

FIELD VALIDATION USING MOBILE APPLICATIONS

MODULE 2.0



SESSION OUTLINE



- 1.1 Introduction to Field Validation
- 1.2 Using the mobile application
- 1.3 Keys and Tags
- 1.4 A guide to mapping
- 1.5 Changeset Comments
- 1.6 Adding attributes - exercise
- 1.7 In the field
- 1.8 Check the uploads



Field validation exercise is only possible when the area of interest has been mapped on OSM map.

Please see Module 1 if you have not gone through the module already.



FIELD VALIDATION

Once the area has been mapped on OpenStreetMap, field validation can start. Using a mobile applications to collect building and infrastructure level attribute data is an innovative way to efficiently collect, store and view data.



WHY FIELD VALIDATION IS IMPORTANT

- Field validation is used to create an exposure database which allows the community to prepare for hazards and disasters
- Enables local governments to quantify vulnerable and at risk buildings and locations



Which building is more vulnerable to cyclones?

Field mapping is important – as imagery doesn't show all the details, for example looking at the satellite imagery below it is not apparent that the buildings are houses made of thatch and metal sheets. This information needs to be collected in the field



CHOOSE A MOBILE APPLICATION

This module was created using observations made and experiences in project implementation. During the implementation the mobile application geoMaptool was used.

<http://geothings.tw/en/products/geomaptool/>.

However other mobile applications exist to assist you for field validation. Research the mobile applications available and select the one that fits your implementation the best.

- At the time of module development only one similar application was developed. OpenMapKit, find information about the application here <http://openmapkit.org/>
- Kobo Toolbox also has similar features. <http://www.kobotoolbox.org/>



IMPORTANT NOTES ON FIELD VALIDATION

The following information will help you determine the best mobile application for your implementation that allows you to meet the criteria for field validation under this strengthening resiliency training course.

WHAT ARE WE VALIDATING? CRITICAL INFRASTRUCTURE

To build the exposure database, you need to add attributes to critical infrastructure.

Examples of critical infrastructure is:

- Buildings
- Bridges
- Road
- Pipe lines
- Foot/cycle path (evacuation route: yes/no)
- Open space and parks



ADDING ATTRIBUTES: BUILDING TYPE

Building type should be record, examples include:

- **Commercial (key)**

- Options: Hotel, hospital (private), school (private), shopping mall, general, airport, restaurant → (value)

- **Industrial**

- Options: Warehouse, chemical/food processing, sewage treatment, general

- **Public**

- Options: Townhall, community center, place of worship, school, hospital, police station, firehall, shelter, park, open space, playground

- **Residential**

- Options: house

- **Infrastructure**

- Options: substation, power



ADDING ATTRIBUTES : BUILDING MATERIAL

Example list:

- Wood/bamboo
- Wood/masonry
- Steel
- Concrete
- Mud
- Masonry/brick
- CI sheet
- Custom



Roof material

- Thatch
- Tile
- Metal sheet
- Concrete
- Custom

Visual condition

- Poor
- Fair
- Good

ADDING ATTRIBUTES: OTHERS

Building type

- Permanent
- Semi-permanent
- Non-permanent
- Custom

Landuse

- Mountain
- Flat
- Coastal
- Custom

Basement?

- Yes
- No

Building Form

- T-shaped
- L-shaped
- Multi-projected
- Box
- Rectangular
- Other
- Custom

Building levels

- 1
- 2
- 3 or more levels



ADDING ATTRIBUTES: BUILDING ADDRESS

Addr:street (street name)

Addr:housenumber (street
number)

Building levels

- 1
- 2
- 3 or more levels

MAPPING LINES

IF you are working with Lines and Points:

