The title of this presentation is "A Free, Cloud-based Tool for Creating and Publishing CAP Alerts". I will present a simple software tool that makes it very easy to start up a CAP-enabled alerting system.

Please be aware that people responsible for issuing alerts already have various systems in place, and these may have been around for many years. Those alerting systems have their own work flows and business rules.

It would be ideal to have CAP alerts generated and published through a process tacked onto existing procedures and alerting systems. But, a tool such as this may be the next best thing.

Learning Objectives

On completion of this session, you should be able to:

1. Describe how an alerting authority gets access to the cloud-based CAP Editor in a particular language.
2. Describe how composers and approvers use the cloud-based CAP Editor to maintain a CAP news feed.
3. Discuss ways in which an alerting authority can leverage its CAP news feed to enhance alert dissemination.

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Here are the Learning Objectives for this session.

Presentation Outline

206.1 Overview of Tool for Creating CAP Alerts

206.2 The Role of Composer and the Role of Approver

206.3 Exercise: Saving a Draft and Publishing an Alert

206.4 Using the CAP Feed to Reach More People

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Here is an outline of the major topics in this presentation.

The first topic is:
        Overview of Tool for Creating CAP Alerts

Tool for Creating CAP Alerts

CAP Alert Editor, Session Setup

NOTE: If an alert must be issued in less than one minute, please use your simplified warning method instead of this editor tool.

This tool is for composing alerts in CAP (X.1303) format. You must login to be authenticated in your role as authorized composer or approver of CAP alerts. (An approver is an authorized composer also authorized to publish the CAP alert.) Authentication requires your e-mail address and password.

Language - 2-letter (lowercase) ISO 639-1 code for text in this CAP alert and its Internet news feed.

Status - Is the alert to be published as an **actual** alert or as a test or exercise?

Scope - Is the alert to be published as a **public** alert or published as a private or restricted alert?

MsgType - Is this a new alert, or an update or cancel of an already issued alert?

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This is the entry point to the freeware known as "CAP Editor".

CAP Editor opens to an authorized person upon entry of his/her email address and associated password.

Here is where the CAP alert language, status, scope and msgType are set.

Then, hit the "Compose CAP Alert" button to continue.

In this application, the composer is able to start from any previously entered CAP message, whether that message was actually posted or only drafted. This is a useful because a new event is often similar to a prior event.

It this is to be not a new alert but an update, cancel, or error of a previous alert, the composer would select the particular posted alert. This allows the software to generate the reference to that posted alert.

Here, a composer can scan the dates and headlines of most recent CAP alerts.

Putting the mouse over an entry shows text of the description and instruction elements for that alert.

We'll assume this is a new alert and the composer wants to start with a previously posted alert concerning an advisory for the Mount St Helens volcano.

Next we will see the main editing screen for a CAP alert, initialized from this previous alert.

Tool for Creating CAP Alerts (draft)

Show/Hide XML | Validate (Google) | Save edited alert | End this session

identifier urn:oid:2.49.0.1.170.1.2014.10.17.10.57.42

sender echristian@usgs.gov   sent 2014-10-17T10:57:42-00:00

status Test   msgType Alert   scope Restricted

restriction:

language en   category Met   responseType

event: Message from USGS Volcanoes Program

urgency Expected   severity Minor   certainty Possible

onset   expires

senderName: USGS Volcanoes Program, Craig Weaver

Text templates for headline, description, instruction.

headline
Mount St Helens Volcano Advisory (aviation color code ORANGE)

description
Current status is Volcano Advisory (Alert Level 2);

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The composing screen has Web form fields with pull-down selections and input areas for text. The composer can mouse over any field to see a tip about what values are expected.

The composer can choose text from templates for the headline, description, and instruction. This choice opens a new window so text can be copied and pasted as needed.

As the alert is being composed, the composer can choose at any time to validate the draft alert.

