NATIONAL
WEATHER
SERVICE

NWS Common Alerting Protocol (CAP) User Training

October 26, 2023

National Weather Service
Silver Spring, MD

NWS Alerts in WMO and CAP Format

World Meteorological Organization (WMO) teletype style format for human reading

```
Flood Watch
National Weather Service Eureka CA
507 AM PDT Mon Sep 25 2023

CAZ101-102-105-252015-
/O.CON.KEKA.FA.A.0007.000000T0000Z-230926T0600Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
Coastal Del Norte-Del Norte Interior-Northern Humboldt Interior-
507 AM PDT Mon Sep 25 2023

...FLOOD WATCH REMAINS IN EFFECT THROUGH THIS EVENING...

* WHAT...Flooding caused by excessive rainfall continues to be
  possible.

* WHERE...A portion of northwest California, including the following
  areas, Coastal Del Norte, Del Norte Interior and Northern Humboldt
  Interior.

* WHEN...Through this evening.

* IMPACTS...Excessive runoff may result in flooding of rivers,
  creeks, streams, and other low-lying and flood-prone locations.
  Flooding may occur in poor drainage and urban areas. Storm drains
  and ditches may become clogged with debris.

* ADDITIONAL DETAILS...
  - Locally heavy rainfall may cause rockslides in steep Terrain.
  - http://www.weather.gov/safety/flood

PRECAUTIONARY/PREPAREDNESS ACTIONS...

You should monitor later forecasts and be alert for possible Flood
Warnings. Those living in areas prone to flooding should be prepared
to take action should flooding develop.
```

CAP format for computer parsing and redistribution

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
    <identifier>urn:oid:2.49.0.1.840.0.e3b8ca2ababf09c59ead90603983b8384013
    <sender>w-nws.webmaster@noaa.gov</sender>
    <sent>2023-09-25T05:07:00-07:00</sent>
    <status>Actual</status>
    <msgType>Update</msgType>
    <scope>Public</scope>
    <code>IPAWSv1.0</code>
    <references>w-nws.webmaster@noaa.gov,urn:oid:2.49.0.1.840.0.cbe28c4582(
    <info>
        <language>en-US</language>
        <category>Met</category>
        <event>Flood Watch</event>
        <responseType>Prepare</responseType>
        <urgency>Future</urgency>
        <severity>Severe</severity>
        <certainty>Possible</certainty>
        <eventCode>
            <valueName>SAME</valueName>
            <value>FFA</value>
        </eventCode>
        <eventCode>
            <valueName>NationalWeatherService</valueName>
            <value>FAA</value>
        </eventCode>
        <effective>2023-09-25T05:07:00-07:00</effective>
        <onset>2023-09-25T09:00:00-07:00</onset>
        <expires>2023-09-25T13:15:00-07:00</expires>
        <senderName>NWS Eureka CA</senderName>
        <headline>Flood Watch issued September 25 at 5:07AM PDT until Septe
        <description>* WHAT...Flooding caused by excessive rainfall contin
possible.

* WHERE...A portion of northwest California, including the following
areas, Southern Humboldt Interior and Southwestern Humboldt.

* WHEN...From 9 AM PDT this morning through this evening.

