PROJECT: MANNHEIMER MAPATHONS
PROMOTING INTEGRATION – PROVIDING HUMANITARIAN AID

https://mamapa.org
Activity: organizing a series of mapathons (every 4-5 weeks) in which recent arrivals in Germany (immigrants, refugees or others) and local residents, work together -- in tandem -- on selected HOT / Missing Maps tasks
100% volunteer organization and participation

- **Begin:** January, 2018
- **Summer 2018:** formally registered as non-profit association (“e.V.”)
- **To date:** 18 Mapathons organized – Mannheim, Ludwigshafen, Heidelberg
- **Mapathon attendance:** 25-35 persons (50/50 new arrivals/local residents)

IT infrastructure/usage provided free of charge by support organisations

**Supporters:**

- **Language and “integration” schools** for migrants, refugees, “new arrivals” (Goethe Institute, Int.Bund, Volkshochschulen, etc.)
- **Local authorities** charged with communal integration tasks
- **Mannheim Technical University** – Faculty for Social Work
- **Geographic Institute** – Uni Heidelberg
- **CartONG France**
- **BASF** (financial)
- **Acquaintances, friends and family**
MANNHEIMER MAPATHONS

Promoting integration of new arrivals

- Mapping in tandem with current residents:
  - Social contact
  - Language practice

- Getting to know their new environment:
  - Moving beyond daily « routines » of school, home, compatriots, family
  - Expanding their daily « geographic horizons »
  - Better understand the new cultural situation in which they find themselves

For all participants: new arrivals and long-time residents:
Deconstruct stereotypes, combat prejudicial thinking
Acquisition of new knowledge and skills

- Raising geographic awareness in general
- First encounter with (digital) cartography
- Increased IT skills
- Awareness of career possibilities related to location-based services
Making a concrete humanitarian contribution

- Supporting others in need worldwide
- Being part of a worldwide community of humanitarian activity.
- Being able to help others despite one’s own difficulties.
MANNHEIMER MAPATHONS
« Live » - 10.04.2018
https://mamapa.org
Road Works Management System BW – BIS2.0
Alexander Dreidt (LST)
Road works & constructions in Baden-Württemberg

- > 400 major road construction sites each year on highways and primary roads
- Hundreds of maintenance works each day
Improve planning and coordination

BIS2.0 supports planning and coordination of road works

- Capture all information relevant for public and third parties
- Finding optimal time slots
- Estimating (and reducing) road work’s traffic impact
- Support request, hearing and approval of road works
Folie 4, 22.09.2019

Streifen (RP T, Abt. 9, LST)

Status: In Vorplanung

Bezeichnung (Extern): A6 Anbau von Fahrstreifen

Bezeichnung (Intern): A6 Anbau von Fahrstreifen

Strasse: A6

Bauliste Auftraggeber:

VAS-Projektnummer:

Aktenzeichen:

VAS-Arbeitsstellenid:

Arbeitsstellen-Nummern: 2019-00012

Ebenen

- Hintergrund
- Luftbilder
- Topographische Karte
- ASB
- Abschnitt/Äste
- Netznoten
- Nullpunkte
- Anschlussstellen
- DTV
- Netzmaschen
- AkD Erfassungsvorgaben
- Bedarfsumleitungen
- Anzeigequerschnitte
- Parkplätze
- Messquerschnitte
- Arbeitsstellen: Umleitungen

Legende

Informationen
Map Matching OSM / Official classified roads network

- All road works are matched to routable OSM network
- Purpose: detect conflicts between road works of different parties
- Preliminary map matching of classified highlighted data issues (mainly in official data)
Diversion planning via OSM

• BIS2.0 uses OSM network to easily capture planned diversion
• Advantage: routable, unclassified roads

• Diversions will be published via DATEX2 as OpenData
• OSM detour routes still to be improved
• LST publishes official route description as open data
OpenData: Detour routes

Detour routes are published as OpenData (de-dl/zero-2-0):
https://www.svz-bw.de/bedarfsumleitungen.html

Further datasets: Park&Pool parkings, more to come…
Thank you!

For your interest, your attention, and before all: all your efforts in creating and maintaining OpenStreetMap.

We are looking forward to working with you!
Public transport stops

Official (BW) data vs OSM

Holger Bruch, 21.09.2019
### NVBW Haltestellen (Stops)

<table>
<thead>
<tr>
<th>STOP_PLACE</th>
<th>District</th>
<th>Municipality</th>
<th>Locality</th>
<th>Name</th>
<th>NameLong</th>
<th>Description</th>
<th>IFOPT-ID</th>
<th>Lat</th>
<th>Lon</th>
<th>ValidFrom</th>
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<td>IFOPT-ID</td>
<td>Lat</td>
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<td>Modality_Ferry?</td>
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</tbody>
</table>

IFOPT: Identification of Fixed Objects in Public Transport
How about Quality?

