SMEM / VOST Operations in Emergency Management

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What are we talking about again?

SOCIAL MEDIA AND DISASTER INTELLIGENCE... WHAT IS THAT?
Social Media

• The sharing or exchanging of information in a virtual space/community.
• Generates hundreds of millions of data points a day.
  • Twitter is responsible for over 500 million tweets per day.
  • http://www.internetlivestats.com/twitter-statistics/
Social media use over time

% of U.S. adults who use at least one social media site
Women and Men Use Social Networking Sites at Comparable Rates

% of U.S. adults who use at least one social media site, by gender

- Men
- Women


Values: 6, 10, 13, 21, 26, 36, 44, 44, 50, 54, 59, 60, 62, 66
Racial Differences Not Very Evident as Social Media Usage Has Grown

% of U.S. adults who use at least one social media site, by race

- White
- Black
- Hispanic


Values: 0, 25, 50, 75, 100
Those With Lower Levels of Education Are Less Likely to Use Social Media

% of U.S. adults who use at least one social media site, by education level

- High school or less
- Some college
- College graduate
Those in Higher Income Households Lead the Way

% of U.S. adults who use at least one social media site, by income
Rural Citizens Have Consistently Lagged Behind

% of U.S. adults who use at least one social media site, by community type
Young Adults Still Are the Most Likely to Use Social Media

% of U.S. adults who use at least one social media site, by age

- 18-29
- 30-49
- 50-64
- 65+
Why Do We Care?

- As with all communications channels, we have to be aware of the audience we are reaching (and hearing) through social media.
Growth and Future

• Demographics matter!
• In general... social media usage is more prevalent in younger people.
• However, the **brand** of social media changes constantly, and usage patterns are not steady across age groups.
• Usage is likely to become more prevalent in older people.
Effective SNS/Social Media Usage

• EM must **utilize social media as part of a comprehensive communication strategy**.
  • EM must utilize social media channels and methods prior to a crisis.
  • Information should be appropriate to the channel.
  • Information should not be simply duplicated across all channels – messages should be managed and appropriate.
• EM must **recognize the collaborative, community aspects of SNS and social media**.
  • These features are useless if the EM community or organization isn’t listening to users comments and feedback.
    • Passive listening – occurs during ‘peacetime’. Can be used to enhance outreach and risk communication.
    • Active listening – occurs during crisis. Active monitoring of social media channels for incoming information.
Usage of Social Media in a Crisis

• When asked, “In an area-wide emergency, how likely would you be to use social media channels to connect with friends and family and let them know you are safe?”
  • Definitely would..................  28%
  • Probably would..................  21%
  • Might or might not................  22%
  • Probably would not...............  13%
  • Definitely would not.............  16%

71% of respondents indicated they may use social media in family reunification.
Usage of Social Media in a Crisis

- **69%** believe that emergency response agencies should regularly monitor websites and social media sites so they can respond promptly.
- Would people request help using social media in an emergency? How?
  - 52% send a text message to response agency
  - 44% ask others to help you reach a response agency through social network
  - 35% post request for help on Facebook
  - 28% send a direct tweet to a response agency
Social Media as a Force Multiplier

• Social media, when used in an **Integrated** way.....
  • Enhances coordination and cooperation among all the actors
  • Provides depth to the communications capabilities of the EOC
    • Example: Boulder Colorado Four Mile Fire
  • Enables citizens to participate in disaster management in their communities
    • Example: Queensland, Australia Floods in 2011
  • Acts as a ‘force multiplier’ for all of these actors – enables better, more efficient response, recovery, mitigation and preparedness
  • **Can create ad-hoc response entities in places and locations where no “official” response is possible.**
    • Example: 2010 Haiti Earthquake
Who is saying what, where, and when

SOCIAL MEDIA AS DISASTER INTELLIGENCE
**Data -> Information -> Intelligence**

- **Data** is a single chunk or piece of information/knowledge.
  - **Data** lacks context and can be difficult to understand
- **Information** is data after it has been analyzed and refined.
  - **Information** provides insight and understanding.
- **Intelligence** is the final layer. Information that has been further refined, to include contextual information about the environment and situation.
- **Information and intelligence** drives situational awareness.

In the EM context, our goal is to build *disaster intelligence* before, during, and after an incident.

*Disaster intelligence forms the backbone of our common operating picture and situational awareness.*
Defining Situational Awareness

- **Situational awareness** is defined as:
  - Knowing and understanding what is happening around you
  - Understanding and predicting how what is happening will change over time
  - Understanding the dynamic nature of the environment
- Emergency and disaster managers must have excellent situational awareness as they make decisions in all phases of emergency management.
- Good decisions require **quality disaster intelligence**.
  - This intelligence must be constantly updated.
Data Quality

Data quality is a combination of four dimensions:

Accuracy
- Measure of how well the data reflects the real world.
- **False information can cost time, resources, and lives.**

Timeliness
- Measurement of how current the data is. Particularly in disaster management, old data can be dangerous.
- **Data/information is perishable!**

Completeness
- Reflection of how complete the data is. Are all pertinent data points included?
- **Missing data/information can cost time, resources, and lives.**

Consistency
- Measurement of how consistent the data is in describing real world conditions. Often a matter of semantics or vocabulary.
Traditional Data Sources

Traditional data sources feeding disaster intelligence/situational awareness include:

- Reconnaissance and damage assessments
- Weather reports and forecasts
- Geographical information
- Population information
- Partner organization reports
- Private sector reports

**Strengths in regards to data quality (perceived)**
- Accuracy, Consistency

**Weaknesses in regards to data quality (perceived)**
- Timeliness, Completeness
Community Volunteered Data

Community volunteered data (CVD) is obtained through a variety of open sources.

