OSM in public transport

case Helsinki, Finland

State of the Map 2018
Markku Huotari, Helsinki Region Transport
What does HSL do?

- Is responsible for the preparation of the Helsinki Region Transport System Plan (HLJ).
- Plans and organizes public transport in the region and work to improve its operating conditions.
- Approves the public transport fare and ticketing system as well as public transport fares.
- Is responsible for public transport marketing and passenger information.
- Procures bus, tram, Metro, ferry and commuter train services.
- Organizes ticket sales and is responsible for ticket inspections.
Cooperation area of HSL

9 municipalities: Helsinki, Espoo, Kauniainen, Vantaa, Kerava, Kirkkonummi, Sipoo, from 1 Jan 2018 Tuusula and Siuntio

According to its charter, HSL may expand to cover all 14 municipalities in the region.
Map production renewal

- Consistent visual look and feel for all our maps
  - Digital and printed maps

- Systematic and effective processes
  - Reduce manual work
  - Ability to react on changes
  - Use of OSM as main data source
  - Map products based on customer needs

- Renew public transport register’s map interface as well
  - Out of date technology and lacking map functionalities
HSL’s maps 2018

- One map style
- Several zooming levels
- Source data as vector layers
HSL Map Style

- Produced with MapBox
  - https://github.com/HSLdevcom/hsl-map-style
  - Based on OSM Bright Template
  - Three language versions: finnish, swedish & finnish+swedish

- API available (https://digitransit.fi/en/developers/apis/3-map-api/)
  - Raster background
  - MapBox vector tiles for "HSL layers"
    - stops, terminals, vending points, park&ride-sites and city bike stations (+ fare zones)
Journey planner (reittiopas.fi)

- GTFS
- OSM
- PRC addresses
- NLS names
- admin. areas
- SIRI
- HSL journey planner
  - matka.fi
  - Waltti
    - Hämeenlinna, Joensuu, Jyväskylä, Kotka, Kouvola, Kuopio, Lahti, Lappeenranta, Oulu, Rovaniemi & Turku
- OTP - API & routing engine
  - github.com/HSLdevcom
  - https://digitransit.fi/

- Map tiles
- Geocoding
- Routing (x 3)
- Realtime data

Daily databuild
Yearly databuild

HSL journey planner
Map Generator

- Web based tool for generating maps
- Output format png (+pgw)
- Source code in github
- Different use cases
  - Route Maps
  - Traffic bulletins
  - etc.

[github.com/HSLdevcom]
hsl-map-generator-ui
hsl-map-generator-server
Traffic bulletins
Stop Poster Generator

github.com/HSLdevcom
hsl-map-publisher-ui
hsl-map-publisher

Stop posters (A0)

Timetables (A4)
Working with the community

- OSM-wiki
  - Explicit permission to import HSL CCBY40 data to OSM – coming up!

- Mapathons & demos
  - Cooperation with HOT-OSM Finland & Digitransit stakeholders
  - Different mapping themes at various events
  - Simple examples (eg. adding buildings, POIs, stops & roads/paths)
Editing OSM

- Importing
  - Swedish road names import:

- Handling and monitoring changes
  - Editing OSM ourselves
  - Using [OSM-notes](https://wiki.openstreetmap.org/wiki/OSM_notes) to crowdsource mapping tasks
  - Piloting [Mapillary](https://www.mapillary.com) to support OSM-editing
  - Monitoring changes with **analytical difference engine** – maybe [OSMCha](https://wiki.openstreetmap.org/wiki/OSMCha)?
Validation

- Use ready to use tools like Osmose & KeepRight

- Compare OSM with official (open) data, eg.
  - Public transport data @ HSL
  - Topographic data @ National Land Survey
  - Digiroad @ Finnish Transport Agency
  - Address data @ Population Register Centre
  - Service Map @ Helsinki Region municipalities

- Provide the results as open data to the community
OSM-data validation (vision)

Customer feedback
- Multiple channels
- Processing & filtering

Validation tools
- Monitor changes
- Discover errors
- Compare reference data

Journey planner logs
- List problems

Open tasklist of OSM-improvements
- Task urgency
- Task level (easy/hard)
- Use OSM Map Notes

OSM "community Manager"
- Handle feedback
- Update OSM
- Data Imports
- OSM Wiki
- Activate & reward
- Mapathons etc.
OSM as the authority’s official map

- **Pros**
  - Ability to react fast on changes
  - Crowdsourcing — you don’t need to do everything yourself
  - One new possible channel to distribute your own data

- **Cons**
  - Uncertainty about the quality of the data
    - Some areas better mapped than others
    - Diversity in individual mapper’s principles
  - Challenges between developer’s and GIS professional’s formats & standards
    - TMS vs WMS/WMTS & web mercator vs ETRS
Challenges

- OSM is far from up to date in Helsinki: edits, imports & mapathons needed
- Can one map style really fulfill all our needs?
- Could there be a more accurate classification for walking routes?
  - We already have...
    - Tracktype = grade*, for motor vehicles
    - Sac_scale = *, for hiking routes
    - Mtb:scale = *, for MTB
- How do we tag invisible stops? (invisible = yes)
Future plans

- Develop validation
  - to improve geocoding, routing and the map itself
- Schematic maps
- Digitransit: develop walking and cycling
  - to get rid of old walking & cycling journey planner [https://pk.reittiopas.fi/en/](https://pk.reittiopas.fi/en/)
- Introduce possible new map products
Further information

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