* IMPACTS...Excessive runoff may result in flooding of rivers,
creeks, streams, and other low-lying and flood-prone locations.
```

May 4, 2023 Service Change Notice
Legacy CAP v1.1 to be Terminated

In early 2024:

- NWS **CAP v1.1 planned for termination**
- New version of alerts.weather.gov supporting CAP v1.2

NWS continues distribution of CAP v1.2

See Service Change Notices at weather.gov/notification

NOUS41 KWBC 042000
PNSWSH

Service Change Notice 23-57
National Weather Service Headquarters Silver Spring MD
400 PM EDT Thu May 4 2023

To: Subscribers:
-NOAA Weather Wire Service
-Emergency Managers Weather Information Network
-NOAAPort
Other NWS Partners, Users and Employees

From: Ben Kyger
Director, NCEP Central Operations

Subject: Termination of Common Alerting Protocol Version 1.1 (CAP v1.1): Effective no Sooner than January 8, 2024

NWS and the National Centers for Environmental Prediction (NCEP) will implement a new version of alerts.weather.gov in early 2024, at which time the dissemination by NWS of products formatted with the Common Alerting Protocol (CAP) version 1.1 (CAP v1.1) will be terminated. With this change, NWS will still support and distribute products in the CAP version 1.2 (CAP v1.2). The change to alerts.weather.gov will be advertised in a separate notice, and its effective date may be affected by a declaration of either Critical Weather Day (CWD) or an Enhanced Caution Event (ECE).

As noted in Service Change Notice (SCN) 17-35:

https://www.weather.gov/media/notification/pdfs/scn17-35capaaa.pdf

the implementation of CAP v1.2 would have an overlap period with CAP v1.1, and CAP v1.1 would be terminated after that overlap period. CAP v1.2 was implemented February 24, 2021, as advertised in SCN 21-01:

https://www.weather.gov/media/notification/pdf2/scn21-01cap_handler_v2aac.pdf

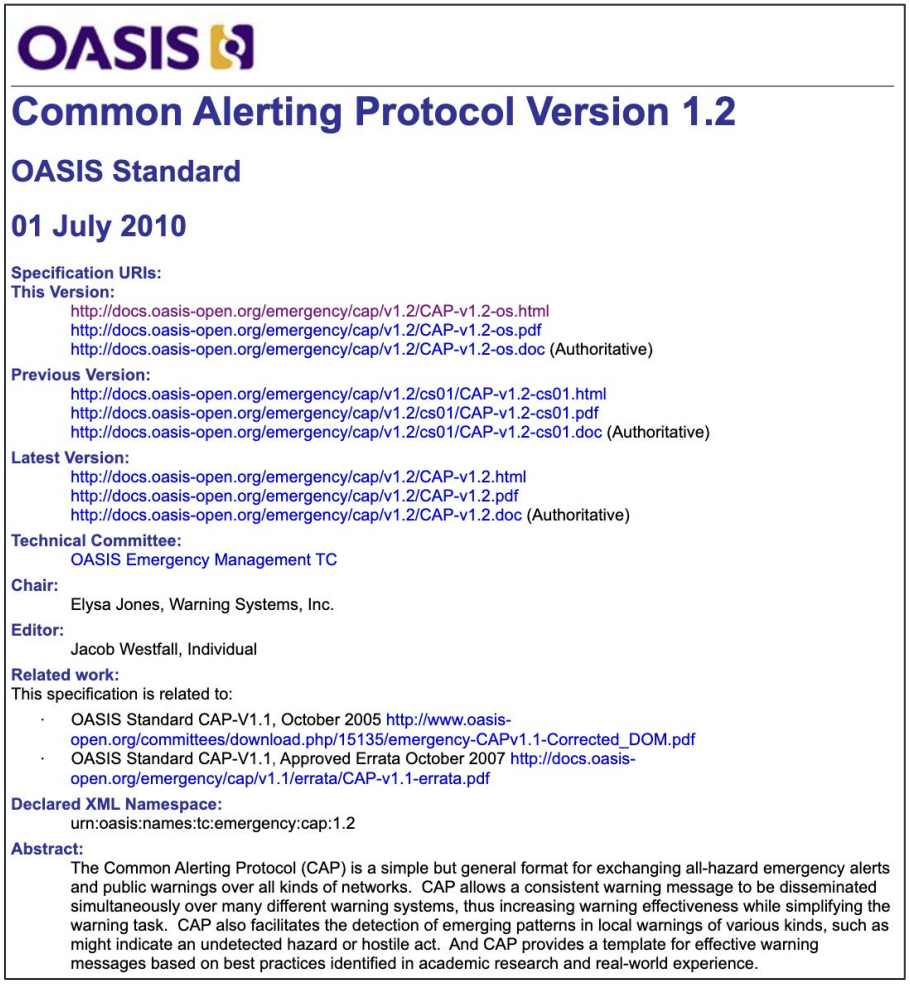
and NWS has supported both versions of CAP since that time.

Current documentation for accessing CAP v1.2 and the 7-day archive of NWS CAP v1.2 is located at:

https://www.weather.gov/documentation/services-web-alerts
https://alerts-v2.weather.gov/

CAP v1.2 messages are provided through multiple dissemination channels, including the NWS Application Programming Interface (API), https file listings, and the NOAAPort satellite broadcast as summarized in sections 1-3, below. These dissemination channels for CAP v1.2 will not change with the new version of alerts.weather.gov.

CAP v1.2 Documentation



OASIS

Common Alerting Protocol Version 1.2

OASIS Standard

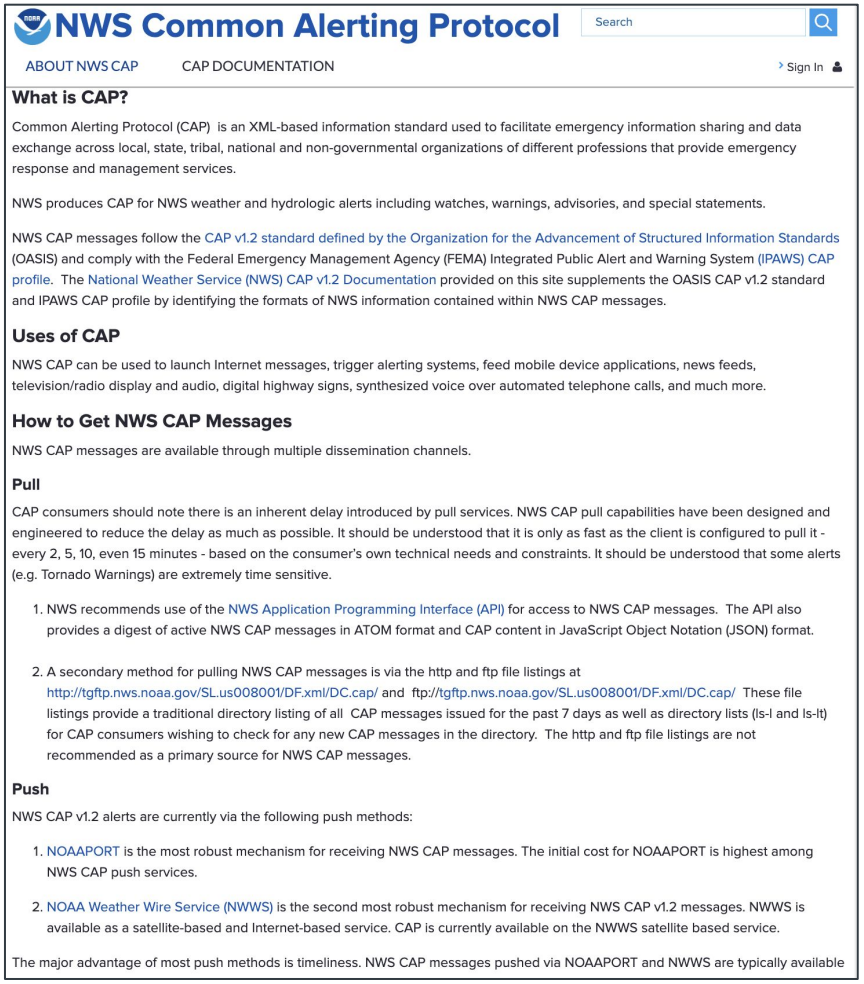
01 July 2010

Specification URIs:
This Version:
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.doc (Authoritative)
Previous Version:
http://docs.oasis-open.org/emergency/cap/v1.2/cs01/CAP-v1.2-cs01.html
http://docs.oasis-open.org/emergency/cap/v1.2/cs01/CAP-v1.2-cs01.pdf
http://docs.oasis-open.org/emergency/cap/v1.2/cs01/CAP-v1.2-cs01.doc (Authoritative)
Latest Version:
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2.html
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2.pdf
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2.doc (Authoritative)
Technical Committee:
OASIS Emergency Management TC
Chair:
Elysa Jones, Warning Systems, Inc.
Editor:
Jacob Westfall, Individual
Related work:
This specification is related to:

- OASIS Standard CAP-V1.1, October 2005 http://www.oasis-open.org/committees/download.php/15135/emergency-CAPv1.1-Corrected_DOM.pdf
- OASIS Standard CAP-V1.1, Approved Errata October 2007 http://docs.oasis-open.org/emergency/cap/v1.1/errata/CAP-v1.1-errata.pdf

Declared XML Namespace:
urn:oasis:names:tc:emergency:cap:1.2
Abstract:
The Common Alerting Protocol (CAP) is a simple but general format for exchanging all-hazard emergency alerts and public warnings over all kinds of networks. CAP allows a consistent warning message to be disseminated simultaneously over many different warning systems, thus increasing warning effectiveness while simplifying the warning task. CAP also facilitates the detection of emerging patterns in local warnings of various kinds, such as might indicate an undetected hazard or hostile act. And CAP provides a template for effective warning messages based on best practices identified in academic research and real-world experience.

docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html



NWS Common Alerting Protocol

Search

ABOUT NWS CAP CAP DOCUMENTATION Sign In

What is CAP?

Common Alerting Protocol (CAP) is an XML-based information standard used to facilitate emergency information sharing and data exchange across local, state, tribal, national and non-governmental organizations of different professions that provide emergency response and management services.

NWS produces CAP for NWS weather and hydrologic alerts including watches, warnings, advisories, and special statements.

NWS CAP messages follow the CAP v1.2 standard defined by the Organization for the Advancement of Structured Information Standards (OASIS) and comply with the Federal Emergency Management Agency (FEMA) Integrated Public Alert and Warning System (IPAWS) CAP profile. The National Weather Service (NWS) CAP v1.2 Documentation provided on this site supplements the OASIS CAP v1.2 standard and IPAWS CAP profile by identifying the formats of NWS information contained within NWS CAP messages.