- Social media platforms (Twitter, Facebook, etc.)
- Media sharing platforms (Flickr, YouTube, Picasa, etc.)
- Media web sites (CNN, CNN iReport, Fox News, local media sites, etc.)

- CVD typically has a **high volume** in a disaster, but much of the information **is not applicable** for situational awareness.

- **Strengths in regards to data quality (perceived)**
  - Timeliness

- **Weaknesses in regards to data quality (perceived)**
  - Accuracy, Consistency, Completeness
Transforming CVD

• Traditional situational awareness data sources are purpose built – they are immediately applicable to EM.
• Community volunteered data (CVD) is a massive pool of data points, most of which has no bearing or applicability to disaster management.
• As such, CVD must be analyzed and processed into Community Volunteered Information (CVI).
  • This task requires human intervention and analysis
  • While CVD contains too much ‘noise’ to be useful in disaster intelligence, CVI is processed, filtered, and applicable to EM.
Community Volunteered Information

Community Volunteered Data (CVI) is obtained by processing and analysis of gathered CVD.

- CVI is a subset of applicable CVD, analyzed and processed into a useable format.
  - CVI is not a raw list of sources and data.
  - Patterns, trends, and real world issues are identified and highlighted.
- **Strengths in regards to data quality (perceived)**
  - Timeliness, Accuracy, Consistency
- **Weaknesses in regards to data quality (perceived)**
  - Completeness
- Through processing and analysis, CVI increases both **Accuracy** and **Consistency**
The Internet
Collecting
Collection yields CVD
Analysis
Analysis yields CVI
Advantages of CVI

Community Volunteered Information offers numerous advantages in disaster intelligence.

• **Timely data**
  • CVI can be fed into situational awareness processes in near real time. The largest delay is the CVD->CVI processing time. The speed and refresh rate of CVI far exceeds traditional SA methods.

• **Variety of sources**
  • The list of sources for CVD and CVI is almost limitless, and the variety of sources can serve as a method of data validation.

• **Synergy with public information and risk communication efforts.**
  • Through monitoring of sources and gathering CVD and CVI, disaster managers are poised to leverage these methods for risk communication, public outreach, and other needs.
As the incident progresses, traditional intelligence methods catch up – making CVI less useful in response.

However, CVI becomes more useful in recovery as the timeline progresses.
Barriers to Adoption

There are significant barriers to adoption of CVI into disaster intelligence/situational awareness processes and workflows.

• **Lack of authenticity and trust**
  • Emergency and disaster managers swear by ‘ground truth’, and they understand how difficult this can be to achieve. How can an average Twitter use be trusted?

• **Time intensive**
  • Emergency and disaster managers already have limited personnel resources to accomplish life safety and life sustainment. Resources to process CVD into useful CVI is very limited.

• **No existing models or tools**
  • Existing tools and models for working with CVD (primarily the social media aspect) are aimed at commercial use.

• **THIS IS STARTING TO CHANGE!**
Overcoming Barriers

- Lack of trust in CVD/CVI stems from a perception of poor accuracy.
  - Increasing trust in CVD/CVI requires overcoming these perceptions through research and case studies.
  - Further, the perception of poor accuracy stems from CVD and a misconception of the CVI process.
- FSU EMHS/CDRP has established ongoing research examining CVD and CVI.
  - Initial deployment to New Orleans after Hurricane Isaac and New Jersey after Hurricane Sandy revealed several important points.
    - CVD with media (pictures) was more reliable.
    - The public is inconsistent with terminology and reports of severity (data consistency)
Issues with CVD

Accuracy
(Severity and Applicability)
Accuracy
(Severity and Applicability)
Consistency (Semantics)
Consistency (Semantics)

Issues with CVD
SOCIAL MEDIA TEAMS

VOST / DISASTER INTELLIGENCE TEAMS / DIGITAL VOLUNTEERS / ETC.
VOST - Introduction

Virtual Operations Support Team (VOST)

• Originated in the US in 2011.
• An effort to understand, use and manipulate the “virtual space emergency” (Schniederman & Preece).
• Employ a trusted team of digital volunteers.
• Making use of publically volunteered information.
The VOST Concept

- VOST engages community volunteers to assist emergency management agencies through social media monitoring, rumor identification, message amplification and situational awareness.
- Workloads are increasing, and budgets are stagnant – how do we deal with a deluge of social media data using existing resources?
Social Media Missions

SMEM/VOST Operations can be broken into three distinct missions:

1. Enhance Situational Awareness
2. Rumor Identification
3. Official Message Amplification

“Disaster Intelligence”
When Do These Occur?

