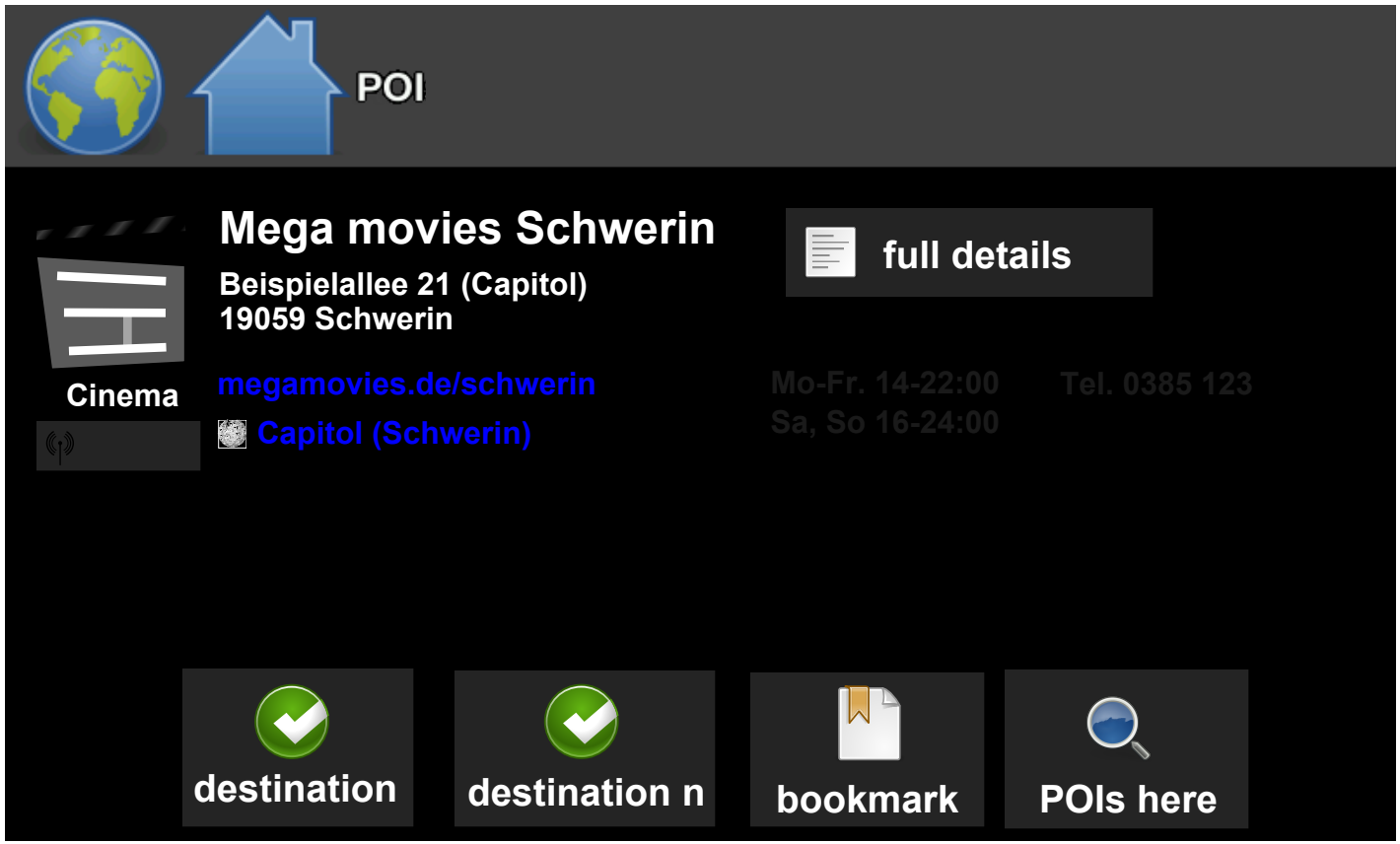
Outline

Extended POI search

- Filter POIs by interest groups.
- Improved search criteria and POI categories.
- Intuitive usage of search functions.

Extended POI infos

- Structured view for better overview
- Additional infos - address, website, opening hours...
- Customizable info page layout.



New platforms

- Raspberry PI:
  - Small and cheap development platform with ARM CPU.
  - Several Linux distributions.
  - Working build instructions for Raspbian.

New platforms

- Raspberry PI:
  - Small and cheap development platform with ARM CPU.
  - Several Linux distributions.
  - Working build instructions for Raspbian.
- Ubuntu Touch
  - Currently targets Google Nexus, more devices to come.
  - Usage of MIR instead of X11.
  - Graphics output using Qt5 framework.
  - Improvement of Navit's Qt GUI.
  - Position information from QtLocation API.

Outline

Summary

- Open source navigation software using OpenStreetMap data.
- Ported to many devices.
- Flexible, customizable and extensible.
- New designs and ports under construction.

You have reached your destination in one slide.

Contacts

Homepage:	www.navit-project.org
Forum:	forum.navit-project.org
Wiki:	wiki.navit-project.org
Bugtracker:	trac.navit-project.org
IRC:	#navit on freenode.net
Facebook:	www.facebook.com/NavitProject
Twitter:	www.twitter.com/NavitProject
LinkedIn:	www.linkedin.com/companies/navit-project

You have reached your destination now.