The composer can also save a copy of the draft alert.
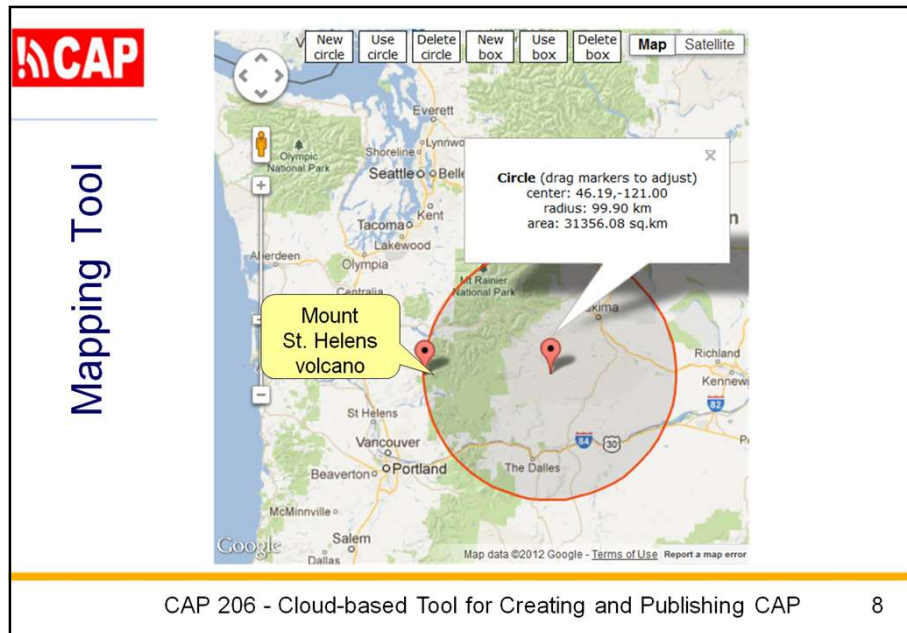
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The composer can choose to show the CAP alert in XML format. When the composer changes anything in the Web form and leaves that field, the CAP message XML changes as well.

Here, we see XML on the right side of the screen.

The composer can also use a map tool to specify a circle and/or a polygon for the alerting area.

Here, the composer has used the mapping tool to specify the center point and radius of a circle that defines the alerting area of this CAP alert message.

This circle is an area extending about 200 km east of the Mount St Helens volcano.

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Here, we see what happens when the composer hits the "Validate" button.

In this case, the Google CAP validator reports that this CAP alert is valid.
If there had been any errors, those would have been listed.

Here, we see what happens when the composer hits the "Save" button.

When the composer receives confirmation that the draft CAP alert message has been saved, he or she can send a link to the draft alert via e-mail to the composer's e-mail address. In this way, the composer can use his or her e-mail system to get others to review the alert, or to send the CAP message to a notification mailing list.

If the person composing the alert is authorized in the role of approver, he or she can actually publish the alert. The tool copies the alert into the publicly accessible directory of posted CAP alerts.

The tool also updates the RSS news feed.

RSS Feed for CAP Alerts

```
<?xml version="1.0" encoding="UTF-8"?>
<rss version="2.0" xmlns:atom="http://www.w3.org/2005/Atom">
 <channel>
  <title>Latest alerts from Zimbabwe Meteorological Services Department</title>
  <link>https://cap-sources.s3.amazonaws.com/zw-msd-en/rss.xml</link>
  <description>Latest alerts from Zimbabwe Meteorological Services
Department</description>
  <language>en</language>
  <copyright>public domain</copyright>
  <pubDate>Thu, 06 Dec 2018 12:48:39 +0000</pubDate>
  <lastBuildDate>Thu, 06 Dec 2018 12:48:39 +0000</lastBuildDate>
  <docs>http://blogs.law.harvard.edu/tech/rss</docs>
  <image>
   <title>Latest alerts from  Zimbabwe Meteorological Services Department</title>
   <url>https://alert-hub.s3.amazonaws.com/images/zw-msd-en.png</url>
   <link>https://cap-sources.s3.amazonaws.com/zw-msd-en/rss.xml</link>
  </image>
  <item>
  [...]
  </item>
 </channel>
</rss>
```

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The news feed points to the CAP alerts as a publicly accessible directory of posted alerts, with the most recent first.

