Shaken Fury 19: Tools and Technologies for Information Sharing and Situational Awareness

August 29 1-2 pm ET
Outline

• Introduction
• Exercise Overview
• State Overview
• Field Reporting/Safety Assessment App
• SABER
• Wrap-up, Next Steps
• Q&A
• Quiz for those seeking Continuing Education Units (CEUs)
Today’s Speakers

• Sean McSpaden, NISC Executive Director
• Brian Blake, Associate Director, Central U.S. Earthquake Consortium (CUSEC)
• Doug Eades, IT Supervisor/GIS Lead, Kentucky Emergency Management (KYEM)
• Jeff Sopel, Senior Technologist, G&H International Services, Inc.
• Jim Morentz, Executive Director, Single Automated Business Exchange for Reporting (SABER)
Continuing Education Units (CEUs)

• CEUs will be awarded to participants that watch the webinar and complete the quiz following the webinar

• 0.1 CEUs for this hour-long event
After today’s webinar, participants will be able to:

1. Describe the objectives tested during the Shaken Fury 19 exercise and give an overview of the exercise.

2. List the 4 major technology solutions used during Shaken Fury 19 and their function.

3. Identify state-led information sharing activities that contributed to Shaken Fury 19.

If you have questions during the webinar, please submit using the question feature in GoToWebinar.
NISC Mission-Focused Job Aids Webinar Series

• In-depth discussion of tools, techniques, and standard operating procedures used for information sharing

• Webinar content applicable to multiple fields, including:
  • Homeland security,
  • Emergency management,
  • Public safety,
  • First responder, and
  • Healthcare preparedness.
The NISC is a non-profit organization devoted to improving information sharing at all levels of government and for all homeland security, emergency management, first responder, healthcare, and public safety stakeholders.
NISC Members Span Multiple Domains & Disciplines

Public Sector – Private Sector – Non-profits

- Critical Infrastructure
- Emergency Management
- EMS
- Fire
- GIS
- Information Technology
- Law Enforcement
- Military
- Private Industry
- Public Health
- Homeland Security
Member Benefits & Application

• Guidance and technical assistance
• Knowledge exchange and networking opportunities
• Access to the NISC Member Portal


Or click ‘Join’ at the top of any webpage on [www.nisconsortium.org](http://www.nisconsortium.org)
CUSEC: A partnership approach

Mission: “….the reduction of deaths, injuries, property damage and economic losses resulting from earthquakes in the central United States.”
Shaken Fury – Review of Tech/Solutions Agenda

• Introduction
• Exercise Overview
• State Overview
• Field Reporting/Safety Assessment App
• SABER
• Outcomes/Next Steps
Shaken Fury 2019

Enhanced Regional Information Sharing through State, CUSEC, DHS S&T, and FEMA partnerships
Exercise Overview

Jeff Sopel
Shaken Fury Exercise Overview

**Scenario:** 7.7 magnitude earthquake along the Cottonwood Grove Fault, the southwest segment of the NMSZ, near Memphis, Tennessee. Exercised whole of community response and recovery occurring from rupture to +61d post rupture.

**Participants:** CUSEC State EMAs and local municipalities; Federal Dept’s and Agencies (FEMA Regions/HQ, DOE, USGS); DoD (State NG, NGB, NorthCom); Private Sector; NGOs, Critical Infrastructure and Utilities.
Shaken Fury Exercise Overview

Interagency Objectives (first 4 for state/regional focus):

1. Establish **enhanced information sharing practices** across the whole community to improve preparedness, response, recovery, and mitigation in response to a catastrophic incident

2. Demonstrate the ability of state and federal response and recovery efforts to collaborate with the **whole community** to **adjudicate and allocate critical resources** to affected communities

3. Demonstrate integrated, **real-time field reporting** capabilities, and incorporate field reports at appropriate scales in EOCs

4. Validate **mutual aid resource planning** and **tracking capabilities** to improve coordination among whole community partners
Previous CUSEC EEI and Data Sharing Efforts

NLE 2011 Exercise EEIs
- Power Status
- Shelter Status
- Hospital Status
- Transportation Status
- Fatalities
- EOC Status

CAPSTONE-14 Exercise EEIs
- Transportation:
  - Air
  - Rail
  - Roads
  - Waterways
  - Fuel
- Infrastructure:
  - Electricity Grid
  - Natural Gas Grid
  - Water Grid
  - Private Sector Infrastructure

