



# **The Integrated Public Alert and Warning System (IPAWS)**

*Get Alerts, Stay Alive*

**Governor's Hurricane Conference  
Session TS36**

***Emergency Communications Support, Failure is Not An Option  
May 13, 2014***

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# What is IPAWS?

- IPAWS is a National System for Local Alerting
  - supports sending of local alerts from local, state, tribal, territorial officials during emergencies and from the President in the event of a catastrophic national emergency.
  - provides authenticated emergency alert and information messaging from emergency officials to the public through:
    - radio and television via the Emergency Alert System
    - cellular phones via Wireless Emergency Alerts
    - NOAA All Hazards Weather Radio via IPAWS-NOAA gateway
    - Internet applications and websites via the IPAWS Public Feed
  - FEMA, tasked by DHS, is responsible for:
    - Development, operation, integration and maintenance of the IPAWS which includes the EAS, WEA, NOAA HazCollect, and public alerts feed components plus future connections for alerting TBD.

## IPAWS is Not:

- Not a subscription based mass notification system
- Not an ETN or reverse dial phone system
- Not an SMS or email sign up system
- Not a paging or limited distribution notification system
  - e.g. can't send a recall notice to a select group of employees

*IPAWS does not know your phone number or your location!*

## IPAWS is for:

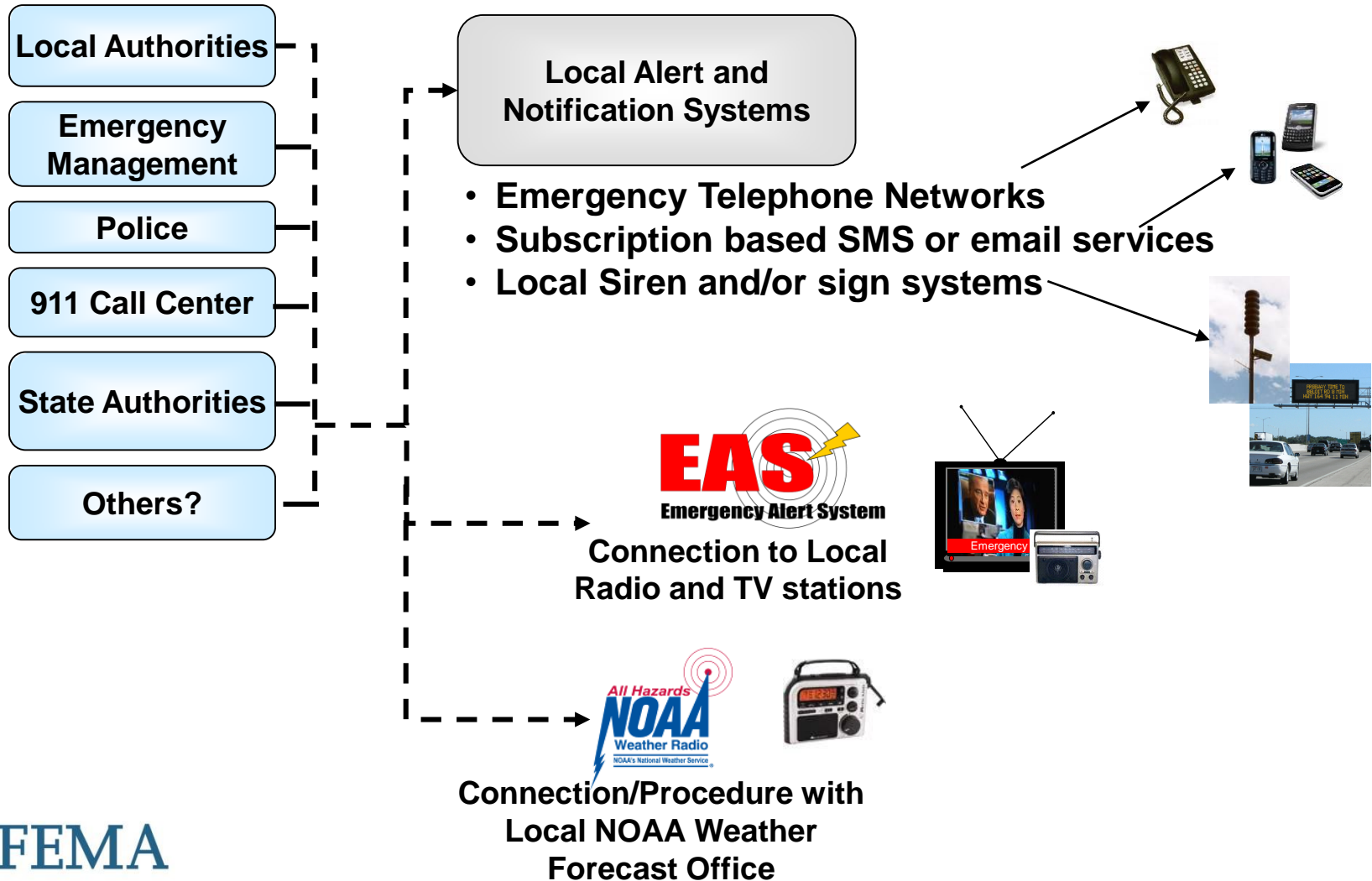
- **Emergency** Alert and Warning information
  - i.e. - urgent information impacting public safety
  - e.g. - not meant for messaging about changes to trash collection schedule
- Alerting **all** citizens in an given area

## IPAWS Can:

- Activate EAS Radio and TV stations
- *Alert* all (WEA capable) cell phones in a defined geographic area, even when cell networks are congested
- Send a warning message for broadcast over NOAA Weather Radio

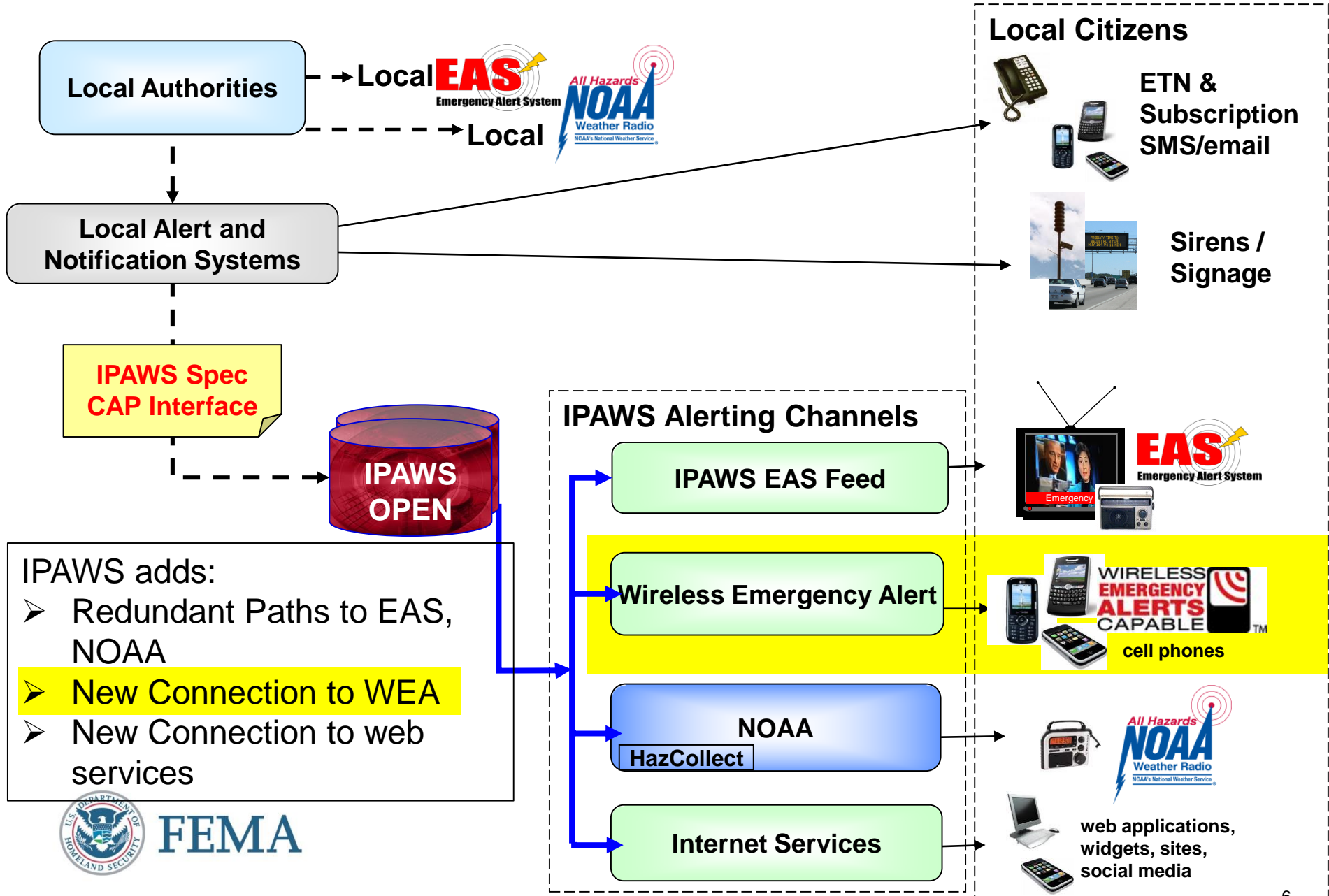
# Notional State/Local Alerting Architecture

## Public Safety / Alerting Authorities



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# Notional State/Local Alerting plus IPAWS



Local Authorities

Local **EAS**  
Emergency Alert System

All Hazards  
**NOAA**  
Weather Radio  
NOAA's National Weather Service

Local

Local Citizens

ETN & Subscription  
SMS/email

Sirens /  
Signage

IPAWS Alerting Channels

IPAWS EAS Feed

**EAS**  
Emergency Alert System

Wireless Emergency Alert

WIRELESS  
EMERGENCY  
ALERTS  
CAPABLE

cell phones

NOAA

HazCollect

All Hazards  
**NOAA**  
Weather Radio  
NOAA's National Weather Service

Internet Services

web applications,  
widgets, sites,  
social media

IPAWS Spec  
CAP Interface

IPAWS  
OPEN

IPAWS adds:

- Redundant Paths to EAS, NOAA
- New Connection to WEA
- New Connection to web services



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# Snapshot - IPAWS Users and Connections Status

See list at: <http://www.fema.gov/integrated-public-alert-warning-system-authorities>

as of May 8, 2014

## Alerting Authorities

### Local

236 County level w/ Public Alerting  
(215 County level in process)

### State

43 State level w/ Public Alerting  
(5 in process)

### Territorial

2 Territory w/ Public Alerting

### Federal

NOAA National Weather Service (NWS); since Jun 2012:  
~850,000 NWS CAP messages processed by IPAWS  
~10,000 NWS Wireless Emergency Alerts sent

National Center for Missing and Exploited Children (AMBER Alerts)  
>100 Wireless Emergency Alerts sent since Dec 2012



## Alert Dissemination Channels (public alerting systems)

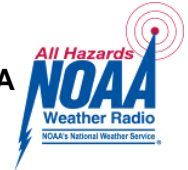
### Emergency Alert System

Over 20,000 EAS participants monitoring the IPAWS EAS Feed



### NOAA

All Hazards NOAA Weather Radio network



### Wireless Emergency Alerts

60 Cellular Carriers connected  
Millions of handsets deployed



### Internet Services

41 vendors with access to monitor IPAWS Public Alerts Feed



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**Note: FEMA doesn't send Alerts!**  
The alerts appearing on citizens cell phone are from local or state sources!