Lines

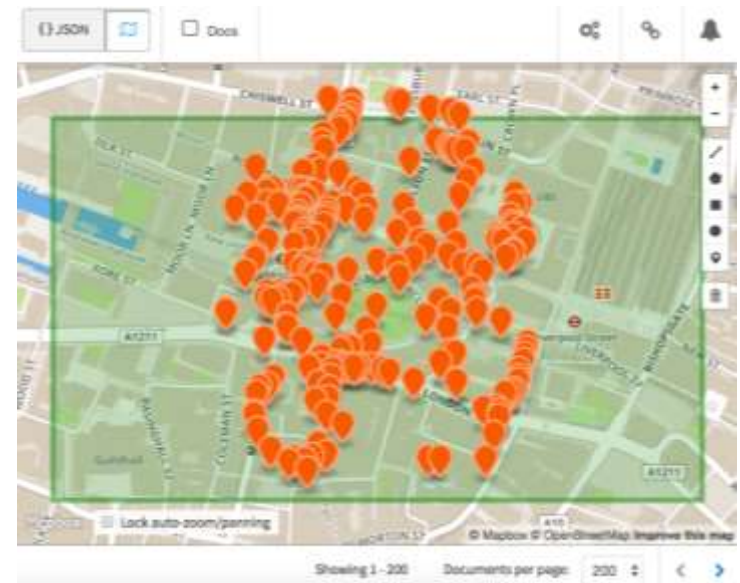
▪ Path

Foot or cycle path, road, highway, powerline, river, stream, canal, bridge (evacuation route?)

Points

▪ Type

Power pole, communications, drainage



KEYS AND TAGS

It is important that the attributes you select for your field validation follow OSM **key and tag** conventions.

Tags are presented as **'key':value**



highway=residential

highway=residential

This is a tag with a **key** of **highway** and a **value** of **residential** which should be used in a way to indicate a road along which people live.

ADDING TAGS



A **tag** consists of two items, a key and a value. They describe specific features of map elements, such as nodes, ways or relations or changesets.

<http://wiki.openstreetmap.org/wiki/Tags>

Add tags to help record the highest amount of information possible.

barrier	fence
fence_type	metal
height	2.5



AN EXAMPLE FROM BANGLADESH FIELD MAPPING ACTIVITY

The list below is the **keys** that were selected for attribute selection

list name	name	label
building_tags	source	Select if survey with BDRCS / Red Cross
building_tags	building	Building
building_tags	building:material	Building Material
building_tags	building:condition	Building Condition
building_tags	building:levels	Number of Floors
building_tags	addr:housenumber	Holding Number
building_tags	addr:street	Street Name
building_tags	name	Building Name
building_tags	building:soft_storey	Soft Story
building_tags	amenity	Type of Establishment (Amenity)
building_tags	office	Type of Office
building_tags	religion	Type of Religion



AN EXAMPLE FROM BANGLADESH FIELD MAPPING ACTIVITY

The list below are the values for the **key: amenity** that were selected for attribute collection

amenity	place_of_worship	Mosque / Church / Temple
amenity	café	Cafe / Tea Stall
amenity	restaurant	Restaurant
amenity	fast_food	Fast Food
amenity	bank	Bank
amenity	office	Office
amenity	hospital	Hospital
amenity	clinic	Clinic / Consultation Chamber / Diagnostic Center
amenity	internet_cafe	Internet Café
amenity	pharmacy	Pharmacy
amenity	police	Police Station
amenity	fire_station	Fire Station
amenity	school	School / Madrasa



AN EXAMPLE FROM BANGLADESH FIELD MAPPING ACTIVITY

The list below are the values for the key: **building:material** that were selected for attribute collection

building:material	concrete	Concrete
building:material	brick	Brick
building:material	stone	Stone
building:material	tin	Tin
building:material	bamboo	Bamboo
building:material	wood	Wood
building:material	metal	Metal
building:material	plastic	Plastic