• Social media missions can happen in all phases of EM, but we primarily focus on Response and Recovery.
3. Official Message Amplification

- SMEM/VOST takes official EM messages (press releases, warnings and alerts, etc.) and rebroadcasts them on all social media channels, using a variety of accounts.
- SMEM/VOST utilizes #hashtags to ensure that official messages are seen by the maximum number of people.
- This is one of the rare instances where a team broadcasts information.
2. Rumor Identification

- Social Media has become a natural breeding ground of misinformation – this is not an inherent problem with social media, but a reflection of natural human behavior in the digital space.
- SMEM/VOST is in a unique position to identify rumors in social media and bring those to the attention of the responsible organization.
- With approval and guidance of the partner or client organization SMEM/VOST can assist in countering developing rumors. (*As official message amplification*)
2. Rumor Identification
1. Enhance Situational Awareness

- SMEM/VOST can enhance situational awareness in response and recovery organizations.
- **Situational awareness** is defined as:
  - Knowing and understanding what is happening around you
  - Understanding and predicting how what is happening will change over time
  - Understanding the dynamic nature of the environment
1. Enhance Situational Awareness

Social media data typically has a **high volume** in a disaster, but much of the information is **not applicable** for situational awareness.

- **Strengths in regards to data quality (perceived)**
  - Timeliness

- **Weaknesses in regards to data quality (perceived)**
  - Accuracy, Consistency, Completeness

Remember the strengths and weaknesses of CVI?
1. Enhance Situational Awareness

• SMEM/VOST monitors, filters, and processes social media data with the intent of creating or enhancing situational awareness.

• SMEM/VOST cannot replace traditional reconnaissance assets, law enforcement, etc. but it can help fill in details quickly.
  • Think ‘big rocks’ and ‘little rocks’
Building Disaster Intelligence

- Disaster intelligence is the **collection**, **analysis**, and **distribution** of information relating to an incident, emergency or disaster.
- The goal is to utilize social media data and information to **expand** our understanding of the incident and how the public is behaving.
- Social media information is a **force multiplier** for existing tools and techniques of situational awareness. Social media helps us formulate **disaster intelligence** to work faster and more efficiently.
Things to Remember...

• Social media data points do not represent a normalized data set. They are not truly random samples of a population – there is significant bias.

• While social media use holds roughly constant over a variety of demographic variables (including income, education level, and rural/urban indicators), it is not consistent among various age groups. Younger people use more social media.

• Social media posts with geo-location information embedded comprise only about 1.5% of the data posted.

Consumers of information created from social media must understand this.
Questions / Discussion

• Questions so far?

Break for lunch!
TEAM ORGANIZATION
SMEM Team Members

Three levels of participation:

1. Volunteer
2. Analyst
3. Team Leader / Manager
Team Organization

* May be called volunteers, collectors, filters, whatever...
Volunteers

Volunteers make up the majority of the SMEM team. **They...**

- May not have extensive EM or social media experience
- Perform the majority of monitoring and data collection in social media
  - Monitoring is based on defined keywords and phrases as well as specific sources
- Pass collected data ‘up’ to Analysts for review
  - The mechanism for this can vary, and will be discussed shortly
Analysts work with data provided by Volunteers and determine trends, verify information, and provide input to reports.

*They...*

- Have some experience in EM and with social media
- Provide feedback to volunteers on data being provided
- Assign work to volunteers as needed (follow up, verification, etc.)
- May work in teams or alone.
Team Leader

Team Leaders run the VOST/SMEM Team and serve as the primary contact with the partner/client organization.

They...

• Author and distribute reports to the partner/client organization
• Determine objectives and priorities for the team
• Assign work to Analysts and Volunteers
• Should have solid understanding of EM practices and how SMEEM integrates into existing systems – they understand disaster intelligence.
Task Assignments

Using the coordination tools, the Team Leader will assign tasks to FSU.VOST members based on experience and technical capability. Sample tasks include:

- **Monitoring** – Volunteer, Analyst, Team Leader
- **Geo-Location and/or Mapping** - Analyst
- **Verification** – Analyst
- **Analysis** - Analyst, Team Leader
- **Reporting** - Team Leader
SMEM / VOST Can Be Virtual

- Requirements for working SMEM / VOST:
  - Laptop or desktop computer
  - Internet connection
  - Social media accounts
  - Skype account
  - Positive, helpful attitude
  - Team oriented
  - Ability to follow directions
Integration into ICS/EOC

- The information created by the SMEM can be used by ESFs and other organizations of SERT, including:
  - ESF-14 (Public Information)
  - ESF-5 (Planning)
  - ESF-6 (Mass Care)
  - ESF-8 (Public Health)
    - “Infodemiology”
  - State Warning Point
- In ICS, this information is most utilized in the Planning Section.
- However... SMEM can fit into an ICS or ESF structure in a variety of ways, and nothing is set in stone.
Policies and Procedures

• Each team should have written policies and procedures.
• Each team member should be trained on the contents of the SOG, policy manual, etc.
Activation

• With advance warning incidents, the VOST/SMEM Team will ‘lean forward’ and prepare for anticipated activation.
  • It’s difficult to use social media as a ‘tripwire’.
• Flexibility is required in scheduling volunteers.
  • Each incident/activation will have different requirements for staffing and technology. These are communicated up to Volunteers and Analysts.
• Initial warnings and activation information is distributed via text message (GroupMe), email, phone, and Skype.
• After initial activation, coordination of volunteers is accomplished via Skype group chat.
Activated to do... what?

