Lives on the Line
Securing Crisis Maps in Libya, Sudan, and Pakistan

DEFCON 19 - 2011
george chamales - rogue genius llc
The Humanitarian Technology Community needs your help.
Crisis Mapping Platform

Information

Aid

Reports

Crisis

Aid

USAID

OCHA

Federal Emergency Management Agency

United States Agency for International Development

Crisis

Platform

Reports
I'm asking for help. I am lost beneath a house. Second Floor 147 Avenue Christophe Chanel Carrefour
Natural Disasters
Don’t Shoot Back
Taliban issues threat to 'foreign horde' of aid workers in Pakistan helping flood relief effort

By JAMES WHITE

Last updated at 5:28 PM on 27th August 2010

Foreign aid workers could become a target for Taliban fighters as they help Pakistani flood victims, a spokesman for the militant group claimed today.

As increasing numbers of aid agencies fly into the disaster-hit country to offer assistance, spokesman Azam Tariq said the 'horde of foreigners' could be at risk.

The terrorist group has a history of attacking aid workers, including agencies under the UN umbrella.

 Pakistani Taliban spokesman Tariq claimed that the US and other countries that have pledged support are not really focused on providing aid to flood victims but have other motives he did not specify.

'Behind the scenes they have certain intentions, but on the face they are talking of relief and help,' he said.

'No relief is reaching the affected people, and when the victims are not receiving help, then this horde of foreigners is not acceptable to us at all,' UN humanitarian chief John Holmes said it remains committed to helping flood victims in Pakistan.
Obviously Faked Reports

Site Blocked by IP address

Inadvertent Spam DOS
Protecting Observers

Verifying Information

Trusting Volunteer Analysts
Haiti
January 2010
< 18 Months

Libya
June 2011

Syria

Bahrain

Egypt
Excellent #Libya "Crisis Map" can help #UN #WFP plan #humanitarian #food, also 4 borders w/ #Tunisia #Egypt - http://libyacrisismap.net/main
“We gave Egyptian National Security a dedicated username and password [to access the Ushahidi platform]”
“Ooh Shiny!”

“Oh $#!@!”

“Don’t just stand there, 
DO SOMETHING!”
Users’ Identities Compromised → People Arrested

Site Knocked Offline → Lifeline Lost

Deployment Compromised → Technology Abandoned
This is where you come in
Present What’s Been Done So Far

Feedback on Current Best Practices

Generate Interest in the Security Community
LIVE SIMULATION

Insert Crisis Here
There has just been a ____________ in the country of ________________.

As a team from _______________ we are responsible for deploying a crisis map in order to ________________.
There has just been a _______________

REVOLUTION

NATURAL DISASTER

MILITARY CRACKDOWN

CONTESTED ELECTION

OUTBREAK OF SECTARIAN VIOLENCE
...in the country of ____________
...as a team from the ____________________________

ON THE GROUND
Bahraini blogger dies in custody; journalists under attack

Iranian blogger arrested before Germany trip

Jailing Maikel Nabil betrays the Egyptian people's revolution

By unjustly imprisoning the blogger Maikel Nabil, the Egyptian army only amplifies his simplistic pro-Israel rantings

Maikel Nabil is an Egyptian citizen and blogger who was sentenced to three years' imprisonment on 10 April by a secretive military tribunal on the dubious charge of "insulting the army". This is a grave violation of human rights and a betrayal of the objectives of the Egyptian people's revolution. His sentence must be overturned regardless of what one thinks of Nabil's writings or his politics. Patriotism cannot be invoked to defend injustice.
“We gave Egyptian National Security a dedicated username and password [to access the Ushahidi platform]”
Most Vulnerable

Individual

Local NGO

Media Org

International NGO

Least Vulnerable

Military

Direct Attacks
Reputation

TED Fellow

Colleague’s Consulting

Worked on Pakreport
Isolation of Operations

- Individual
- Local NGO
- Media Org
- International NGO
- Military
Threats to Deployment Managers

Ignorance

Education
Standards
Best Practices

Direct Attacks

Anonymity
Bigger the Better

Infiltration

Reputation
Isolate Operations
...we are responsible for deploying a crisis map.
...we are responsible for deploying a crisis map

Code it Yourself

Open Source Crisis Mapping Apps

Kludge Existing Services
2008

2011

george chamales // DEFCON USA - 2011
Reports are private until approved......unless
Platform Considerations

Security
- Code Vetting
- Secure Coding

Adaptability
- Source Access
- Helpful Authors
- Previous Additions
...we are responsible for deploying a crisis map
Platform Location

Observable

Encryption
Obfuscation

Attackable

DOS Prevention
IP Mobility
Synchronization
Expect Outages
...in order to ________________.
Setup Platform
basic tech skills + server

Operate Successfully
the skills needed to perform the deployment effectively, securely
Spreading the Word

No One

Private Network

Everyone
Message Corruption
Spreading the Word

Misinterpretation
Anonymity
Bigger the Better

Corruption
Source Access
Helpful Authors
Collection Sources

Direct Messages

Social Media

Professional Media
A Gay Girl
In Damascus

A Heterosexual
Married American
Guy in Ireland

http://www.guardian.co.uk/world/2011/jun/13/syrian-lesbian-blogger-tom-macmaster
Collecting Reports

