



WESTFÄLISCHE  
WILHELMS-UNIVERSITÄT  
MÜNSTER

# OSM Editor for kids

Educational MapApps

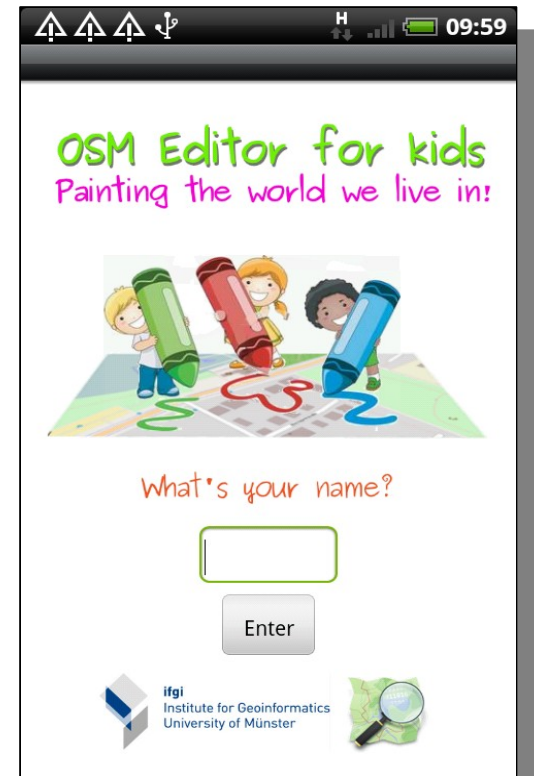


wissen.leben  
WWU Münster

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26.01.2012

# 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

## 3. Architecture

(1/4)

How to bring together OpenStreetMap and Android with ESRI technology?





### 3. Architecture

(2/4)

OpenStreetMap

OSM Editor 2.0<sup>Beta</sup>

ArcGIS Server 10

ArcGIS Android API

ArcSDE

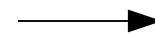
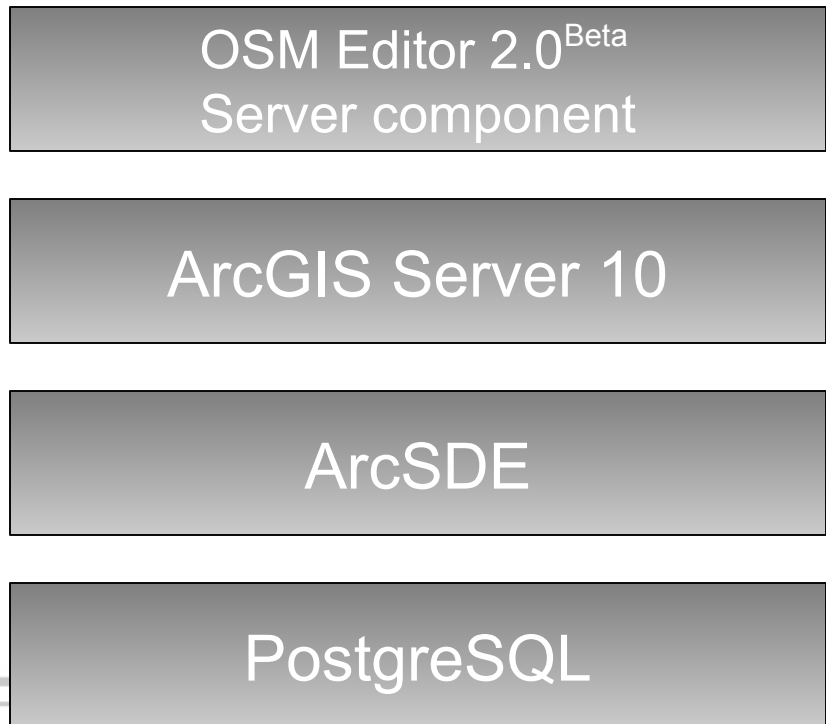
Android

PostgreSQL



## 3. Architecture

(3/4)



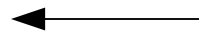
Server side



## 3. Architecture

(4/4)