DESIGN FIELD VALIDATION SURVEY

WORKSHOP

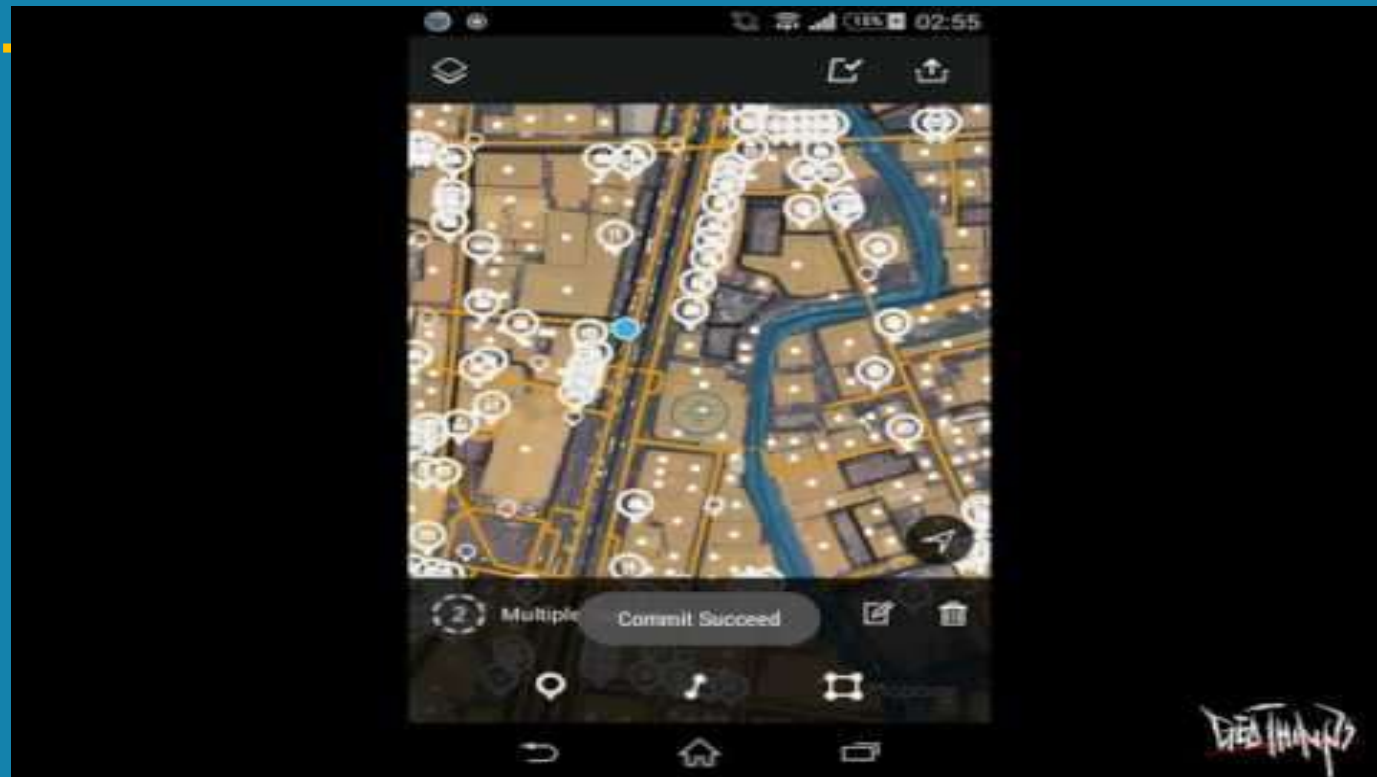
Workshop Objective:

Work to draft a list of Tags and Values that you want to collect to create your exposure database.

Align the list you have created with the OSM convention for Tags and Values



APPLICATION [**DESIGN YOUR POWERPOINT DEPENDING ON THE MOBILE APPLICATION CHOSEN**]



ppt.

