

Here's how Hawaii's emergency alert design led to a false alarm



The disastrous false alarm issued by Hawaii over the weekend has raised concerns about what safeguards the state had in place. The state-wide alert, which told people a ballistic missile was about to hit, terrified residents and visitors, as the state scrambled for 38 minutes to issue a correction.

Officials soon released a timeline of events, saying the state's software contained a menu option that allowed a live alert to be sent in place of a test, a problem that several people quickly categorized as a design failure. The state released an image that showed a list with options for test and live alerts next to each other. Officials later said the image did not accurately portray the system, and released what it characterized as a "representation" of the system, but said that it could not share an actual screenshot.

While the state has not named its software provider, evidence suggests it is an Idaho-based company called AlertSense, a FEMA-approved company that says it works with clients in states around the country. The [audio version](#) of the alert broadcast in Hawaii was posted [on the company's website](#). The first image released by Hawaii also appears similar to example software provided to *The Verge* by AlertSense. For instance, the word "templates" appears above the alert options in AlertSense's software, and is barely visible in the first image issued by the state. (A local TV station in Hawaii independently came to [the same conclusion](#).) *The Verge's* review of the program suggests that functionally there is only a one-click difference between sending a test and a live alert.

BMD False Alarm

Amber Alert (CAE) - Kauai County Only

Amber Alert (CAE) Statewide

1. TEST Message

PACOM (CDW) - STATE ONLY

Tsunami Warning (CEM) - STATE ONLY

DRILL - PACOM (CDW) - STATE ONLY

Landslide - Hana Road Closure

Amber Alert DEMO TEST

High Surf Warning North Shores

Image: Hawaii Emergency Management Agency

Recently Created Templates	
Earthquake Warning LIVE	
High Surf Warning LIVE	
Tsunami Warning TEST	
Hospital Evacuation TEST	
Earthquake TEST	
EAS RWT TEST	
EAS Monthly Test LIVE	
EAS RWT LIVE	
Test Template	
Shelter in Place	

Image: AlertSense

AlertSense would not confirm whether it was the vendor of the software, but in an interview with *The Verge*, it [provided a presentation](#) that outlines how its system works. (The Hawaii Emergency Management Agency declined to comment.)

AlertSense CTO Randy Grohs explained that there are essentially two paths to send an alert using the system. In one, an alert is created from scratch. The user of the software fills in information for the alert, like where it's being sent, what the message says, and crucially, whether it's a test or live alert.

But the company also lets software users create "templates" — options that fill in all of the information with one click. Templates can be created for both test and live alerts. (Hawaii has publicly said that the person who sent the false alarm chose an incorrect template option.)

AlertSense

IPAWS Experience

Once logged into the system, this Dashboard is shown.

The user can review recently created templates, history, verify connection to IPAWS and initiate a public message.

Since this system is permission based, some users may see more information than others.

Messages
Go to the Message Form to send a Message:
SEND A PUBLIC MESSAGE

IPAWS-OPEN Service Status

TEST	120028	Expires on 05/20/2018	Status
DEMO	120028	Expires on 06/11/2015	Status

Recently Created Templates

- Earthquake Warning LIVE
- High Surf Warning LIVE
- Tsunami Warning TEST
- Hospital Evacuation TEST
- Earthquake TEST
- EAS RWT TEST
- EAS Monthly Test LIVE
- EAS RWT LIVE
- Test Template
- Shelter in Place

Step 1:
Select Send A Public Message

AlertSense

Create Public Message

Templates
Selected Template: Earthquake Warning LIVE
Save New Template Update Template Delete Template

Message Type
IPAWS-Of

***TEST TEMPLATES**

- Earthquake TEST
- EAS RWT TEST
- Hospital Evacuation TEST
- Tsunami Warning TEST

LIVE TEMPLATES

- Earthquake Warning LIVE

Regardless of the previous selection, the user is brought to a 2nd page in the system, which provides the alerting form necessary to complete the message.

Templates provide a convenient starting point for alerts and they can be organized into different groups. The emergency alerting team names and organizes templates in accordance with their specific needs, use-cases and processes.

If a template is selected, the form is pre-populated with everything that was saved in that template, including endpoint (demo or live), communication channels and other message options.

Step 2:
Select or Verify Template

Regardless of what's selected, the user then has the opportunity to review the information before submitting the alert.