User side



OSM Editor 2.0<sup>Beta</sup> Web GUI

ArcGIS Android API

Android

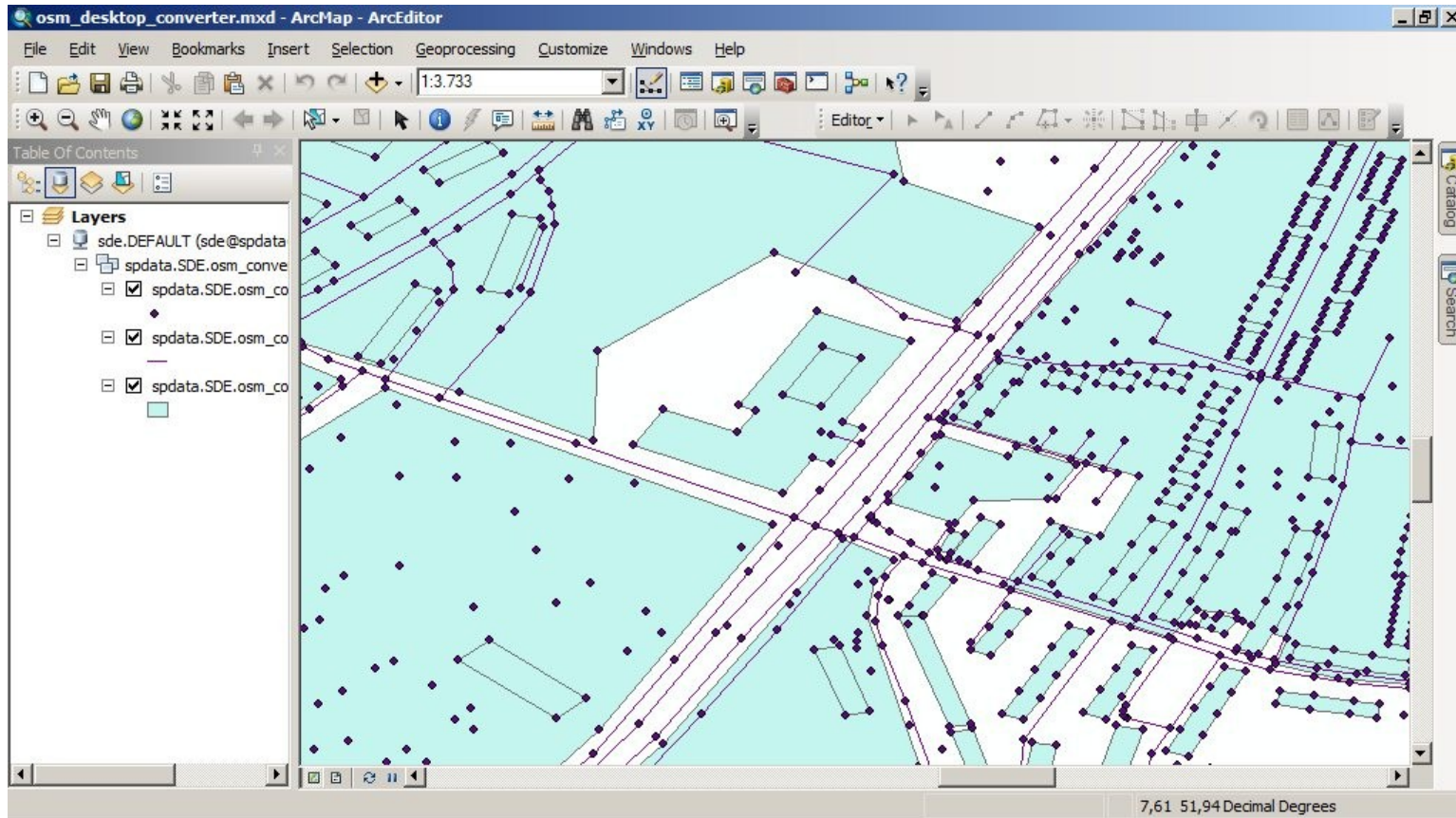


## 4. ArcGIS Feature Service (OSM Editor) (1/11)

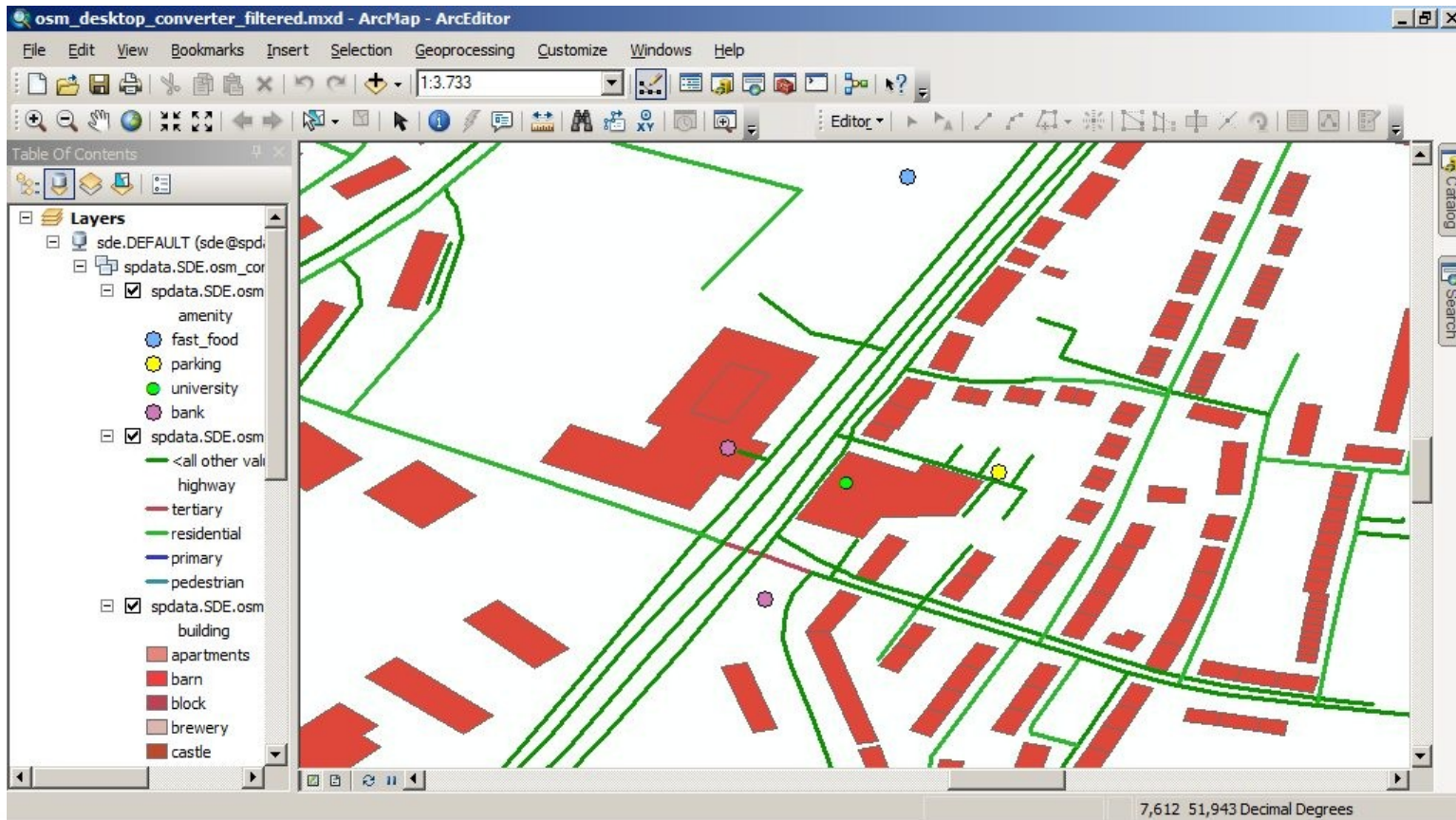
To create an editable OSM Feature Service:

- 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) (2/11)

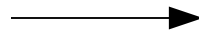
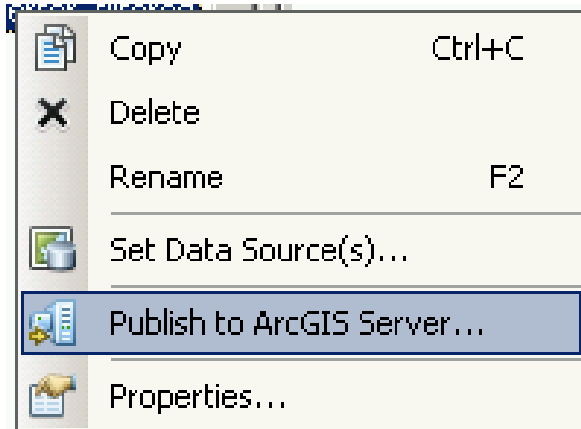


## 4. ArcGIS Feature Service (OSM Editor) (3/11)





## 4. ArcGIS Feature Service (OSM Editor) (4/11)



### ArcGIS Services Directory

[Home](#)