ADDING ATTRIBUTES – EXERCISE



Insert country relevant photos here for practice.
Ask the participants to verbally add attributes to
house types

ADDING ATTRIBUTES- FIELD VALIDATION USING GEOMAPTOOL

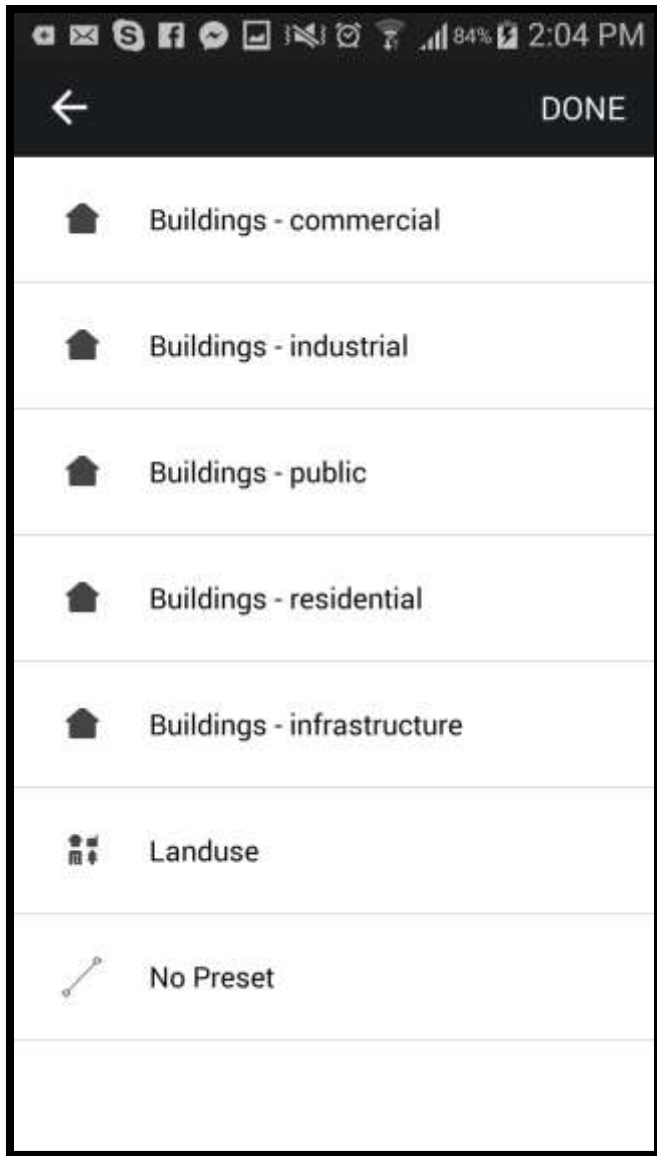
As you are walking along select the building or house on the map. You can check the information already available and add more to this.

The screenshot shows the Geomapping tool interface. At the top, there is a status bar with icons for various services and a battery level of 84% at 2:03 PM. Below the status bar is a navigation bar with a back arrow on the left and the word "DONE" on the right. The main area is a list of attributes for a selected building. Each attribute is represented by a row with a circular 'x' icon on the left, the attribute name in the middle, and the value on the right. The attributes and their values are: name (Geoinformatics Center), office (research), addr:postcode (12120), building (yes), level (2), addr:street (km 42, Paholyothin Hi), evacuation (no), and building:condition (Not Damaged). At the bottom right of the list, there is a circular button with a plus sign and the word "no" above it, which is used to add new attributes.

Attribute	Value
name	Geoinformatics Center
office	research
addr:postcode	12120
building	yes
level	2
addr:street	km 42, Paholyothin Hi
evacuation	no
building:condition	Not Damaged

