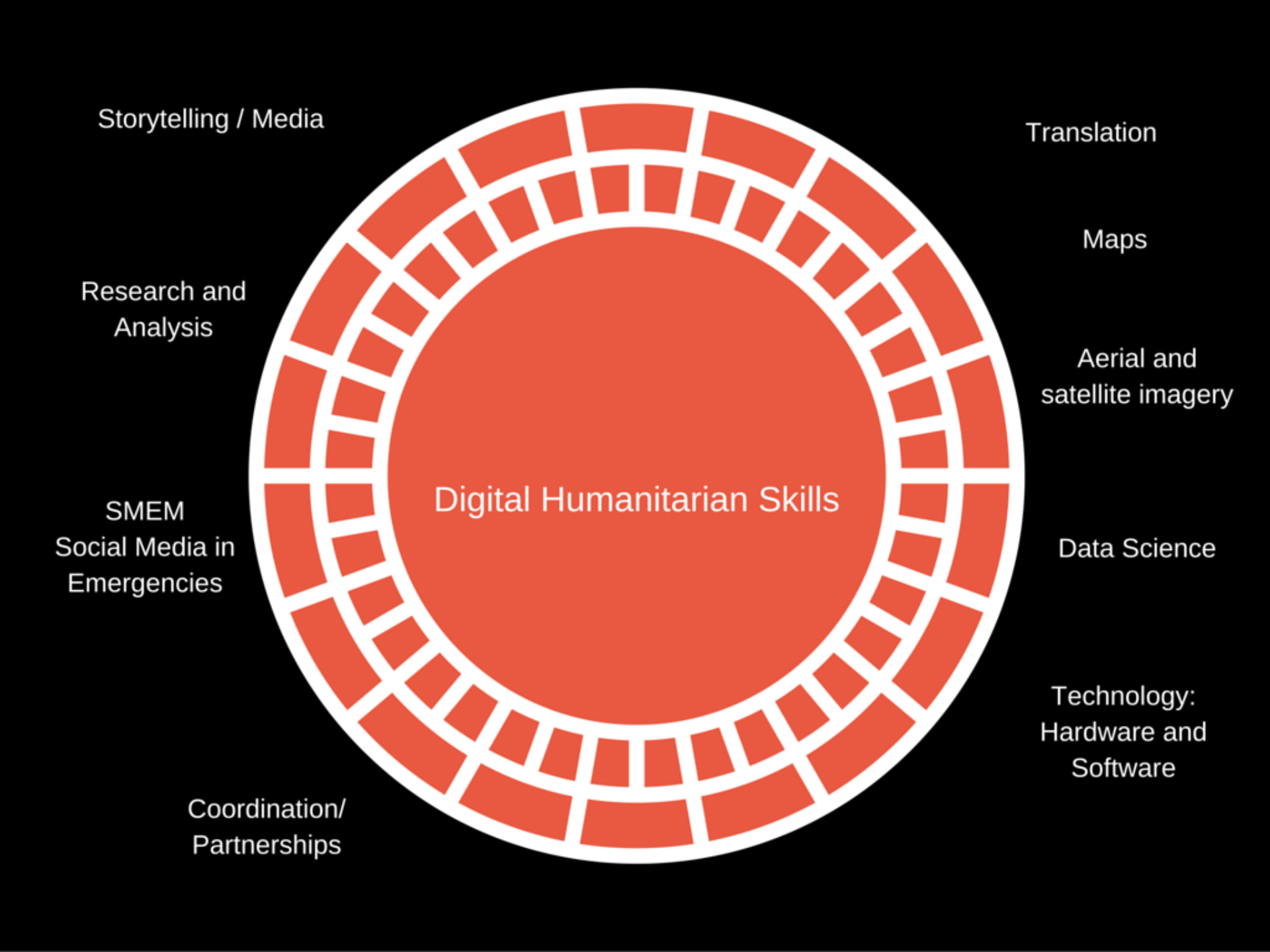
Digital Humanitarians in the Sky

Heather Leson October 13, 2015
EOScience 20 Frascati Italy


Storytelling / Media
Translation
Maps
Research and Analysis
Aerial and satellite imagery
Digital Humanitarian Skills
SMEM Social Media in Emergencies
Data Science
Technology: Hardware and Software
Coordination/ Partnerships

