



Promoting Cooperative Solutions for Space Sustainability

United Nations/Belarus Workshop on Space Technology
Applications for Socio-Economic Benefits
Minsk, Belarus – 11-15 November 2013



The role of space technologies....

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**The Secure World Foundation (SWF)
is a private operating foundation
dedicated to the secure
and sustainable
use of space
for the benefit of Earth
and all its peoples**



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Basic Facts

- Non-profit operating foundation
- 3 offices – Colorado, Washington, Brussels
- Strong role in policy development in both the international and domestic policy communities
- Key Governance Focus Areas: Space sustainability, space policy, **human and environmental security** and NEO

Your social media alphabet



Android



Blogger



Classmates



Delicious



Eventbrite



Facebook



Google+



Hootsuite



iOS



Jive



Klout



LinkedIn



Myspace



Netlog



Orkut



Pinterest



Quora



Reddit



StumbleUpon



Twitter



Ustream



Viadeo



Wordpress



Xing



Yammer



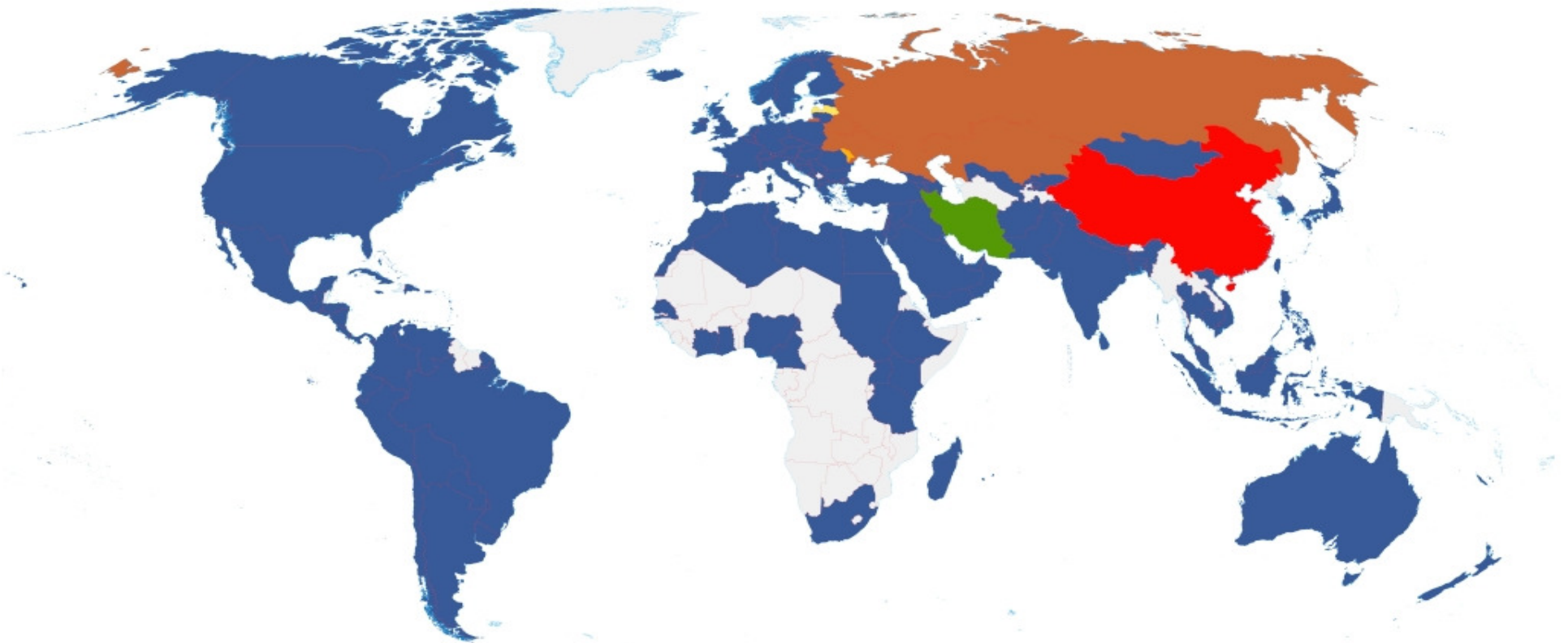
Zoomr



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WORLD MAP OF SOCIAL NETWORKS

June 2013



Facebook QZone V Kontakte Odnoklassniki Cloob Draugiem

Source: [credits: Vincenzo Cosenza vincos.it](http://www.vincenzo-cosenza.com)
<http://www.vincenzo-cosenza.com/2013/06/27/world-map-of-social-networks/>