If there are already attributes they will be displayed

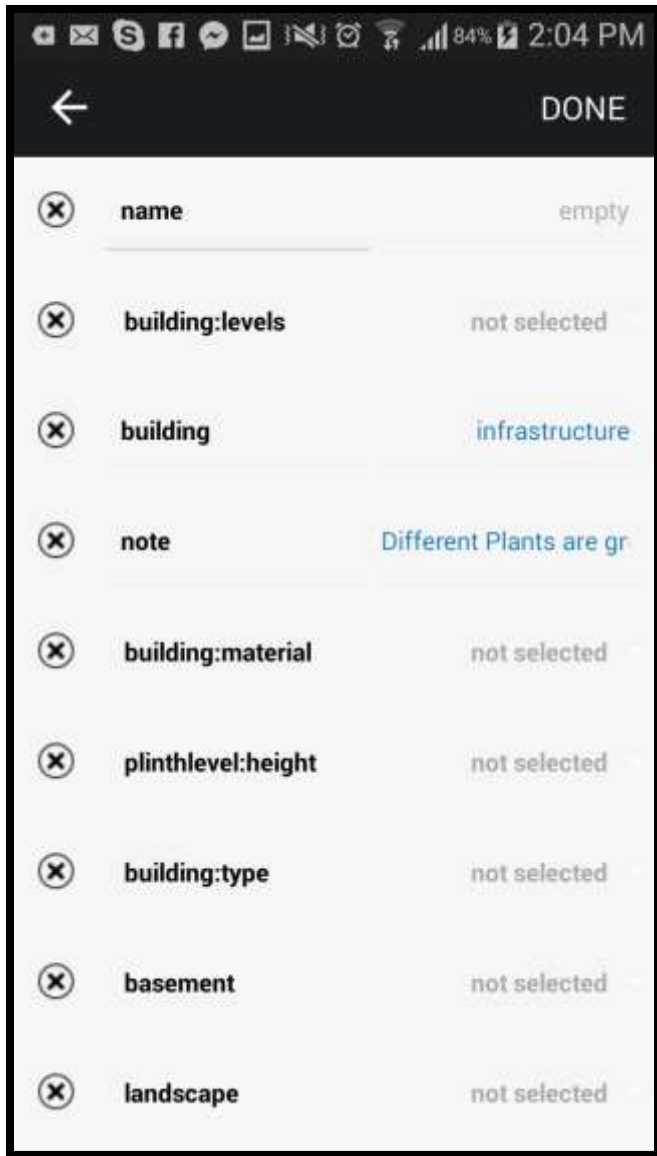
ADDING ATTRIBUTES- FIELD VALIDATION USING GEOMAPTOOL



If object selected is a polygon the following dropdown will appear – select the appropriate type



ADDING ATTRIBUTES- FIELD VALIDATION USING GEOMAPTOOL



The screenshot shows the Geomaptool interface with a list of attributes for field validation. The interface includes a status bar at the top with various icons and the time 2:04 PM. Below the status bar is a navigation bar with a back arrow and the word "DONE". The main content area displays a list of attributes, each with a delete icon (X) on the left and a value on the right. The attributes and their values are:

Attribute	Value
name	empty
building:levels	not selected
building	infrastructure
note	Different Plants are gr
building:material	not selected
plinthlevel:height	not selected
building:type	not selected
basement	not selected
landscape	not selected

Continue adding
the follow
information



ADDING ATTRIBUTES- FIELD VALIDATION USING GEOMAPTOOL EXAMPLE 1



ADDING ATTRIBUTES- FIELD VALIDATION USING GEOMAPTOOL EXAMPLE 2



IN THE FIELD

Good practices for general mapping:

- Ensure there is OSM data created by desktop mapping
- Ensure mobile phone is fully charged
- Have a mapping plan

Good practices for mapping residential buildings:

- Respect home owner's/tenant's privacy
- Do NOT put the name of tenants in the “name” attribute
- If possible where an identifier clothing that indicates you are a volunteer working on a mapping project for community resilience