Subscribers to the RSS news feed can get the alert automatically delivered.

Now let's look at the

The Role of Composer and the Role of Approver

We are using Zimbabwe as an example of the cloud-based CAP Editor in operational use.

Zimbabwe Meteorological Services Department (MSD) is responsible for sending out emergency alerts for weather conditions in Zimbabwe. Like most other alerting authorities have done for decades, MSD would send an alert as a text bulletin, disseminating it via e-mail, fax, and phone calls to local radio and television broadcasters.

Text-based dissemination has a range of shortcomings. Broadcast media reaches fewer people today as online media replaces mass media. This means that many people who should have been alerted are missed. Also, broadcast media are imprecise and this means that many people outside the alerting area are alerted unnecessarily. A further shortcoming is that the alerting process may be too slow for a sudden-onset emergency such as a flash flood.

Let's consider how MSD can use the free CAP Editor tool to create and publish CAP alerts.

The web page at https://cap.alert-hub.org shows Zimbabwe Meteorological Services Department as one of hundreds of initialized alerting authorities. The page provides a link for creating MSD alerts and a link for the news feed containing already published MSD alerts. In this case, the CAP Editor interface is in English and Shona. It can support any language, as is apparent in the links for other alerting authorities.

!))CAP https://cap.alert-hub.org/login.php?sourceId=zw-msd-en

!))CAP **CAP Alert Editor, Initial Setup**

This tool is for composing alerts in CAP format. If you are in the role 'approver-cap' you are authorized to publish CAP alerts. If your role is 'composer-cap' you can create draft CAP alerts but you cannot approve and publish a CAP alert. If you are not in either of the two roles, you cannot use the CAP Editor tool.

Compose CAP alert | Guest

Click here to preview the CAP Editor Tool in the role of "Guest"

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Anyone can preview the CAP Editor tool at any alerting authority by simply entering as "Guest".

A Guest user cannot save a draft alert or publish an alert. Those actions require a password. That password is set only after the alerting authority head has designated a person who is allowed to perform those actions.

In the CAP Editor tool, authorized users are people defined in either the "composer-cap" or the "approver-cap" role. An "approver-cap" user has all composer abilities plus the "publish alert" ability.

Note that the username must be the user's e-mail address.

The username and password for each composer and approver is registered to the user group defined for MSD in Amazon Web Services. The group is not specific to a language. That means, a composer or approver can work with all languages for the particular alerting authority.
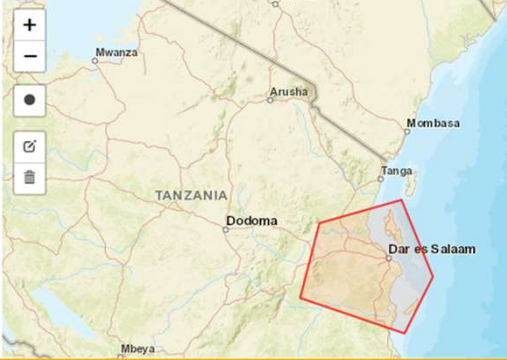
The tool provides a Web form that prompts the composer to enter, for this specific emergency, the key facts (What? Where? How soon? How bad? How certain?), plus recommended actions.

The Web form provides a mapping tool for delineating the alerting area, and it validates that all required data and information is in the CAP alert.

As soon as a CAP alert is composed and approved by MSD, the associated CAP alert news feed is updated.

Now, I mentioned that the alerting authority head must designate specific persons who can act in the role of composer or approver. Let me explain briefly how that process works.

The alerting authority head sends an e-mail to the system administrator to designate specific persons as composers or approvers. Then, each one gets an e-mail explaining how to set his/her password for using the tool.

The tool starts out with the feed in "testing" status, which means the composers and approvers are only allowed to publish "Test" or "Exercise" CAP alerts. Next, the alerting authority head will tell the system administrator to change the feed status to "operating".

