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Crowdsourced Data, Volunteer Activism & Crisis Mapping from a GIS Perspective



The International Network of Crisis Mappers

- A venue for an interdisciplinary mix of field practitioners, scholars, specialists to meet
 - Conference, ICCM
 - Virtual
- Sharing via google groups and Ning

What is Crisis Mapping?

An interdisciplinary new field?

A subfield of GIS? Something else?



Brega, a local doctor told the BBC. A convoy of military vehicles was hit when a trailer carrying explosives was hit. Children could be among the victims. It has not been confirmed.

<http://www.telegraph.co.uk/news/worldnews/africaandthemiddleeast/libya/1175000/Libya-Live.html> ★

/Libya-Live.html ★

uuugggh

where did you get this one?

I follow links from twitter thru to see where they lead

I see

..

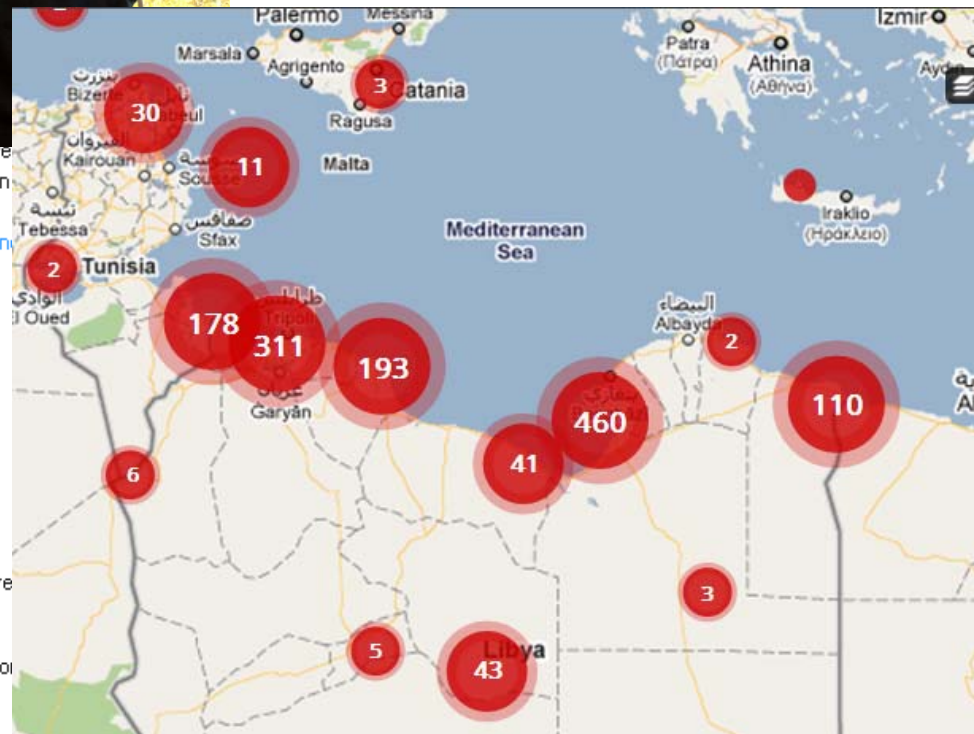
it says it hasn't been confirmed though

but one thing we know for sure, things are going on in Brega

yes.. its a keep an eye out or look for more info

URGENT: #Malta flagged cargo ship "GLYFADA" now in port

that from twitter.



- People Movement
- Health
- Logistics
- Security/Threat
- Sources
- Humanitarian Response
- 3W Clusters
- Media Outlets
- Material Need
- Int'l Coalition



Origins & Accelerants

- Participatory maps
- User-friendly platforms
- Crowdsourced event data:
 - Cell phones, twitter, social media



Core components of Crisis Mapping

- **Data**
 - Crowdsourced events
 - Imagery
 - Roads, landcover, other variables
- Visualization
- Analysis
- Response & P2P Connection

[+ Modify Date](#)

<input type="checkbox"/> Aggregate Counts (إجمالي العدد)	<input type="checkbox"/> Food Tampering (التلاعب بالطعام)
<input type="checkbox"/> Announcement (إعلان)	<input type="checkbox"/> Killed (قتل)
<input type="checkbox"/> Article (مقال)	<input type="checkbox"/> Missing (مفقود/اعتقال)
<input type="checkbox"/> Eyewitness Report (تقرير شاهد عيان)	<input type="checkbox"/> Water Tampering (التلاعب بالمياه)

Optional Information

Select a City



Find Location

* Search for your location using a location name or latitude,longitude coordinates (format: 38.19,-85.61), or click on the map to pinpoint the correct location.

Example: Corner of City Market, 5th Street & 4th Avenue, Johannesburg

Browse...

Syria Tracker

Missing, Killed, Shaheed, Martyr, Kidnapped, Eyewitness, Report

English (US)

+ SUBMIT A REPORT

HOME

REPORTS

SUBMIT A REPORT

GET ALERTS

CONTACT US

ABOUT US

DISCLAIMER

Eyewitness account from Syria

UNVERIFIED

16:36 Apr 29 2011 Syria

Eyewitness Report (تقرير شاهد عيان)

Description

[Editor's Note: These accounts come via sources in Syria. Their identities are being withheld for their own protection.] I was in Zaid Mosque which had heavy security presence under the guise of protecting people. The sermon attempted to calm people down, but it was not long before less than 200 people started a demonstration calling [...]

News Source Link

<http://alive.in/syria/blog/2011/04/29/eyewitness-account-from-syria/>

Credibility: 0

Leave A Comment

Name:

Email:

Comments:



Wider map

Additional Reports

Eyewitness account from Syria

16:36 Apr 29, 2011


Syria, 0 Kms

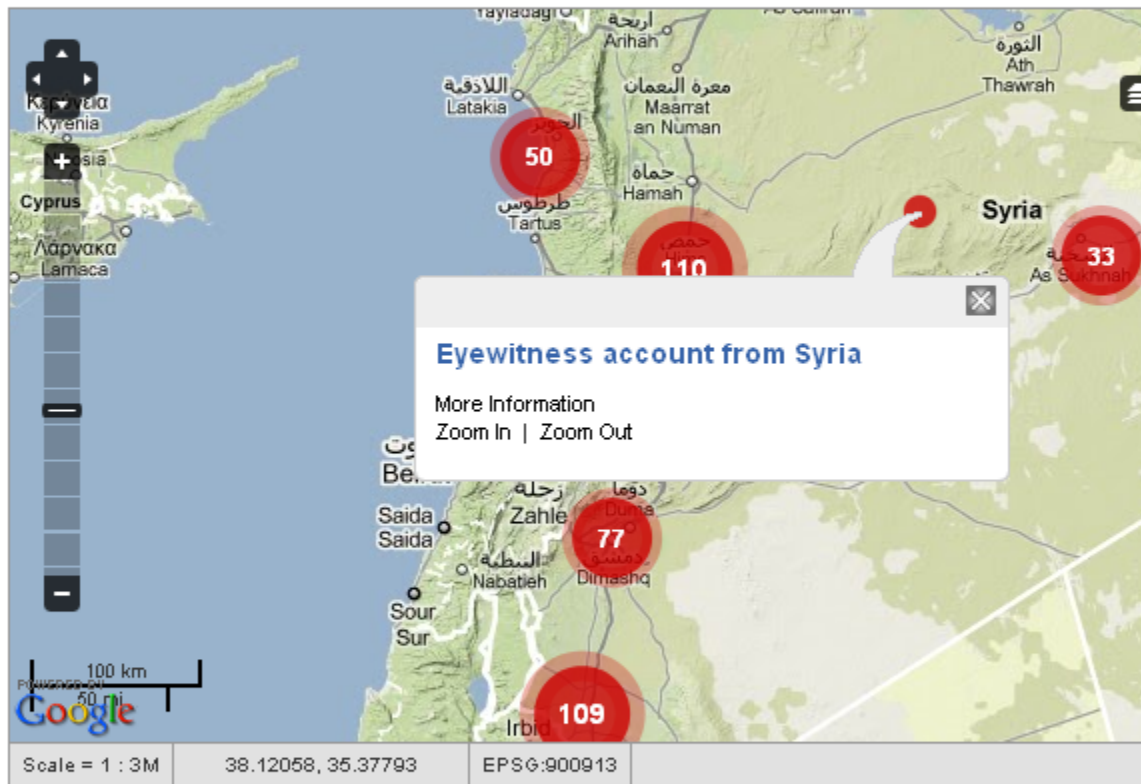
Rising death toll

16:08 Apr 23, 2011

Please help us document the crimes in Syria. Please see disclaimer for additional information.

FILTERS → **REPORTS** NEWS PICTURES VIDEO ALL

 FULL SCREEN MAP




From: Apr 2011 to: May 2011

Play




↓ CATEGORY FILTER [HIDE]


ALL CATEGORIES


 MISSING (اعتقال/مفقود)

 KILLED (قتل)

 TWITTER REPORTS


 EYEWITNESS REPORT (تقرير شاهد عيان)

 ANNOUNCEMENT (إعلان)

 FOOD TAMPERING (العبث بالغذاء)

 WATER TAMPERING (العبث بالمياه)

 ARTICLE (مقال)

 AGGREGATE COUNTS (إجمالي العدد)

How to Report

1. By sending an email to svriatracker@gmail.com



Clipped from blogs.aljazeera.net

A screenshot of the Al Jazeera website. The Al Jazeera logo is at the top left. A yellow sticky note is placed over the top right of the page, reading "Al Jazeera live blog 10 Febr". Below the sticky note, the website header shows "ALJAZEERA" and navigation links like "In Depth", "Programmes", "Video", "Blog", and "Business". A section titled "Live blog Feb 11 - Egypt protests" is visible, with a sub-headline "Journalists in Middle East on February 10th, 2011". Below this is a photo of a crowd of people at night. To the right, a section titled "Recent Middle East Blog Posts" lists several articles, including "Live blog Feb 11 - Egypt protests" and "Khartoum explosions: No surprise".

A graphic with a light beige background. At the top, the text "Text your needs to" is written in a simple font. Below it, the number "4636" is written in large, bold, dark red font. Underneath the number, the text "in Haiti" is written in a large, bold, black font. To the right of the text, there is a small illustration of a blue car and several white tents on a green field. In the bottom right corner, there is a small logo for "Ush".



SMS can facilitate telling your story



Volunteers fill the gap



In Haiti? Text **4636** (International: **+44 762.480.2524**) on Digicel or Comcel with your **location and need**. Report emergencies and missing persons.

Haiti

The 2010 Earthquake in Haiti

Ushahidi-Haiti @ **Tufts**
UNIVERSITY

Search Reports Here:



DOWNLOAD REPORTS (3605)



REPORTS RSS

Transitioning to Noul.ht

Our local partner, Haiti-company Solutions, has the most up-to-date reports for first responders — please visit their site for the most current data.