IN THE FIELD

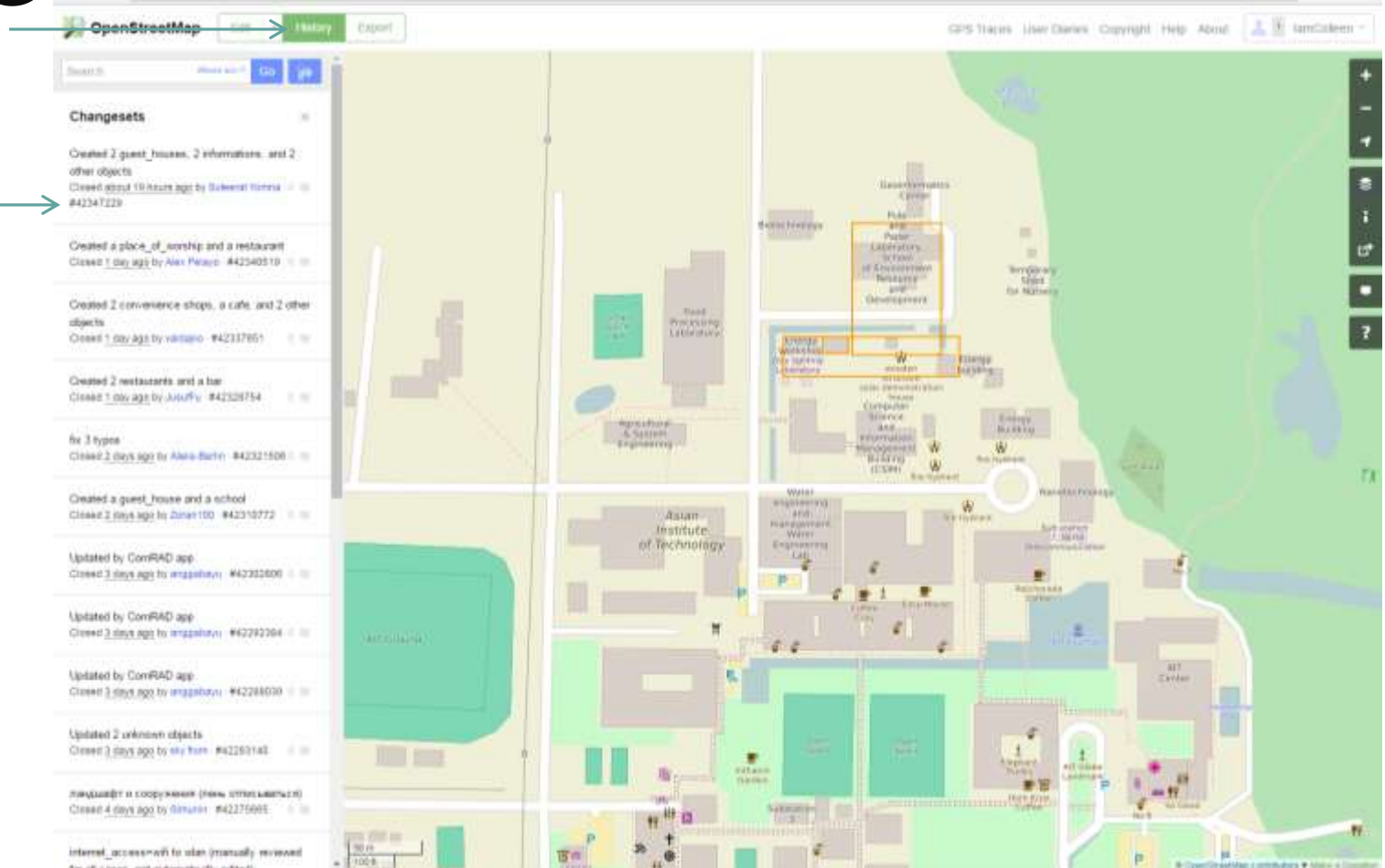
Good practices for mapping commercial buildings:

- Many stores can exist in one commercial building – to map this properly following the below steps (see example below).
- Record the attributes of the building
- Add points on top of the building to indicate the name of the store in the commercial building



CHECK YOUR UPLOADS - GEOMAPTOOL

- Open OSM and search the AOI. Click on 'history'. View and ensure your data uploaded to OSM
- Select the hashtag (ex. #423678) to see your object specific updates



THANK YOU FOR
COMPLETING
FIELD VALIDATION