• Each activation of the team requires a mission – a specific task or tasks to accomplish.
  • Missions for the team may change as the incident evolves.
  • The mission focuses the team’s activities and must be communicated with the entire team.

• Example:
  • “Find information about rising water, flooding, and damage in southern Escambia County and/or downtown Pensacola.”
  • “Monitor public sentiment about the response and recovery efforts in South Florida.”
COMMUNICATION/COORDINATION
Coordination of Team Efforts

• There are several tools critical to coordination of the SMEM/VOST.
• Generally, these include:
  • Skype, GroupMe and SMS Text Messages
  • Information Portal
  • Activity Log and Worksheet (Google Doc)
  • Reporting Tool (Ushahidi)
Skype, GroupMe and SMS

• These tools are the primary method that team members talk to one another. *The team is virtual! Communication is critical.*

• **GroupMe and SMS** are used for alerts and activation information.
  • Also used as an ‘all users’ communications channel for critical information.

• **Skype** is the primary communication and coordination tool.
  • Skype allows group chats which are **persistent**. If a user logs off and then back on, they can see all the chats that have been sent in their absence.
Information Portal

- The tool puts all team information about the activation in one place for all members to access.
- FSU.VOST utilizes a Wordpress site for this functionality.
- It is important that some parts of the Information Portal be protected by a password. Some information may not be appropriate for wide public distribution.
Activity Log and Worksheet

- The Activity Worksheet tracks all major events, including:
  - Activation information
  - Missions
  - Major events in the incident
  - Search terms, hashtags and geocodes
  - Existing information sources
  - Reports issued
  - Requests from the client organization
  - Deactivation
- FSU.VOST utilizes Google Docs.
Collection, Analysis, Distribution

• The CVD to CVI process is an example of the traditional intelligence gathering cycle – **collection, analysis** (and/or exploitation), and **distribution** (or dissemination).

• Disaster intelligence depends almost entirely on Open Source Intel (OSINT) – stuff people post in public places (like Instagram and Twitter).
Reporting Tool

Searching, Filtering, and Aggregation Platforms

Activity Log and Worksheet

Skype, GroupMe, SMS

Info Portal

Team Info

Reports

Analysis and Reporting
COLLECTION

Searching, Filtering, and Aggregation Platforms

Reporting Tool

Analysis and Reporting

Info Portal

Team Info

Reports

Skype, GroupMe, SMS

Activity Log and Worksheet
Search, Filtering, and Aggregation Platforms

Reporting Tool

Info Portal

Skype, GroupMe, SMS

Activity Log and Worksheet

Analysis and Reporting

Team Info

Reports

Analysis
Searching, Filtering, and Aggregation Platforms

DISTRIBUTION
COLLECTION PHASE
Searching and Filtering

- Volunteers can use any platform they are comfortable with to search social media, including:
  - Hootsuite (highly recommend)
  - Tweetdeck
  - Twitterfall
  - Twitter.com // Instagram.com // Facebook.com
- What about the other SM platforms?
- Search terms, hashtags, geocodes, etc. are assigned to volunteers by the Team Leader. They are coordinated/stored in the Activation Workbook.
#Hashtags... and Keywords

- **Hashtags** – are a way that people can self organize or categorize their content.
  - E.g, people who want to contribute information about tropical storm Karen would add the #TSKaren hashtag
- Hashtags can be organic or pre-defined
  - **Organic** hashtags are a phenomenon of the wisdom of crowds.
    - i.e. some one uses that hashtag and gradually the crowd adopts it and its use diffuses through the system.
  - **Pre-defined** hashtags require education / advertisement
- Keywords are technically and operationally identical to hashtags, minus the ‘#’.
- Keywords and hashtags will evolve throughout the incident! They do not remain static.
Exercise Activity #1

Posting
• Create and post or tweet, using the hashtags #GHC2017, #ANTarchy2, #GHCSMEX and #SMEMTraining
Exercise Activity #2

Hashtags and Keyword Examples

• Search Twitter.com for:
  • “GHC”
  • “tornado”
  • #GHC
  • #GHC2017
  • #ANTarchy2

• Fort McMurray fire examples

• -RT and ?
Searching and Filtering

• Using the incident hashtags, keywords and geotags, the Volunteer begins to collect data from social media... but what to do with it? *(And there is going to be a lot of it)*

• “Tracking the Maybe”
  • The Volunteer submits data that that feel is “possibly” or “maybe” of value in building disaster intelligence.
    • Does it describe what’s happening? Is it a life safety issue? Does it provide details on the incident? Does it indicate an unmet need? Does it indicate how the public feels about the response/recovery/etc.?
  • It’s better to have **too much** then **not enough**.