13,000 layers of information shared during CAPSTONE-14

2014 EEI Publication Guidance

Post CAPSTONE-14 EEIs

<table>
<thead>
<tr>
<th>EEI Name</th>
<th>ESF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Status</td>
<td>ESF-12</td>
</tr>
<tr>
<td>Transportation</td>
<td>ESF-1</td>
</tr>
<tr>
<td>Communications</td>
<td>ESF-2</td>
</tr>
<tr>
<td>Fuel</td>
<td>ESF-12</td>
</tr>
<tr>
<td>Shelters</td>
<td>ESF-6</td>
</tr>
<tr>
<td>Hospital Status</td>
<td>ESF-8</td>
</tr>
<tr>
<td>Water Status</td>
<td>ESF-3</td>
</tr>
</tbody>
</table>
Tech/Solutions for Shaken Fury

1. CUSEC Regional Information Sharing Platform (RISP);
2. Essential Elements of Information (EEIs) and FEMA Community Lifelines;
3. FEMA WebEOC Integration; and
CUSEC Regional Information Sharing Platform (RISP)

Key Components:

1. **Coordinated Information Sharing** - CUSEC Member States and other partners

2. **Information Product Delivery** - RCOP Viewer/Dashboard Series

3. **Automation Scripts** - Data integration, Power Outages, Social Media, etc.

4. **Historical Data Analysis** - Power outages, WebEOC integration

The goal is to provide more awareness/support for RISP activities for further outreach, partnerships to help provide standard information products that support CUSEC states.
CUSEC Lifelines Reporting Process

**Reporting Level**

- **Strategic/Summary**
- **Tactical/Detailed**

**Level of Detail**

**Sample Information Products**

- **What is it?**
  - Regional level summary for each lifeline
  - Mixture of narrative and map-based content from CUSEC WebEOC FUSION
  - Automated process to populate this based on more granular data/indices
  - WebEOC FUSION Board and associated ArcGIS Online Map;
  - Includes State and County-level Lifeline status information
  - Dashboards, Maps, WebEOC Boards based on individual reporting indices;
  - Provides information used to inform Lifeline status reports
Whole of Community Information Sharing
CUSEC RISP - Shaken Fury Hub

Shaken Fury Hub Site provided access to information including: regional power outages, gas station fuel availability, and business open-close status.

Information sharing was enhanced among the whole of community: states, FEMA Regions, FEMA HQ, National Guard Bureau, private sector, and nonprofit/crowdsource groups.

State Overview

Doug Eades
Shaken ‘19 Fury Links

Shaken Fury KYEM RISP Map Series
www.tinyurl.com/kyemsf19
username: shaken-fury pw: kyem2019

Shaken Fury DHS S&T Review
www.tinyurl.com/sf19-aar

Central United States Earthquake Consortium
www.cusec.org

Doug Eades, KYEM IT Supervisor/GIS Lead
james.eades2.nfg@mail.mil

Brian Blake – CUSEC Associate Director
bblake@cusec.org
Field Reporting/Safety Assessment App

Brian Blake
Field Reporting & Data Collection

*Shaken Fury 2019*

- State Geologists
- Safety Assessment Teams
Field Reporting & Data Collection

CUSEC State Geologists
Field Reporting & Data Collection

Safety Assessment

• Most mature implementation of S&T-supported technology demonstrated during Shaken Fury.

• During the exercise, the Tennessee Structural Assessment and Visual Evaluation (TNSAVE) coalition tested activation & field data collection.
Missouri SAVE Coalition Deployment

• May 22, 2019
• Jefferson City, MO
• EF-3

• 600+ Structures Assessed
• ~20 Assessors

• 2 Deployments
UNSAFE
DO NOT ENTER OR OCCUPY
(TO ORDER IS NOT A DEMOLITION ORDER)

This structure has been inspected and is found to be seriously damaged and unsafe to occupy, as described below:

Date: 05/19
Time: 1:30

This facility has unsafe emergency conditions.

Inspector: [Signature]

Do Not Remove, Alter, or Cover This Placard
Unauthorized by Governing Authority.
Test Drive the Safety Assessment App

- Test drive the app
  - Smartphone
  - Geoform
  - Dashboard

- Access training material

- Transition to your AGOL Organization

https://safety-assessment-cusec.opendata.arcgis.com
• Nonprofit founded by an Organizing Group of Walmart, Target, Macy’s, Boyd Gaming, Costco, Lowes, Walgreens, and Sears Holdings

• **Purpose:** *Influence government recovery priorities and enable business-to-business collaboration by providing accurate and timely business status information to get businesses back in business faster*
How SABER Works

Business Operations Status

Option 1: Fully Automated Connection to Internal Business Management System When Available from Company

Outage Data Source

Option 2: Spreadsheet of status from management system or manually, depending on company capability

Status spreadsheet uploaded to SABERspace.org

Option 3: Commercial SpotOnResponse™ for Ops Center or field status reporting

SABER is Status Data
XchangeCore transforms business status into National Information Exchange Model-compliant standard data formats and distributes in GeoJSON, GeoRSS, KML, XML, CSV through SOAP and REST connections.