DH
Network
Digital Humanitarian Network

MapAction

GISCORPS
MRSA

HOT

onlinevolunteering.org

esri

TRANSLATORS
WITHOUT BORDERS

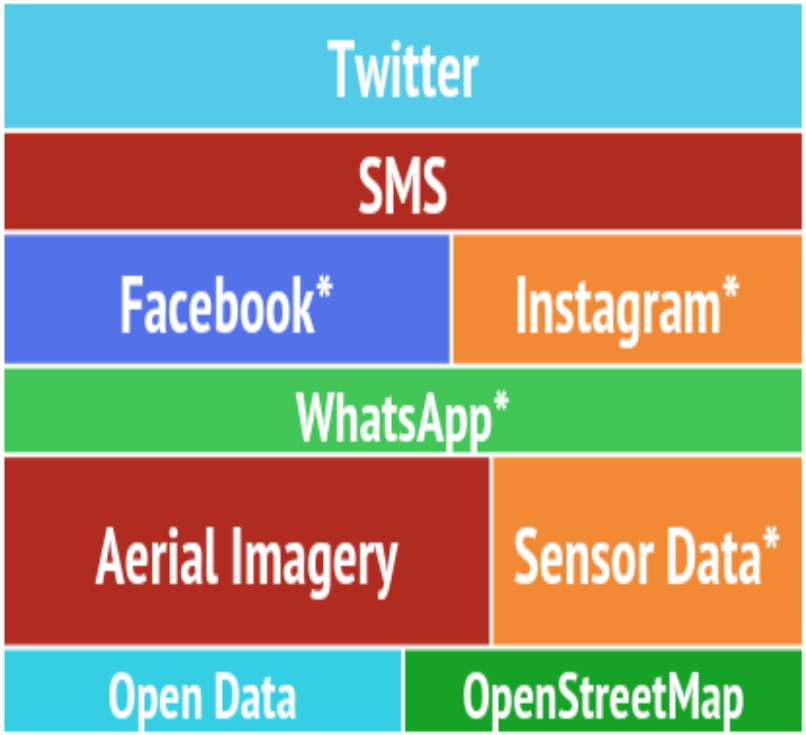
DataKind

HUMANITYROAD

PEACE
GEEKS

Help EARTH Foundation

Social & Data Ecosystem



Social Computing can use a number of data formats to do research analysis. Social data can be used with physical and open data to provide insights.

*We seek to research these data types pending technology changes and data licenses.