# Wireless Emergency Alerts (WEA)



- ▶ Enables 90 character, cell tower targeted, emergency alerts to be broadcast to cellular phones in a defined alert area

▶ Uses **“cell broadcast”** technology to avoid network congestion

- Different channel than voice, SMS, email or web

▶ Cellular carrier participation voluntary

- Most Commercial Mobile Service Providers (CMSP) have opted into WEA

▶ New phones are delivered opted-in

- Citizens may opt-out of receiving alerts

▶ **IPAWS is the only way emergency managers can send Wireless Emergency Alerts (WEA)**

▶ **WEA use is free to alerters and alertees**  
**– no usage or text message charges**



▶ Significantly different from SMS/email based alerting systems

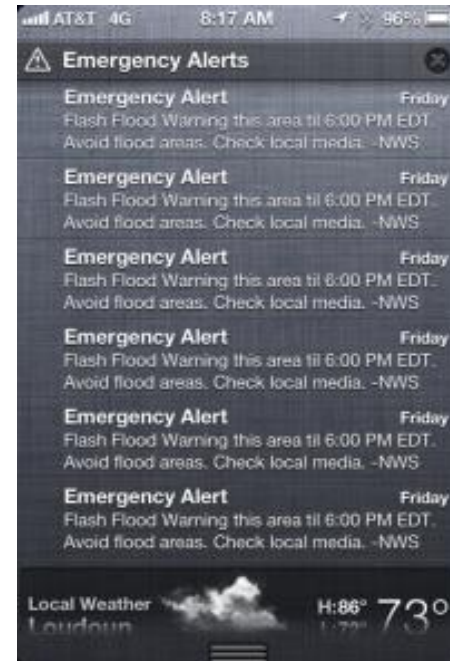
- **Not subscription based** -- true location based alerting via broadcast from cell towers
- Sends alerts to phones in an area - not to a database of phone numbers
- **For “Alerts” only**.... not for notification type messages
- Categorizes Alerts in three types:
  - **Imminent Threat** (*Severity, Urgency, Certainty*)
  - **AMBER / Child Abduction Emergency**
  - **Presidential** (\*\**Cannot Opt-Out* \*\*)



# LIMITATIONS

## Wireless Emergency Alert Capabilities

- WEA reality check:
  - 90 characters only
  - Not all handsets work (*yet...*)
  - Display & behavior inconsistent among different handset types
  - Still some network issues:
    - Duplicate alerts on some handsets
    - Some alerts delivered miles outside alert area
  - No local “test code”
  - Public perception and education, “Why am I getting this?” and “Screechy” ring tone



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# WEA Messages generated by NWS WFO warning messages:

## WEA Messages Originated by NWS

**Extreme**

**Severe**

| Warning Type                | WEA Message   |
|-----------------------------|---|
| <b>Tsunami Warning*</b>     | Tsunami danger on the coast. Go to high ground or move inland. Listen to local news. -NWS |
| <b>Tornado Warning</b>      | Tornado Warning in this area til hh:mm tzT. Take shelter now. Check local media. -NWS     |
| <b>Extreme Wind Warning</b> | Extreme Wind Warning this area til hh:mm tzT ddd. Take shelter. -NWS                      |
| <b>Hurricane Warning</b>    | Hurricane Warning this area til hh:mm tzT ddd. Check local media and authorities. -NWS    |
| <b>Typhoon Warning</b>      | Typhoon Warning this area til hh:mm tzT ddd. Check local media and authorities. -NWS      |
| <b>Flash Flood Warning</b>  | Flash Flood Warning this area til hh:mm tzT. Avoid flooded areas. Check local media. -NWS |
| <b>Dust Storm Warning</b>   | Dust Storm Warning in this area til hh:mm tzT ddd. Avoid travel. Check local media. -NWS  |

**Legend**

tzT = timezone  
ddd= three letter abbreviation  
for day of the week

\*WEA activated for Tsunami Warnings when Tsunami Watch or Tsunami Advisory not previously in effect.



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# WEA - Technical Notes!

Things you need to know about how carriers deliver alerts to cell phones

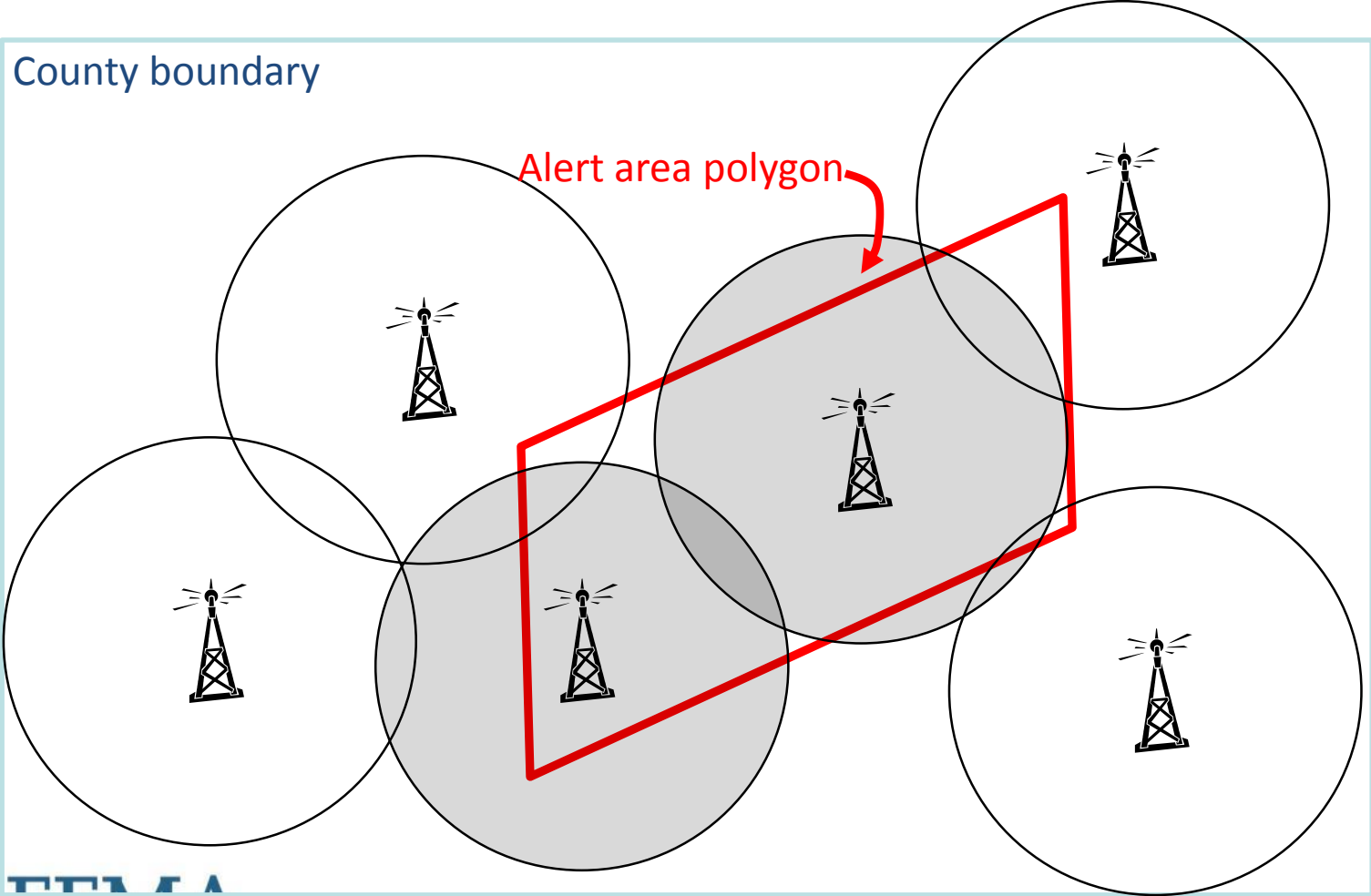
- *Different WEA coverage footprints depending on wireless carrier implementation*
- *FCC rules allowed for variation in technical implementation in wireless carriers networks*
- *Three variations of how alerts are targeted from cellular towers in the field today*



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# Carrier WEA Implementation: Variation 1

*Alert is broadcast only from towers located inside alert area polygon defined in the IPAWS message*

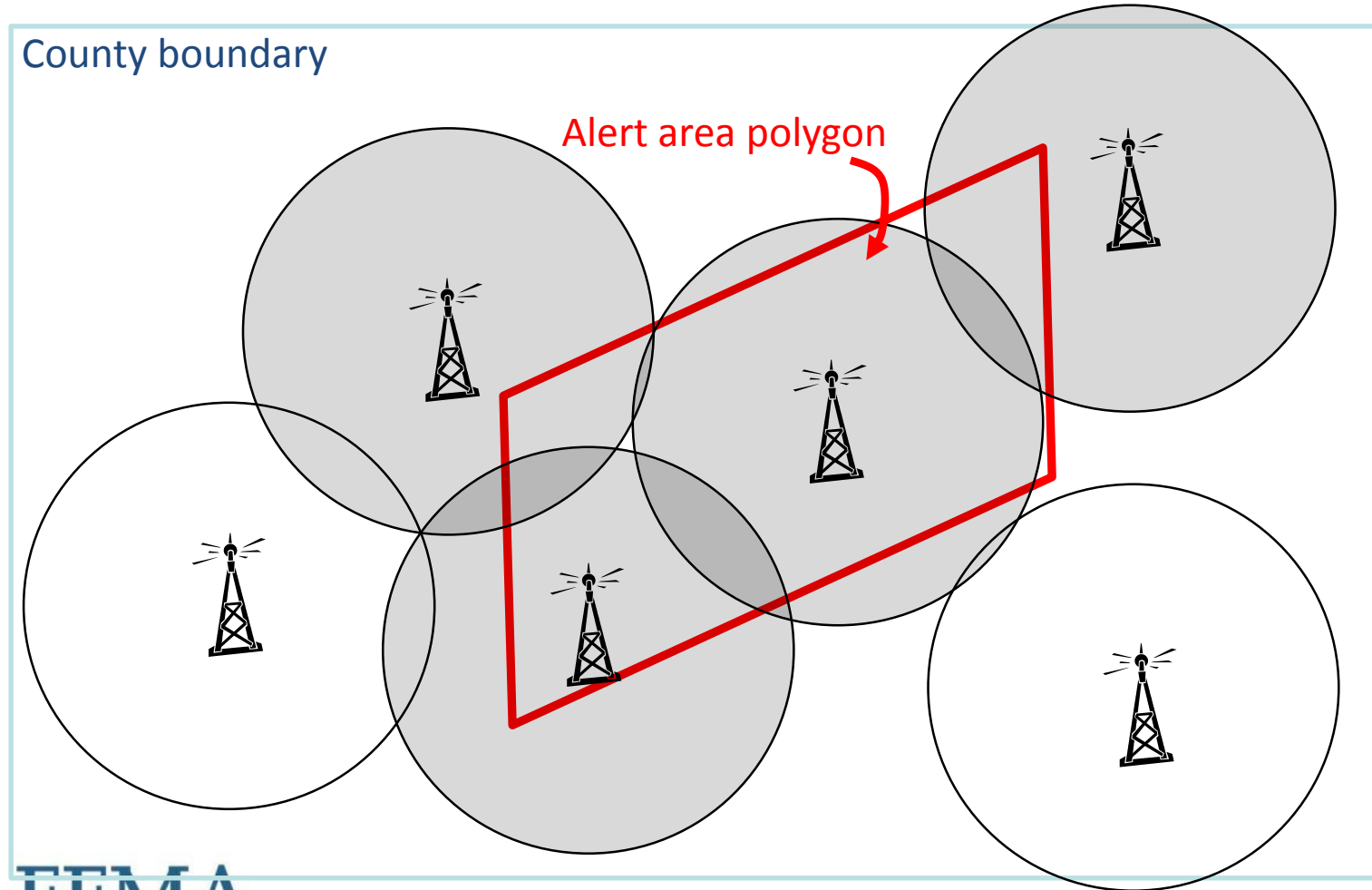


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WEA is broadcast inside shaded circles only.