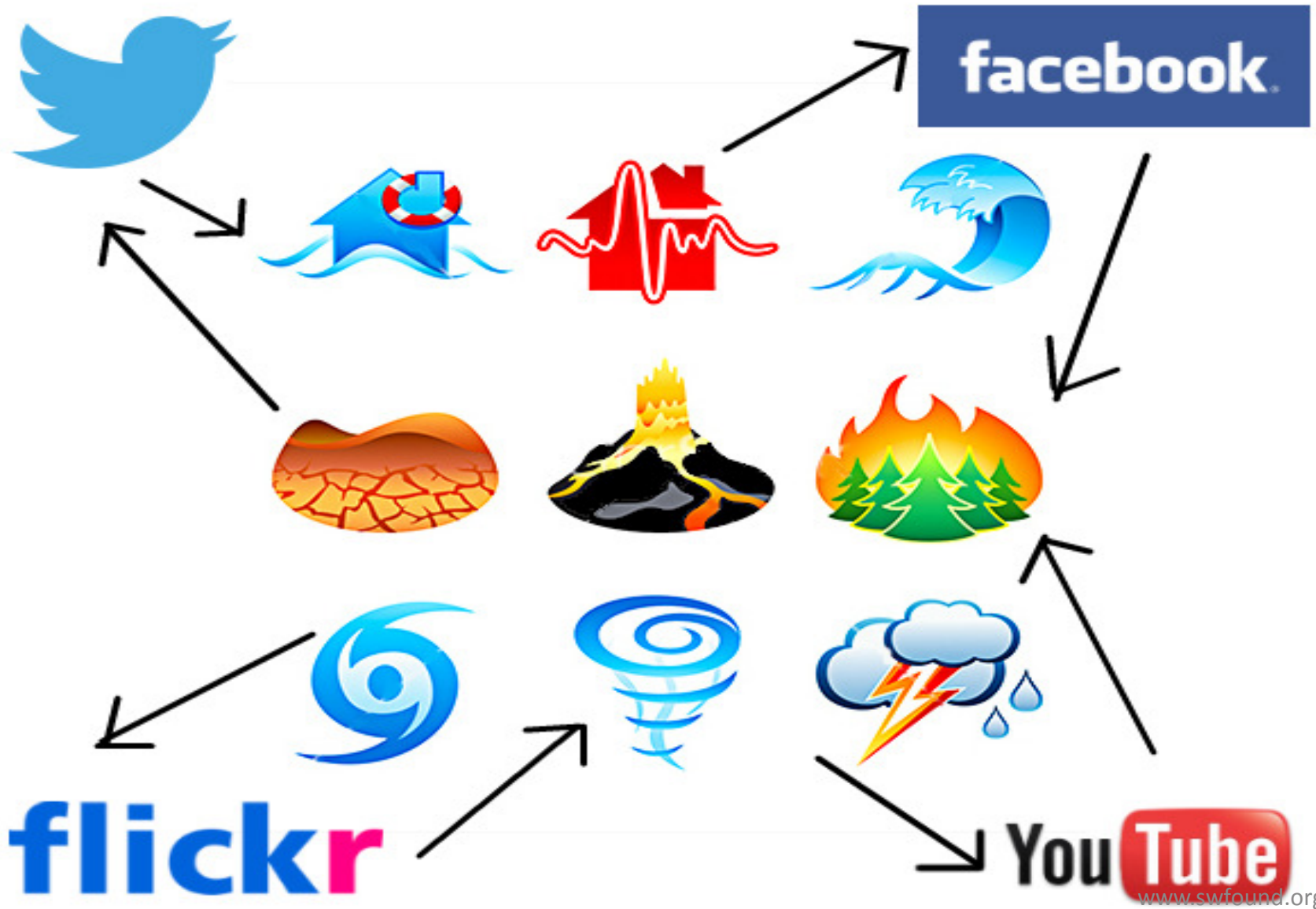
license: CC-BY-NC

source: Alexa

Social Media in Disasters???



Yes....Social Media in Disasters





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Yes....



Contact friends to make sure they are safe



25% Download disaster-related apps



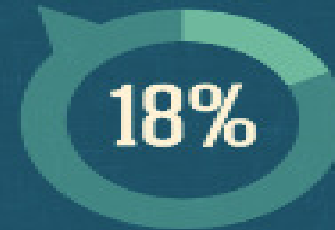
Let loved ones know they are safe



Use info on social media to buy supplies and find shelter



1 in 5 Americans have used an emergency app



Retrieve emergency information through Facebook

1 in 5 survivors contact emergency responders via social media, websites, or email

44% Ask their online friends to contact responders

During disasters, social networks often replace 911 as the go-to source for help



35% Directly post a request for help on a responder's Facebook



25% Send direct Twitter messages

80%

80% of Americans expect emergency response agencies to monitor and respond to social media platforms