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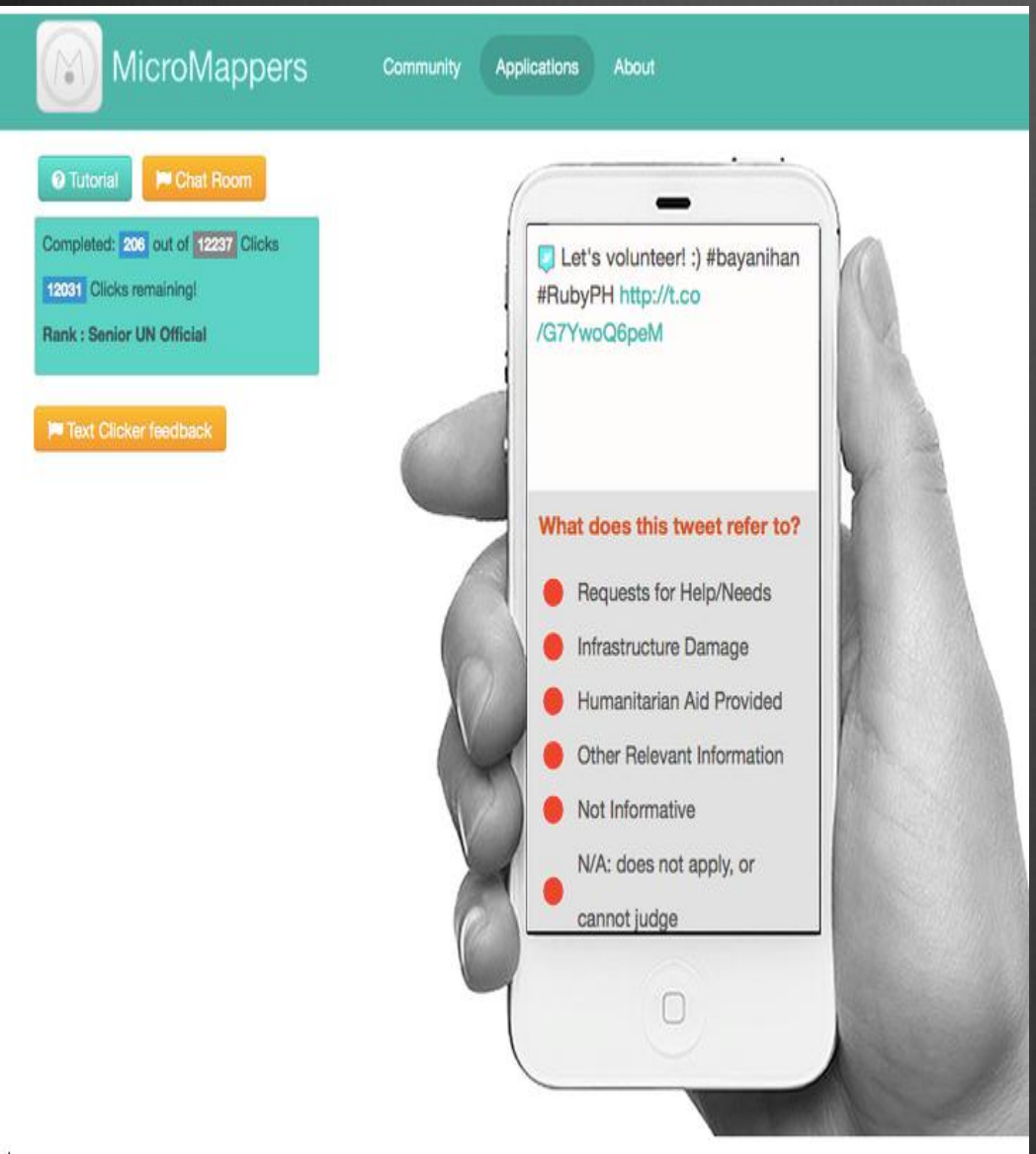
MicroMappers

AIDR
ARTIFICIAL INTELLIGENCE FOR DISASTER RESPONSE



Tag: Requests for Help/Needs
Human-tagged tweets: 71 (0.73%)
Machine-tagged tweets: 123 (0.41%)
Precision: 0.57
Recall: 0.25
AUC: 63.00%

Tag: Humanitarian Aid Provided
Human-tagged tweets: 323 (3.34%)
Machine-tagged tweets: 915 (3.08%)
Precision: 0.33
Recall: 0.23
AUC: 74.00%

Tag: Infrastructure Damage
Human-tagged tweets: 260 (2.69%)
Machine-tagged tweets: 122 (0.41%)
Precision: 0.43
Recall: 0.12
AUC: 72.00%

Tag: Other Relevant Information
Human-tagged tweets: 2,279 (23.56%)
Machine-tagged tweets: 9,925 (33.43%)
Precision: 0.48
Recall: 0.37
AUC: 73.00%

Tag: Not Informative
Human-tagged tweets: 6,742 (69.68%)
Machine-tagged tweets: 18,601 (62.66%)
Precision: 0.77
Recall: 0.87
AUC: 75.00%

Summary:
Human-tagged tweets: 9,675 total
Machine-tagged tweets: 29,686 total
Precision: 0.52 avg
Recall: 0.37 avg
Quality (AUC)*: 71.80%