# Carrier WEA Implementation: Variation 2

*Alert is broadcast from towers with est. coverage that includes a part of the alert area polygon defined in the IPAWS message*



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WEA is broadcast inside shaded circles only.



# Carrier WEA Implementation: Variation 3

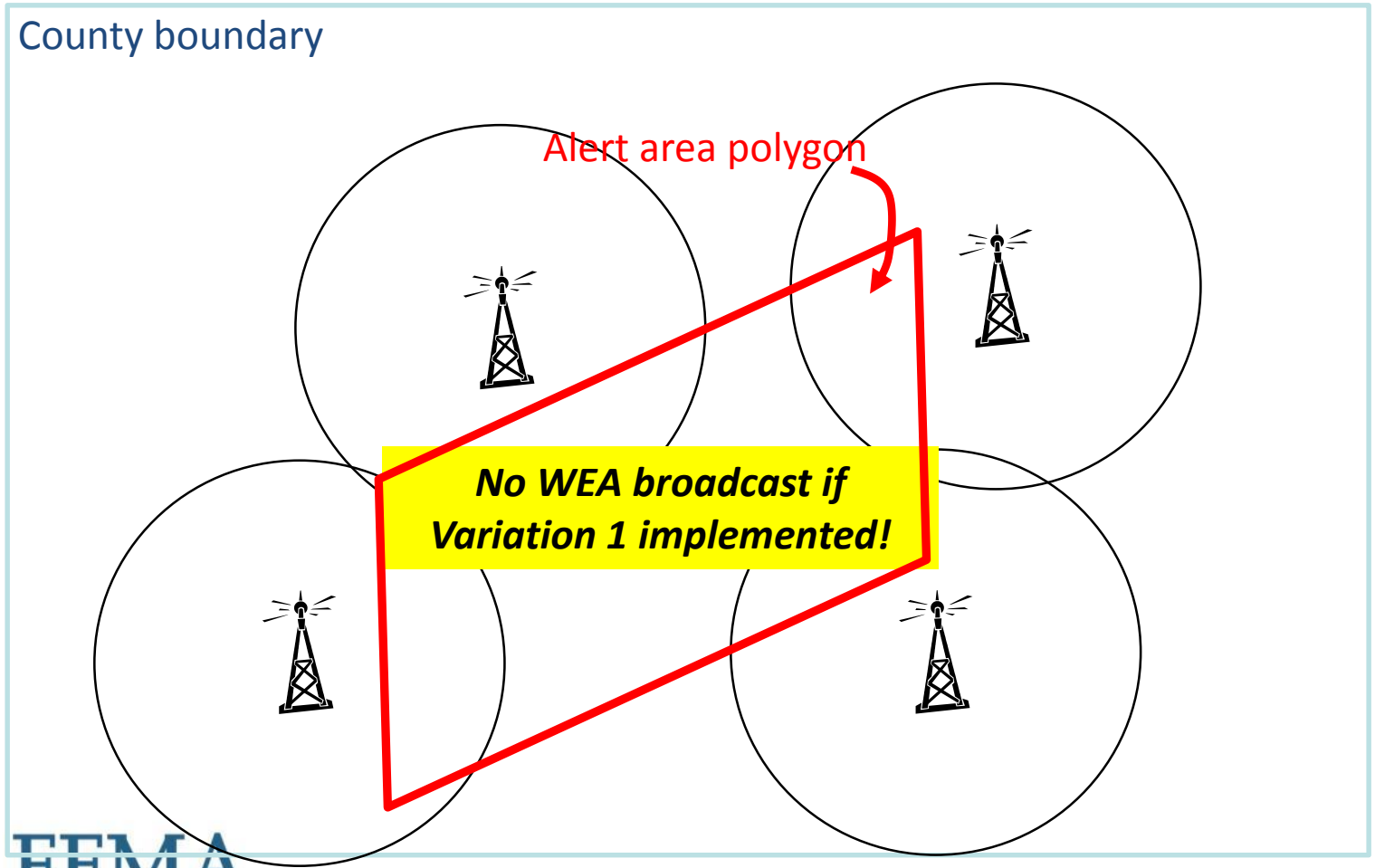
A custom App is deployed on carriers' smart phones

- The WEA App communicates with the carrier's alerts database and if the phone is in an alerted zone, then the WEA is sent as an SMS text message to the phone
- This variation is dependent upon SMS channel availability
  - potential for alert delivery to be affected by SMS congestion in local wireless network
- WEA Roaming may not be supported by app based WEA implementation



# Rural Consideration for WEA coverage:

- *Cell towers are fewer and farther apart in rural areas*
- *WEA may not be broadcast if alert area does not include a tower location*



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WEA is broadcast inside shaded circles only.

# How to: Become IPAWS Alerting Authority

1. Obtain an IPAWS-compatible alerting tool
2. Complete a IPAWS Memorandum of Agreement
  - Email completed MOA Application to IPAWS inbox
  - After signature process, FEMA will assign a “COG ID” for your organization setting up access to IPAWS-OPEN and deliver a PKI certificate to be used by your alerting tool to authenticate message exchanges with IPAWS

3. Complete IPAWS web-based training

4. Complete the “Public Alerting Application”
  - ***With approval of state IPAWS coordinator***

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With training certificate and signed “Public Alerting Application” your COG ID will be permitted to send alerts via IPAWS directly to the public

IPAWS application forms & instructions at: [www.fema.gov/alerting-authorities](http://www.fema.gov/alerting-authorities)

# Step 1: Select an Alerting Tool

Select IPAWS compatible software



- ▶ Recommend considering/ documenting alerting requirements and procedures.
  - Who will send what alerts when?
- ▶ Your operations center or dispatch may already have a tool that can work with IPAWS.



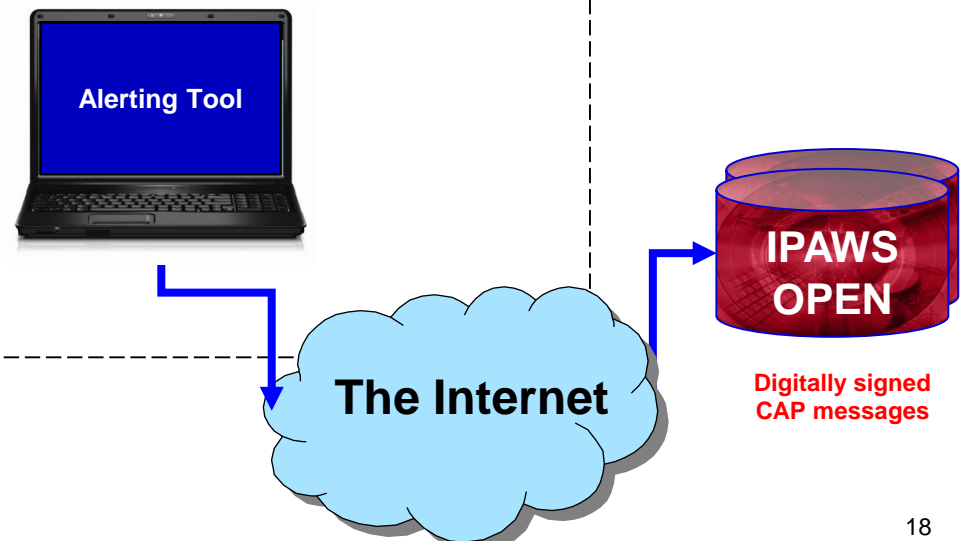
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## Alerting Authority alert origination tools

- More than 60 different tools are currently in use by state/local authorities with IPAWS connections
- Vendors supporting 10 or more IPAWS users:
  - EMNet
  - WebEOC
  - Hyper-Reach
  - E-Team
  - Everbridge
  - Code Red
  - GSSNet
  - Blackboard Connect
  - Cassidian Communication Geo Cast
  - Nixle
  - Digital Alert Systems (DASDEC)
  - FirstCall Emergency Notification
  - On-The-Go Alerting
  - Roam Secure Alert Network
  - Federal Signal
  - Amatra SmartSource for Mass Notification
  - The Communicator! NXT

- Tools vary widely in operational look & feel
- Some tools do not support all capabilities available via IPAWS

***Evaluate tools for one that fits your operational plans and use cases!***



# Alerting Tools Information – Webinar Presentations

IPAWS hosted Webinars for vendor tools that demonstrated four minimum IPAWS functions:

1. Post of a message to IPAWS that generated EAS, WEA, and Public Alerts Feed alert
2. Retrieve message status to verify alert was successfully transmitted to the intended audience
3. Interoperable message exchange with other IPAWS COG
4. Verify & display of connectivity status with IPAWS

▶ *Recordings of past webinars can be viewed at:*

- <https://femaipawslab.webex.com/ec07011/eventcenter/recording/recordAction.do?siteurl=femaipawslab&theAction=archive>

| Webinar   | Alert Origination Tool Vendor                      |
|-----------|--|
| Webinar 1 | MyStateUSA AlertSense                              |
|           | Eyestreet Solutions On-The-Go Alerting             |
|           | Comlabs EMNet                                      |
| Webinar 2 | GSS Alert Studio                                   |
|           | NC4 E-Team   |
|           | Federal Signal Corporation                         |
| Webinar 3 | Inspiron Logistics                                 |
|           | Asher Group  |
| Webinar 5 | Monroe Electronics Interop-Solutions               |
|           | Interop-Solutions                                  |
|           | Geo-Comm, Inc.                                     |
| Webinar 6 | Nixle  |
|           | AmberAlert.com - dba Law Enforcement Alerting, Inc |
|           | Emergency Communications Network                   |
| Webinar 7 | AtHoc, Inc   |
| Webinar 8 | Ping4Alerts  |

# Alerting Tools Information – Webinar Presentations

- ▶ Summary of tool observations during the scheduled Webinar: ***the following are notes observed during the webinars - please verify tool capabilities and features with the vendor!***

| Company              | Alerting Tool         | IPAWS Alert Channel |     |       | Features       |             |              |           | User Feedback   | COG-to-COG |          | Verify       |
|----------------------|-----------------------|---------------------|-----|-------|----------------|-------------|--------------|-----------|-----------------|------------|----------|--------------|
|                      |                       | WEA                 | EAS | NWEM  | Channel Select | Map/Polygon | 90 char text | Templates | Success/Failure | Send       | Retrieve | Connectivity |
| MyStateUSA           | AlertSense            | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| Eye Street Solutions | On-The-Go Alerting    | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| ComLabs              | Emnet                 | yes                 | yes | no(1) | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| GSS                  | Alert Studio          | yes                 | yes | yes   | yes            | yes         | yes          | no(5)     | yes             | yes        | yes      | yes          |
| NC4                  | E Team                | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| Federal Signal       | CenterPoint Dashboard | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| Inspiron Logistics   | WENS                  | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes(2)   | yes          |
| Asher Group          | Hyper-Reach           | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| Monroe Electronics   | DASEOC                | yes                 | yes | yes   | yes            | no(3)       | yes          | unknown   | yes             | yes        | yes      | yes          |
| Interop-Solutions    | Paraclete             | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| GeoComm              | GeoLynx               | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |
| Nixle                | Nixle                 | yes                 | yes | no    | no             | yes         | yes          | yes       | yes             | no         | no       | yes          |
| ECN                  | CoderED               | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | no(4)    | yes          |
| AtHoc                | IWSAlerts             | yes                 | yes | yes   | yes            | yes         | yes          | yes       | yes             | yes        | yes      | yes          |

