OSM Editor for kids

Educational MapApps

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Agenda

1. What is this about?
2. Use case
3. Architecture
4. ArcGIS Feature Service (OSM Editor)
5. For kids? (OSM Tags + HCI)
6. Video
7. Further work
1. What is this about?

Mobile (Android) application to edit OSM data

Use of ArcGIS Server technologies

Aimed at children
2. Use case

On-line edition (Create, Modify, Delete)

GPS integration

Points and lines

Describe the data with OSM tags
How to bring together OpenStreetMap and Android with ESRI technology?
3. Architecture

- OpenStreetMap
- OSM Editor 2.0\(^{Beta}\)
- ArcGIS Server 10
- ArcGIS Android API
- ArcSDE
- Android
- PostgreSQL
3. Architecture

OSM Editor 2.0\textsuperscript{Beta}
Server component

ArcGIS Server 10

ArcSDE

PostgreSQL

Server side
3. Architecture

User side

OSM Editor 2.0\textsuperscript{Beta} Web GUI

ArcGIS Android API

Android
To create an editable OSM Feature Service:

- Using ArcGIS Desktop & OSM Editor desktop component, download and convert OSM data to standard format
- Add OSM data to the database (SDE)
- Create a template *.mxd
- Publish *.mxd as editable Feature Service
4. ArcGIS Feature Service (OSM Editor)
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Problem:
Not very user friendly or intuitive
4. ArcGIS Feature Service (OSM Editor)  

Problem:
Not very user friendly or intuitive

Solution:
OSM Editor 2.0 server component
OSM Editor 2.0 offers

- intuitive web interface for the user
- creation of Feature Services in a few easy steps
- automated synchronization back to OpenStreetMap
- use of templates
4. ArcGIS Feature Service (OSM Editor)
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4. ArcGIS Feature Service (OSM Editor)  (10/11)

Problems faced:

- OSM Editor 2.0 is still in beta
- OSM limits
Benefits of our ArcGIS architecture (Server + Feature Service + Android API):

- compatibility
- mobility
- web interface is easy to use
- easy to implement, no need to handle fragile XML requests, etc.
5. For kids? OSM Tags

Tag → Key - Value (e.g. Highway - Pedestrian)

5. For kids? OSM Tags

Selecting a pre-defined set of tags:

1. Account for the most general values:
   (e.g. Road: “A road of unknown classification. Should be updated to the appropriate value”)

2. Avoid complex/unclear tags
   (e.g. primary, secondary, tertiary)

3. Include those tags which children may find near the school (e.g. living_street)

+ Analyze commonly used tags (Tools: TagWatch, TagInfo)
5. For kids? Human Computer Interaction (3/3)

Keep it simple (Simple GUI)

Make it enjoyable (Usability)

Affective interfaces:

Address kids expressing emotions

Errors:

Avoid accusatory messages

Kindly propose solutions

Praise children when finishing their job
Warning: Home video!
6. Video

Before
6. Video

After
6. Video

OSM Editor for kids

After

ArcGIS My Map
6. Video
6. Video

OSM Editor for kids
6. Video

![OSM Editor for kids](image)

- **source = survey**
- **fixme = resurvey**
- **created_by = OSM Editor 4 kids**

Buttons: Upload, Cancel
6. Video

What did you capture?

Key:
Example: Highway

Value:
Example: Road

Save  Cancel
7. Further work

OSM as background map!

ArcGIS OSM Editor (Feature service) + Symbology

Usability study

Modify existing OSM data (and Delete?)
Thank you!