Tag	Item	Tagger	Action
Other Relevant Informati	Typhoon #Haguipit Update: Etna's family safely return home as their evacuation centre is cleared	MicroMappers	Delete
Other Relevant Informati	Response to #TyphoonHaguipit in #Philippines, shows lessons learned from a year ago @USEmb	MicroMappers	Delete
Not Informative	"Kick polluters out of climate talks. We refuse a future where deadly storms are a..." http://t.co/	MicroMappers	Delete
Not Informative	No more #RubyPH thanks god	MicroMappers	Delete
Other Relevant Informati	Typhoon Haguipit: report from the Philippines. Blog: Typhoon Haguipit: report from the Philippin	MicroMappers	Delete
Other Relevant Informati	Philippine storm kills 27, but no damage to Manila	theSundaily http://t.co/e6oulfEfFK via @sfs	MicroMappers	Delete
Requests for Help/Needs	Help those affected by typhoon #Haguipit. Give $1 dollar towards recovery. https://t.co/v4Y1SGf	MicroMappers	Delete
Not Informative	@sunsweetSA I know ed sheeran is a music man and typhoon haguipit is a typhoon, but other th	MicroMappers	Delete
Not Informative	#Haguipit yet another reminder that all governments must ramp up efforts 2 cut their emissions	MicroMappers	Delete
Not Informative	I missed being on twitter. I've been away for 1 week due to Typhoon Haguipit that hit Eastern Vis	MicroMappers	Delete
Infrastructure Damage	Aerial images of Philippine houses torn apart in aftermath of Typhoon Haguipit http://t.co/sjjVV	MicroMappers	Delete
Not Informative	"We're out here in the Philippines. I'm so blessed to come out here to help this devastation" - Ju	MicroMappers	Delete
Other Relevant Informati	Philippines Official On Typhoon Haguipit: 'The Impacts Of Climate Change Are... http://t.co/YoIr	MicroMappers	Delete
Not Informative	#EditorsPicks: Will and Kate, Colbert, Haguipit, & More .. Must see pics! http://t.co/pAWbmSoW	MicroMappers	Delete
Infrastructure Damage	Typhoon-battered islands heed lessons of Haiyan. Southeast Asia http://t.co/Rpp9jfRo4l via @B	MicroMappers	Delete
N/A	WEDNESDAY ! üí©D Goodbye #RubyPH ôÂôÂôÂ http://t.co/b9UD22HGit	MicroMappers	Delete
Not Informative	"@JBCrewdotcom: "We're out here in the Philippines. I'm so blessed to come out here to help thi	MicroMappers	Delete
Other Relevant Informati	Super-storm Haguipit changes direction towards Spratly Island - VietNamNet Bridge http://t.co/	MicroMappers	Delete
Other Relevant Informati	Philippines Prepares for Typhoon With Cancelled Flights http://t.co/uKcNVCtb9s #Skiftnews	MicroMappers	Delete
Other Relevant Informati	Nice work from @yulsman http://t.co/YqYNCgjUYM	MicroMappers	Delete

Page 1 of 502 Human-tagged tweets 1 - 20 of 10030

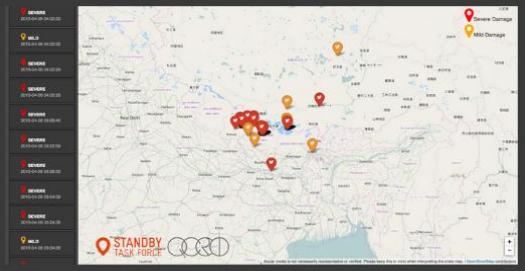
Download

Download Human-tagged tweets for all classifiers of this collection

Format: Spreadsheet (.csv) Single JSON object (.json) One JSON per line (.txt-json)

MicroMappers Curate Damage Assessment Data

MICROMAPPERS FOR NEPAL EARTHQUAKE RESPONSE (APRIL 2015)



2803

MicroMapper Contributors

234727

Number of images reviewed

55044

Number of text items reviewed

410

Image Map Marker count

219

Text Map marker count

UN OCHA requested help to provide social information insights and situational awareness in response to the Nepal Earthquake of April 25, 2015. The MicroMappers community lead by the Standby Task Force and the Qatar Computing Research Institute team collectively aggregated, curated and identified tweets and images about damage assessements and needs in Nepal. This will inform humanitarian decision-makers.