Source: PR Daily reader Frankie Rendón of Creative Signals



Hurricane Sandy



Ho

The community did the same



Hurricane Sandy

159,206 likes · 33 talking about this



Like

Message



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Japanese earthquake, tsunami

JAPAN TSUNAMI



Source: PR Daily reader Frankie Rendón of Creative Signals

Number of tsunami-related

1,100

March 11, 2011

- March 11, 2011 Facebook reached 4 million updates
- Within an hour of the earthquake, more than 1,200 tweets per minute were being sent from Tokyo
- Twitter reported that the day of the earthquake 177 million tweets were recorded, setting a new record
- The office of the Prime Minister created a Facebook page with English translations

80 PATIENTS

who was able to alert the Embassy and coordinate with Japan's Ground Self-Defense Forces who evacuated the patients



84% That's 84% of total status updates



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Examples of social media use in Japan



3/11 地震安否確認 / Confirm that you are safe



holly cow, I AM in Japan,... earthquake, earthquake right now!

41 minutes ago from web



bachocha
Ricardo Duran

3/11 地震安否確認 / Confirm that you are safe

Events

Public · By Koichi Murata, Zen Miyajima and 2 others



Going (17,991)



Maybe (331)



Invited (18,489)



Export · Report

March 11, 2011 at 6:00pm until March 19, 2011 at 11:30pm

What do do next: <http://on.fb.me/e3oCh3>
Looking for someone: <http://on.fb.me/hDqAki>
Suggestions and Feedback: <http://on.fb.me/fjiS6g>

*English and French follow Japanese... See More



Toshiaki Suzuki

去年、この使い方知らなかった!!!

Like · Comment · March 10, 2012 at 1:45pm



Jiae Kim



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Google launched:
Person Finder: 2011 Japan Earthquake
to provide support to the Red Cross

- Social media on Facebook by citizens
- The City of Twitter suggest and report to the authorities
- Videos of citizens helped disaster relief



Follow

for at least

← ↻ ★

Follow

al
forts

← ↻ ★



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Benefits From The Use of Social Media During Disasters



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An easy mean to send out information

- Reach out in real-time to a vast part of the population
- Continuously update the public with important information when traditional media channels are unavailable
- Quick way to let others know their status and get in touch with their friends and family
- Find information about the crisis and where to get help from either the authorities and/or other citizens

- Text messages
- Photos (cameras)
- Voice messages (microphones)
- Location
- Time





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Risks From The Use of Social Media in Disasters

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Challenges of social media use in emergency situations

- **Technological** - Region's power and communications infrastructures are unreliable especially in response and recovery phase
- **Reliability** - The anonymity of social media platforms can also cause concerns over the reliability of the data being shared - cannot validate the information





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The Current Role of Space Technologies

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Search for people, places and things



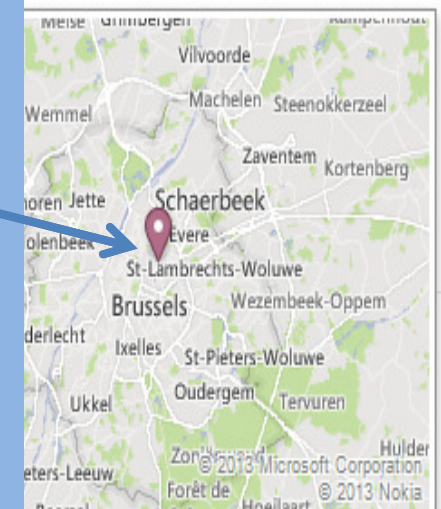
Home Natassa

GNSS – GLOBAL NAVIGATION SATELLITE SYSTEM

- Location, movement (GNSS receivers, accelerometers)
- Time

REAL TIME TRACKING

Sponsored  Create Ad



Get Directions

Players - Tickets cinéma

20th Century Fox Belgium



Tentez votre chance de gagner des tickets cinéma pour 'Players' avec Justin Timberlake

Like • André Paula Santos likes 20th Century Fox Belgium. www.swfound.org



Thu

right now

Wed

ok

5:51pm



**...BUT there is always
“Space”
for improvement**



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Why Space-based technologies?

- **Earth observation** (e.g. meteorological), **communication satellites**, **Global Navigation Satellite Systems (GNSS)** and **remote sensing technology** play an important role in disaster risk reduction and disaster management
- A voluminous number of **data** (e.g from social media) can be **collected** and **distributed across a wide area** more reliably and safely even during disasters
- **Space technologies** play an important role providing **spatial imagery** while **social media** is supplemental, providing information that has **high temporal and area resolution**



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Why Earth Observation satellites?