At that point, all published Test and Exercise alerts are removed from the feed so that it is empty and ingest by alert hubs can begin. Composers and approvers can begin to publish "Actual", "Update", and "Cancel" CAP alerts as well as "Test" or "Exercise" CAP alerts.

This is also the time for the alerting authority head to have the CAP feeds URL entered into the record in the WMO Register of Alerting Authorities.

So, we have seen that publishing a CAP alert is as easy as using a Web browser to fill out a Web form.

Doing so allows the alerting authority to have its emergency alerts become part of a vast network of dissemination capabilities. Yet, throughout this global network of alert dissemination, attribution of the originating authority can be preserved.

Most importantly, this amazing boost to alert dissemination comes at no cost to the alerting authority

Now we are going to run an exercise, using the cloud-based CAP Editor.

We will walk through what is entailed in saving a draft CAP alert and publishing a CAP alert.

Together, we will come up with a scenario wherein an emergency is happening and MSD needs to issue a CAP Alert.

As we fill in the draft CAP alert, we need to focus on the Key facts for this specific emergency:

- What is it? As we write the description, think in terms of "impact" on people and property.

- Where is it (so we can draw the alerting area polygon)?

- How soon do people need to act (the "urgency" level)?

- How bad is it (the "severity" level)?

- How sure are the experts (the "certainty" level)?

- What actions should people take (the "instruction" element)?

≡CAP Presentation Outline

206.1 Overview of Tool for Creating CAP Alerts

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➡ 206.4 Using the CAP Feed to Reach More People

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We turn now to the last topic in this presentation:
Using the CAP Feed to Reach More People.

!∩CAP Reaching People via the News Feed

➢ "Look for alerts here": link to the CAP news feed from agency Web site in order to leverage
　－　sister agencies (e.g., civil protection authorities at national and city levels)
　－　non-government organizations,
　－　in-country and international news media (print, radio, television, etc.)
➢ Cell phone services send SMS or cell broadcast
➢ Amateur radio operators help disseminate alerts
➢ High-priority alerts automatically sent by satellite

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The alerting authority can put a link to its CAP news feed on its own Web site and invite customers to pick up its emergency alerts from there. This "look for my alerts here" approach works well for:

• sister agencies in the country (e.g., civil protection authorities at national and city levels)

• non-government organizations,

• in-country and international news media (print, radio, television, etc).

The alerting authority can extend this same approach to have cell phone services show the alerts as SMS or cell broadcast messages. It might be feasible to have alerts displayed on digital signage throughout the area.

The alerting authority might engage or amateur radio operators to help disseminate the alerts even when all other telecommunications are out of service.

Aggregators of CAP Alert News Feeds

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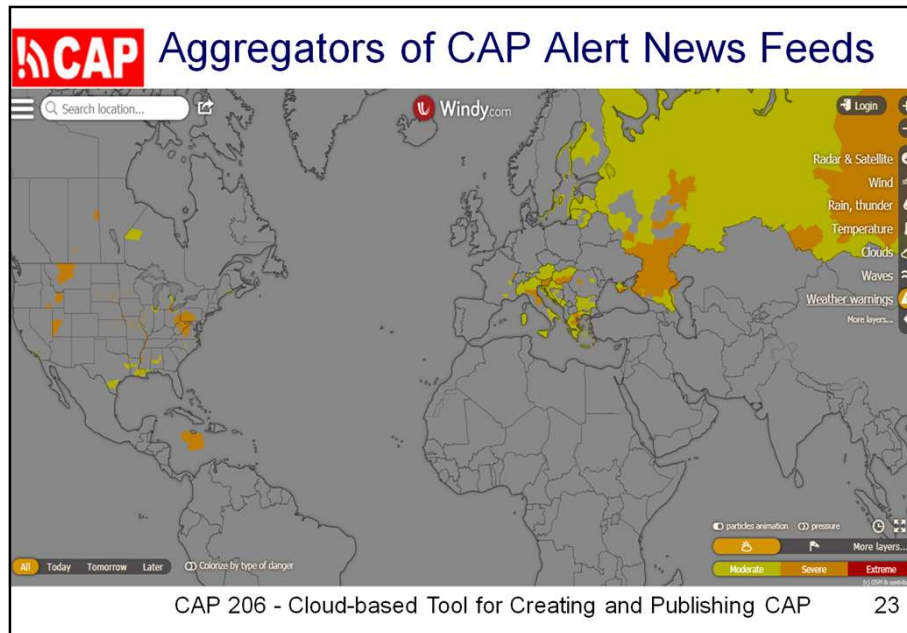
We noted that publishing a CAP alert to a news feed allows the alerting authority to have its emergency alerts become part of a vast network of dissemination capabilities.