- notes:
- 1 NWEM post failed during the demo (probably due to user error when crafting the message)
  - 2 COG-to-COG xml was not retrieved
  - 3 Allows manual entry of polygon, but there is no mapping tool
  - 4 Cog-to-COG retrieval was not successful during the demo
  - 5 Templates will be in the next software release



# Recommended!

## Develop a Public Alerting Plan:

- Document local public alert standard operating procedures
- Coordinate with State and neighboring local jurisdictions about public alerting
- Inform citizens about how and where alerts will be distributed
- Practice: train, drill, & exercise sending alerts



# FEMA Primary Entry Point (PEP) Stations

- ▶ To satisfy requirement for a nationwide alert capability for warnings about a national catastrophic event, FEMA maintains relationships and equipment at a number of private sector radio stations across the US.
- ▶ FEMA PEP stations include:
  - extended backup power generation system
  - special communications connections to FEMA
  - back up transmitter and EMP protection (newer stations only)
- ▶ IPAWS encourages planning and use of PEP stations in state and local disaster response

## Ask about FEMA PEP Stations in your area

In coordination with the station owner, local public safety officials may leverage the more resilient infrastructure of the station for delivering local emergency information when the station is not being used for a national catastrophic emergency.



# For more information

- ▶ Email the IPAWS inbox: [IPAWS@dhs.gov](mailto:IPAWS@dhs.gov)
- ▶ IPAWS Website: <http://www.fema.gov/ipaws/>
- ▶ EMI Independent Study Courses:
  - **IS-247a: *IPAWS Introduction***  
<https://training.fema.gov/EMIWeb/IS/is247a.asp>
  - **IS-248: *IPAWS for the American Public***  
<http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-248>
  - **IS-251: *IPAWS for Alerting Authorities***  
(to be release this summer)
- ▶ IPAWS Stakeholder Information and Webinar Mailing Lists:  
<http://www.fema.gov/integrated-public-alert-and-warning-system-working-groups>



# Contacts:

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Send User Applications to:  
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Visit:  
<http://www.fema.gov/ipaws/>

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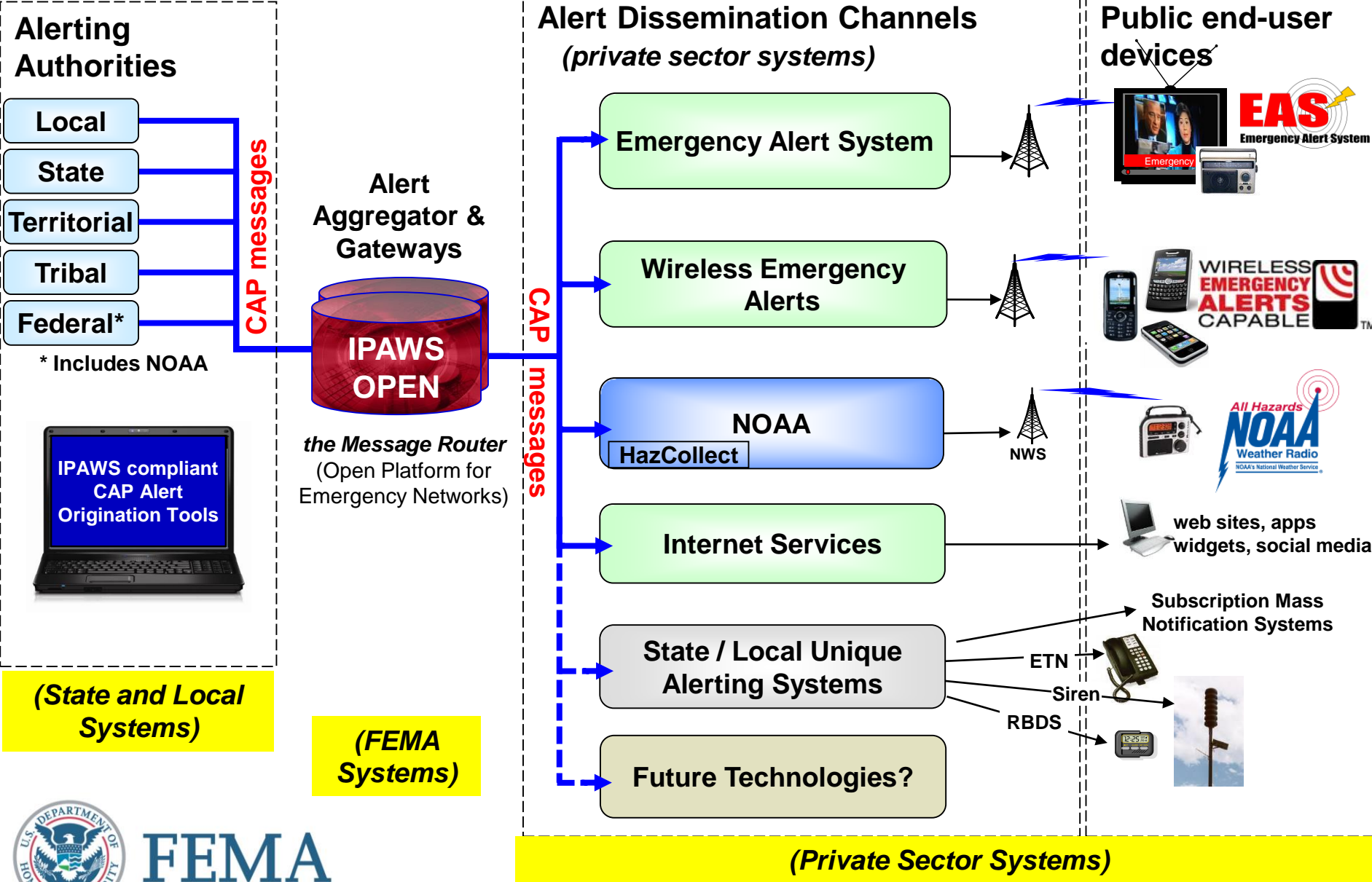
202.646-1386 Office  
Mark.Lucero@fema.dhs.gov  
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## **Additional Information Slides**

# IPAWS Architecture –



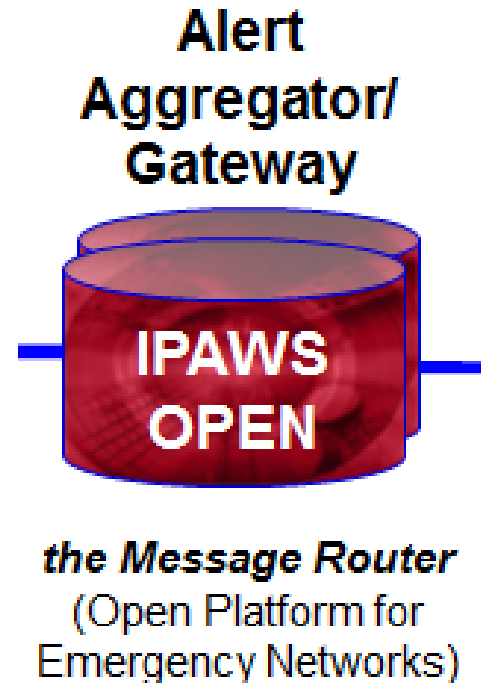


# What the IPAWS-OPEN does

A Gateway to “Alert Dissemination Channels”

## Alert Aggregation:

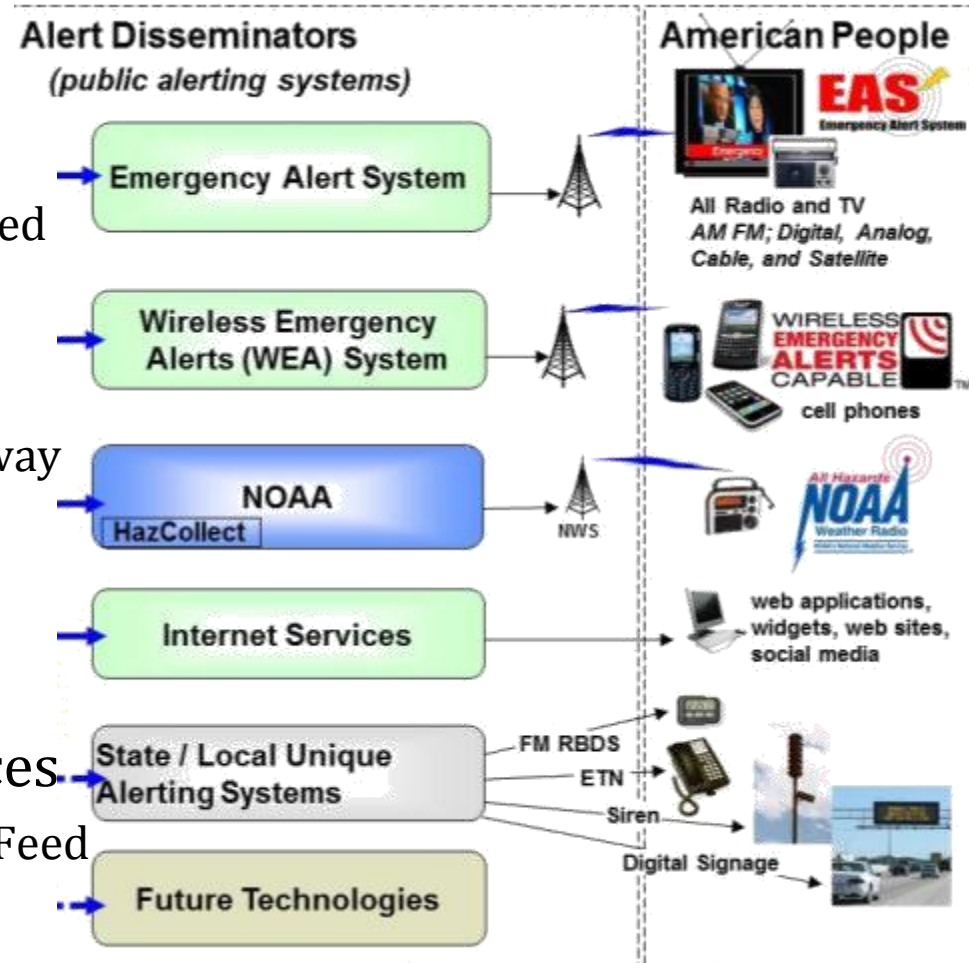
1. Authenticates sender
  - A. Web Service Security
  - B. Digital Signature
2. Validates message format
3. Verifies permissions
  - A. What alerts can you send
  - B. Where can you send them
  - C. How can you send them
4. Hands off alert messages to IPAWS Alert Dissemination Channels: EAS, WEA, NOAA Weather Radio, Internet Apps