Uses of CAP

NWS CAP can be used to launch Internet messages, trigger alerting systems, feed mobile device applications, news feeds, television/radio display and audio, digital highway signs, synthesized voice over automated telephone calls, and much more.

How to Get NWS CAP Messages

NWS CAP messages are available through multiple dissemination channels.

Pull

CAP consumers should note there is an inherent delay introduced by pull services. NWS CAP pull capabilities have been designed and engineered to reduce the delay as much as possible. It should be understood that it is only as fast as the client is configured to pull it - every 2, 5, 10, even 15 minutes - based on the consumer's own technical needs and constraints. It should be understood that some alerts (e.g. Tornado Warnings) are extremely time sensitive.

1. NWS recommends use of the NWS Application Programming Interface (API) for access to NWS CAP messages. The API also provides a digest of active NWS CAP messages in ATOM format and CAP content in JavaScript Object Notation (JSON) format.

2. A secondary method for pulling NWS CAP messages is via the http and ftp file listings at http://tgftp.nws.noaa.gov/SL.us008001/DF.xml/DC.cap/ and ftp://tgftp.nws.noaa.gov/SL.us008001/DF.xml/DC.cap/ These file listings provide a traditional directory listing of all CAP messages issued for the past 7 days as well as directory lists (ls-l and ls-lt) for CAP consumers wishing to check for any new CAP messages in the directory. The http and ftp file listings are not recommended as a primary source for NWS CAP messages.

Push

NWS CAP v1.2 alerts are currently via the following push methods:

1. NOAAPORT is the most robust mechanism for receiving NWS CAP messages. The initial cost for NOAAPORT is highest among NWS CAP push services.

2. NOAA Weather Wire Service (NWWS) is the second most robust mechanism for receiving NWS CAP v1.2 messages. NWWS is available as a satellite-based and Internet-based service. CAP is currently available on the NWWS satellite based service.

The major advantage of most push methods is timeliness. NWS CAP messages pushed via NOAAPORT and NWWS are typically available

vlab.noaa.gov/web/nws-common-alerting-protocol

Purpose and Benefits of CAP

OASIS

Common Alerting Protocol Version 1.2

OASIS Standard

1.1 Purpose

The Common Alerting Protocol (CAP) provides an open, non-proprietary digital message format for all types of alerts and notifications. It does not address any particular application or telecommunications method. The CAP format is compatible with emerging techniques, such as Web services, as well as existing formats including the Specific Area Message Encoding (SAME) used for the United States' National Oceanic and Atmospheric Administration (NOAA) Weather Radio and the Emergency Alert System (EAS), while offering enhanced capabilities that include:

- Flexible geographic targeting using latitude/longitude shapes and other geospatial representations in three dimensions;
- Multilingual and multi-audience messaging;
- Phased and delayed effective times and expirations;
- Enhanced message update and cancellation features;
- Template support for framing complete and effective warning messages;
- Compatible with digital signature capability; and,
- Facility for digital images and audio.

Key benefits of CAP will include reduction of costs and operational complexity by eliminating the need for multiple custom software interfaces to the many warning sources and dissemination systems involved in all-hazard warning. The CAP message format can be converted to and from the "native" formats of all kinds of sensor and alerting technologies, forming a basis for a technology-independent national and international "warning internet."

CAP is Intended to Promote Interoperability

OASIS

Common Alerting Protocol Version 1.2

OASIS Standard

2 Design Principles and Concepts (non-normative)

2.1 Design Philosophy

Among the principles which guided the design of the CAP Alert Message were:

- **Interoperability** – First and foremost, the CAP Alert Message should provide a means for interoperable exchange of alerts and notifications among all kinds of emergency information systems.
- **Completeness** – The CAP Alert Message format should provide for all the elements of an effective public warning message.
- **Simple implementation** – The design should not place undue burdens of complexity on technical implementers.
- **Simple XML and portable structure** – Although the primary anticipated use of the CAP Alert Message is as an XML document, the format should remain sufficiently abstract to be adaptable to other coding schemes.
- **Multi-use format** – One message schema supports multiple message types (e.g., alert / update / cancellations / acknowledgements / error messages) in various applications (actual / exercise / test / system message).