**Folder: /**

**Current Version:** 10.02

**View Footprints In:** [Google Earth](#)

**Services:**

- [ms\\_sde](#) (MapServer)
- [ms\\_sde](#) (FeatureServer)
- [osm](#) (MapServer)
- [osm](#) (FeatureServer)
- [osm\\_symbology](#) (MapServer)
- [osm\\_symbology](#) (FeatureServer)

**Supported Interfaces:** [REST](#) [SOAP](#) [Sitemap](#) [Geo Sitemap](#)



## 4. ArcGIS Feature Service (OSM Editor) (5/11)

Problem:

Not very user friendly or intuitive



## 4. ArcGIS Feature Service (OSM Editor) (6/11)

Problem:

Not very user friendly or intuitive

Solution:

OSM Editor 2.0 server component



## 4. ArcGIS Feature Service (OSM Editor) (7/11)

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) (8/11)

## ArcGIS Editor for OpenStreetMap

[Log On](#) | [Help](#)

### Create new Feature Service

[< Back to list](#)

#### What

Zoom and pan the map to the area for which you want to retrieve data from OpenStreetMap. More data takes longer to download.



© OpenStreetMap contributors, [CC-BY-SA](#)

#### How

What should the service be named? What data should be symbolized (using the template dropdown below)? Do you want to synchronize with OpenStreetMap?

Name the feature service:

Got a special template in mind?

Minimal

Synchronize with OpenStreetMap?

[Cancel](#)



## 4. ArcGIS Feature Service (OSM Editor) (9/11)



### ArcGIS Editor for OpenStreetMap

[Log On](#) | [Help](#)

**Download Complete** [< Back to list](#)

Successfully created the Feature Service by downloading the requested data from OpenStreetMap.

**Content**



**Links**

Feature Service: [http://localhost/arcgis/rest/services/55e00972-57f8-4d33-99b9-dd77a9126104\\_Minimal/FeatureServer](http://localhost/arcgis/rest/services/55e00972-57f8-4d33-99b9-dd77a9126104_Minimal/FeatureServer)

Map Service: [http://localhost/arcgis/rest/services/55e00972-57f8-4d33-99b9-dd77a9126104\\_Minimal/MapServer](http://localhost/arcgis/rest/services/55e00972-57f8-4d33-99b9-dd77a9126104_Minimal/MapServer)

[Edit Feature Service](#) | [ArcGIS.COM](#)



## 4. ArcGIS Feature Service (OSM Editor) (10/11)

Problems faced:

- OSM Editor 2.0 is still in beta
- OSM limits

## 4. ArcGIS Feature Service (OSM Editor) (11/11)

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 (1/3)

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



## 5. For kids? OSM Tags (2/3)

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



WELL  
DONE  
YOU  
DID  
IT!



## 6. Video

(1/8)