+ SUBMIT INCIDENT

HOME

REPORTS

SUBMIT INCIDENT

GET ALERTS

CONTACT US

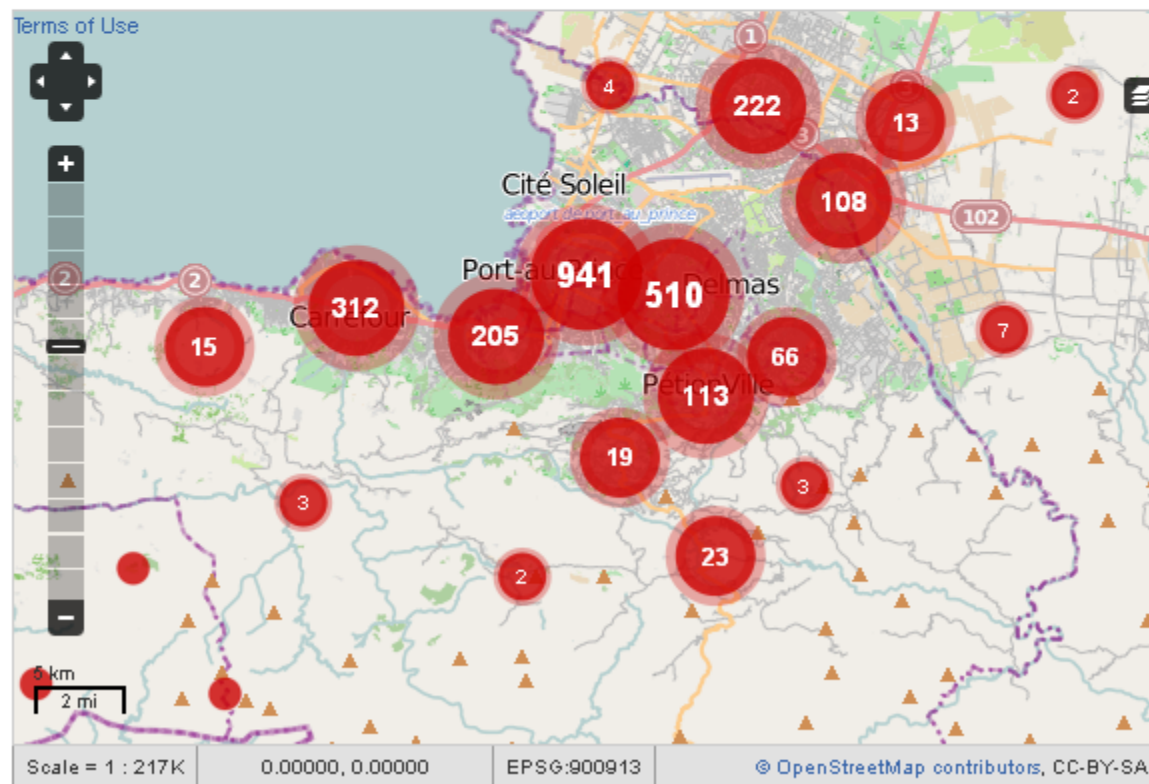
HOW TO HELP

ABOUT

FILTERS → **REPORTS** NEWS PICTURES VIDEO TODO

VIEWS → **CLUSTERS**

↓ CATEGORY FILTER



↓ TIMELINE OF EVENTS

ALL CATEGORIES



1. URGENCES | EMERGENCY

2. URGENCES LOGISTIQUES | VITAL LINES

3. PUBLIC HEALTH

4. MENACES | SECURITY THREATS

5. INFRASTRUCTURE DAMAGE

6. NATURAL HAZARDS

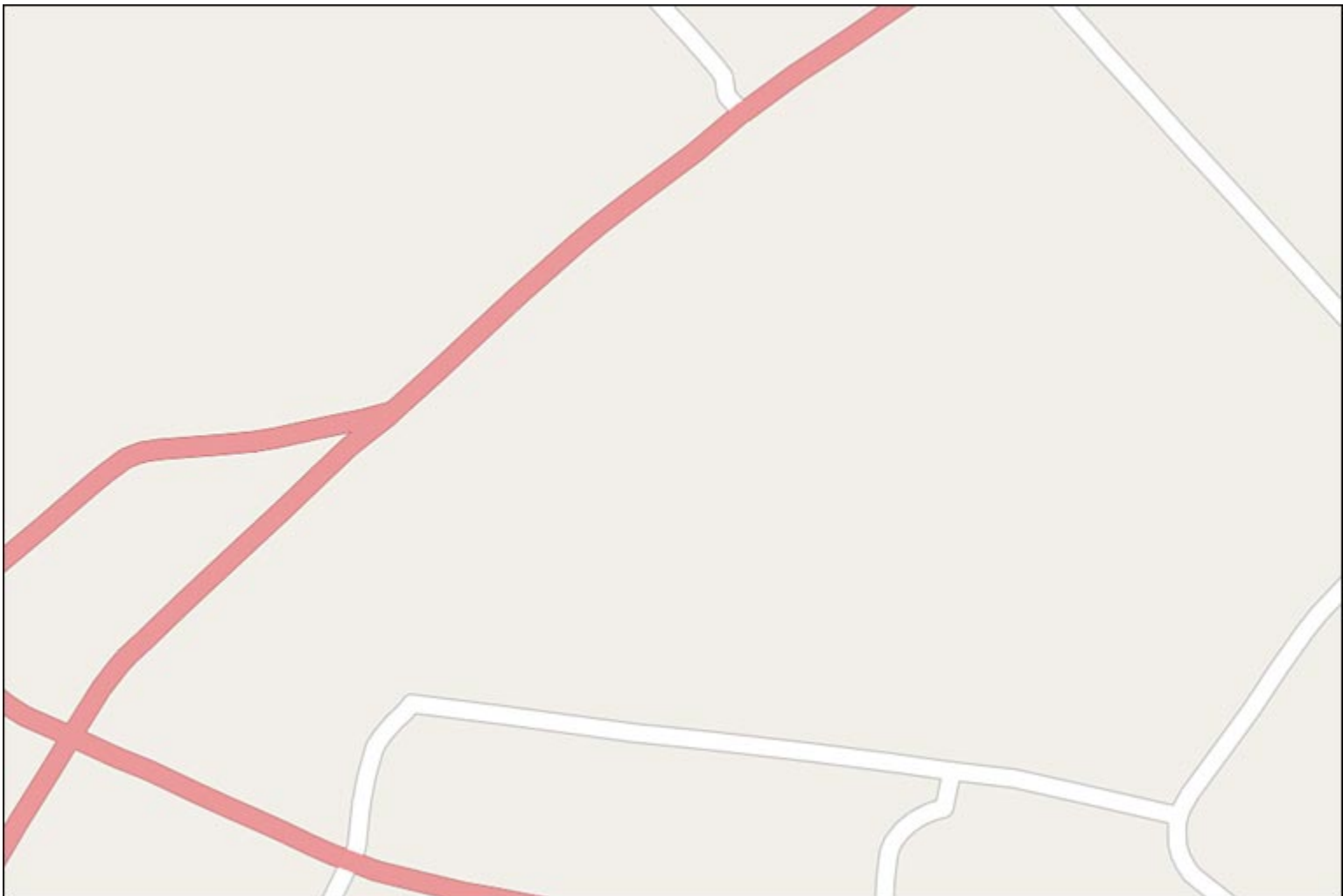
7. SECOURS | SERVICES AVAILABLE







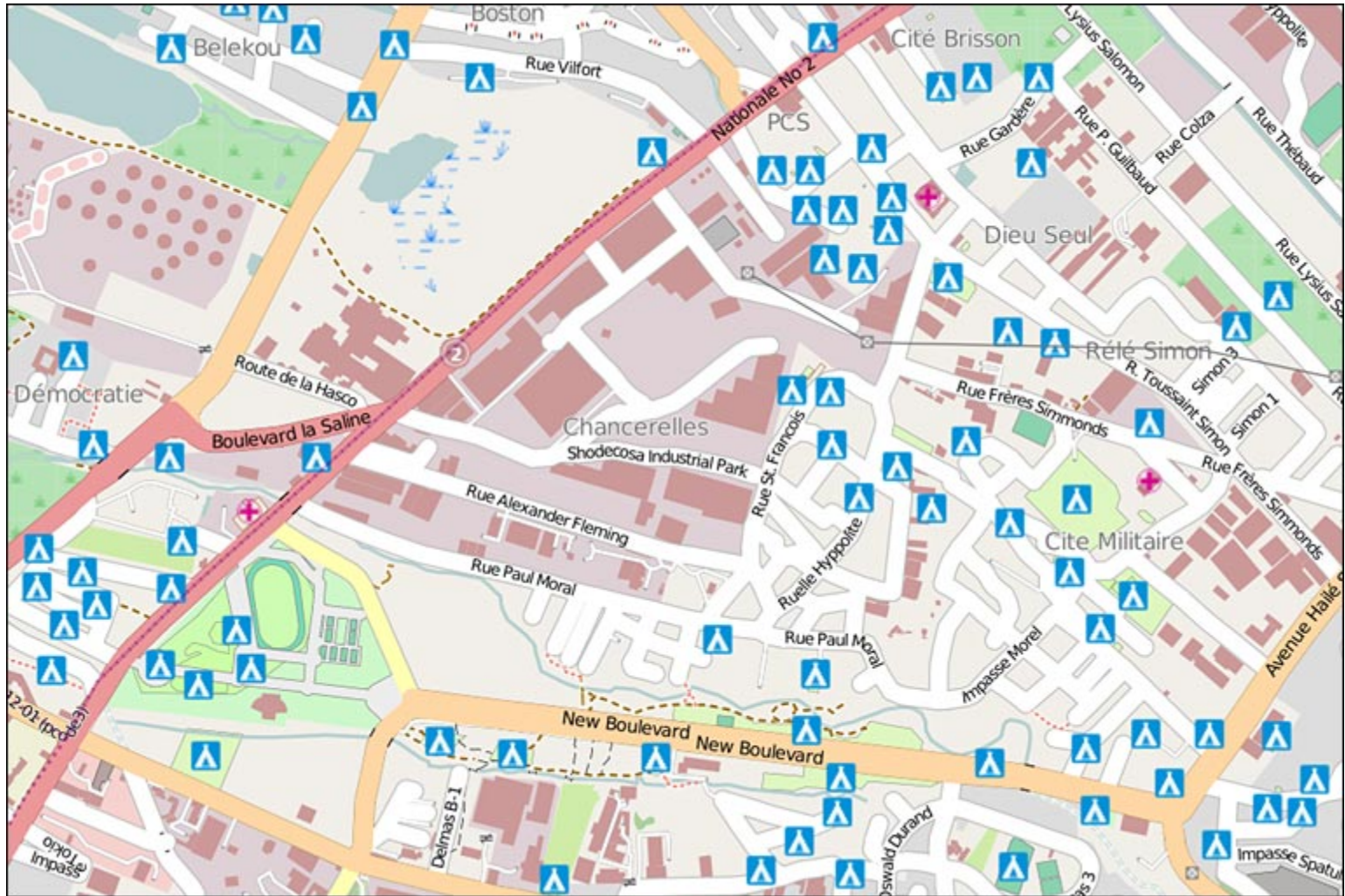
Good road maps: sine qua non for Crisis Mapping