- **Familiarity** – The data elements and code values should be meaningful to warning originators and non-expert recipients alike.
- **Interdisciplinary and international utility** – The design should allow a broad range of applications in public safety and emergency management and allied applications and should be applicable worldwide.

July 20, 2023 Service Change
Discontinued Full Suite of CAP to IPAWS

Discontinued transmission of full suite of NWS CAP to FEMA's Integrated Public Alert and Warning System (IPAWS) and began transmitting only CAP messages intended to activate WEA.

- Mitigates issue for NWS alerts that did not activate WEA following recent IPAWS update.

NWS recommends users of NWS CAP for non-WEA purposes use NWS-direct sources to access the full feed of NWS CAP.

See Service Change Notices at weather.gov/notification

NOUS41 KWBC 192110
PNSWSH

Service Change Notice 23-82
National Weather Service Headquarters Silver Spring MD
510 PM EDT Wed Jul 19 2023

To: Subscribers:
-NOAA Weather Wire Service
-Emergency Managers Weather Information Network
-NOAAPort
Other NWS Partners, Users and Employees

From: George Jungbluth
Acting Director, Office of Dissemination

Subject: Changes to NWS Common Alerting Protocol (CAP) Message Availability via the Federal Emergency Management Agency (FEMA) Integrated Public Alert and Warning System (IPAWS): Effective on or after July 20, 2023

Effective on or after July 20, 2023, NWS will discontinue transmission of the full suite of NWS CAP version 1.2 (v1.2) messages to IPAWS and begin transmitting only those CAP messages to IPAWS that are intended for activation or deactivation of Wireless Emergency Alerts (WEA). The CAP messages that will be sent to IPAWS will represent a small subset of NWS alerts and there will be inconsistencies with the full NWS CAP feed.

This change mitigates an issue for some NWS alerts that do not activate WEA via IPAWS, which began following a recent IPAWS system update.

Users of NWS CAP messages for non-WEA purposes should use NWS-direct sources for the full feed of NWS CAP messages as detailed at:

https://vlab.noaa.gov/web/NWS-common-alerting-protocol

These NWS-direct sources include pull capabilities from the NWS Application Programming Interface (API), and HTTP (Hypertext Transfer Protocol) and File Transfer Protocol (FTP) listings. They also include push capabilities from NOAAPort. The pros and cons of using CAP from these channels are detailed on this page.

Users may also wish to view all NWS alerts in CAP format at:

https://alerts.weather.gov

WEA is a joint effort between the Federal Communications Commission (FCC), FEMA and the wireless industry allowing public safety authorities to send geographically-targeted emergency messages to cell phones. The NWS conveys messages to WEA for life-threatening hazards and those hazards deemed high impact with consequences that can be mitigated or minimized with immediate action by message recipients.

NWS CAP From IPAWS Should Only Be Used for WEA

Attempting to use NWS CAP from IPAWS for purposes other than WEA may result in duplicate alerting, missed alerts, and public confusion.

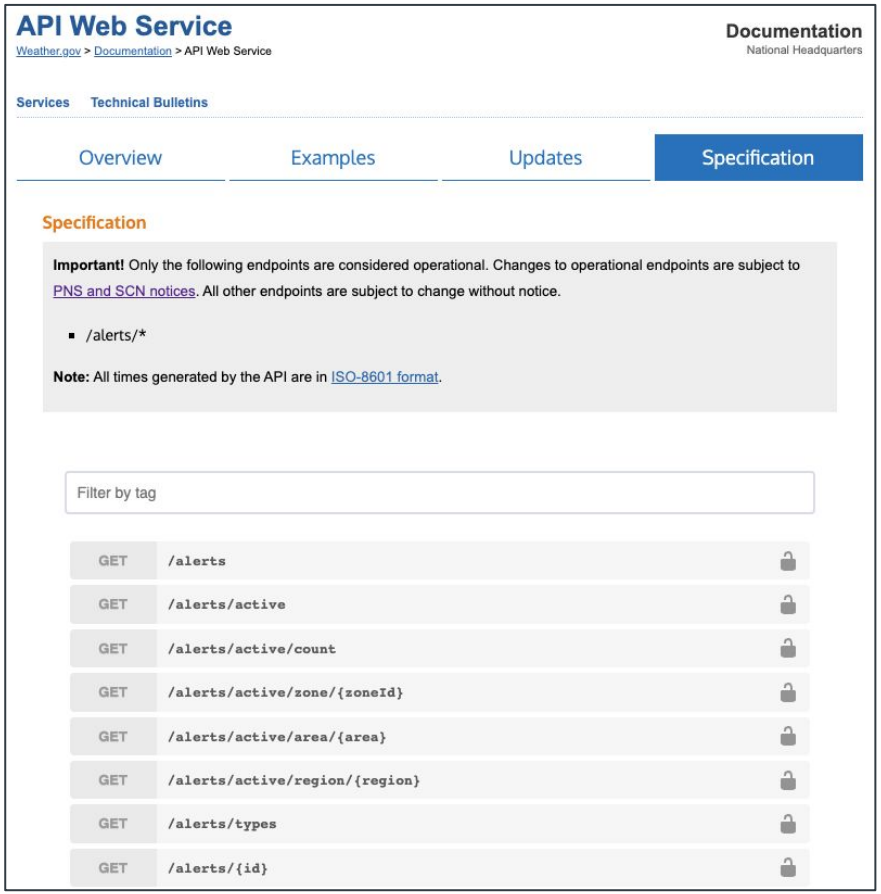
NWS CAP Direct from NWS	NWS CAP from IPAWS
Full suite of NWS CAP messages	Subset of NWS CAP messages
Intended for use by all	Intended only for use by WEA
Includes test messages	Does not include test messages
Regular CAP message <identifier>	<identifier> value appended with ".IPAWS"
<msgType> value (i.e., "Alert", "Update", and "Cancel" more closely reflects actual alert life cycle	In some cases when CAP message generated from alert update, <msgType> value is "Alert" (suggesting alert is new) instead of "Update"
May contain multiple <references> values to provide more complete history of the alerts being replaced the CAP message.	Contain maximum of one reference in <references> element that identifies only the immediate prior CAP sent to IPAWS for the alert
Returns filtered index of alerts (includes some of the alert content) in the ATOM standard and can then pull the desired CAP messages	Returns multiple CAP messages in single pull using IPAWS Design Guide along with the CAP standard

Where to Get NWS CAP

NWS API	Internet Pull	Free	Request what you want
http/ftp **(do not use as primary)**	Internet Pull	Free	File listing of CAP messages
NOAAPORT	Satellite Push	Satellite equipment	Must filter from full stream of NWS text and graphics products and satellite imagery
NOAA Weather Wire Service (NWWS)	Satellite Push	Satellite equipment	Must filter from full stream of mostly NWS text products
NWWS OI (future)	Internet Push (XMPP)	Free	

NWS Application Programming Interface (API)

NWS alerts available in CAP, ATOM, and JSON



Robust selection of filters for alerts

Example. ATOM feed of all active alerts in Kansas:

https://api.weather.gov/alerts/active.atom?area=KS

Read documentation and updates before using.

Note:There are limits to API usage to ensure the stability of the API.

API Usage Example

ATOM contains links to CAP messages in the feed:
https://api.weather.gov/alerts/active.atom?area=KS