• Data is submitted by the Volunteer to the Reporting Tool (such as [Ushahidi](http://www.ushahidi.org))
Location Based Searching
Exercise Activity #3

Location Based Searches

• Use Google Maps to get coordinates of a location (latitude, longitude)

• Search using a geocode:
  • “geocode:latitude,longitude,range_in_km” – no spaces!
  • Latitude and longitude must be in decimal degrees format.
  • Again, no spaces
  • “geocode:28.425550,-81.434651,5km”
Reporting Tool - Collection

- All of the data collected to support situational awareness must be collected somewhere...
  - FSU.VOST utilizes Ushahidi, but other teams use a variety of products, including Google Sheets and proprietary tools.
- The Reporting Tool is updated continuously, and provides a view of the incident as reported through traditional media and social media.
At Versus About

• Tweets/posts about an incident can be classified into two broad categories:
  • “At” Tweets – Posts that come from at or inside the incident. Survivors, bystanders, witnesses, etc.
    • At tweets are the most valuable from a disaster intelligence standpoint.
  • “About” Tweets – Posts about an incident, that may (or more likely may not) contain useful disaster intelligence.
    • These should not be automatically discarded, but many contain useless info (i.e. “So terrible what happened.”)
Geotagged Tweets

• Geotagged tweets (or other posts) contain the coordinates of the phone/device at the time the post was made. Typically this is in decimal degrees (latitude/longitude) format.
• Geotagging is disabled by default on most smartphones – the user must enable it.
• Geotagging can immediately demonstrate if tweets are “At” or “About”
Disaster intelligence is best when we have geospatial information associated with it – we can place it on a map.

“This happened here.”

The majority of information that contributes to situational awareness or disaster intelligence will have a geospatial component.

This does NOT mean it has to be geotagged (though that can be a start).

This is why we use Ushahidi.

Geospatial information can be added by the Volunteer or he Analyst. It can come from anywhere, including:

- Geotags.
- Descriptions in the post/tweet.
- Locations visible in photos or videos.

Example

http://www.google.org/crisismap/2016-fort-mcmurray-fire
Exercise Activity #4

- Break into groups of three or four.
  - Each group needs at least one laptop.
- **Locate** the following:
  - Three photos that are geotagged.
  - Five posts *about* a place in/near West Palm Beach
  - Four posts about GHC
- **Do** the following:
  - Post a group selfie to Twitter or Instagram, using the hashtag #GHC2017 and #ANTarchy2
  - Report out to the class.
Validating the data, looking for patterns.

ANALYSIS
Reporting Tool

• All of the data collected to support situational awareness must be collected somewhere...
  • FSU.VOST utilizes Ushahidi, but other teams use a variety of products, including Google Sheets and proprietary tools.
• The Reporting Tool is updated continuously, and provides a view of the incident as reported through traditional media and social media.
• Through this tool, team members and the partner organization have a searchable, scalable, and categorized list of reports and data.

Ushahidi
Updating The Worksheet

• As the Analyst works through submitted data, it is necessary to update the Activation Worksheet with new information, such as:
  • New official information on the incident
  • Evolving hashtags, keywords, and geocodes
  • Significant events in the incident
• The Worksheet is the central repository of guidance information for the team, it must be current and updated.
“Tracking the Maybe”

- Once Volunteers enter the ‘maybe’ information, Analysts examine the information with four goals in mind:
  - **VALIDATION**: Is the data valid, does it have value to the mission?
  - **REFINEMENT**: Can it be refined? For example, can we add geospatial information?
  - **VERIFICATION**: Can the data be verified?
  - **RELATED**: How does this data relate to the incident or trends in the incident (flooding, popular support, etc.)
- Only after the data is validated, refined, and verified will it be included in the reports to the client organization.
Validation

- Once Volunteers save information in the Reporting Tool, the Analyst must determine if the data is **accurate** as well as **pertinent**.
- How do we know what we are seeing is valid to the mission?
  - Does it contribute to situational awareness? Does it explain what’s happening in the incident? **YES? - Valid**
  - Does it do this in a timely manner? In other words, is this information that isn’t already available from other means? **YES? – Valid**
- **Stay in context of the mission or missions.** Some information may be valid from a situational awareness standpoint that is of no concern from a public sentiment standpoint.
Refinement

• The Volunteer considers a single piece of data (a post or tweet).
• The Analyst considers each piece of data as part of the larger picture of submitted data. Can a data point be combined with another on the same topic?
• Does the data have geospatial data? What can be added?
• Does the data relate to an official message such as a SitRep or Press Release? Link them if possible.
• The Analyst tries to expand each piece of data as much as possible.
Verification

Method: *Ask for Verification*

Andy Carvin, a reporter for NPR, covered the Arab Spring in Tunisia in 2011.