Open Street Map - 24 hours later



The power of the volunteer HOT-OSM community



<http://vimeo.com/9182869>

موقع يوشايد لا يتضمن أي مسئولية بخصوص صحة التقارير المرفوعة على الموقع، هذه التقارير المرفوعة تمثل جزء فرعي مصر عن تجارب المواطنين والتي يتم اصدار تقارير نتائجها بواسطة أفراد مستقلين ولا تعطي هذه التقارير صورة كاملة عن الأحداث في مصر

FILTERS → **REPORTS** NEWS PICTURES VIDEO ALL

عرض الخريطة الكاملة



↓ [CATEGORY FILTER] [HIDE]

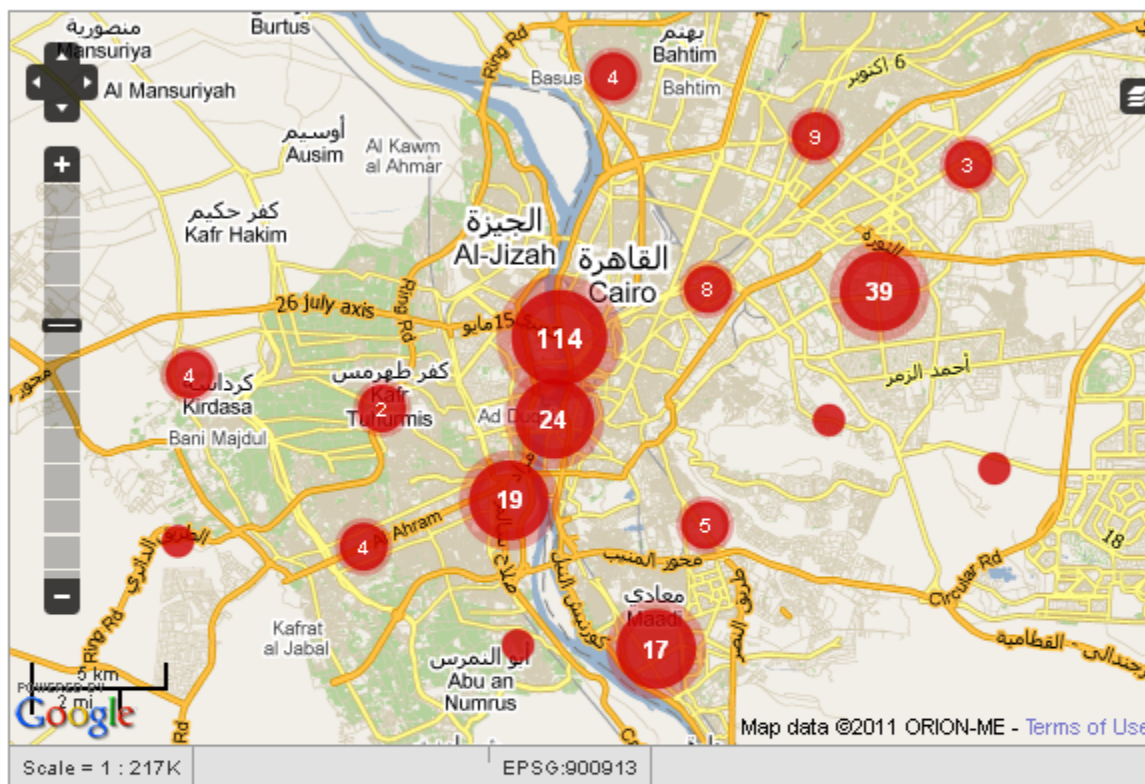
-  ALL CATEGORIES
-  A.CAMPAIGN EVENT
-  CANDIDATES PREVENTED FROM REGISTERING
-  DEMONSTRATION / RALLY
-  ILLEGAL CAMPAIGNING
-  VIOLATION OF POLITICAL RIGHTS
-  MEDIA BIASED
-  OTHER
-  B.VOTING ISSUE
-  C.POLLING STATION
-  D.VOLENCE
-  E. ALL WENT WELL

التصنيف الأكثر أهمية

FILTERS → **REPORTS** NEWS PICTURES VIDEO ALL

FULL SCREEN MAP

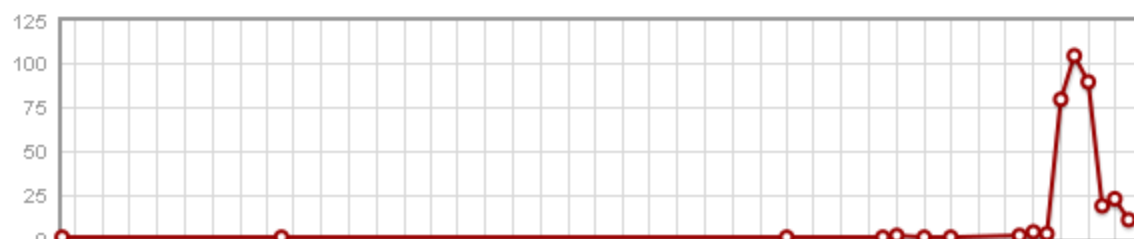
↓ CATEGORY FILTER [HIDE]