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# IPAWS Alert Dissemination Channels:

- Emergency Alert System
  - TV, Radio, Cable, Satellite
  - 20,000+ monitoring IPAWS EAS Feed
- Wireless Emergency Alerts
  - Opt-in Wireless Carriers
  - 60 connected to IPAWS Alert Gateway
- National Weather Service
  - NOAA Weather Radio/HazCollect
  - 1000 WX transmitters
- Interoperating Systems/Services
  - 39 monitoring IPAWS Public Alert Feed

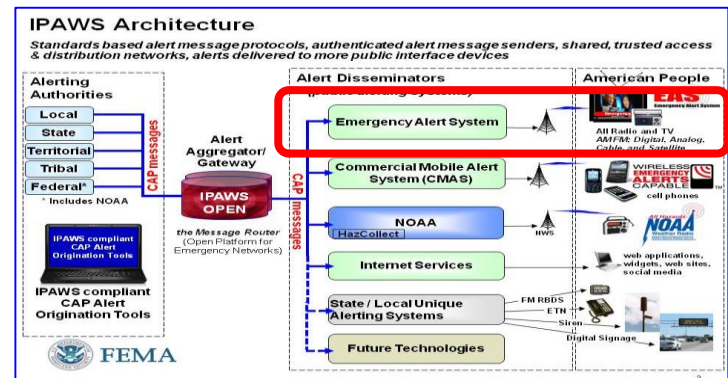


# Emergency Alert System and IPAWS



- ▶ All EAS Participants are required to monitor the IPAWS EAS Feed for a national EAS emergency alert message
- ▶ Stations may, if they deem it in the public interest, also broadcast alerts and warnings from the local, state, and National Weather Service officials which are relevant for the area they serve –
  - **meet with your local stations to coordinate local alerting!**
- ▶ IPAWS posts a test message (RWTs) for each time zone once per week on EAS Feed so radio and TV stations can confirm that their equipment is functioning
- ▶ State and Local authorities may also use IPAWS to route alerts to local EAS stations

EAS Participants are defined by the FCC's EAS rules in C.F.R. 47 Part 11 and include all radio and television broadcast, cable, satellite, and wireline providers (e.g. Verizon FiOS or AT&T Uverse)



# Emergency Alert System Capabilities



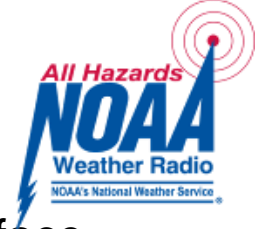
*via IPAWS, in addition to traditional EAS state or local configurations*

- Trigger TV and Radio alerts
- FCC requires all licensees to monitor IPAWS EAS feed
- Supports audio attachments (mp3)
- Supports audio links
- Supports Text to speech



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# NOAA All Hazards Weather Radio via IPAWS

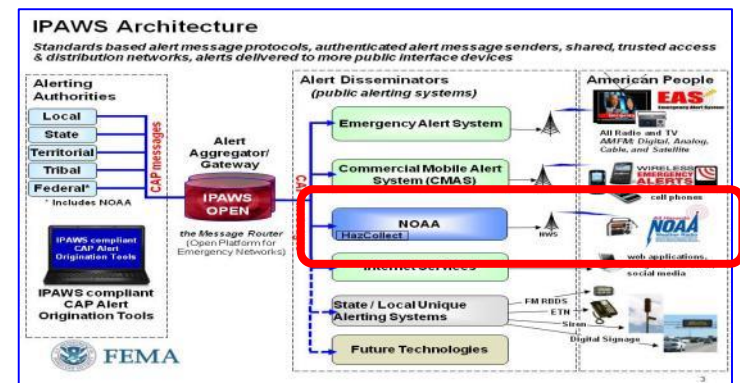


All-Hazards Emergency Message Collection System, or HazCollect interface enables emergency alert messages from local alerting authorities to be broadcast over local NOAA Weather Radio transmitters directly from an IPAWS alert message

- Permission to access Hazcollect via IPAWS must be coordinated and approved through the NWS in coordination with your local Weather Forecast Office (additional info at <http://www.nws.noaa.gov/os/hazcollect/>)

## NOAA Weather Radio Capabilities

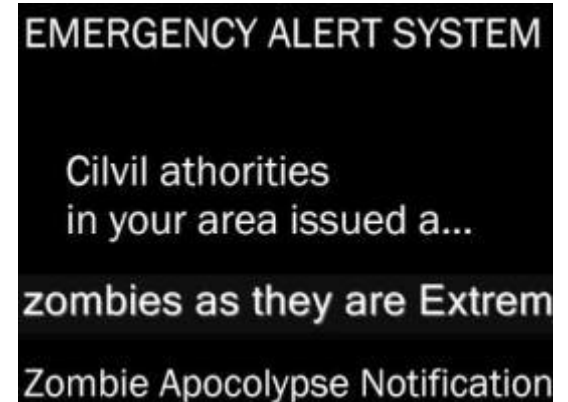
- Broadcast of Non Weather Emergency Messages to local weather radios
- 1000 transmitters nationwide (162.400-162.550 MHz)
- Alert can “wake up” weather radio in the middle of the night
- Radios include battery back-up (work when power is out)
- Most schools have weather radios



# LIMITATIONS

## Emergency Alert System Capabilities

- Emergency Alert System (reality check)
  - Broadcasters are not required to air your alert (check your state EAS plan)
  - Broadcast footprint is very large
  - Potential for duplicate alerts (if multiple sources are used)





# LIMITATIONS

## NOAA Weather Radio Capabilities

- Not all households have one
- “test code” currently not supported
- Weather radios require programming by citizens
- HazCollect is an old system with “quirks”
  - Proper message configuration is required

GET THE INFORMATION YOU NEED...24 HOURS A DAY... GET A **NOAA WEATHER RADIO!**

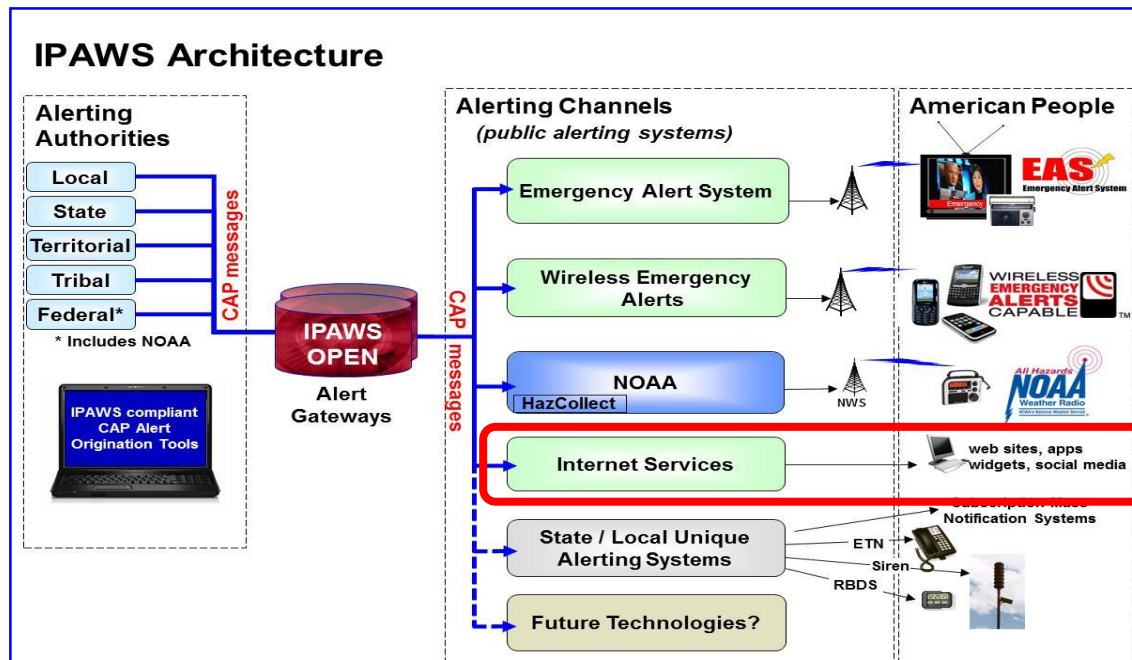


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# Internet Services / Applications

- ▶ Approved 3<sup>rd</sup> party internet web services and application can monitor and retrieve public alerts in CAP format and post or distribute the alert information via their websites, apps, subscription services, etc.



*Computer or Smart Phone Apps  
Social Media,  
Subscription services  
Website pop-ups*





# How IPAWS Works

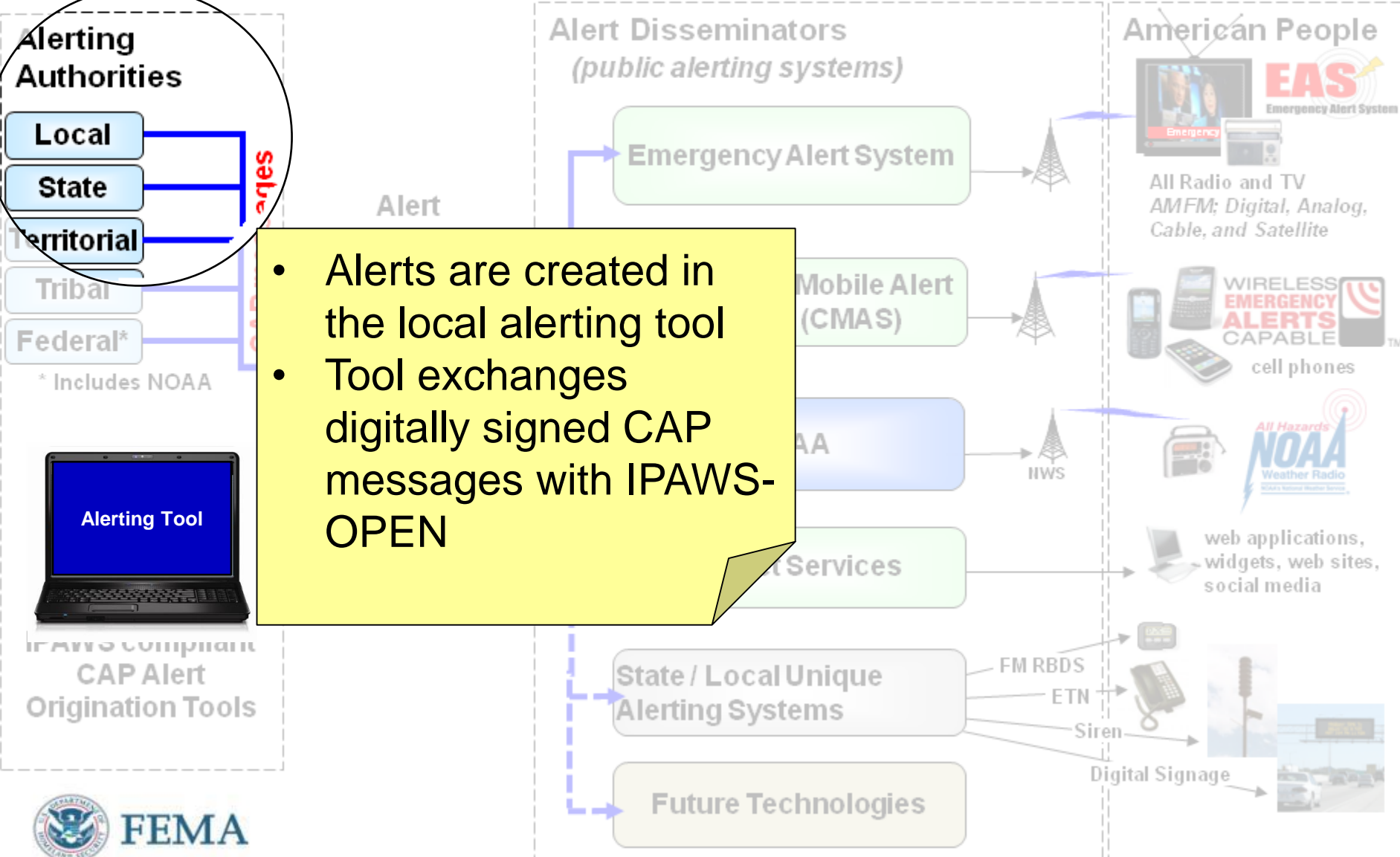


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# IPAWS Architecture

## How IPAWS Works...

standards, protocols, authenticated alert message senders, shared, trusted access & distribution networks, alerts delivered to more public interface devices