- He received information from a variety of Twitter sources about events in the country.
  - He had no personal knowledge of these sources or events.
- He simply responded to Tweets with specific questions, including, “Can you verify this?” or “Source?”
- Further, he asked for photos or videos.
- Became wary of tweets with journalistic terms such as “Breaking News”
Verification

Method: **Triangulation**

- Given a specific event or report...
  - Are other other unconnected sources reporting the same event?
    - NOT re-tweets
  - Is the report coming from a primary source?
  - In the case of video or photos, is the scene depicted in line with what is being reported?
    - Background signs, terrain, time zones, languages, etc.
Verification

**Method: Message Analysis**

- Assess the data presented in the report
  - Does the report align with what is expected to be occurring?
    - Event, severity, timing, etc?
  - Does the info appear to be sensational or exaggerated?
  - Are there links to expanded information? What kind?
  - Are there pictures or video attached?
    - The presence of pictures greatly increases the odds of a factual report.
Exercise Activity #5.1

Photo Verification
Exercise Activity #5.2

Context

https://twitter.com/PatrickSvitek/status/727224169134436352
Verification

Method: **Source Analysis**

- Assess the source, not the information
  - Can the source be authenticated? Is the source personally known?
- Examine available public profiles.
  - Is there a real name? A location? Is there a complete bio? A picture?
- Account history
  - Is the account new? How many followers/subscribers?
- Who are the followers?
- When does the account post content?
  - May indicate rough time zone information
Exercise Activity #6

Sample Account Analysis

https://twitter.com/Frank_Underwood/status/727492712891572225
Verification

**Method: Trusted Sources**

- Use known or trusted agencies for verifiable content.
  - News agencies
    - Individual reporters and meteorologists
  - Personal and professional contacts
  - Government agencies
    - NWS, NOAA, EM, Law Enforcements, Local/county government, Fire, EMS.
  - **FSU.VOST maintains a list of these accounts in Florida.**
Verification

• Successful verification typically requires a **combination** of these methods.
• Analysts and Team Leaders (who often perform verification) must have a solid understanding of the disaster, what has happened in the past, and what is happening now.
Verification

Grading the Data

• FSU.VOST uses Boolean grading scales
  • The date is valid (and is included in analysis) or the data is invalid (and is discarded/ignored).
  • The data is verified (and is included in analysis) or the data is unverified (and is discarded/ignored).

• Valid and Verified data means that the Analyst believes:
  • The content of the data is ‘true’;
  • The data pertains to the incident;
  • The data contributes to the current mission(s) of the team.
Analysis

• Once data is graded, the Analysts and Team Leader can analyze the data for patterns, etc.
• **Analysis only occurs on data that has been deemed “valid” and “verified”.**
• Analysis must focus on the following:
  • Life Safety and Critical Issues
  • Situational Awareness / Disaster Intelligence
  • Rumors
Analysis – Critical Issues

• If a Volunteer or Analyst becomes aware of a potential life safety, casualty/fatality or infrastructure issue, it should be reported immediately to the Team Leader.

• Rapid validation and verification should occur (using any and all methods) and the information should be passed to the partner or client organization as quickly as possible.

• Do NOT wait for a scheduled report to alert the organization of the possible critical issue.

• When in doubt, report the information.
DISTRIBUTION
The Reporting Tool

• The Reporting Tool becomes a live report of information that is valid and verified.

• It should be accessible by then entire team, and to the ICS/EOC structure as required.

• However... the reporting tool does not represent analysed data; it is a snapshot of what the team believes is ‘true’ and it requires further study by the Analyst before it becomes disaster intelligence.

• Reports contain the boiled down information – that of the most value to the ICS/EOC organization.
Two types of reports are generated:

- **Situation Reports**
  - Produced on a set schedule (typically twice per day or once per operational period) and contains (at a minimum):
    - Goals and objectives of the team
    - Definition of the operational period
    - Team Leader contact information
    - Summary of Situational Awareness information / Disaster Intelligence
    - Summary of Trends and Data being collected
    - Summary of Critical Events collected and reported

- Situation Reports will be distributed to the entire team and the ICS/EOC structure – through pre-arranged methods/channels.
Reporting

Two types of reports are generated:

• **Interim Reports**
  • The Team Leader may, at their discretion, publish interim reports during the operational period. These interim reports may include critical items or other information.
  • Interim reports will be distributed to the entire team and the ICS/EOC organization.
Reporting

• When reporting (either SitReps or Interim Reports), avoid including information that is found in other sources, unless it corroborates or confirms information in the report.
• Keep reports simple and concise.
• Provide reports in the pre-determined format. (Email, Word Doc, PDF, etc.)
• Ensure that all team members see each report. The reports demonstrate what the ICS/EOC organization requires, and helps focus all aspects of the operation.
Exercise Activity #7

- Split into groups of 4-5 people.
- Each group will investigate a topic (they will be assigned to you). You are looking for:
  - Hashtags associated with this topic (and who is using them).
  - Who is tweeting about this? Private citizens? News organizations? Both?
  - What can we learn about public sentiment from this investigation? Are people angry? Happy? Indifferent?
  - How many times (ballpark estimate) are government or official news tweets being retweeted? What can this tell you about how these organizations are reaching the public?