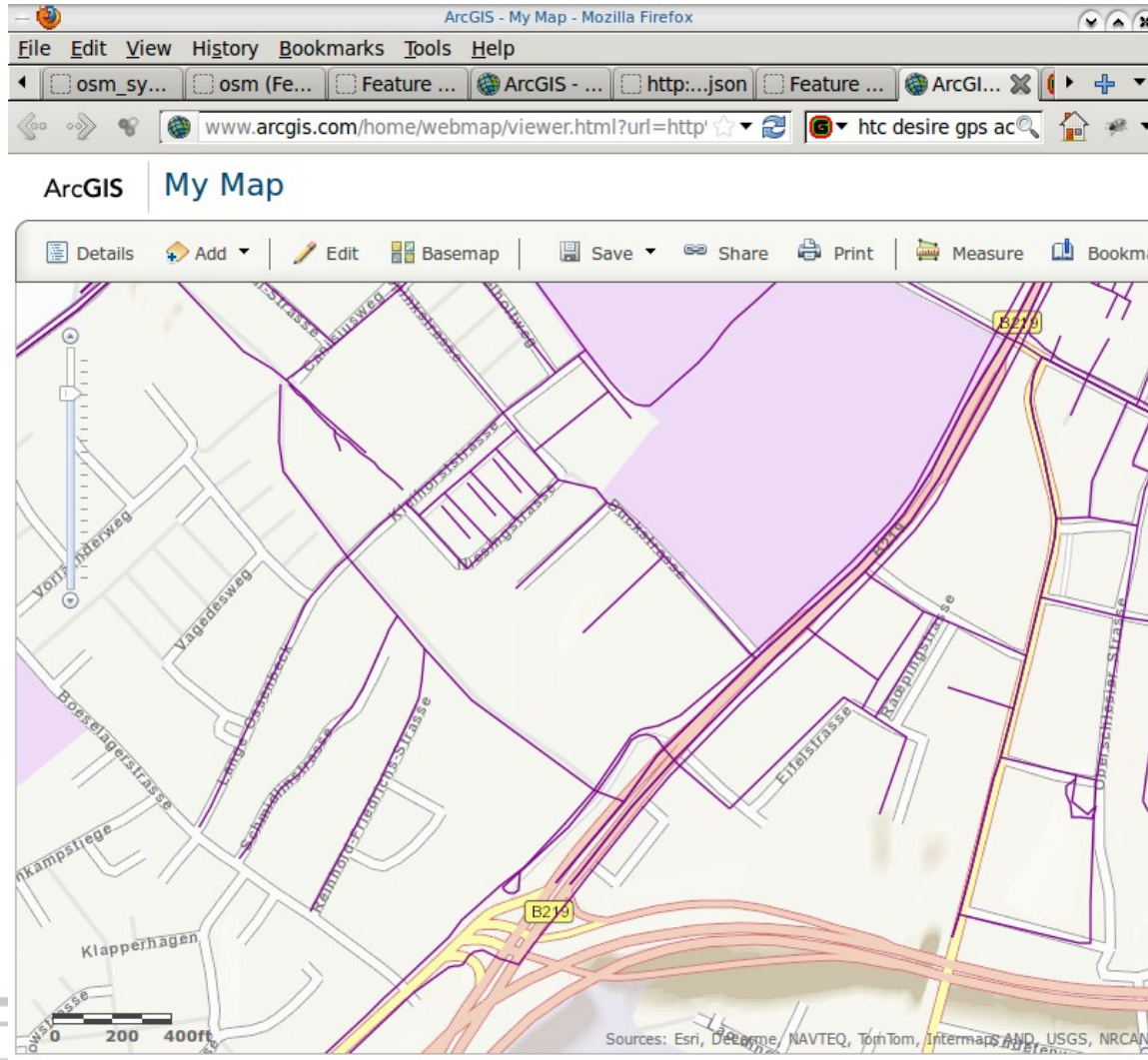
**Warning:** Home video!



# 6. Video

(2/8)