```
<?xml version="1.0" encoding="UTF-8"?>
<feed xmlns="http://www.w3.org/2005/Atom" xmlns:cap="urn:oasis:names:tc:emergency:cap:1.2">
   <id>https://api.weather.gov/alerts.atom?area%5B0%5D=KS&amp;limit=500&amp;active=1</id>
   <generator>NWS CAP Server</generator>
   <updated>2023-10-25T15:30:00+00:00</updated>
   <author>
      <name>w-nws.webmaster@noaa.gov</name>
   </author>
   <title>Current watches, warnings, and advisories for Kansas</title>
   <link rel="self"
href="https://api.weather.gov/alerts.atom?area%5B0%5D=KS&amp;limit=500&amp;active=1"/>
   <entry>

<id>https://api.weather.gov/alerts/urn:oid:2.49.0.1.840.0.c290337bc1e59f78c5f00580cd158c8d29e207
0e.001.1</id>
      <link rel="alternate"
href="https://api.weather.gov/alerts/urn:oid:2.49.0.1.840.0.c290337bc1e59f78c5
f00580cd158c8d29e2070e.001.1.cap"/>
      <updated>2023-10-25T10:21:00-05:00</updated>
      <published>2023-10-25T10:21:00-05:00</published>
      <author>
         <name>NWS</name>
      </author>
      <title>Flood Warning issued October 25 at 10:21AM CDT until October 25 at 3:30PM CDT by
NWS Topeka KS</title>
      <summary>* WHAT...Flooding caused by excessive rainfall is expected.