Groups will briefly discuss their findings.

- Ransomware
- East Liverpool, Ohio
- Theresa May
- Opioid Epidemic in the United States
- Ivory Coast
- Javier Valdez Cardenas
- North Korea
- Fidget spinners
HERMINE AND MATTHEW
Hurricane Hermine
September 2016

- First hurricane to hit Florida since the 2005 season.
- First hurricane to hit the Big Bend region in over 35 years.
- Last hurricane to hit Tallahassee was Kate in 1985.
Activation

Wednesday, 31 August 2016
Activation

- FSU.VOST activated 31 August 2016 at the request of Florida SERT, ESF-14.
- Initial emphasis was on protective actions. Questions asked by 14 included:
  - Who is doing what?
  - Are people listening to warnings?
  - What is being done at the local levels?
- Trends in social media included:
  - Reports of school closures
  - Complaints that schools weren’t closed (Tampa Bay area)
  - Rainfall
  - Hurricane parties
  - Personal preparedness, including supply purchases, etc.
Thursday, 1 September 2016
Thursday

- Taskings from ESF-14 included:
  - Who is doing what? (continued)
  - Who is evacuating, and are these evacuations being heeded?
  - What is being done at the local levels? (continued)

- Trends in social media included:
  - Reports of school closures
  - Complaints that schools weren’t closed (Tampa Bay area)
  - Power outage concerns (Tallahassee)
  - Rainfall
  - Coastal flooding (Cedar Key)
  - Coastal flooding (Wakulla County, Big Bend)
  - Personal preparedness, including supply purchases, etc.

- Critical events for FSU.VOST
  - Member safety during landfall – stressing personal preparedness.
  - Negative responses from public regarding duration of electrical outages.
Friday, 2 September 2016

Landfall was Friday morning at 0130 EDT as a Category 1.

East of St. Marks Florida.
Friday

• Taskings from ESF-14 included:
  • Damage?
  • Life safety
  • Unmet needs
  • Power outage status?

• Trends in social media included:
  • **Power outage complaints**
  • Coastal flooding (Wakulla County, Big Bend)
  • Cleanup
  • Complaints about trees
  • Physical damage from downed trees

• Critical events for FSU.VOST
  • Power outages and telecom interruptions degraded FSU.VOST capabilities. We lost most of the volunteers.
Saturday, Sunday, Monday

- Taskings from ESF-14 included:
  - Cleanup needs?
  - Power outage status? Numbers, duration, etc.
- Trends in social media included:
  - Power outage complaints
  - Parental concern about students at FSU
  - Political arguments between State of Florida and City of Tallahassee
- Critical events for FSU.VOST
  - Sunday afternoon we began to get some volunteers back.
What Went Well

• Internal communication and coordination
  • Utilized Google Hangouts
• Sense of responsibility due to impending impact on the Tallahassee area.
• The utilization of key words to find pertinent information about evacuations, electrical outages, flooding, and structural damages.
Areas for Improvement

- Due to the impact on the Tallahassee/Leon County area by Hermine, safety took priority for many members over reporting information.
- Volunteers lost power and internet access as the storm made landfall. This effectively shut down VOST operations.
- Tasked with missions (power status) that are already performed by other ESFs – with better data.
- FSU.VOST has never encountered political bickering during response. This was distracting, particularly at landfall +24H and onward.
Hurricane Matthew
September 2016

- State of emergency for all 67 counties in Florida.
- Hurricane Matthew made landfall in Haiti on October 4, 2016 as a Category 4 hurricane.
- 25 deaths in North Carolina, 13 in Florida, 4 in South Carolina and 3 in Georgia.
Activation

Tuesday, 4 October 2016
0800 EDT
Activation

• FSU.VOST began issuing warnings to Volunteers on 3 Oct, and began a partial activation on the afternoon of 4 Oct 2016.
• SITREP 1 was issued 1700 on 4 October.
  • Highlights: gas shortages in South Florida (long lines), confusion about evacuations (SC had started evacuating, FL had not)
  • Many people talking about models and tracks, without the background to understand.
• Partner agencies included SERT ESF-14 and Nassau County EM.
• Taskings included
  • #FLPrepares hastag
  • Rumor identification
  • Look for the ‘outliers’ – the unexpected.
Thursday

Thursday, 6 October 2016
0800 EDT

Hurricane Matthew
Thursday, October 6, 2016
11 AM EDT Intermediate Advisory 33A
NWS National Hurricane Center

Potential Track Area:

<table>
<thead>
<tr>
<th>Watches:</th>
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<tbody>
<tr>
<td>Hurricane</td>
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<tr>
<td>Trop.Storm</td>
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<tbody>
<tr>
<td>Hurricane</td>
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<tr>
<td>Trop.Storm</td>
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</tbody>
</table>

Current Information:
- Center Location: 24.6 N 77.5 W
- Max Sustained Wind: 125 mph
- Movement: NW at 12 mph

Forecast Positions:
- Tropical Cyclone
- Post-Tropical
- Sustained Winds:
  - D < 39 mph
  - S 39-73 mph
  - H 74-110 mph
  - M > 110 mph

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.
Thursday

- Taskings included
  - #FLPrepares hashtag performance
  - Evacuation and preparedness info
  - Rumor identification
  - Look for the ‘outliers’ – the unexpected.