Before



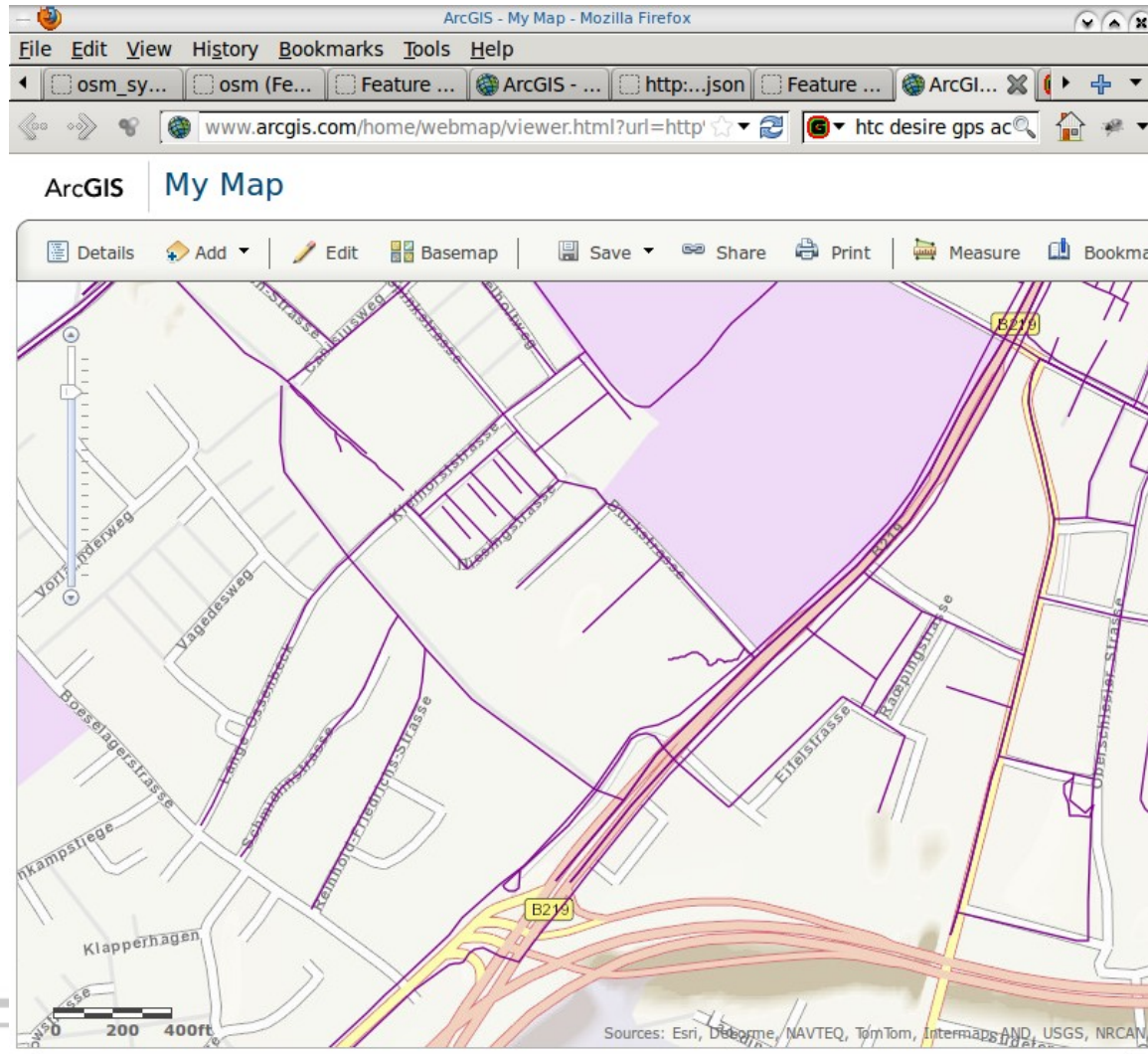




# 6. Video

(3/8)