Templates

Selected Template: **Earthquake TEST** [Save New Template] [Update Template] [Delete Template]

Message Type

IPAWS-OPEN Endpoint: **TEST - COG ID: 120028** [?]

EAS [?] [?]

WEA [?] [?]

Message Settings

Event Type: **Earthquake Warning** [?]

Response Type: **Execute Action** [?]

Duration: **1 Hour** [?]

Change Advanced CAP Fields [?]

EAS / NWM: Broadcast Message Content

Event Headline: **Earthquake Warning - TEST ONLY** [?]

Event Description: **TEST ONLY Earthquake Warning** [?]

EMERGENCY ALERT SYSTEM
2018 EFFECTIVE UNTIL 8:30PM MST
A CIVIL AUTHORITY
Issued an
Earthquake Warning

The system supports both 'practice' (demo) and 'live' scenarios. Practice alerts can help the team maintaining their skills. Treating them seriously insures that team members are well versed in their own processes and familiar with the software system.

Regardless of whether a template is used as a starting point, and regardless of whether the alert is practice or live, the next steps are to modify, review and verify the message type, message content and other settings for the specific scenario.

Step 3:
Verify Message Type (demo or live)

Step 4:
Complete the Message Settings section

Recommended Instructions **Seek shelter if needed. TEST ONLY** [?]

Audio Message [Preview Text to Speech](#) [?] [Select Existing File](#) [Upload File](#)

WEA: Mobile Phone Content

Auto Generated Text Message: **Earthquake Warning in this area until 8:30PM MST** [?]

Execute Action

Edit Text Message [?]

Text Message: **TEST ONLY Earthquake Drill** [?]

26 of 90 characters used.

Target Area

Area Description: **Area** [?]

Geographic Area: **Circle 1** [?]

[Add Shape](#) [?]

FIPS Codes: **016000 - IDAHO - ALL STATE** [?]

SEND MESSAGE

System operators review and edit all information before sending the message in a clear and easy **WYSIWYG** (what you see is what you get) format.

Whether for practice or live scenarios, these content preview steps are very important to ensure that the alert message is accurate and formatted correct before pressing "SEND".

Step 5:
Create / modify / preview / verify Message Content and Formatting

Step 6:
Specify the target area

Step 7:
Click Send Message

A pop-up box is the final step in sending the alert. The box has the same message, whether a live or test alert is sent: "Are you sure you want to send this Alert?"

AlertSense

CAP to EAS Translation:
A CIVIL AUTHORITY HAS ISSUED AN EARTHQUAKE WARNING FOR THE FOLLOWING COUNTIES/AREAS: NO AREA AT 7:30 PM MST ON JAN 16, 2018 EFFECTIVE UNTIL 8:30PM MST. Message from: TEST ONLY EARTHQUAKE WARNING. SEEK SHELTER IF NEEDED. TEST ONLY

Audio Message: [Preview Text to Speech](#) [Select Existing File](#) [Upload File](#)

WEA: Mobile Phone Content

Auto Generated Text Message: Earthquake Warning in this area until 8:30PM MST
Execute Action

Edit Text Message ☒
Text Message: TEST ONLY Earthquake Drill
26 of 90 characters used.

Target Area

Area Description: Area
Geographic Area: Circle 1

**Step 8:
Click Send Alert
As final confirmation**

After completing the form, and pressing "SEND MESSAGE" a third confirmation dialog is presented. This dialog is presented such that the underlying form and previews are still visible.

After the message has been reviewed, the user confirms that the message is to be sent by clicking "SEND ALERT" in the pop up window.

Send Alert will send the message to IPAWS for dissemination to the channels selected.

Cancel will take the user back to the form for further review.

AlertSense describes the system as an eight-step process. If you select a template, some of those steps include scrolling through and checking auto-filled information, but even so, the company says, it requires more than one click to send an alert. In Idaho, the company points out, a news segment [ran this week](#) about AlertSense having safeguards to prevent what happened in Hawaii.

But effectively, when using a template, there are three clicks, whether a live message or test is sent. If the information in those templates isn't double-checked, the versions would look essentially the same. The main difference is whether the user clicks the test template option or the real one. The company says it may now alter the final pop-up confirmation to be different for test and live alerts.

"If you don't follow best practices, the difference between sending live and a demo can be configured to be a small difference," Grohs says.