Thanks to the MicroMappers, Standby Task Force, QCRI Staff and UNOCHA. More on: MicroMappers.org

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Timeline

2010 QCRI Created
2012 QCRI's Social Innovation Programme

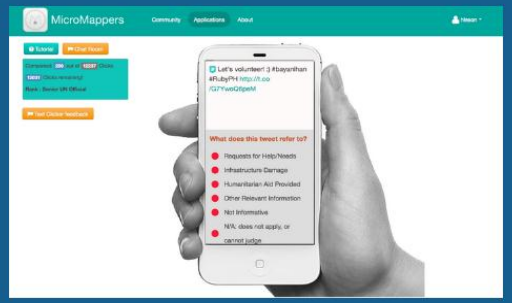
2013
- AIDR Development starts
- MicroMappers Development starts
- Uaviators Created
- Typhoon Haiyan Response with UN OCHA

2014
- MicroMappers - Coconuts for Computer Vision
- UNICEF AIDR SMS - Zambia
- Typhoon Hagupit Response

2015
- WoRDE prototype with Translators without Borders
- Cyclone Pam (Vanuatu Response)
- Nepal Earthquake Response

MICROMAPPERS IN ACTION

MicroMappers launched the Image and Text Clickers in response to Typhoon Hagupit (Ruby). These tools makes it possible for anyone to contribute. We provide curated images and text. The Mappers make decisions. Our team and partners provide the insights to UN OCHA.



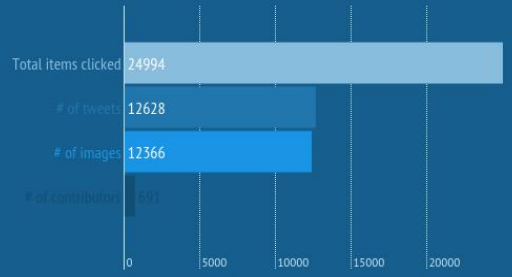
50394

Each tweet was reviewed 3 times by MicroMappers. So many clicks!

33377

Each photo was reviewed 3 times by MicroMappers. Click. Click.

Here are the unique statistics for the MicroMappers Typhoon Hagupit (Ruby) Deployment:



Thank you to the all the MicroMappers, Standby TaskForce, GIS Corps and QCRI colleagues. Well done!