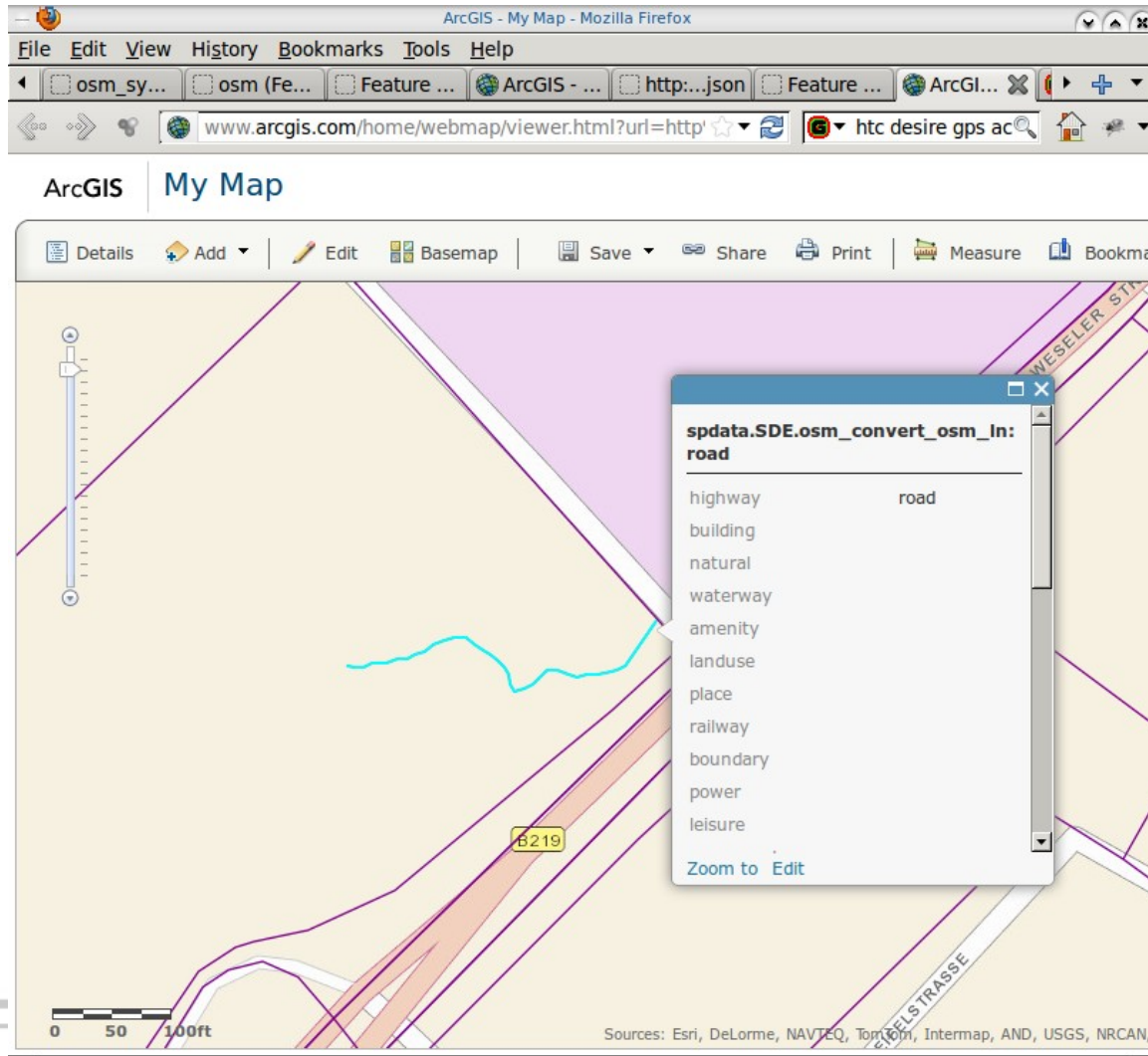
After



# 6. Video

(4/8)