* WHERE...A portion of east central Kansas, including the following
counties, Franklin and Osage.

* WHEN...Until 330 PM CDT.

* IMPACTS...Flooding of rivers, creeks, streams, and other low-lying
and flood-prone locations is occurring. Numerous roads remain
closed due to flooding. Streams continue to rise due to excess
runoff from earlier rainfall.

* ADDITIONAL DETAILS...
.
.
.
```

CAP Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
   <identifier>urn:oid:2.49.0.1.840.0.c290337bc1e59f78c5f00580cd158c8d29e2070e.001.1</identifier>
   <sender>w-nws.webmaster@noaa.gov</sender>
   <sent>2023-10-25T10:21:00-05:00</sent>
   <status>Actual</status>
   <msgType>Alert</msgType>
   <scope>Public</scope>
   <code>IPAWSv1.0</code>
   <info>
      <language>en-US</language>
      <category>Met</category>
      <event>Flood Warning</event>
      <responseType>Avoid</responseType>
      <urgency>Expected</urgency>
      <severity>Severe</severity>
      <certainty>Likely</certainty>
      <eventCode>
         <valueName>SAME</valueName>
         <value>FLW</value>
      </eventCode>
      <eventCode>
         <valueName>NationalWeatherService</valueName>
         <value>FAW</value>
      </eventCode>
      <effective>2023-10-25T10:21:00-05:00</effective>
      <onset>2023-10-25T10:21:00-05:00</onset>
      <expires>2023-10-25T15:30:00-05:00</expires>
      <senderName>NWS Topeka KS</senderName>
      <headline>Flood Warning issued October 25 at 10:21AM CDT until October 25 at 3:30PM CDT by
NWS Topeka KS</headline>
      <description>* WHAT...Flooding caused by excessive rainfall is expected.

* WHERE...A portion of east central Kansas, including the following
counties, Franklin and Osage.

* WHEN...Until 330 PM CDT.

* IMPACTS...Flooding of rivers, creeks, streams, and other low-lying
and flood-prone locations is occurring. Numerous roads remain
.
.
.
```