Create infographics infogr.am

Aerial Sensors

Unmanned Aerial Systems

UAViators

HUMANITARIAN UAV NETWORK

DRAW
EDIT
SAVE
DELETE

AIDR
ARTIFICIAL INTELLIGENCE
FOR DISASTER RESPONSE

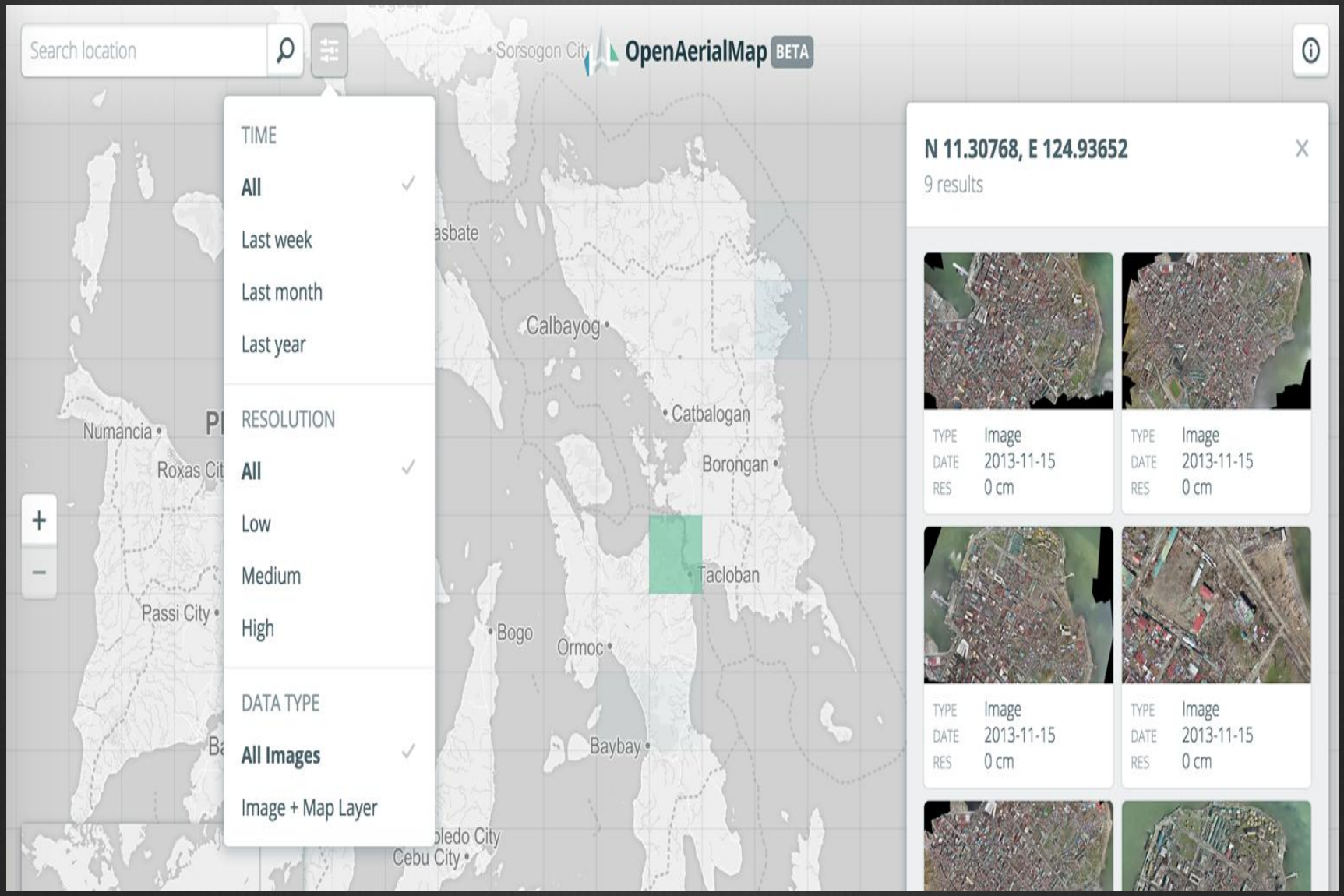
AIDR
ARTIFICIAL INTELLIGENCE
FOR DISASTER RESPONSE

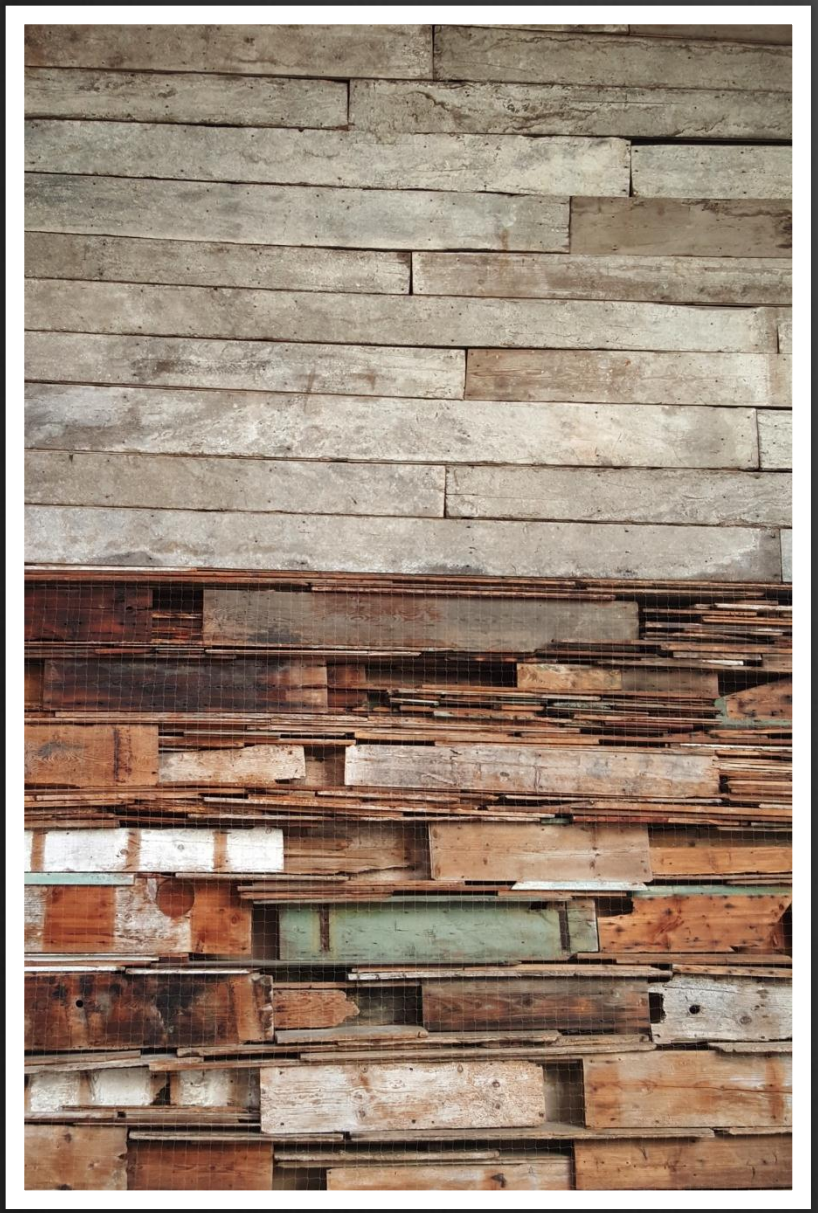
Young Mappers in Indonesia, Bangladesh and the United States of America