Organizations Impacted/Supported

Government, Corporate, Public Web Portals

Incident Management Applications (WebEOC, others)

GeoCollaborate and ArcGIS Common Operating Pictures

Police, Fire, Utility, Mobile Apps for Field Verification

Free Copy of Google Earth®

And Many More…
13,000 SABER business locations in FEMA models created “Ground Truth” of 4,390 affected stores

SABER provided business status in GeoJSON format from day 0 to day 61 to CUSEC ...

... where an ArcGIS Feature Service was created to process SABER status for CUSEC RISP ...

... and Feature Service published for CUSEC states to use in their own ArcGIS Common Operating Pictures
EXERCISE EXERCISE EXERCISE
Shaken Fury Report #1

Within hours after the reported earthquake, SABER, the Single Automated Business Exchange for Reporting, identified 13,376 reporting locations among its members in the earthquake area. Of these 4,776 (35%) have reported business disruptions resulting in their closure.

SABER members are categorized by FEMA’s lifelines and represent the following subcategories tracked in SABER.

<table>
<thead>
<tr>
<th>Lifeline Subcategory</th>
<th>Total Members in Area</th>
<th>Reported Closed</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Box</td>
<td>1024</td>
<td>405</td>
<td>40%</td>
</tr>
<tr>
<td>Convenience</td>
<td>459</td>
<td>39</td>
<td>8%</td>
</tr>
<tr>
<td>Finance</td>
<td>272</td>
<td>122</td>
<td>45%</td>
</tr>
<tr>
<td>Food</td>
<td>5869</td>
<td>2019</td>
<td>36%</td>
</tr>
<tr>
<td>Fuel</td>
<td>954</td>
<td>690</td>
<td>27%</td>
</tr>
<tr>
<td>Housing Improvement</td>
<td>106</td>
<td>126</td>
<td>43%</td>
</tr>
<tr>
<td>Hotel</td>
<td>12</td>
<td>18</td>
<td>44%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>2323</td>
<td>817</td>
<td>28%</td>
</tr>
<tr>
<td>Retail</td>
<td>439</td>
<td>144</td>
<td>33%</td>
</tr>
<tr>
<td>Total</td>
<td>13376</td>
<td>4375</td>
<td>33%</td>
</tr>
</tbody>
</table>

The newest feature of SABER is the status best practices that members have developed over the past year as part of a DHS Science and Technology project. Best practice reporting is about a series of problems for businesses that prevent their operation and which government priorities should address to return the community to normal. The following chart shows the percent of businesses reporting problems.

Problems Associated with Business Status

- Major structural damage
- Need some repairs
- Problem with employees
- Problem with Utilities (Power)
- Using Generator
- Problem with Customers Getting There
- Problem with Products (cash, manual credit cards)
- Problem with Supply

Roughly half of the locations reporting are SABER Members who make a direct report through automated connections, spreadsheet submissions, or the SABER mobile app. The remainder are proxies for closure extrapolated from the Hughes satellite transponder reports. These locations reporting business disruptions are not a random representation of business conditions and should not be extrapolated.
Enroll at www.SABERspace.org

For more information ...
James W. Morentz, Ph.D.
Executive Director
Jim@SABERspace.org
301-467-4242
Outcomes – Whole of Community Information Sharing

This level of information access heightened situational awareness and the ability to make informed decisions aligned to the seven FEMA Community Lifelines.
Developing Trends based on Archived/ Historical Data

Graphical summaries of power outages, business status and fuel status over time provided a way to assess trends in stabilization over time.
Automated Reporting

• Snapshot reports for Fuel, Power and state Resource Request and Mission status were generated every 30-min. or on demand

• These provided a quick view on the status of key Lifelines in a format that could be easily emailed

• Available when internet bandwidth is limited
Next Steps

• Publish and distribute the DHS S&T AAR for Shaken Fury
• Continue the support and development of the tools and solutions that demonstrated value during Shaken Fury (e.g., Building Safety Assessment, GasBuddy, Power, Comms/FCC DIRS, State Geologists) through partnerships with FEMA and CUSEC states
• Engage with FEMA and CUSEC states to support integration of Community Lifelines in state EOC processes
• Seek new partners and explore additional information products and applications that may benefit the community
• Promote the Shaken Fury 19 Story Map: https://arcg.is/01Kfvm
Thank You
Q&A

Please submit questions using the question feature in GoToWebinar.
Member Benefits & Application

- Guidance and technical assistance
- Knowledge exchange and networking opportunities
- Access to the NISC Member Portal


Or click ‘Join’ at the top of any webpage on [www.nisconsortium.org](http://www.nisconsortium.org)
Quiz

• Following the webinar you will be prompted to complete a quiz
• Complete the quiz to receive your continuing education units (CEUs) for this session