http/ftp

Index of /SL.us008001/DF.xml/DC.cap

Name	Last modified	Size
Parent Directory		-
ls-l	22-Sep-2023 18:37	1.4M
ls-lt	22-Sep-2023 18:37	1.4M
T_XOUS55_C_KWBC_20230922183659_urn:oid:2.49.0.1.840.0-KEEPALIVE-58316.xml	22-Sep-2023 18:36	2.2K
T_XOUS52_C_KWBC_20230922183614_urn:oid:2.49.0.1.840.0.d8161851deee4057250fcdbb6941b97c0c321009.001.1-O-NEW-KILM-FA-A-0003.xml	22-Sep-2023 18:36	4.6K
T_XOUS52_C_KWBC_20230922183347_urn:oid:2.49.0.1.840.0.a3545ce49456c3ab548b9a70e4508151cf4a556c.001.1-O-EXT-KMLB-SC-Y-0036.xml	22-Sep-2023 18:33	4.1K
T_XOUS52_C_KWBC_20230922183346_urn:oid:2.49.0.1.840.0.a3545ce49456c3ab548b9a70e4508151cf4a556c.003.1-O-CON-KMLB-SC-Y-0036.xml	22-Sep-2023 18:33	4.7K
T_XOUS52_C_KWBC_20230922183344_urn:oid:2.49.0.1.840.0.a3545ce49456c3ab548b9a70e4508151cf4a556c.002.1-O-CON-KMLB-SC-Y-0036.xml	22-Sep-2023 18:33	3.3K
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T_XOUS51_C_KWBC_20230922183115_urn:oid:2.49.0.1.840.0.0fd5c33bf18491d809d1c580a5f8f42477034d55.001.1-O-CON-KAKQ-CF-A-0004.xml	22-Sep-2023 18:31	3.9K
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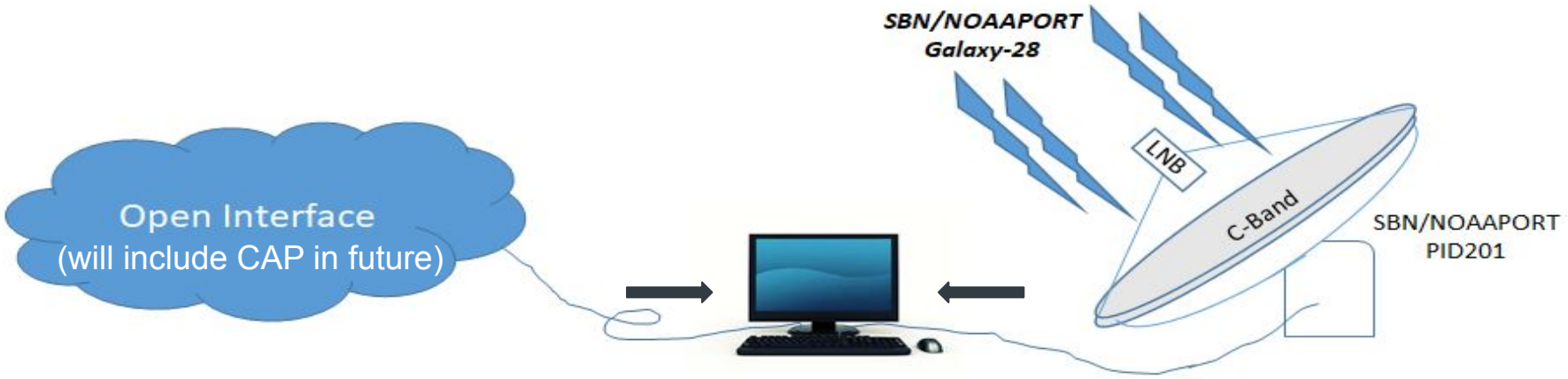
T_XOUS51_C_KWBC_20230922183002_urn:oid:2.49.0.1.840.0.09bf423fb4dc36bdcf8f9ead974e2a459428355f.001.1.xml	22-Sep-2023 18:30	19K
T_XOUS53_C_KWBC_20230922182938_urn:oid:2.49.0.1.840.0.66c43f9bce46d57fc1e73ebe0cf8dca1554b8b7b.001.1-O-CON-KUNR-SV-W-0326.xml	22-Sep-2023 18:29	4.9K
T_XOUS52_C_KWBC_20230922182932_urn:oid:2.49.0.1.840.0.3ed92811e898a2ee26a56f09b52ef0e68cf2932e.001.1.xml	22-Sep-2023 18:29	8.0K
T_XOUS55_C_KWBC_20230922182702_urn:oid:2.49.0.1.840.0-KEEPALIVE-44763.xml	22-Sep-2023 18:27	2.2K
T_XOUS51_C_KWBC_20230922182310_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.034.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	7.0K
T_XOUS51_C_KWBC_20230922182309_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.033.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.2K
T_XOUS51_C_KWBC_20230922182308_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.032.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	9.0K
T_XOUS51_C_KWBC_20230922182307_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.023.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.5K
T_XOUS51_C_KWBC_20230922182306_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.028.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.0K
T_XOUS51_C_KWBC_20230922182305_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.030.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.6K
T_XOUS51_C_KWBC_20230922182304_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.029.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.4K
T_XOUS51_C_KWBC_20230922182303_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.031.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.9K
T_XOUS51_C_KWBC_20230922182302_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.019.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.7K
T_XOUS51_C_KWBC_20230922182301_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.024.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:23	8.2K
T_XOUS51_C_KWBC_20230922182259_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.025.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	7.8K
T_XOUS51_C_KWBC_20230922182258_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.035.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	7.4K
T_XOUS51_C_KWBC_20230922182257_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.011.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.0K
T_XOUS51_C_KWBC_20230922182256_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.023.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182255_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.027.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.2K
T_XOUS51_C_KWBC_20230922182254_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.026.1-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.2K
T_XOUS51_C_KWBC_20230922182253_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.022.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.9K
T_XOUS51_C_KWBC_20230922182251_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.025.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	7.9K
T_XOUS51_C_KWBC_20230922182250_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.022.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.7K
T_XOUS51_C_KWBC_20230922182249_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.017.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.8K
T_XOUS51_C_KWBC_20230922182248_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.018.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.5K
T_XOUS51_C_KWBC_20230922182247_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.021.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.5K
T_XOUS51_C_KWBC_20230922182246_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.021.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182245_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.020.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.5K
T_XOUS51_C_KWBC_20230922182244_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.018.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	9.0K
T_XOUS51_C_KWBC_20230922182243_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.020.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182242_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.016.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.2K
T_XOUS51_C_KWBC_20230922182241_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.024.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.1K
T_XOUS51_C_KWBC_20230922182240_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.016.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182239_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.019.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.8K
T_XOUS51_C_KWBC_20230922182238_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.017.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.9K
T_XOUS51_C_KWBC_20230922182237_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.015.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	7.7K
T_XOUS51_C_KWBC_20230922182236_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.001.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.6K
T_XOUS51_C_KWBC_20230922182235_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.001.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182233_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.015.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.2K
T_XOUS51_C_KWBC_20230922182233_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.014.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182232_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.012.1-O-CON-KAKQ-SS-W-1016.xml	22-Sep-2023 18:22	7.8K
T_XOUS51_C_KWBC_20230922182231_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.010.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.4K
T_XOUS51_C_KWBC_20230922182230_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.014.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.2K
T_XOUS51_C_KWBC_20230922182229_urn:oid:2.49.0.1.840.0.c689938292a03405cc7d1dab4bb59060112b5c73.013.2-O-CON-KAKQ-TR-W-1016.xml	22-Sep-2023 18:22	8.5K

Should not be used as a primary source for NWS CAP since there is no separation of active and non-active alerts and does not have the functionality of the API to subset easily.

NOAA Weather Wire Service (NWWS) and NOAAPORT

Combined Internet and satellite platform for highest availability of text alerts



Requires NWS issued user id/password and XMPP reader or software

Requires 1.8m or larger satellite dish and Novra DVB-S2 Satellite Receiver system

Importance of Checking status Element

Failure to properly handle a CAP message can result in undesirable consequences such as public confusion and false alarms.