Kathmandu Living Labs – civic tech hubs & labs support resilience

Partnerships and Coordination

OpenAerialMap





Open Aerial Data Pipeline

Data Collection – Satellite & Aerial

Data Processing – manual, tools

MACHINE LEARNING

Data Filtering – MicroMappers/Pybossa

Data Tasking/Mapping – Task Manager

HUMAN COMPUTING

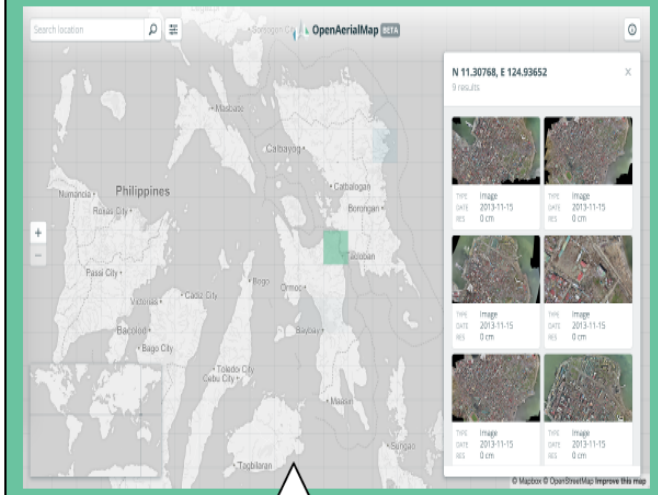
Data Validation – Tier Tech Support or automated?