- No IDs
- Typos in IDs
- Missing quays
- Missing coordinates
- Missing name
- Close to origin coords
- Wrong (=no) validity period
- Multiple quays
- Replacement/School bus stops flagged as 'Normal'

For details see https://www.mfdz.de/blog/opendata-haltestellen-in-baden-wurttemberg
OpenStreetMap: PTv1 vs PTv2

PTv1

- highway=bus_stop
- name=Technologiepark
- route_ref=31
- towards=Bunsengymnasium

PTv2

- type=public_transport
- public_transport=stop_area
- Name=Technologiepark
- type=route
- route=bus
- ref=29

- public_transport=stop_position
- bus=yes
- name=Technologiepark
- public_transport=platform
- bus=yes
- name=Technologiepark
- ref:IFOPT=de:08221:1226:2:RiS
- highway=bus_stop
- route_ref=31
- towards=Bunsengymnasium
Some stop mapping „varieties“

- No PTv2 Tags
- No highway=bus_stop
- PTv2, but no mode tags
- Formatting of IFOPT
- tram / light_rail mixup
- highway=bus_stop on street
- No name
- Route number as local ref
- local ref in name
Matching OSM and official stops: What?

• For buses the waiting area
  • highway=bus_stop (or, if no bus_stop: public_transport=platform, bus=yes)

• For rail/tram/light_rail:
  • Public_transport=stop_position (or, if not available: halt or station)
Matching OSM and official stops: How?

- Name resemblance
- Mode resemblance
- Quay identity
- Distance
- Directions resemblance

Match Rating
Matching OSM and official stops: How?

Stop name resemblance (using Bigrams as metric):
\[ \text{NGRAM}(<\text{Name}_{\text{NVBW}}>;<\text{Name}_{\text{OSM}}>) \]

Matching quay:
\[ <\text{Quay}_{\text{NVBW}}> = <\text{Quay}_{\text{OSM}}> \]

Quay\text{OSM} is extracted from local_ref (or name) and Quay\text{NVBW} is extracted from IFOPT:
country_code:admin_area:stop_place:level:quay

Does direction match?
\[ <\text{Name}_{\text{NextStopNVBW}}> \sim <\text{Name}_{\text{NextStopOSM}}> \]
\[ <\text{Name}_{\text{NextStopNVBW}}> \not\sim <\text{Name}_{\text{NextStopOSM}}> \]
Matching issues

• Matching is sensitive to incomplete tagging
Matching issues

• Matching is sensitive to incomplete tagging
• Matching correct side of street oftens depend (often unavailable) stop sequences
Overall Results

- **Matched**
- **Matched quais to stop_area**
- **Matched though distant**
- **Matched though name differences**
- **Matched though no official name**
- **Matched though no osm name**
- **Not matched (no single quay)**
- **Not matched (but other quay)**

The pie chart shows the distribution of these categories.
Insights

• Authoritative locations are often inaccurate
Insights

- Authoritative locations are often inaccurate
- Authoritative data might have inaccurate validity information
Insights

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- Authoritative stop names may be outdated
Insights

• Authoritative locations are often inaccurate
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• Authoritative stop names may be outdated
• Some areas of BW not yet well covered in OSM
Insights

• Authoritative locations are often inaccurate
• Authoritative data might have inaccurate validity information
• Authoritative stop names may be outdated
• Some areas of BW not yet well covered in OSM
• OSM-Tagging for stops is heterogenous
Ideas for next steps...

• Publish match results as map
• Integrate GTFS as stops source
• Publish issues (Osmoscope? Maproulette?)
• Provide additional MapCSS/Osmose rules
• Request German Stop Database (DELFI) as OpenData and repeat...

• Code: https://github.com/mfdz/nvbw-osm-stop-comparison
OpenTrailView 360

Nick Whitelegg
School of Media Arts and Technology
Solent University
OpenTrailView 360

- “StreetView for paths and trails”
  - https://opentrailview.org
- 100% Free and open source
  - https://gitlab.com/nickw1/opentrailview/
- Panoramas auto-connected using underlying OpenStreetMap data
- Uses:
  - GeoJSON Path Finder https://github.com/.perliedman/geojson-path-finder
  - Pannellum https://pannellum.org
Contribute

• Photo Spheres (Google Camera)
  – c.40 shots needed, autostitched to 360 pano so time consuming
  – High-resolution, some stitching errors but big improvement compared to c.5 years ago

• 360 cameras (e.g. Ricoh Theta)
  – Quick
  – Quality can be poorer, photo shooter appears in panorama
Thanks!

• Questions?

• Contact:
  – nickw4426@gmail.com, @hikar_AR