From: Oct 2004 to: Apr 2011

Play

Oct 2004 2004 2005 2006 2006 2007 2008 2008 2009 2010 2011 Apr 2011

**ALL CATEGORIES**

TOUCHING

CATCALLS

OGLING

COMMENTS

STALKING OR FOLLOWING

PHONE CALLS

INDECENT EXPOSURE

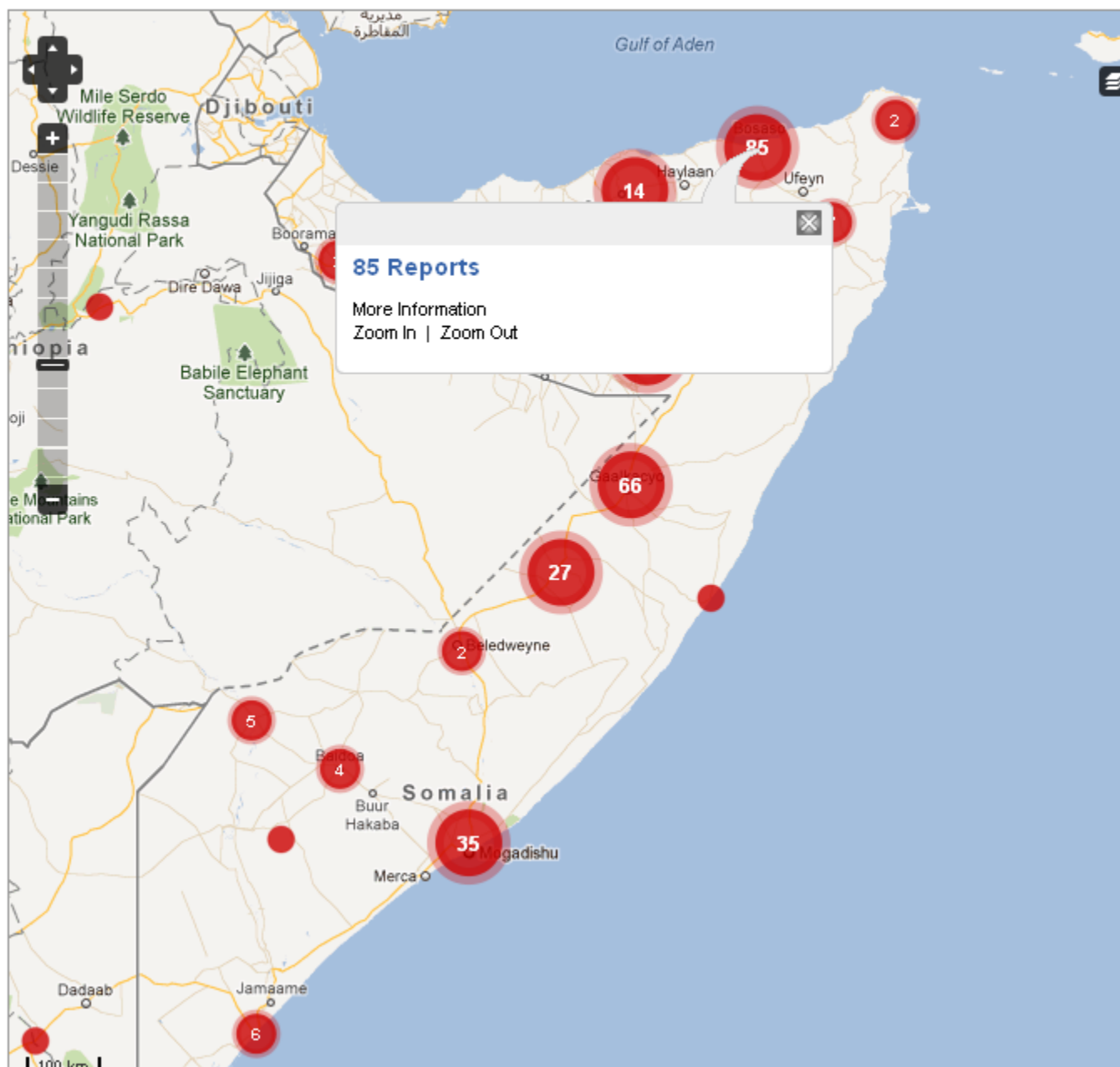
SEXUAL INVITES

FACIAL EXPRESSIONS

RAPE / SEXUAL ASSAULT

How to Report

1. By sending a message to **0169870900**
2. By sending an email to report@harassmap.org
3. By sending a tweet with the hashtag/s **#harassmap**
4. By filling this [form](#)



↓ CATEGORY FILTER [HIDE]

ALL CATEGORIES

ECONOMIC

POLITICAL

SOCIAL

SMS:+456099103

ABOUT THIS PROJECT

Al Jazeera English is aggregating unheard from inside Somalia by asking via text mes "How has the Somalia Conflict affected you

Responses are currently being translated i English and plotted onto the map.



Showing Reports from Dec 05, 2007 through Jan 14, 2012 [change date range](#)

List

Map

12

1-50 of 85 Reports

<>



268751763 0

17:36 Dec 07, 2011

These are hard times especially what Bosaso is facing. - Anonymous, Bosaso



116340508 0

12:42 Dec 07, 2011

In dawn after morning prayer Sheikh Dr Ahmed, who was a well-known Islamic scholar, was killed in Bosaso.



116420442 1

12:39 Dec 07, 2011

I lost my kiosk through this fire. I was born in Kandala



SMS 0

08:42 Dec 07, 2011

In the last few months the city of Bosaso has had a knock on effect on life. The scholars that were preaching the good to the people and where...



000100054 0

List

Map

12

1-50 of 85 Reports

<>

Filter Reports By

Category

[Clear](#) ▾

- All Categories 339
- Economic 128
- Political 77
- Social 167

Location

[Clear](#) ▸

Type

[Clear](#) ▸

Media

[Clear](#) ▸


Verification

[Clear](#) ▸[Reset all filters](#)




FILTER REPORTS

Both problems & solutions...

<http://www.snowmageddoncleanup.com/#>



3 Steps to Helping

- 
1. Report a problem or solution.
- 
2. Look for reports near you.
- 
3. Use the report's comment section to connect with neighbors.

Organize a Cleanup Party
Help cleanup your local school / church / temple / community organization!

Legend:

- SIDEWALK PROBLEM
- CAR STUCK
- POWER OUTAGE
- PLOWS NEEDED
- ELDERLY/DISABLED ASSISTANCE
- POTHOLE
- SOLUTIONS**
- SNOWBLOWER AVAILABLE**
- PLOW AVAILABLE
- SHOVEL TO SHARE
- CLEANUP PARTY
- VICTORIES

Snowmageddon Cleanup Challenge

Washingtonians, the challenge has been laid. Go the extra mile to help your fellow neighbor dig us out of the snow. Dig out a car. Shovel a sidewalk. Salt a driveway. Whatever you do.

Concerns raised: Verification

Information Evaluation

Approve this Report?

☐ Yes ☒ No

Source Reliability:

— Select One —

— Select One —

Yes, the source has direct access to information (witness or actor)

Yes, the source has access to information, but can be wrong

Yes, the source has no direct access to information, but is often right

Not always, but is often right

No, the source has (had) no access to information

I do not know

Verification II

Information Evaluation

Approve this Report?

☐ Yes ☒ No

Source Reliability:

— Select One —

Information Probability:

— Select One —

— Select One —

Yes, the information is confirmed by several independent sources

Yes, the information is not confirmed (yet), but is likely

Yes, the information makes sense

No, the information is surprising

No, the information is unlikely and may be disinformation

I do not know

The Standby Task Force

Online Volunteer Community for Live Mapping

[About](#)[Our Model](#)[Deployments](#)[Partners](#)[Events](#)[Praise](#)[In the News](#)[Contact](#)[APPLY NOW](#)[REQUEST ACTIVATION](#)

About

In the aftermath of some of the recent disasters we have witnessed an increasing number of informal actors, largely volunteer based, entering the field of crisis mapping for humanitarian response. The development of ICTs has opened unprecedented space for engagement to a variety of individuals and groups, regardless of their physical location and affiliation to traditional responders. Similarly, with increased access to technology local communities – always the first responders in crisis situations – are not only building and improving their own preparedness and response systems, but are also more effectively engaging in traditional humanitarian preparedness.

1

tweet

retweet



Search

Recent Posts

- [Samoa Simulation SBTF After-Action Report](#)
- [The Spirit of the SBTF: A Global Network of Self-Starters](#)
- [Standby Human Resources](#)
- [A Review of SBTF Deployments in 2011](#)
- [Mapping the Democratic Republic of Congo Elections](#)

Categories

- [Uncategorized](#)

SBTaskForce Twitter

- Our [#Libya](#) deployment in collaboration with [#WHO](#) stopping for 24 hours to allow [#GISCorps](#) to do data cleaning and quality control [#health 2012-01-04](#)
- need exact location of Albiyar Hospital [#benghazi](#) [#libya](#) anyone can



An ecosystem of remote assistance

- Standby Task Force, Open Street Map, GISCorps, CrowdFlower, Crisis Mappers, Crisis Commons, MapAction, Geeks Without Bounds...
- Working with local communities, international institutions, NGOs...

Person Finder: Haiti Earthquake

[English](#) | [Français](#) | [Kreyòl](#)

What is your situation?

[I'm looking for
someone](#)

[I have information
about someone](#)

Currently tracking about 32500

PLEASE NOTE: All data entered will be available to the public and viewable and usable by anyone. Google does not review or verify the accuracy of this data.