Data Analysis / Monitoring and Evaluation

MORE RESEARCH

Browser

www.OpenAerialMap.org



Interactive map for image discovery:

- Browse
- Search
- Filter
- Preview
- Download

External applications using OAM API (e.g. QGIS OAM Plugin)

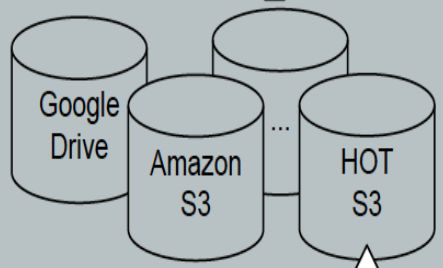
Catalog

api.OpenAerialMap.org

{"meta":{"provided_by":"OpenAerialMap","license":"CC-BY 4.0","website":"http://beta.openaerialmap.org","page":1,"limit":4000,"found":1099},"results":"Hello, world!"}

OIN Indexing + Application Program Interface providing catalog access to the OAM browser and external applications

OIN



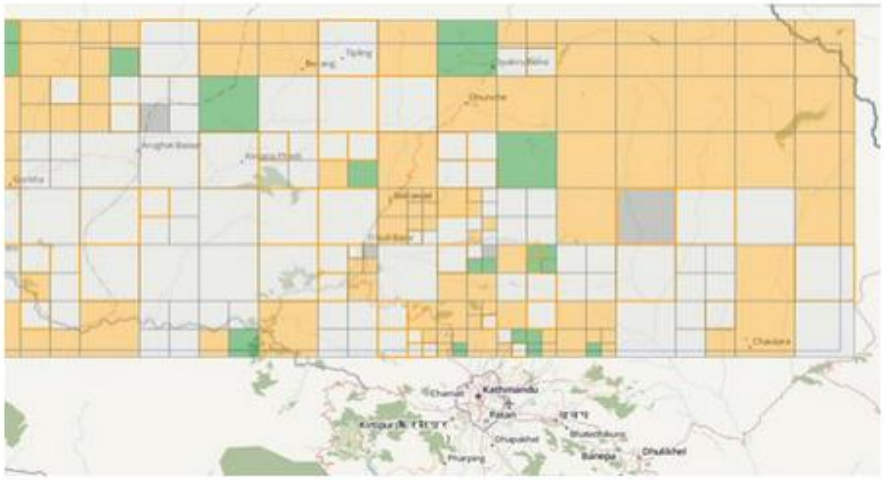
github.com/OpenImageryNetwork

Open Imagery Network: a simple, distributed federation of highly available public file stores

Bill Gates
@BillGates

Following

Citizen cartographers are helping earthquake efforts by mapping roads & open spaces: b-gat.es/1IbMilH



RETWEETS 610 FAVORITES 644

1:35 AM - 5 May 2015

Reply to @BillGates

معهد قطر لبحوث الحوسبة
Qatar Computing Research Institute
عضو في مؤسسة قطر
Member of Qatar Foundation

ص.ب. ٥٨٢٥
برج التورنيدو, الطابق ١٨
الخليج الغربي, الدوحة - قطر
هاتف ٠٦٢٩ ٤٤٥٤ ٩٧٤+
فاكس ٠٦٣٠ ٤٤٥٤ ٩٧٤+

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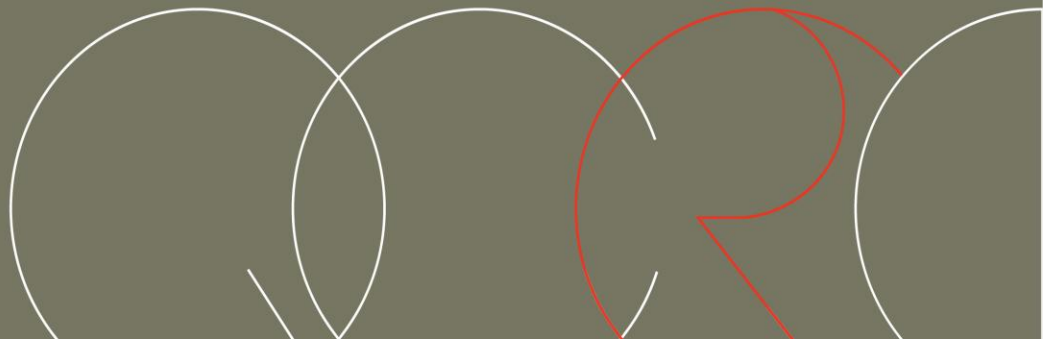
Thank you

Heather Leson
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