- **Earth-observation satellites** can provide vital **information** to better prepare for disasters and reduce their impact on people and property
- **Satellite data** is used to support large-scale emergency recovery programmes through a **post disaster needs assessment**



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Why remote sensing technology?

Remote sensing technology: collect disaster related information through a wide geographic range within a short time

+

Using social media: real-time and semi-real-time information

=

Assess the impacts of disasters and organize urgent rescue and relief operations



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Why telecommunication satellites?

- Space technology remains largely unaffected during disasters whereas both information and communication technologies which are based on ground infrastructure are vulnerable to natural disasters
- Communication is faster in various locations
- Communication is reliable across a wide distance and remote areas

Can provide constant access to social media 😊

Reliability improvements

The emergency response community **needs validation of data** from end-users as well as continuous reports back

Social media

The local communities using applications which support social media and GNSS (eg. Twitter) and/or remotely sensed information can provide information for ground-level activities ,real-time and near-time for collection, calibration, analysis, communication

Space technologies

Satellite imageries can verify rumors





Using Satellite imagery to verify rumors (1/2)

FAKE
(but awesome)

BREAKING NEWS

PIERS MORGAN TONIGHT **3 FEET OF WATER ON FLOOR OF NYSE** **LIVE CNN**

SUPERSTORM SANDY

WIND SPEED 85 MPH **WIND GUSTS** 110 MPH

MPH 0 39 74 96 111 131 155 200

CAT TD TS 1 2 3 4 5

FAKE

FAKE

This one has been around since before the storm.
<http://bit.ly/PDTDk1>

M 12:12 PM



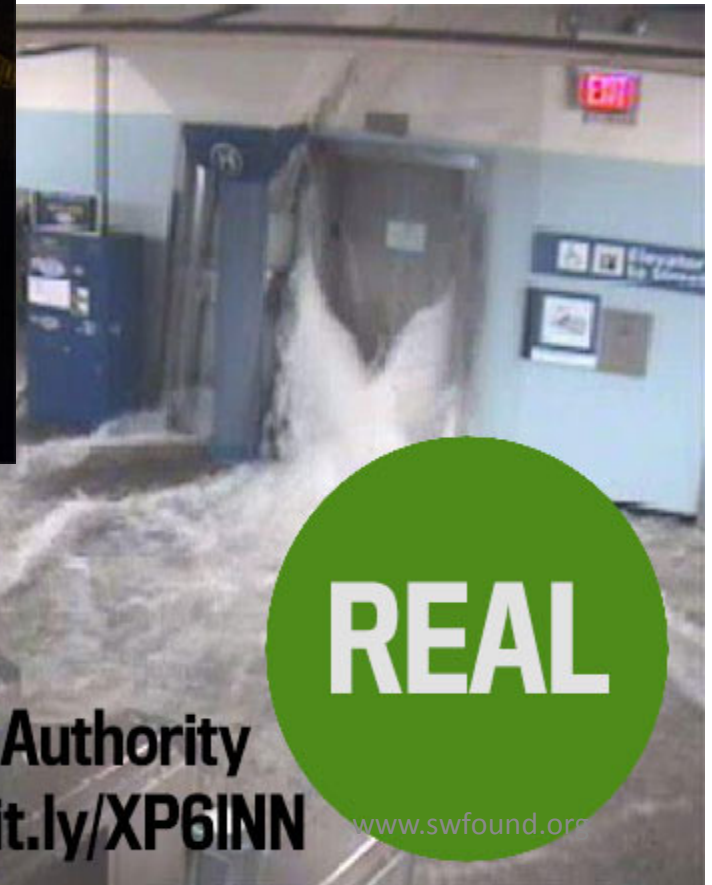
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Using Satellite imagery to verify rumors (2/2)



Official AP Photograph
<http://nbcnews.to/PDFRxV>

REAL



REAL

Posted by the Port Authority
of NY & NJ: <http://bit.ly/XP6INN>

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Conclusion & Recommendations (1/2)

- Social media is **useful and emerging tool** in disasters and International organizations, governments, NGOs, and local authorities should realize its **importance**
- **Social media** encourages the general public to act as “information volunteers” **keeping people instantly updated**
- The convergence of **space technologies** with **social networking** could offer **tremendous opportunity**



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Conclusion & Recommendations (2/2)

- **Applications** with real time, SMS alerts, early warning systems and geolocation mapping have the ability to **save lives**
- We should examine how we can **better incorporate quality applications** (apps) and **social media platforms** into the disaster management planning and strategy
- Things to improve:
 - **space technology application capacities** - easier access and reasonable costs
 - **Social media** - privacy and policies



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