[Embed this tool on your site](#) - [Developers](#)

powered by


Person Finder: 2011 Japan Earthquake

[日本語](#) | [English](#) | [한국어](#) | [中文 \(简体\)](#) | [中文 \(繁體\)](#)

What is your situation?

[I'm looking for
someone](#)

[I have information
about someone](#)

Currently tracking about 17300 records.

PLEASE NOTE: All data entered will be available to the public and viewable and usable by anyone. Google does not review or verify the accuracy of this data.

[Embed this tool on your site](#) - [Developers](#) - [Terms of Service](#)

powered by




Crisis Maps help:

- Collect evidence: intimidation, human rights violations, torture, deaths, sexual harassment, GBV, election monitoring,



© 2006 DigitalGlobe Inc. All rights reserved.

Before: Porta Farm Community prior to the eviction and demolition operation. Approximately 850 structures are clearly visible.



© 2006 DigitalGlobe Inc. All rights reserved.

After: Porta Farm after eviction of residents and demolition of structures. Few buildings remain in the image and vegetation has overtaken much of the area.

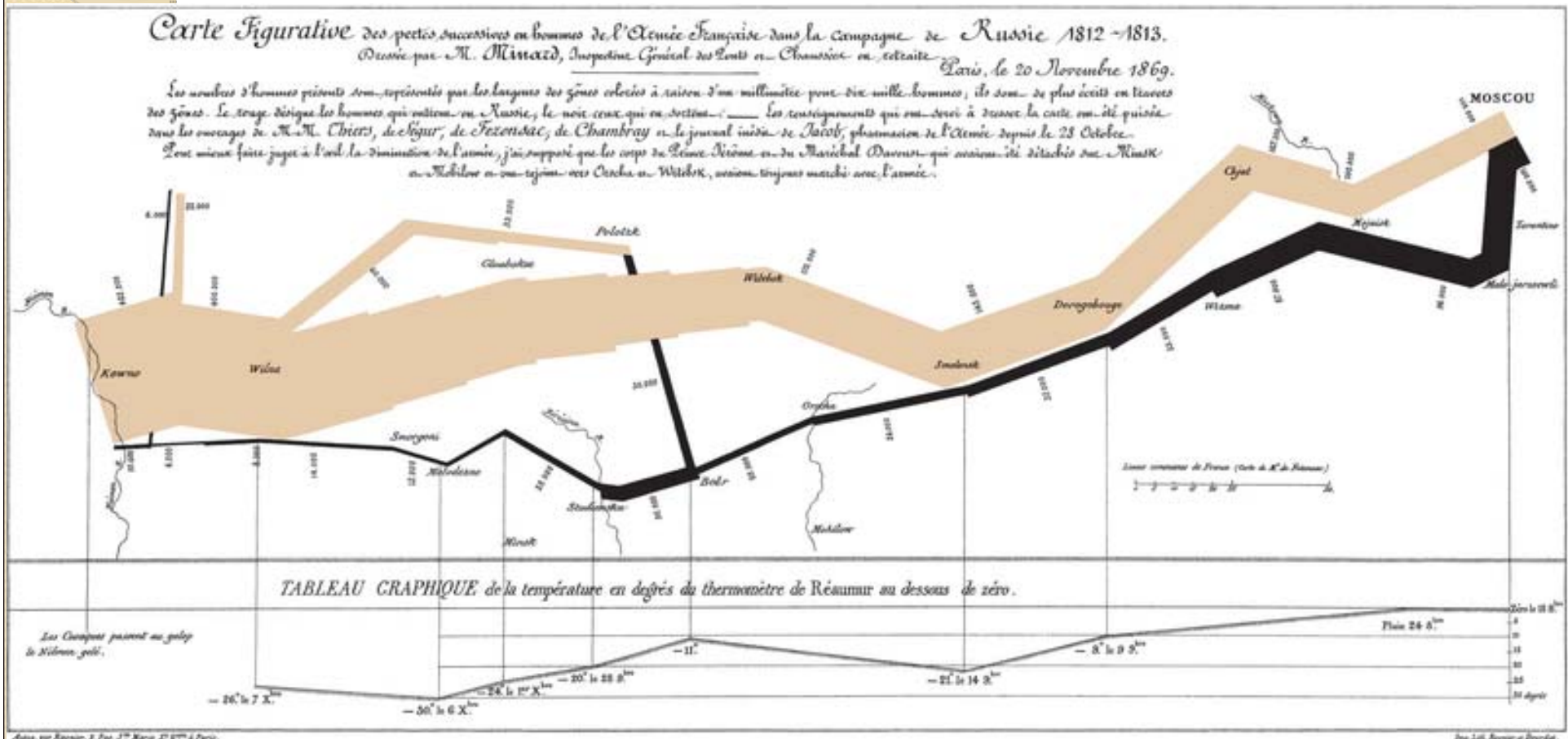
Friends at Public Laboratory: balloons & kites for grassroots mapping



What can we learn from Crisis Maps?

Creative ways to visualize complex data:

Napoleon's march



Analysis: Snow's Cholera Map

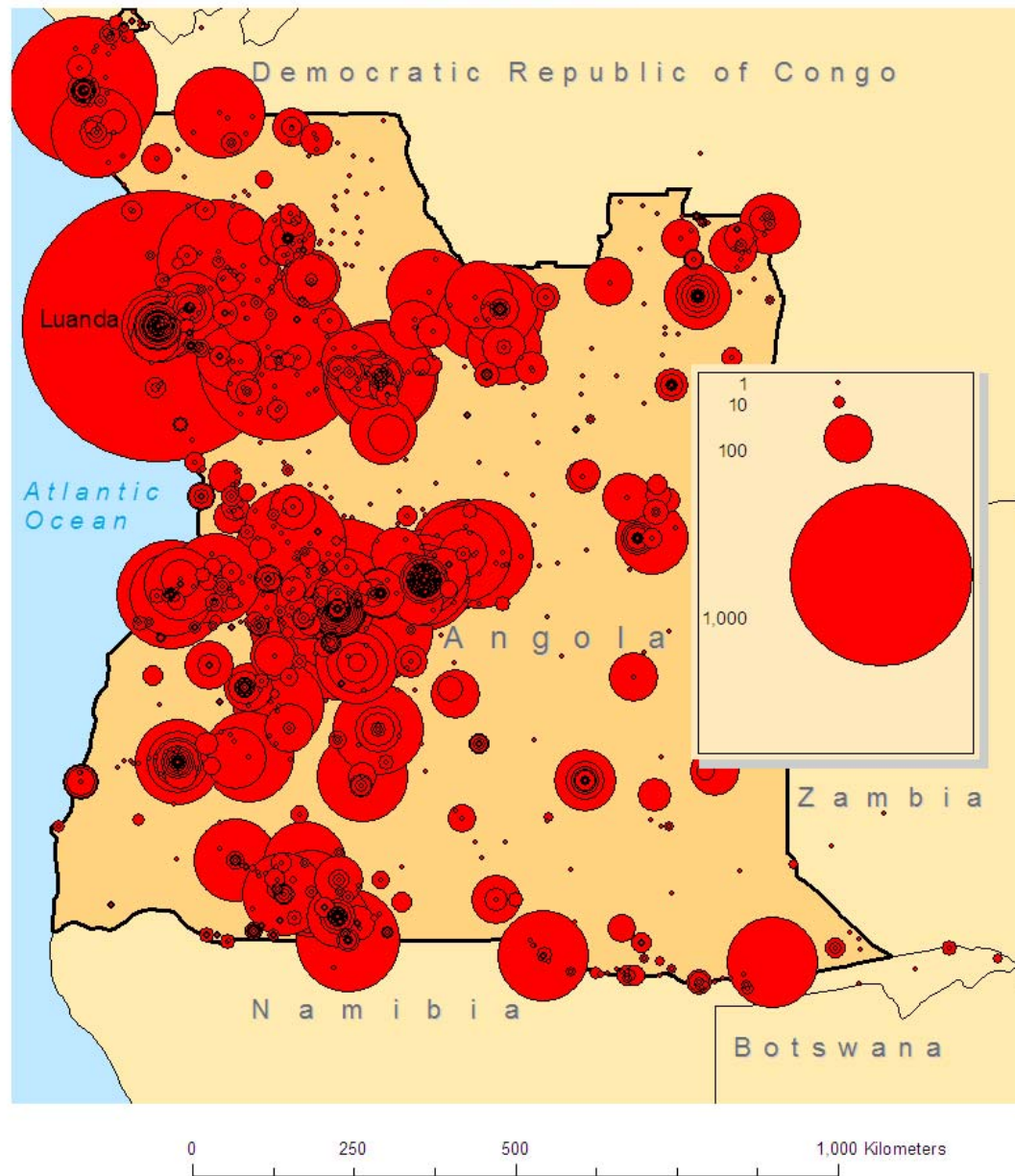




Sample questions & hypotheses from a crisis map

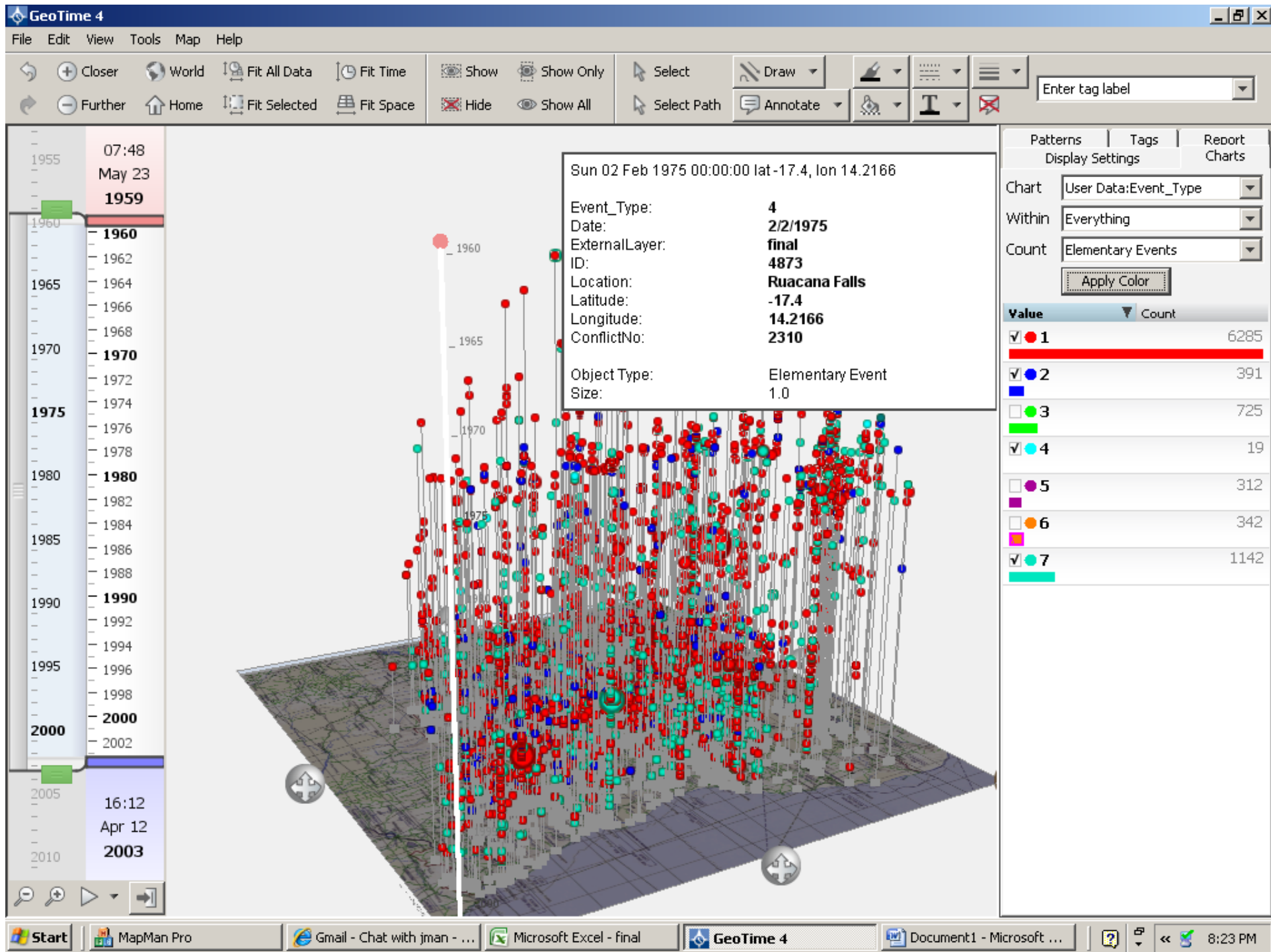
- What explains why combatants sometimes target civilians while at other times they refrain from doing so?
- The deliberate targeting of civilians is NOT a ubiquitous feature in war. What explains patterns, variation and change?
- Coping with complex spatio-temporal event data