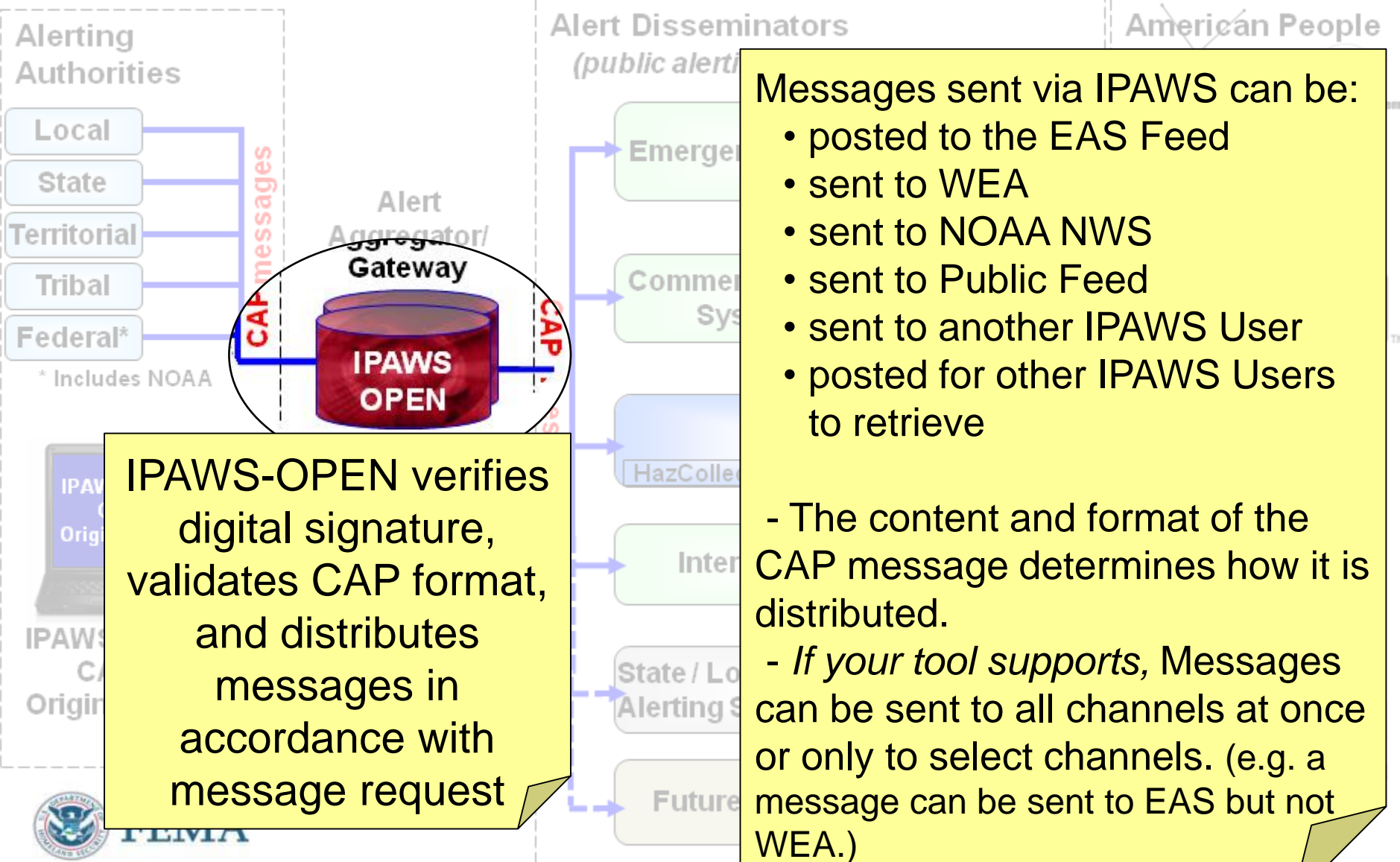


- Alerts are created in the local alerting tool
- Tool exchanges digitally signed CAP messages with IPAWS-OPEN



# IPAWS Architecture

Standards based alert message protocols, authenticated alert message senders, shared, trusted access & distribution networks, alerts delivered to more public interface devices



# IPAWS Architecture

Dissemination channels connected to or monitoring IPAWS-OPEN receive or retrieve alert messages and broadcast, distribute, or post alerts.

Local systems can be used as alert tool input to IPAWS or to retrieve alerts as an additional alerting channel.

Authenticated alert message senders, shared, trusted access to more public interface devices

Alert Disseminators (public alerting systems)

American People

Emergency Alert System

Commercial Mobile System (CMAS)

NOAA  
HazCollect

Internet Services

State / Local Unique Alerting Systems

Future Technologies

Alerts broadcast to local consumer devices!



All Radio and TV  
AM FM; Digital, Analog,  
Cable, and Satellite



WIRELESS  
EMERGENCY  
ALERTS  
CAPABLE  
cell phones



All Hazards  
NOAA  
Weather Radio

web applications,  
widgets, web sites,  
social media



Digital Signage

\* Includes NOAA

IPAWS compliant  
CAP Alert

IPAWS  
OPEN

the Message Router  
(Open Platform for  
Emergency Networks)

CAP messages







# IPAWS User Application Documents

## How to sign up for IPAWS



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# Step 2: IPAWS Application Documents

Apply for a Memorandum of Agreement with FEMA

## MOA Application

Application for Memorandums of Agreement (MOA) between FEMA and Collaborative Operating Group (COG) for Access to IPAWS-OPEN by Interoperable Software System(s)

Name of Sponsoring Eligible Organization:

Individual who will sign the MOA on behalf of the Sponsoring Eligible Organization

Name:

Primary Phone:

Name:

Email:

Organization:

Mailing Address:

City:

Alternate Phone:

Name:

Organization:

Mailing Address:

City:

Technical Phone:

Name:

Organization:

Mailing Address:

City:

Federal Interoperable (IPAWS)

Regarding

IPAWS OPEN

WARNING: This document contains information that is exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is intended for use only by the individuals named herein. It is not to be disseminated to the public.

## MOA

Memorandum of Agreement

between the  
«Name of Sponsoring Eligible Organization»  
and the



## Rules of Behavior

### 1.0 INTRODUCTION

The following Rules of Behavior apply to all persons with application access to IPAWS-OPEN (Interoperable Software System) under who have been issued a COGID and associated credentials for IPAWS-OPEN. These individuals shall be held accountable for their actions related to the information resources provided to them and shall comply with the following rules or not being their status privileges. The Rules of Behavior apply to electronic devices used as well as their primary workstation in an Emergency Operations Center (EOC) and at any alternate workplace (e.g., telecommuting from a remote or satellite office) using any electronic device including laptop computers and portable electronic storage (PES). IPAWS-OPEN includes personal digital assistants (PDA) by a J2534-PRO, cell phones, text messaging systems (e.g., BlackBerry), and other mobile devices that enable wireless access to IPAWS-OPEN. These Rules of Behavior are intended to protect IPAWS-OPEN and its associated information and data. These Rules of Behavior are intended to protect the privacy of users' personal information and data, protect the integrity of IPAWS-OPEN, and protect the confidentiality of IPAWS-OPEN.

### 2.0 APPLICATION RULES

#### 2.1 Official Use

- IPAWS-OPEN is a Federal system to be used only for the performance of the user's official duties in support of public safety as provided in the National Incident Management System (NIMS).
- The use of IPAWS-OPEN for unauthorized activities is prohibited and could result in revocation within warning, loss of access rights, similar process or both penalties.
- By utilizing IPAWS-OPEN, the user of the interoperable system(s) consents to allow system monitoring to assist system administrators in troubleshooting.

- Users will be held accountable for safeguarding all configuration items and information well addressed by IPAWS-OPEN. Users are required to safeguard the information with appropriate controls, procedures and any other controls providing system support on their behalf. In addition, users will be held accountable for the security of a remote device or workstation or any other device used to access IPAWS-OPEN. Users will be held accountable for the security of the device and any other device used to access IPAWS-OPEN.

- If a user is interacting with IPAWS-OPEN, the user is responsible for protecting their user information by means of personal programs or devices. Users shall not install any such personal programs or devices on any system within the operational limits of their public safety authority to be used as permitted, as determined by applicable state and/or local laws and any applicable regulations.

#### 2.2 Access Security

- All email addresses provided in connection with interoperable system(s) user accounts must be associated to an approved email account assigned by the user's emergency management organization. The use of personal email accounts to support emergency messaging through IPAWS-OPEN is prohibited.
- Users must have approval of the MOA by FEMA, a COG issued with COGID and Digital Certificate will be created and used to the designated external representation. All individuals with knowledge of these credentials must adhere to other Federal authentication mechanisms without explicit approval from IPAWS-OPEN.
- Every interoperable system user is responsible for providing secure access to IPAWS-OPEN to their use of IPAWS-OPEN and shall adhere to these Rules of Behavior.

## ▶ Memorandum of Agreement

– MOA Application identifies county organization name, POCs, alerting tools used

– MOA establishes the relationship between the county and FEMA, connection, communications, security

– Includes the Rules of Behavior defining official use, password rules, accountability



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# Step 3&4: Public Alerting Authority Application

**Public Alerting Application**

OOIG Name: \_\_\_\_\_ OOIG ID#: \_\_\_\_\_

Emergency Message Collection System (MsgCollS)

(OOIG) for your geographic area of responsibility:

Name: \_\_\_\_\_ EPC Code: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Event Codes: (Check all that apply)

|   |   |   |
|---|---|---|
| <input type="checkbox"/> Avalanche Warning (AW)           | <input type="checkbox"/> Law Enforcement Warning (LEW)    | <input type="checkbox"/> Administrative Message (AM)      |
| <input type="checkbox"/> Civil Danger Warning (CDW)       | <input type="checkbox"/> Local Area Emergency (LAE)       | <input type="checkbox"/> Avalanche Alert (AA)             |
| <input type="checkbox"/> Civil Emergency Message (CEM)    | <input type="checkbox"/> Nuclear Threat Warning (NTW)     | <input type="checkbox"/> Radiological Emergency (RE)      |
| <input type="checkbox"/> Earthquake Warning (EQW)         | <input type="checkbox"/> Radiological Hazard Warning (RH) | <input type="checkbox"/> Telephone Outage Emergency (TOE) |
| <input type="checkbox"/> Evacuation (Immediate) (EVI)     | <input type="checkbox"/> Shelter in Place Warning (SPW)   | <input type="checkbox"/> Tornado Warning (TW)             |
| <input type="checkbox"/> Fire Warning (FW)                | <input type="checkbox"/> Tornado Warning (VOW)            | <input type="checkbox"/> Unexploded Ordnance (UO)         |
| <input type="checkbox"/> Hazardous Material Warning (HMW) |   | <input type="checkbox"/> Unexploded Ordnance Test (UOAT)  |

The undersigned has reviewed this application and the public alerting authorities requested by the applicant are consistent with the state Emergency Alert System plan, IEMEN Alert System plan, or other operational public warning plans.