Verification

- History
- Reputation
- Collaboration

Collection

- Multiple Methods
- Expect Outages
Message Processing

Local Team  Crisis Mapping Community  Any Online Volunteers  Automated Analysis
### Low-Tech Crowdsourcing

<table>
<thead>
<tr>
<th>INCIDENT TITLE</th>
<th>LOCATION</th>
<th>CATEGORY</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>APPROVE</th>
<th>VERIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>347 Economiste</td>
<td>4, Rue Abdelaziz Ethaabi, El Menzah V Tunis</td>
<td>Geo-Located, Print, Other</td>
<td>36.846959</td>
<td>10.174695</td>
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<td>YES</td>
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<tr>
<td>349 Le Temps</td>
<td>1004 El Menzah - Tunis - Tunisia</td>
<td>Geo-Located, Print, Other</td>
<td>36.846959</td>
<td>10.174695</td>
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<tr>
<td>340 Nessma TV</td>
<td>14, Rue 8006, Monplaisir 1073, Tunis</td>
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<td>25, Rue Jean Jaures, Tunis 1000, Tunisia</td>
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<td>36.80325</td>
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<td>69 Health Clinic - Gasser Ben Ghashir</td>
<td></td>
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<td>32.683284, 13.175867</td>
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<td>NO</td>
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<tr>
<td>38 HOSPITAL, Tripoli</td>
<td>Tripoli Medical Centre</td>
<td>Geo-Located, Hospital Location, Media News</td>
<td>32.854679, 13.229728</td>
<td>13.230099</td>
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<td>Tripoli Central Hospital</td>
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<td>32.880596, 13.190106</td>
<td>13.190981</td>
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<tr>
<td>48 HOSPITAL - Tripoli - Al Jalaal Children Hospital</td>
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<td>Geo-Located, Hospital Location, Media News</td>
<td>32.8851, 13.1633</td>
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<td>39 HOSPITAL, Tripoli</td>
<td>Tripoli Eyes Hospital</td>
<td>Geo-Located, Border Crossing, Refugees/IDPs</td>
<td>32.8962, 13.200803</td>
<td>13.201043</td>
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</tr>
</tbody>
</table>

Desperate refugees continue to flow to Libya's border
Want to Help Humanitarian Operations in Libya using your Laptop? Join UN Volunteers Online Now!

By PATRICK | Published: MARCH 10, 2011

The UN Online Volunteer Service (OVS) has now teamed up with the UN Office for the Coordination of Humanitarian Affairs (OCHA) and the Standby Task Force to support crisis mapping efforts in Libya. This means you can now join the UN as a volunteer to provide direct support to the humanitarian response in Libya.
Help map SMS messages from the crisis in Pakistan

**Instructions**

This job involves the translation, categorization and geotagging of SMS messages from Urdu, Pashtu or English speakers. This is a volunteer job for humanitarian benefit. We thank you in advance for your efforts to support this project.

1. Read the SMS message from Pakistan.
2. If you don’t understand the language the SMS is written in, click “I can’t understand this language, get me a new message”.
3. If the SMS is illegible, junk, or does not contain words, check the box to “Mark as not enough information”.
4. Answer the questions that follow.
5. Select the appropriate/applicable category for the message from the list shown. You may select more than one category.
6. If the SMS contains geographic information, click on the map to place a red marker in the location nearest to the geographic location from the SMS.

Please use the “Notes” box to include any other relevant or important information about the SMS message content. Thank you!

**The SMS:** [FL communities using un safe water resources (rivers,ponds) in thatta, sindh]

**Can you translate this SMS?**

- I can’t understand this language, get me a new message

**Language** *(required)*

- English
- Pashtu
- Urdu
- Other

Please fill out as many fields about this SMS as possible

Hi-Tech Crowdsourcing
Crowdsourced Micro-Tasking

Filtering Tips

1. PRETEND THE LATITUDE / LONGITUDE DOESN'T EXIST. If the message words itself mention a location, ignore it.
2. Super-critical messages: If you see a message that the key words have a major impact to responders, significant violence in the area, ignore it.
3. When in doubt, mark NO LOCATION. If a message explicitly states "no location".
4. Use your best judgement on whether or not to mark "no location". If the information in the message is something that you can use to do your job.
5. A location can be anything that could be used in a city, state, name of hospital / school / etc.
6. When in doubt, mark "No Location"

Description

- Spam: Message is completely out of context.
- Can't Understand: Have no idea what is being said.
- Not Actionable: No description of needs or information.
- No Location: No location is mentioned in the message.
- Actionable: Message has a location and a clear need.

Categories

- Agriculture
- Camp Mgmt
- Comms
- Education
- Functioning communication hubs
- Health
- Logistics
- Medical Emergency
- Not Actionable
- Nutrition
- Other
- Personal Security
- Priority
- Protection
- Recovery
- Search and Rescue
  - Missing persons
  - Removal of corpses
  - Buried and injured persons
- Shelter
- Unspecified help requests
- Water and Sanitation

00479 - the people in the village of god need food and water so that they can stay. It is in the university of Kiskeya (in the area of delmas 35 right of the main delmas road). Please respond - 00479 GeoLoc ( )

Preprocessed by the QN Plugin SMS Parser**
Message Processing

Infiltration

Need to Know
Corroboration

Inaccuracy

Corroboration
Reputation
History
Post-Crisis Opportunities
YES

Worth it?
Lives on the Line
Defending Crisis Maps in Libya, Sudan, and Pakistan

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