Civilian Casualties in Massacres 1961-2002

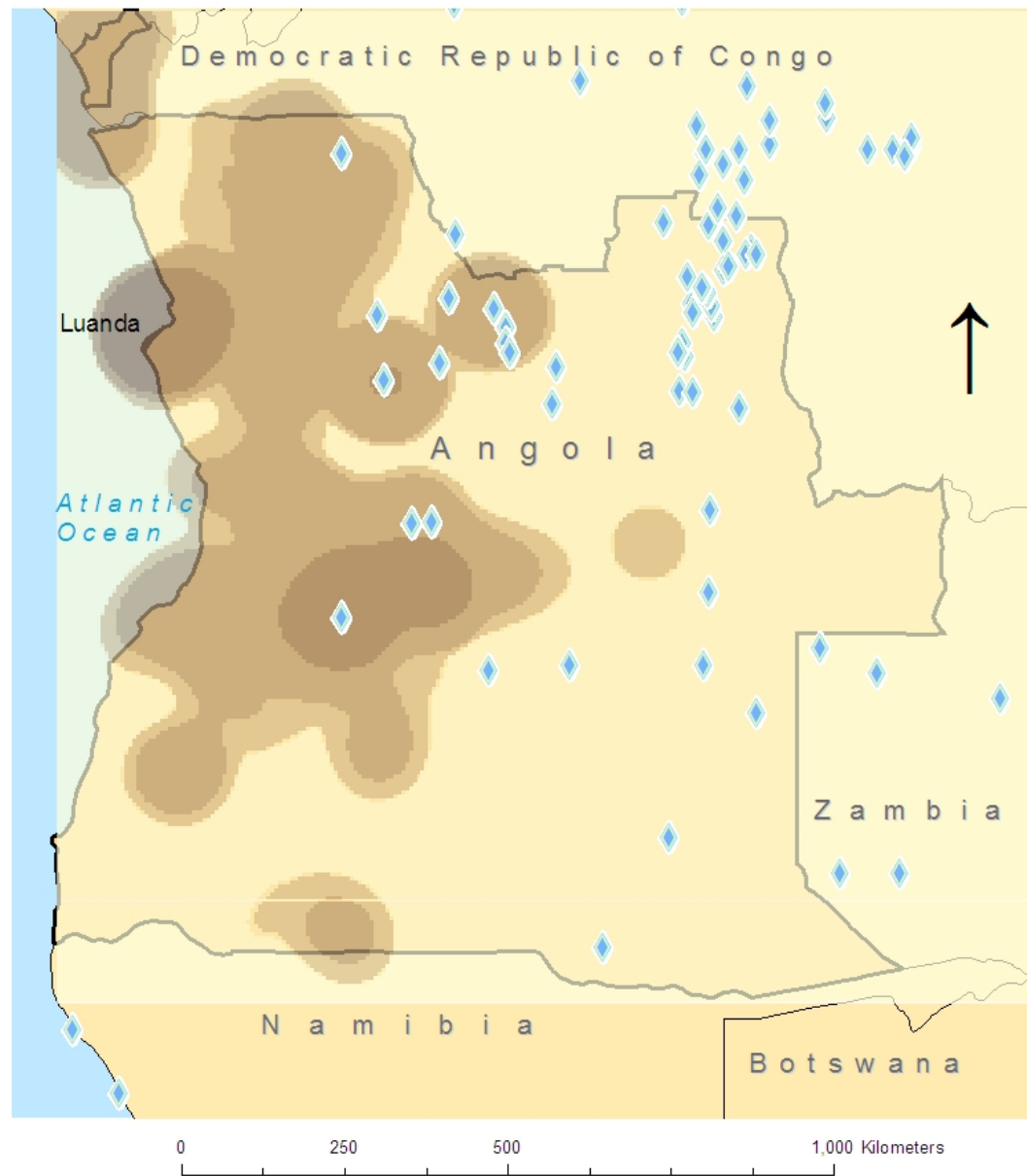


This
horrific
war...

and so
many
dots

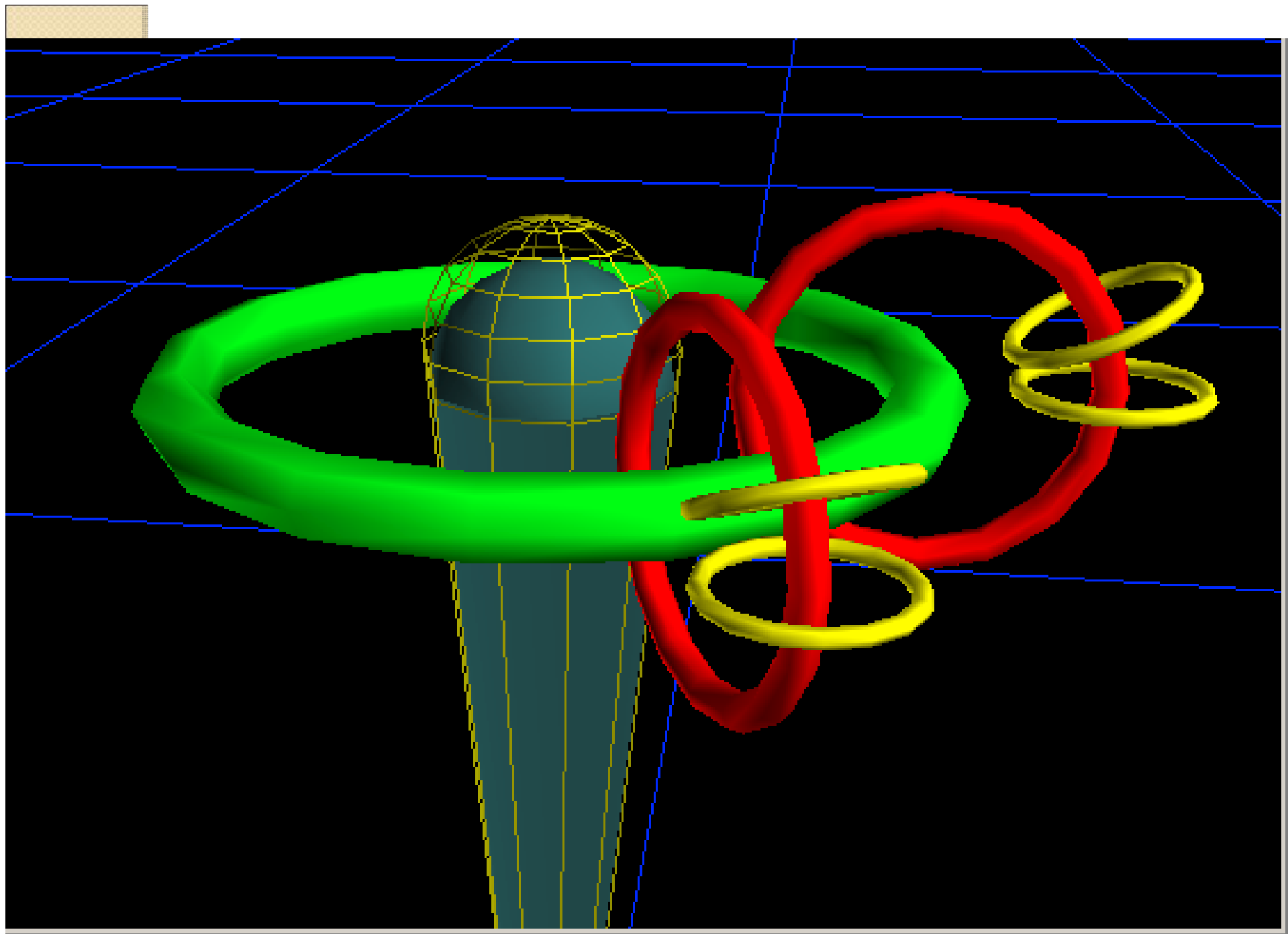


Diamond Deposits and Event Density



Author: Jen Ziemke, 2007

Kernel Density Function
Geometrical Interval = 5; Z = 1





A girl can dream...

- Complex visualization for pattern detection and hypothesis formulation
- Cross-event space-time correlations



Crisis Mapping Analytics

- Detecting the signal from the noise
- Understanding existing patterns, dynamics, trends
- Testing for spatial effects (autocorrelation, clustering/dispersion)
- Testing hypotheses (proposed correlations, relationships)
- Forecasting
- Data-mining



Learning from you...

- Maps collecting location-event data
- Spatial point pattern processes:
Criminology and epidemiology
 - Mapping space-time discrete events: incidents of crime, an explosion, battle, food distribution points, etc.



Connecting back

- Closing the communications loop:
 - linking back to affected populations
 - Working within existing systems in the humanitarian community



Let's brainstorm next steps!

- For the ecosystem
- For “volunteers”
- For affected populations
- For analysts/experts in GIS
- For working together in cross-disciplinary teams
- For finding ways to preserve this new knowledge



What is Crisis Mapping?

- A field, a sub-field, a practice, just a good party, or nothing new under the sun?
What is your perspective?
- I look forward to learning from you!
Thank you.