For the State of \_\_\_\_\_ Agency: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Apply for public alerting permissions

- ▶ Public Alerting Application
  - Defines what areas you can alert, what event codes

**Training Certificate**

**Emergency Management Institute**



**FEMA**

This Certificate of Achievement is to acknowledge that

**MARK A LUCERO**

has reaffirmed a dedication to serve in times of crisis through continued professional development and completion of the independent study course:

**IS-00247.a**  
**Integrated Public Alert and Warning System (IPAWS)**

Issued this 28th Day of January, 2012



Tracy Egan  
 Department Head  
 Emergency Management Institute

0-1 JACET (01)

Complete IPAWS web-based training

- ▶ Training Certificate
  - High level training on IPAWS alerting concepts
  - Strongly recommend specific training for your alerting tool, follow best practices, coordinate with state and neighboring counties



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# Walk Through MOA Form [1]

Application for Memorandum of Agreement (MOA) between  
FEMA and Collaborative Operating Group (COG)  
for Access to IPAWS-OPEN by Interoperable Software System(s)

Name of Sponsoring Eligible Organization: \_\_\_\_\_

Your county Emergency Management Agency title

Individual who will sign the MOA on behalf of the Sponsoring Eligible Organization

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Who will sign? (usually the EMA director)

Primary Point of Contact

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Primary POC (who will process the paperwork?)

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Alternate Point of Contact

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Alternate POC

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Technical Point of Contact

Name: \_\_\_\_\_ Title: \_\_\_\_\_

The techno-geek (usually your comms person)

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_



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# Walk Through MOA Form [2]

**Interoperable System 1**

*(The following information will be used to populate Appendix A of the MOA. Please complete one form for each interoperable system connecting to IPAWS-OPEN.)*

Name of Interoperable Software System: \_\_\_\_\_

**Function:**  
Is this system intended to be used to issue public alerts for dissemination over the Emergency Alert System (EAS), the Commercial Mobile Alert System (CMAS) and/or National Weather Service dissemination systems (HazCollect) via IPAWS-OPEN?  Yes  No

*(Briefly describe the purpose of the system.)*  
\_\_\_\_\_  
\_\_\_\_\_

Host Server Location: \_\_\_\_\_

Type of Third Party Software System:

Commercial Off the Shelf Software (COTS) Company: \_\_\_\_\_

Custom Designed Software Company: \_\_\_\_\_

Other If "Other", please describe: \_\_\_\_\_

**Data Sensitivity:** *(Note: Classified systems cannot be connected to IPAWS-OPEN)*

Interoperable System 1 does not contain classified data. I understand that IPAWS-OPEN system data is considered Sensitive But Unclassified (SBU) and this level of security is adequate for our requirements. I also understand that Law Enforcement Sensitive or Sensitive Personally Identifiable Information (SPII) (such as Social Security Numbers) should not be passed through IPAWS-OPEN.

**Data Description:** *(Describe only data that will be relayed to or retrieved from IPAWS-OPEN.)*  
\_\_\_\_\_  
\_\_\_\_\_

Vendor/Developer Contact information:

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

What software will you use? (ETEAM)

Will you use this system to send alerts via IPAWS

Purpose: "EMERGENCY MANAGEMENT AND INTEROPERABILITY SOFTWARE FOR THE STATE OF WEST VIRGINIA"

Location: "Charleston, WV"

Is it COTS? (yes) What company? (NC4/ETEAM)

Acknowledge that IPAWS doesn't process Classified

What kind of data: "unclassified alert and emergency response information"

Who is your software vendor POC?  
Amber Arnold, Support Specialist,  
amber.arnold@nc4.us, 703-221-7707



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# Walk Through Alerting Authority Form

**Application for IPAWS Public Alerting Authority**

COG Name: \_\_\_\_\_ COG ID#: \_\_\_\_\_

**Dissemination Systems Requested:**

Emergency Alert System (EAS)  
 Commercial Mobile Alert System (CMAS)  
 National Weather Service All Hazards Emergency Message Collection System (HazCollect)

Is this a statewide system?  
 Yes  No

If no, please list the name(s) and FIPS Code(s) for your geographic area of responsibility:  
[Attach additional pages as needed]

| <u>Name:</u> | <u>FIPS Code:</u> |
|--------------|-------------------|
| _____        | _____             |
| _____        | _____             |
| _____        | _____             |
| _____        | _____             |

**Event Codes:** [Check all that apply]

|  |   |   |
|--|---|---|
| <u>EAS/CMAS/HazCollect</u>                                 |   | <u>EAS/HazCollect Event Codes</u>                         |
| <input type="checkbox"/> Avalanche Warning (AVW)           | <input type="checkbox"/> Law Enforcement Warning (LEW)      | <input type="checkbox"/> Administrative Message (ADR)     |
| <input type="checkbox"/> Civil Danger Warning (CDW)        | <input type="checkbox"/> Local Area Emergency (LAE)         | <input type="checkbox"/> Avalanche Watch (AVA)            |
| <input type="checkbox"/> Civil Emergency Message (CEM)     | <input type="checkbox"/> Nuclear Power Plant Warning (NUPW) | <input type="checkbox"/> Child Abduction Emergency (CAE)  |
| <input type="checkbox"/> Earthquake Warning (EQW)          | <input type="checkbox"/> Radiological Hazard Warning (RH-W) | <input type="checkbox"/> Telephone Outage Emergency (TOE) |
| <input type="checkbox"/> Evacuation Immediate (EVI)        | <input type="checkbox"/> Shelter in Place Warning (SPW)     | <u>Test Codes</u>   |
| <input type="checkbox"/> Fire Warning (FRW)                | <input type="checkbox"/> Volcano Warning (VOW)              | <input type="checkbox"/> Required Monthly Test (RMT)      |
| <input type="checkbox"/> Hazardous Materials Warning (HMW) |   | <input type="checkbox"/> Required Weekly Test (RWT)       |

The undersigned has reviewed this application and the public alerting authorities requested by the applicant are consistent with the state Emergency Alert System plan, AMBER Alert System plan, or other operational public warning plans.

For the State of \_\_\_\_\_ Agency: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Name: \_\_\_\_\_ Title: \_\_\_\_\_  
 Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

COG ID#: This will be assigned later, leave it blank

What kind of alerts do you want to send? (usually all are checked)

Are you alerting for the whole state? (no)

What county are you alerting for? (we can fill in the FIPS code for you)

What kind of emergencies will you alert for? (usually all except AVW, NUW, VOW, AVA, CAE, RMT)

Jimmy fills this part out indicating that the state has coordinated with the county in accordance with state alert and warning plans



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# IPAWS Local Implementation Aids



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# IPAWS is Just Another Tool in the Toolbox

## Communications Tools used for Public Alerting:

- Reverse Dial Telephone systems
- Email and SMS registration systems
- Local Websites / Message Boards
- Social Media - Face book, Twitter, etc
- Local media coverage
- Sirens and Giant Voice systems
- Local Emergency Alert System (EAS)
- Local National Weather Service



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# Information about tools and use of IPAWS

## ▶ IPAWS Practitioner Webinars

Source for information tailored towards IPAWS users

- Register for email announcements on webinar subjects and information at:
  - <http://www.fema.gov/integrated-public-alert-and-warning-system-working-groups>
- Past webinar archives



The screenshot shows the FEMA website's page for the Integrated Public Alert and Warning System Working Groups. The page features a navigation menu with links for Disaster Declarations, Assistance, Bank, Feeds, and Policies, FAQs. A search bar is located in the top right corner. The main content area is divided into three sections: Integrated Public Alert and Warning System Working Groups, IPAWS Practitioner Working Group, and IPAWS Developer Working Group. Each section provides a brief description of the group's purpose and offers links to join email lists and view past webinars. The page also includes social media icons for Twitter, Facebook, YouTube, and RSS, and a 'Share/Email This Page' button.

Federal Emergency Management Agency

Home About Contact Us FAQs Languages

FEMA

What are you looking for?

Disaster Declarations Assistance Bank Feeds Policies, FAQs

Plan, Prepare & Mitigate > Integrated Public Alert and Warning System > Calendar of Events >

Follow FEMA: Twitter Facebook YouTube RSS

Integrated Public Alert and Warning System Working Groups

Share/Email This Page

### Integrated Public Alert and Warning System Working Groups

Public safety officials and system developers are invited to participate in monthly working group webinars. If you are unable to attend a program due to other commitments, a recording will be accessible from the FEMA Library or at the archive links below.

### IPAWS Practitioner Working Group

The IPAWS Practitioner Working Group holds monthly webinars on the latest topics in IPAWS development and allows public safety officials to ask questions directly to guest presenters from the Program Management Office and private sector. Webinars are usually the first Wednesday of the month at 12:00 PM Eastern time.

- [Join the IPAWS Practitioner Email List](#)
- [View past IPAWS Practitioner Webinars](#)

### IPAWS Developer Working Group

The IPAWS Developer Working Group holds monthly webinars on the latest topics in IPAWS development and allows private sector developers to ask questions directly to guest presenters from the Program Management Office and partner organizations. Webinars are usually the third Wednesday of the month at 12:00 PM Eastern time.

- [Join the IPAWS Developer Email List](#)
- [View past IPAWS Developer Webinars](#)

Return to the [FEMA IPAWS Home Page](#).