The CAP news feed is immediately useful because anyone can get these emergency alerts by just subscribing to the news feed.

The news feed is automatically aggregated to the WMO Alert Hub. It is also aggregated by various other global-scale Alert Hubs. Examples include the "Windy" site (shown here), plus aggregators operated by Accuweather, the Weather Company, the IFRC Hazards App, and Google Public Alerts.

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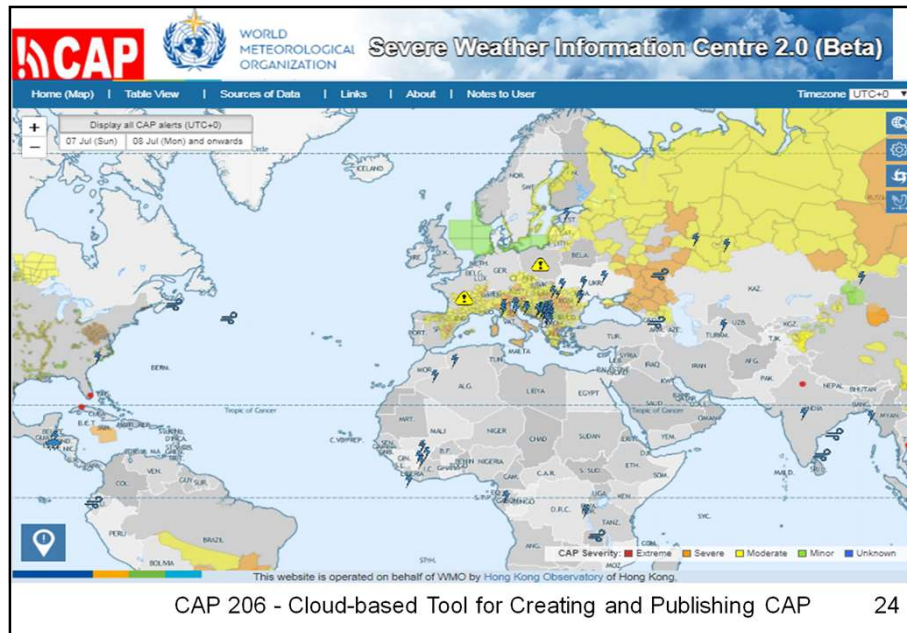
Here we see another aggregator of CAP alerts: the Severe Weather Information Service operated by WMO's Hong Kong Observatory.

All of the these CAP feed subscribers can immediately relay any high-priority emergency alert, and thereby help the alerting authority to quickly reach more of the people in the precisely delineated alerting area.

If it is a high-priority alert, it is automatically sent by satellite as well.

Just to review, these are the Key Points covered in this presentation

- Overview of Tool for Creating CAP Alerts

- The Role of Composer and the Role of Approver

- Exercise: Saving a Draft and Publishing an Alert

- Using the CAP Feed to Reach More People

What have you learned?

1. Describe how an alerting authority gets access to the cloud-based CAP Editor in a particular language.
2. Describe how composers and approvers use the cloud-based CAP Editor to maintain a CAP news feed.
3. Discuss ways in which an alerting authority can leverage its CAP news feed to enhance alert dissemination

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Now that you have completed this session, you should be able to perform the objective tasks.

Reference Links

- CAP References (PrepareCenter.Org)
- CAP Implementations by Country
- CAP Video (10 minutes, made by IFRC)
- CAP Training Courses - contact me
  Eliot Christian eliot.j.christian@gmail.com

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Here are some key reference links concerning CAP.