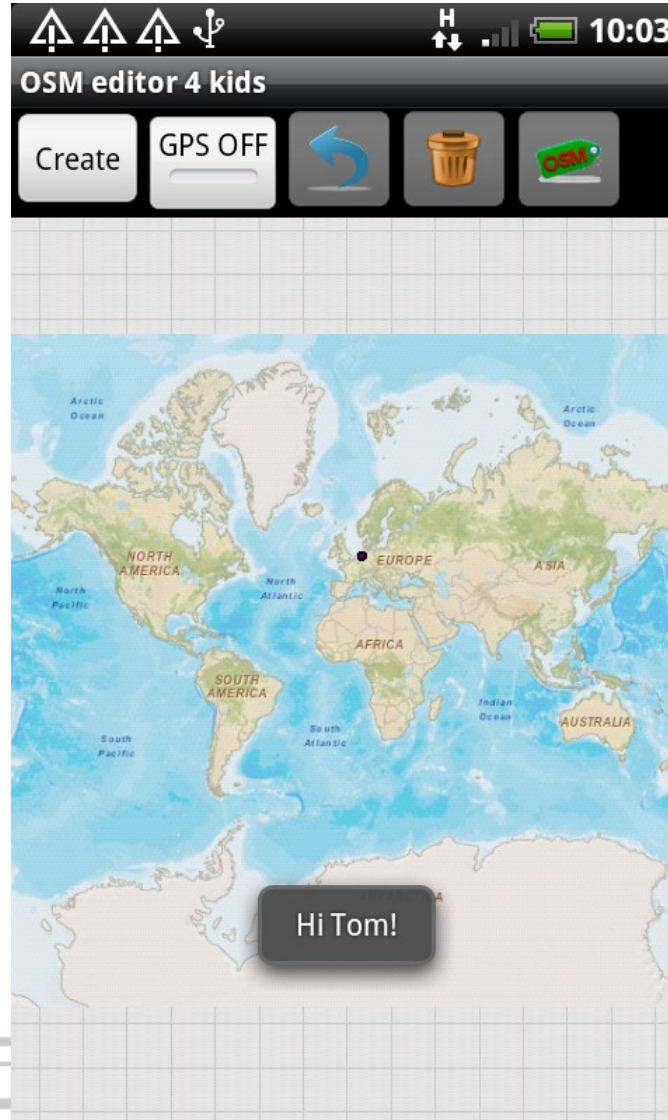
After





## 6. Video

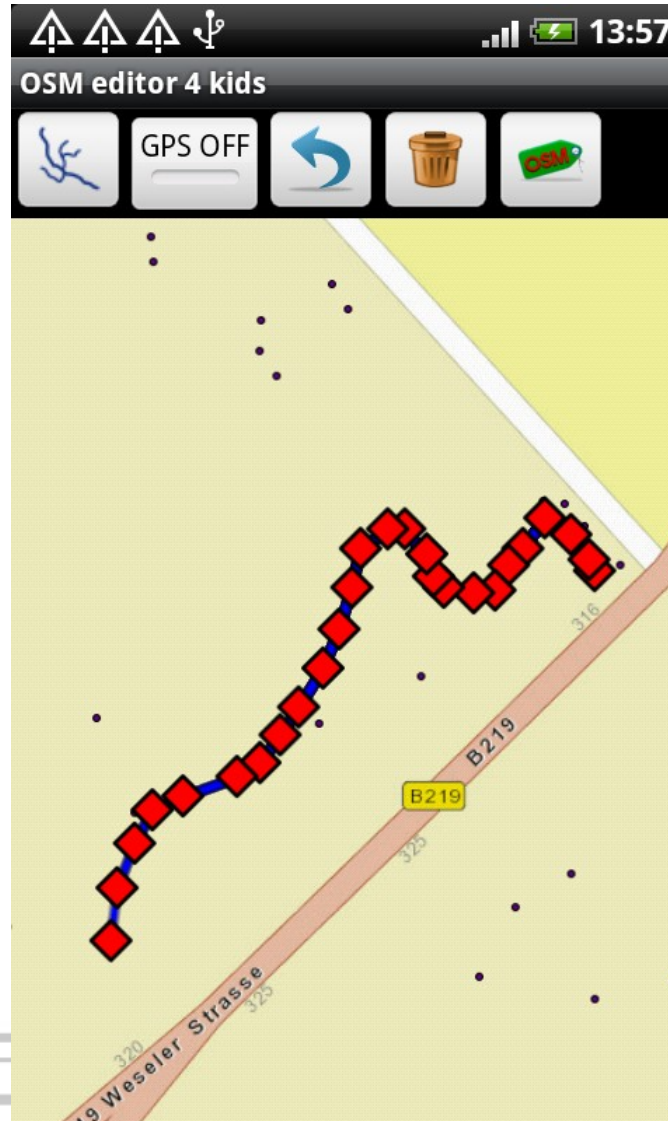
(5/8)





## 6. Video

(6/8)





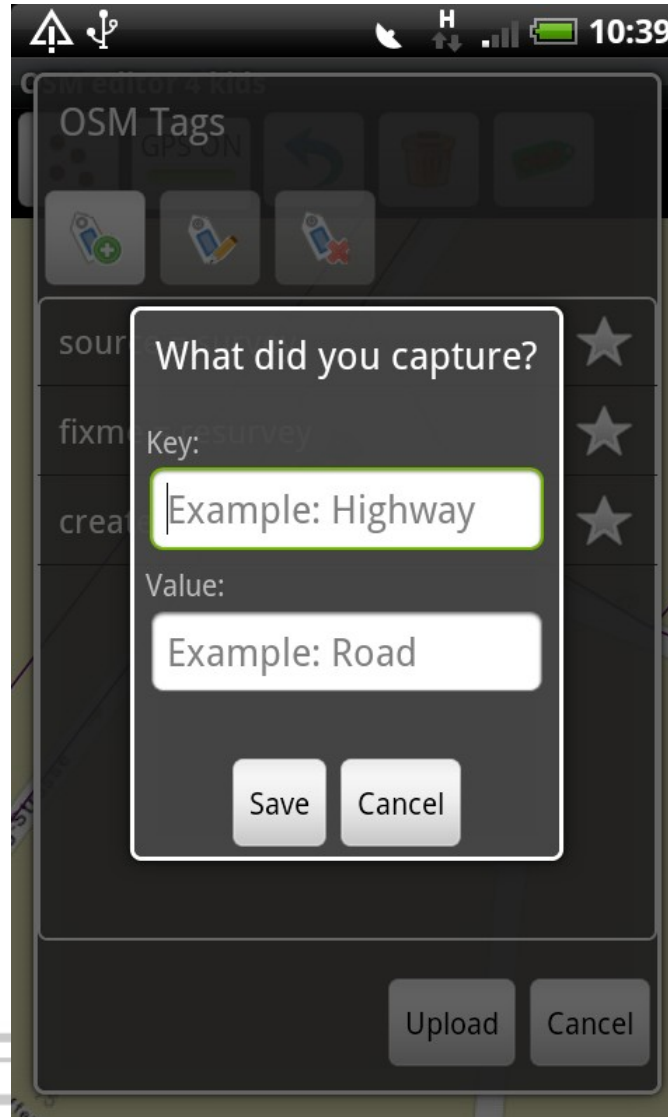
## 6. Video

(7/8)





## 6. Video





## 7. Further work

OSM as background map!

ArcGIS OSM Editor (Feature service) + Symbology

Usability study

Modify existing OSM data (and Delete?)



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OSM Editor for kids

**Thank you!**

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