Last Updated: 06/15/2012 - 16:41





# IPAWS Lab

- FEMA supported Test Lab & Staff available for alerting tool evaluation, demonstration, exercises and testing

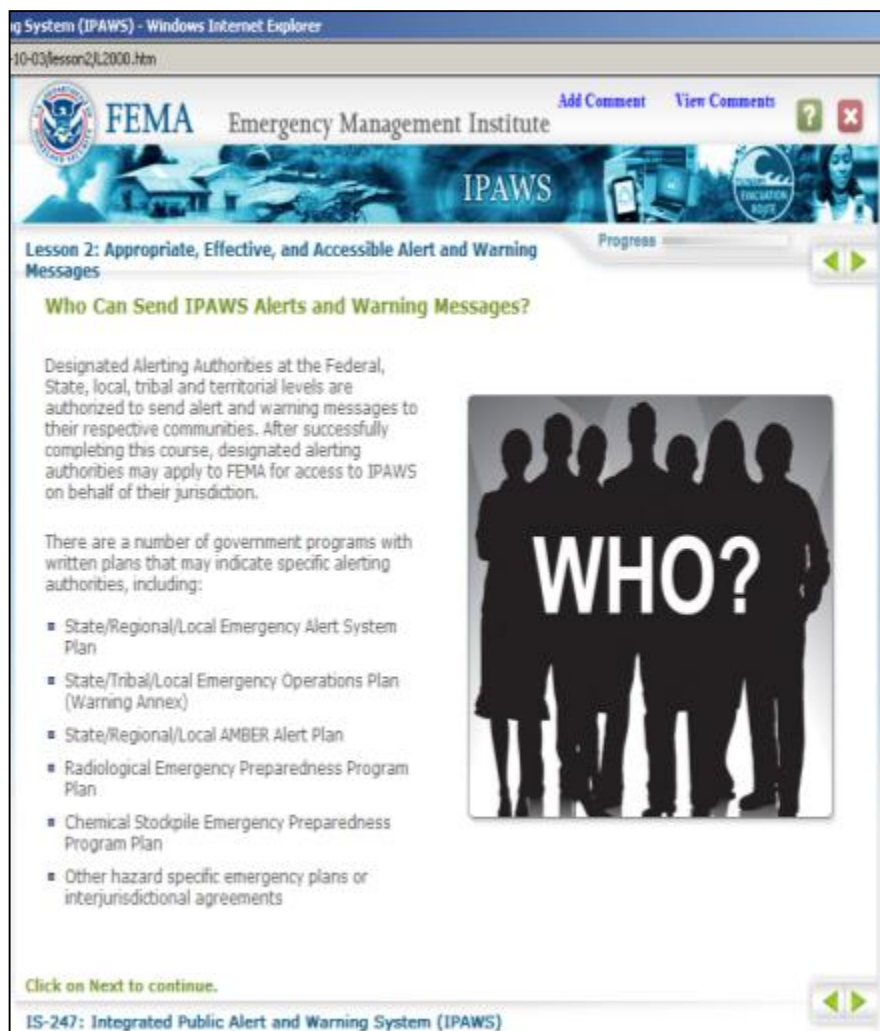


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# EMI Independent Study course for Alerting Authorities (IS-247a)

- ▶ EMI Independent Study course for Alerting Authorities available on-line
- ▶ As of Aug 2013, 7,549 people have completed IS-247/IS-247a



The screenshot shows a web browser window titled "ig System (IPAWS) - Windows Internet Explorer" with the address bar displaying "10-03/lesson2/L2000.htm". The page header includes the FEMA logo, the text "FEMA Emergency Management Institute", and "IPAWS". There are links for "Add Comment" and "View Comments", and a search icon. The main content area is titled "Lesson 2: Appropriate, Effective, and Accessible Alert and Warning Messages" and features a progress bar. The current section is "Who Can Send IPAWS Alerts and Warning Messages?". The text explains that designated alerting authorities at the Federal, State, local, tribal, and territorial levels are authorized to send alert and warning messages. It lists several government programs with written plans that indicate specific alerting authorities, including:

- State/Regional/Local Emergency Alert System Plan
- State/Tribal/Local Emergency Operations Plan (Warning Annex)
- State/Regional/Local AMBER Alert Plan
- Radiological Emergency Preparedness Program Plan
- Chemical Stockpile Emergency Preparedness Program Plan
- Other hazard specific emergency plans or interjurisdictional agreements

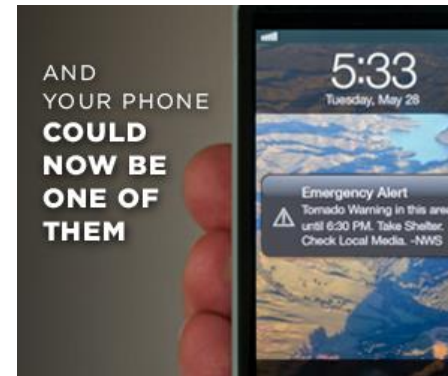
To the right of the text is a graphic showing silhouettes of a group of people with the word "WHO?" written in large white letters. At the bottom of the page, there is a "Click on Next to continue." instruction and a navigation bar with "IS-247: Integrated Public Alert and Warning System (IPAWS)".

# IPAWS Public Education Campaign

- ▶ Ready.gov/Alerts Website
- ▶ FEMA and the Ad Council produced Public Safety Announcements (PSAs) on Wireless Emergency Alerts (WEA) for distribution on radio and TV
- ▶ “IPAWS for the American People” Emergency Management Institute (EMI) Web Based Training Course
- ▶ IPAWS is working with Ready.gov to create content on Alerts and Warning for the Children’s Preparedness section



THERE ARE MANY THINGS THAT  
**KEEP YOU SAFE**



AND  
YOUR PHONE  
**COULD  
NOW BE  
ONE OF  
THEM**



**WIRELESS  
EMERGENCY  
ALERTS  
FROM  
SOURCES  
YOU TRUST**  
[Learn More >](#)

Ready



FEMA



Ad Council



# WEA Public Service Announcement

Link to PSA on FEMA website:

[http://www.fema.gov/medialibrary/media\\_records/12177](http://www.fema.gov/medialibrary/media_records/12177)

FEMA Ready.gov site about emergency alerts:

<http://www.ready.gov/alerts>



FEMA

# IPAWS education for The American People (EMI course IS-248)

- ▶ NEW EMI Independent Study course for The American Public available on-line as of August 2013
- ▶ The American People course is designed to educate the public and demonstrate the relevance and importance of IPAWS in their lives before, during, and after a disaster.



<http://www.training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-248>





# IPAWS Usage Examples



FEMA

# IPAWS/WEA News Clips

<http://youtu.be/lfFEwe8VHIU>

SAMSUNG



FEMA

# WIRELESS EMERGENCY ALERTS IN ACTION

## Boston Bombings' Man-Hunt

“Boston officials did use cellphone text messages, known as Wireless Emergency Alerts, in the aftermath of the marathon bombings...the Massachusetts Emergency Management Agency has the ability and authority to issue imminent threat WEA messages.

The Massachusetts Emergency Management Agency (MEMA) issued a shelter-in-place order stating, ‘**Shelter in place still in effect, it does not prevent employees from returning home – MEMA.**’

Boston residents then spread the word by tweeting; the WEA messages are intended to sound a siren on their devices to alert people to pay attention and get more information elsewhere.”

<http://www.radioworld.com/article/report-boston-did-use-wireless-alerts/219096> April 24, 2013



## WINTER STORMS: MISSISSIPPI

- ▶ The Mississippi EMA sent Wireless Emergency Alerts (WEA) because several counties in the Mississippi Delta experienced iced roads and bridges where emergency only travel was advised.
- ▶ WEAs were also sent to counties along the I-20 corridor during the shut-down of the Mississippi River Bridge in Vicksburg due to a multiple 18-wheeler accident involving hazardous materials.



- ▶ “There was no way to test the system before its use, so it was a learning experience for both us and the cell phone companies...I am convinced this alerting system can save lives, as long as citizens do not disable it on their phones,” said MEMA Director Robert Latham.

<http://www.msema.org/mema-sends-first-wireless-emergency-alert-messages/> February 13, 2014



# SUMMER CAMP AND TORNADOS: CONNECTICUT

- ▶ Five counselors and 29 children were in the Sports World Complex soccer dome when the manager received a WEA and evacuated everyone into an adjoining building. **The EF-1 category tornado hit the dome within about two minutes of the alert which was also about the time it took to rush everyone into the adjoining building.**
- ▶ “Maybe two seconds after they got through the door, I looked back and heard a loud boom...and saw the top of the dome going flying into the air” said camp counselor Kyle Noonan. No children were injured, not even a scratch.



## BOSTON BOMBINGS' MAN-HUNT

- ▶ Boston officials used Wireless Emergency Alerts (WEA) in the aftermath of the marathon bombings.
- ▶ Massachusetts Emergency Management Agency has the ability and authority to use IPAWS and issued an imminent threat WEA stating, **“Shelter in place still in effect, it does not prevent employees from returning home – MEMA”**.
- ▶ Boston residents then spread the word by tweeting.





# SHELTER-IN-PLACE AND EVACUATIONS SUPER STORM SANDY

- ▶ “As Hurricane Sandy headed for the city..., sirens began ringing on some New Yorkers’ cell phones. **The alarms were accompanied by messages telling them to stay inside; not to drive; or for those in Zone A, to evacuate.** -- New York Times, November 9, 2012
- ▶ **The emergency alerts showed up where and when they mattered.”**  
-- O’Reilly Radar, October 30, 2012



# AMBER ALERTS: OKLAHOMA

- ▶ In Tulsa County, OK, a man at a fishing pond spotted the vehicle that had been plastered in AMBER alerts all over broadcast media, WEAs, Facebook, asking the public to look for a child taken by his father.
- ▶ The man crawled through tall weeds to confirm the license plate and then called the police. The father and 2-year-old son were asleep inside the vehicle.
- ▶ “I didn’t think none of it [the WEA]; just keep an eye out and next thing I know, I’m fishing the next morning and here we are...” --

<http://wnow.worldnow.com/story/23346951/sperry-man-describes-finding-toddler-in-tulsa-amber-alert> 09/05/2013



## PLANNED POWER OUTAGE: TENNESSEE

- ▶ The Wireless Emergency Alert (WEA) supported local outreach efforts to let county residents know about the outage and what to do to prepare.



- ▶ Tennessee Emergency Management Agency issued a WEA about a planned county-wide power outage to Moore County and parts of Lincoln County, informing them that their power would be out for about four hours.
- ▶ “This is a great capability for local emergency manager and agencies,” said Jason Deal director of the Moore County Emergency Management Agency. “Having multiple channels for distributing warnings makes us more effective in our efforts to protect the public.”  
<http://news.tn.gov/node/11396> September 23, 2013

# AMBER ALERTS: MINNESOTA

- ▶ Cell phone users across Minnesota received a Wireless Emergency Alert (WEA) informing them about the abduction of 8-month-old in Minneapolis. Within an hour after the AMBER Alert was issued, a teenager, who saw the WEA on her father's phone and the suspicious vehicle on her street, called the police who then arrested a suspect and reunited the boy with his mother.
- ▶ When the WEA went out, more than 110 billboards across the state also displayed the AMBER Alert.
- ▶ "It was very effective because I looked at the phone and saw the AMBER Alert, and what's interesting -- just five seconds before, I also saw the AMBER Alert on a highway sign," Ojeda-Zapata said. "They're doing it right. You can't ignore AMBER Alerts these days."  
<http://www.myfoxtwincities.com/story/21292496/emergency-alerts-cell-phones-abuzzwithwirelessalerts#ixzz2Mh6pxN9z>  
-- February 20, 2013



## COMMUNITY GATHERINGS AND TORNADOS: ILLINOIS



- ▶ In Washington, IL, 600 – 700 people were in Sunday services when cell phones began to display Wireless Emergency Alerts (WEA).
- ▶ “Everybody started looking down,” the pastor said, and saw a message from the National Weather Service cautioning that a twister was in the area. The pastor stopped the service and ushered everyone to a safe place until the threat passed.
- ▶ A day later, many townspeople said those messages helped minimize deaths and injuries. “That’s got to be connected...the ability to get instant information.”



## FREEZING RAIN: OREGON



- ▶ The City of Portland used IPAWS to send Wireless Emergency Alerts to people in Multnomah County after freezing rain blanketed the metro area with ice. The WEA read, "Portland strongly urges all residents to stay indoors today & not travel due to ice."
- ▶ "The icy condition of sidewalks, in addition to the already slick roads, were key deciding factors in sending out the alert," Transportation Director Leah Treat said. February's alert was the first time WEA was used by the City of Portland.

<http://www.kgw.com/news/local/Portland-uses-wireless-alert-system-for-first-time-244632301.html> February 9, 2014