

Navit

Open Source Navigation using OpenStreetMap

Manuel Hohmann

Navit Development Team



4 August 2013

Outline

- 1 Introduction
- 2 Basic features
- 3 Advanced usage
- 4 The future of Navit
- 5 Conclusion

Follow the talk for the next 20 minutes.

Outline

- 1 Introduction
- 2 Basic features
- 3 Advanced usage
- 4 The future of Navit
- 5 Conclusion

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:

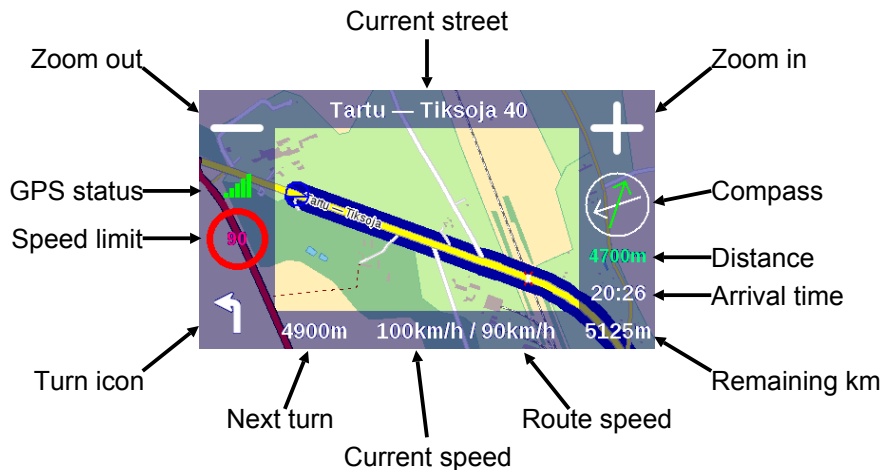
- Ångström
- ArchLinux
- TomTom



Outline

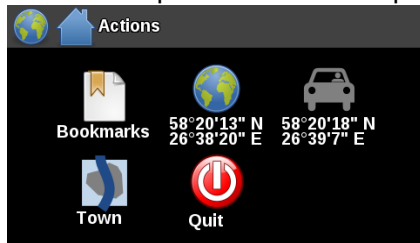
- 1 Introduction
- 2 Basic features
- 3 Advanced usage
- 4 The future of Navit
- 5 Conclusion

On the road



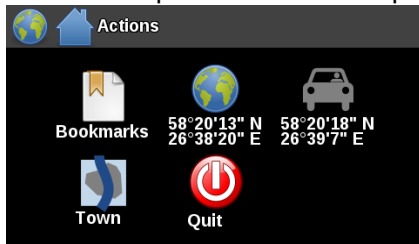
Find points of interest

- 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:

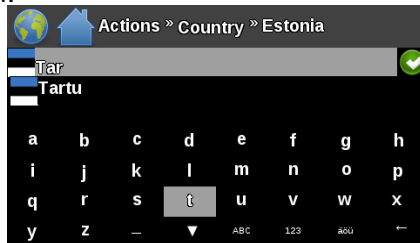


The screenshot shows the Navit application's address entry screen. At the top, there is a navigation bar with a globe icon, a home icon, and the text "Actions » Country » Estonia". Below this is a search bar containing the text "Tar". To the right of the search bar is a green checkmark icon. Below the search bar, the word "Tartu" is displayed. At the bottom of the screen is a virtual keyboard with letters arranged in a grid. The letter 't' is highlighted. Below the keyboard are icons for switching between ABC, 123, and a6U modes, and a back arrow.

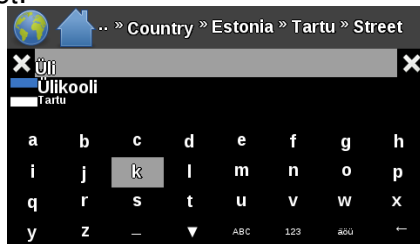
a	b	c	d	e	f	g	h
i	j	k	l	m	n	o	p
q	r	s	t	u	v	w	x
y	z	—	▼	ABC	123	a6U	←

Find an address

- Enter the town:

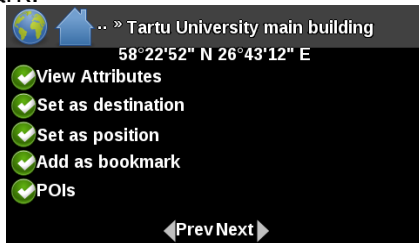


- Enter the street:



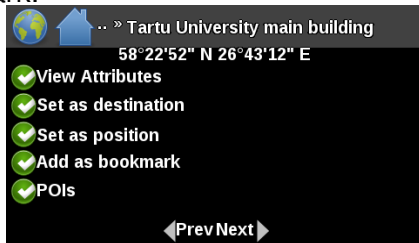
Work with bookmarks

- Add a bookmark:

