

OpenStreetMap and Android: An Overview

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Agenda

- Short introduction to OpenStreetMap (OSM)
- What does OSM provide?
- OSM on Android as a User and Mapper
- OSM on Android as a developer
 - Don't expect many technical details here



Introduction

- OpenStreetMap = a collaborative project to create a free map of the world
 - free = free beer & freedom
- openstreetmap.org (.de is a bit different)
- Wiki-style: everybody can edit the map
 - you need an account
- License: Creative Commons Attribution-Share Alike 2.0
 - may change, see http://wiki.openstreetmap.org/wiki/Open_Database_License



Example Map

OpenStreetMap

Die freie Wiki-Weltkarte

OpenStreetMap ist eine freie, editierbare Karte der gesamten Welt, die von Menschen wie dir erstellt wird.

OpenStreetMap ermöglicht es geographische Daten gemeinschaftlich von überall auf der Welt anzuschauen und zu bearbeiten.

Das Hosting der OpenStreetMap-Server wird freundlicherweise von UCL VR Centre und bytemark unterstützt.

Hilfe & Wiki
News-Blog
Shop
Legende

Suchen [Wo bin ich?](#)

Beispiele: „München“, „Heinestraße, Würzburg“, „CB2 5AQ“, oder „post offices near Lünen“ mehr Beispiele ...

[Spenden](#)

Karte Bearbeiten Chronik Export GPS-Tracks Blogs

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What does OSM provide?

- **Data** (nodes, ways)
- **More data** (street names, types, ..., any attribute)
- **Even more data** (house numbers, POIs, ...)
 - bad coverage for house numbers, though
- **Apps, GUI etc are not directly provided by OSM, but there's a large OSM ecosystem**
 - example: OpenLayers integrates OSM maps into web pages



Data provided by OSM

- Maps
 - as tiles = small PNG images for 19 zoom levels



- Get it via HTTP GET from <http://b.tile.openstreetmap.org/17/70376/43023.png>
lat/lon to tile number formula:
http://wiki.openstreetmap.org/wiki/Slippy_map_tilenames



Data provided by OSM

- Maps
 - as XML data
 - World dump: planet-latest.osm.bz2 = 7.3 GB
 - there are diffs that are much smaller
 - See <http://wiki.openstreetmap.org/wiki/Planet.osm>
 - Berlin: berlin.osm.bz2 = 11 MB (~127MB uncompressed)
 - See <http://download.geofabrik.de/osm/europe/germany/>
 - via HTTP API
 - Get the map data (XML) for a given area
 - Use PUT requests to upload changes
 - http://wiki.openstreetmap.org/wiki/API_v0.6



Data provided by OSM

- Search
 - <http://wiki.openstreetmap.org/wiki/Search>
 - Warning: search on openstreetmap.org is currently slow, flaky, and not up-to-date
 - http://wiki.openstreetmap.org/index.php/Name_finder and <http://gazetteer.openstreetmap.org/namefinder/>
 - Please don't judge OSM coverage using this search!
 - Alternatives:
 - Use <http://www.openrouteservice.org> (access on request)
 - Cloudmade (API key required)
 - Wait for OSM search to be fixed
 - Implement your own, based on the dump data



Data provided by OSM

- Navigation?
 - Not provided by OSM, but see <http://www.openrouteservice.org>
 - You can use OSM for implementing navigation / route planning because you have all the data, not just the tiles



OSM on Android

- Feature matrix of Android software is at <http://wiki.openstreetmap.org/wiki/Android>
- Vespucci
 - Editor, Open Source
 - Not usable enough for mapping larger areas
 - <http://code.google.com/p/osmeditor4android/>



OSM on Android

- MapDroyd
 - Vector-based viewer
 - Rendering slower than tile-based viewers
 - Works Offline
 - Free, but not Open Source
 - <http://www.mapdroyd.com>



OSM on Android

- AndNav2
 - Server-side navigation
 - Text-to-Speech
 - Accessibility: “what's reachable in 10 minutes?”
 - Free, not Open Source
 - Shows ads
 - Upload GPS traces to OSM
 - Based on osmdroid
 - <http://www.andnav.org>



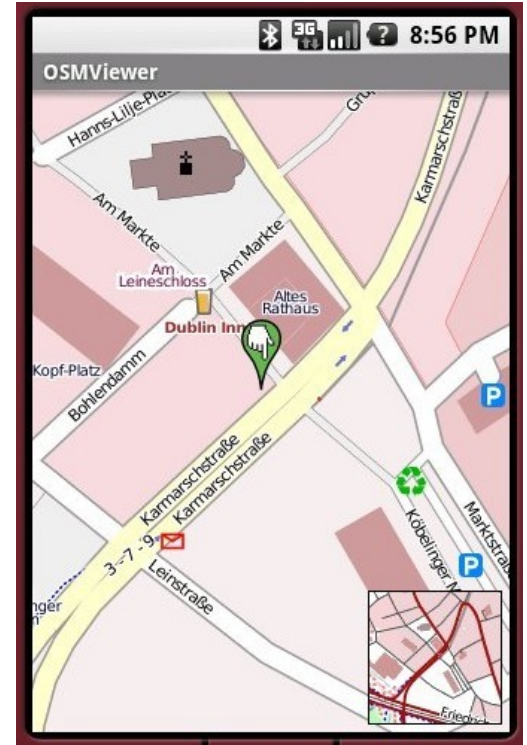
OSM on Android

- Conclusion:
 - Most apps still feel a bit unfinished
 - Mapping larger areas will probably still happen on the desktop computer



OSM/Android for Developers

- osmdroid
 - Tile-based viewer
 - Open Source (LGPL)
 - Base for many other apps (AndNav, ...), easy integration
 - See <http://code.google.com/p/osmdroid/>
 - See org.andnav.osm.samples package for examples on how to use it in your programs
 - Very recent new feature: smooth zooming



- Thanks!
- Get these slides at <http://www.danielnaber.de/publications/>

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