OpenStreetMap* 
in Madagascar

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OSM contributor

* born in the cloud
About Madagascar

- 660,000 km² (France + Benelux)
- 20,000,000 inhabitants
- Caver in Madagascar
- No reliable maps
- Do it myself
- Use OSM to share “cost”
On a way (polyline)

- highway = primary
- ref = N 7
Coding model : tag

On a point

- highway = milestone
- pk = 733
Open tag model

- highway=tertiary
- ref = N 19
- surface = unpaved
Key:surface

(Redirected from Surface)

Summary:

See also Landcover

To provide additional information about the physical surface of roads/footpaths and some other features. Primarily concerned about the surface in relation to transport and sports and more commonly used on linear features. For broader descriptions of surfaces see Landcover.

For roads for motor vehicles there is normally an assumption that the surface is `surface=paved` unless otherwise stated. Paved in OpenStreetMap is non-specific and may cover sealed, tarmaced, asphalt, bitumen `surface=unpaved` is treated as the opposite of paved. More specific tags can be used for surfaces which are normally classified into paved or unpaved for routing purposes. Navigation software should assume that roads-that-are-not-paved will have slower driving speed (and therefore longer driving time) and may be impassable in some weather conditions.

Paths for non-motorised use (`highway=footway`, `highway=path` etc should ideally always be tagged with surface (or alternatively `tracktype=*`) given that there is no default for such paths.

Rendering software convention varies, but generally roads-that-are-not-paved are shown in a different colour but same width as their paved cousins or use the same colour but are dashed.

Values

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
<th>Element</th>
<th>Comment</th>
<th>Data users may treat this as</th>
<th>Rendering</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Roads

`highway=*`
Open tag model

- highway=tertiary
- ref = N 19
- surface = unpaved
- smoothness = very_bad

<table>
<thead>
<tr>
<th>smoothness</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>very_bad</td>
<td></td>
<td>(high_clearance) Car with high clearance, light-duty off road vehicles</td>
</tr>
<tr>
<td>horrible</td>
<td></td>
<td>(off_road_wheels) heavy-duty off road vehicles and all below</td>
</tr>
<tr>
<td>very_horrible</td>
<td></td>
<td>(specialized_off_road_wheels) tractor, ATV, tanks, trial, Mountain bike and all kind of off-highway vehicles (see also mtb_scale=*)</td>
</tr>
</tbody>
</table>
Open tag model

- highway=tertiary
- ref = N 19
- surface = unpaved
- smoothness = very_bad
- seasonal = yes
- access:conditionnal = no @ Dec-May
Open tag model

• Open tag model allows adaptation to a large variety of problems but documentation is important

• Tag evolution is an open process: convergence with other users sharing same problems → allows sharing solutions and tools (ex.: H.O.T. : Humanitarian OSM Team)
OSM in Madagascar

• No high resolution satellite view before June 2012
→ Only ground collectors with GPS

• High resolution satellite views allow remote work

<table>
<thead>
<tr>
<th>National Roads</th>
<th>km</th>
<th>June 2012</th>
<th>November 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>2600</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Secondary</td>
<td>4700</td>
<td>60 %</td>
<td>99 %</td>
</tr>
<tr>
<td>Tertiary</td>
<td>4600</td>
<td>18 %</td>
<td>84 %</td>
</tr>
<tr>
<td>Total</td>
<td>12000</td>
<td>53 %</td>
<td>93 %</td>
</tr>
</tbody>
</table>
OSM in Madagascar

• Few contributors collecting data
• No public data (like Cadastre)
• No partnership with other institutions (NGO, government…)
• Lack of data about:
  – Administrative organization
  – Health network
  – Schools organization
  – …
<table>
<thead>
<tr>
<th>surface</th>
<th>lanes</th>
<th>concrete lanes</th>
<th>pavement types</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>if you know how the concrete is laid out.</td>
<td></td>
</tr>
<tr>
<td>surface</td>
<td>concrete plates</td>
<td>specified surface=paved</td>
<td>pavement types</td>
</tr>
<tr>
<td></td>
<td></td>
<td>long, narrow concrete plates laid out for a two-tracked vehicle (motorcars) so that the tires always hit the concrete. There might be sand, ground, grass, pavers, asphalt, etc., in between them. Note that if you tag a single-tracked way you just use surface=concrete, since there are no lanes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>dirt</td>
<td>specified surface=paved</td>
<td>unpaved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>heavy-duty plates chained closely together on the short side, might have tar or sand in between the connections.</td>
<td></td>
</tr>
<tr>
<td>surface</td>
<td>earth</td>
<td>A multi-layer pavement with a stone or gravel basis and a topmost surface of firm, granular grit, basalt or quartz, as invented by the Roman Empire. Easy to walk, jog, cycle or ride on. In hilly areas mostly with drainage channels and convex cross-section for proper channeling, motorized vehicles will have difficulty.</td>
<td>unpaved</td>
</tr>
<tr>
<td></td>
<td>fine_gravel</td>
<td></td>
<td>unpaved</td>
</tr>
</tbody>
</table>