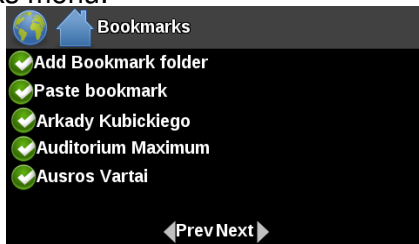


Work with bookmarks

- Add a bookmark:



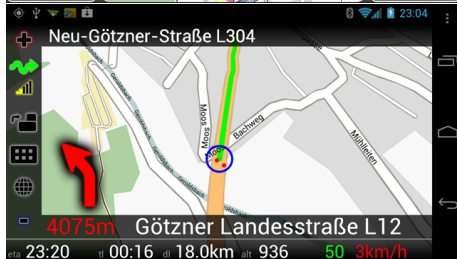
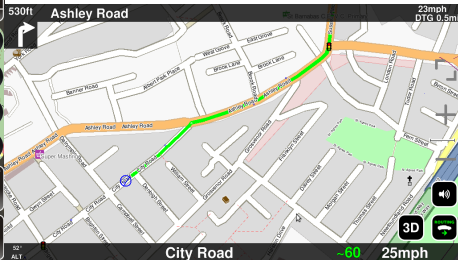
- The bookmarks menu:



Outline

- 1 Introduction
- 2 Basic features
- 3 Advanced usage**
- 4 The future of Navit
- 5 Conclusion

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

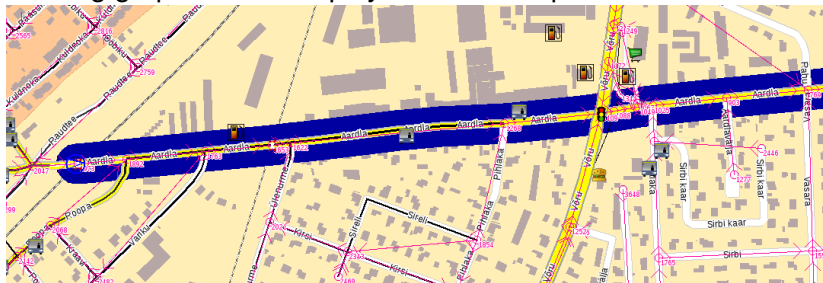
- Routes are calculated using Dijkstra algorithm.
- Route preferences defined by customizable routing profiles: car, truck, bike, pedestrian, horse are already included.

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:

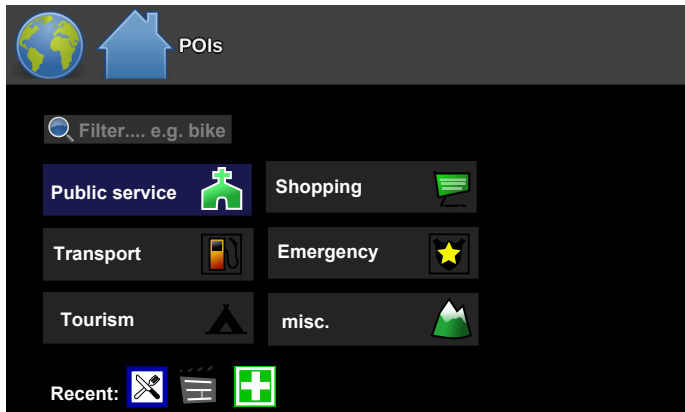


Outline

- 1 Introduction
- 2 Basic features
- 3 Advanced usage
- 4 The future of Navit**
- 5 Conclusion

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.

The screenshot shows a user interface for a Point of Interest (POI) page. At the top, there are icons for a globe and a house, followed by the text 'POI:'. Below this, the main content area is divided into sections. On the left, there is a clapperboard icon, the text 'Cinema', and a small icon of a person. The main title is 'Mega movies Schwerin'. Below the title, the address 'Beispielallee 21 (Capitol) 19059 Schwerin' is listed. To the right of the address, there is a 'full details' button. Below the address, the website 'megamovies.de/schwerin' is shown in blue text. To the right of the website, the opening hours are listed: 'Mo-Fr. 14-22:00' and 'Sa, So 16-24:00'. Below the opening hours, the phone number 'Tel. 0385 123' is shown. At the bottom of the page, there are four buttons: 'destination' (with a green checkmark icon), 'destination n' (with a green checkmark icon), 'bookmark' (with a bookmark icon), and 'POIs here' (with a magnifying glass icon).

POI:

Mega movies Schwerin

Beispielallee 21 (Capitol)
19059 Schwerin

full details

Cinema megamovies.de/schwerin
Mo-Fr. 14-22:00 Tel. 0385 123
Sa, So 16-24:00

destination **destination n** **bookmark** **POIs here**

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

- 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

- 1 Introduction
- 2 Basic features
- 3 Advanced usage
- 4 The future of Navit
- 5 Conclusion**

- 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. 