- Trends included
  - Gas shortages and price gouging in South Florida
  - Life safety tweets – people that refused to evacuate and were posting photos about it. “You can’t make me leave”
  - Reports of bars and clubs refusing to close
  - Hurricane parties
Friday, 7 October 2016
0800 EDT
Friday

• Taskings included
  • Fuel shortages, price gouging, etc.
  • Rumors
  • Donation scams, etc.

• Trends included
  • Wind, rain, damage
  • Relief!
  • St. Augustine ‘underwater’ – people trapped in buildings (and bars)
  • Concerns about family/friends that did not evacuate.
  • Rumors: BLM looting, 300 escaped alligators
  • Continued fuel shortages
Saturday

Saturday, 8 October 2016
0800 EDT
Saturday

- Taskings included
  - Fuel shortages, price gouging, etc.
  - Rumors
  - Donation scams, etc.
- Trends included
  - Focus on damage in St. Augustine and Jacksonville
  - Ongoing fuel issues, particularly in Central Florida.
  - Rumors: BLM looting (continued, persistent), BLM Standoff
  - Email scam posing as power company
  - ‘Overhype’ issues, countered by some (not as many)
  - By evening, Twitter traffic was reduced considerably
Sunday

• Taskings included
  • Fuel shortages, price gouging, etc.
  • Rumors
  • Donation scams, etc.

• Trends included
  • Slow traffic
  • Recovery efforts, damage.
  • Frustration at closed/damaged beaches, etc. Focused in Flagler county.
What Went Well

• Internal communication and coordination – Hermine was great practice
• New operational leadership for FSU.VOST ran the activation.
• Attention brought to critical issues such as the gas shortages was done quickly and efficiently.
• The utilization of key words to find pertinent information about evacuations, electrical outages, flooding, and structural/road damages.
• VOST was focused on situational awareness and was not duplicating the effort of other ESF
Areas for Improvement

• VOST is most effective in the last day or two prior to landfall, and the first few days of response and recovery.
• At two days after landfall, it was noted that many people’s lives had returned to order and not much actionable information was posted on social media.
Social Media Exercise
#ANTarchy2
#ANTarchy2

- **#ANTarchy2** is the Governor's Hurricane Conference Game that encourages players to develop a Twitter account and analyze social media posts.
- **Step 1:** Form a team/"colony" composed of other Governor’s Hurricane Conference attendees.
- **Step 2:** Earn points for your colony by interacting with the GHC Ants on Twitter and take by taking pictures of them around the conference. The colony with the most points will win the GHC Trophy found at the FSU EMHS table.
- **Step 3:** Earn Ant Money by finding the ANTarchy logo around the conference and finding the Ants around the conference. The keeper of the logo or the ant may have Ant Money to hand out. Turn in 10 Ant Monies to earn a ANTarch shot glass at the FSU EMHS table! Monitor twitter to find out where the Ants will be each day.

**Ways To Earn Points For Your Colony:**
1. Creating a twitter and tweeting to one of the Ant accounts
2. Tweeting a picture of yourself and an ANTarchy game piece, such as a sticker with the #ANTarchy logo, a presentation slide with a #ANTarchy logo, or with one of the five Ant Statues with their game designer.
3. Posting a comment on one of the Ant’s tweets that corrects wrong information in the tweet, clarifies the tweet, or answers a question the tweet posts.
4. Using the Geolocate feature on your tweet
5. Participating in an in-person activity and then tweeting about your experience
6. Following the instructions provided in designer tweets and respond to them in the specified manner.
7. Participate in cross platform (twitter, facebook, and instagram) activities while still using appropriate hashtags.
CONCLUSIONS
Create a Process

- No matter the size or composition of your SMEM team, develop a process for locating and verifying information.
  - It can be based on Collect-Analyze-Distribute (CAD) or whatever fits your needs and capabilities.
- Remember, the CAD process can be executed by even a single person.
  - The single person works the collection process for a while, then shifts to analysis and goes back to look at collected data. Finally they write the SitRep and start over.
Document the Process

- Write it down!
- Develop an SOG for your SMEM operations and publish it.
Train the Team

- Make sure that all SMEM team members understand the SOG and the process.
Exercise the Team

• First and foremost... do not ever attempt to exercise a realistic scenario in live social media. Do not create exercise injects in live social media. Ever. It will backfire, and the entire #SMEM world will mock you. I’m not joking.

• So... How do you exercise? Use real world non-emergency events to exercise your process and SOG. The Super Bowl, March Madness, etc. all provide a massive amount of social media traffic perfect for practicing collection, analysis and distribution.

• Run activation exercises.

• Use real disasters or incidents in other jurisdictions as exercises.
Play with the Tools

- The tools and techniques presented here are not the only ones out there. Experiment when possible, see what works best for your organization.
Final Activity
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These slides are available upon request.