<status>*status*</status>

Denotes the **appropriate handling of the alert message**.

Where *status* is one of the following:

- "**Actual**" - Actionable by all targeted recipients
- "Exercise" - Actionable only by designated exercise participants; exercise identifier SHOULD appear in <note>. Not currently used by NWS.
- "System" - For messages that support alert network internal functions. Not currently used by NWS.
- "**Test**" - Technical testing only, all recipients disregard; explanation of test SHOULD appear in <note>
- "Draft" – A preliminary template or draft, not actionable in its current form. Not currently used by NWS.

Example 1

<status>**Actual**</status>

Example 2

<status>**Test**</Status>

Know the Difference Between expires and eventEndingTime

For decades, NWS has been making a distinction between the stale date/time of information in the alert message and the expected end time of the subject event.

"expires" element	"eventEndingTime"
Expiration of the information in the alert message. Date/time at which the information in the message should be considered stale and no longer used.	Expected end time of the event in the alert message.
The NWS forecaster is expected to update or cancel the alert by the <expires> time unless the eventEndingTime has been reached.	Date/time at which the hazard conditions of the subject event are no longer expected.

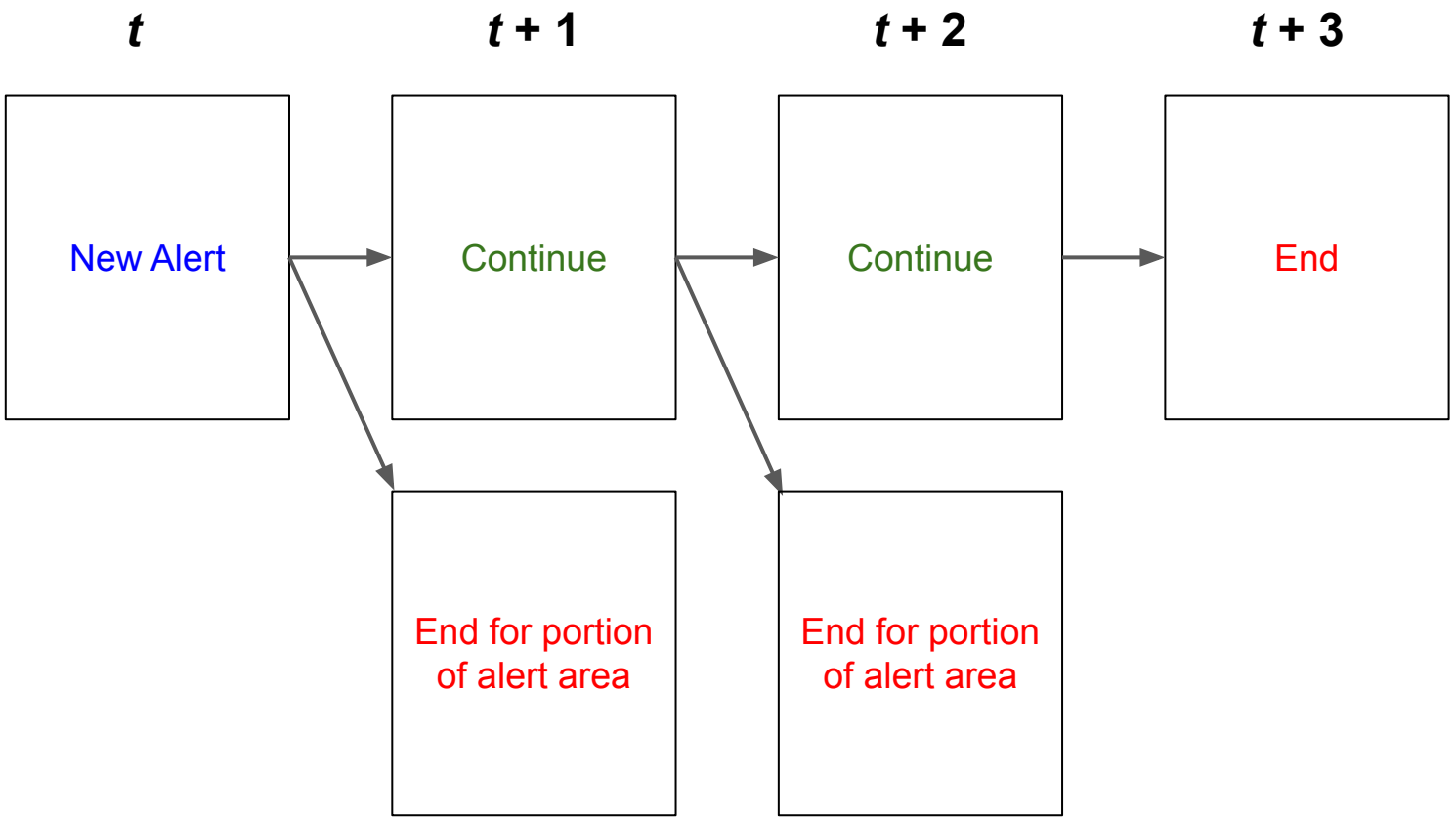
Note: eventEndingTime will not be included in NWS CAP for very long duration or open-ended alerts (e.g., tropical cyclone related events, tsunamis, some long duration floods, etc.) which are in effect until further notice.

Examples of expires and eventEndingTime

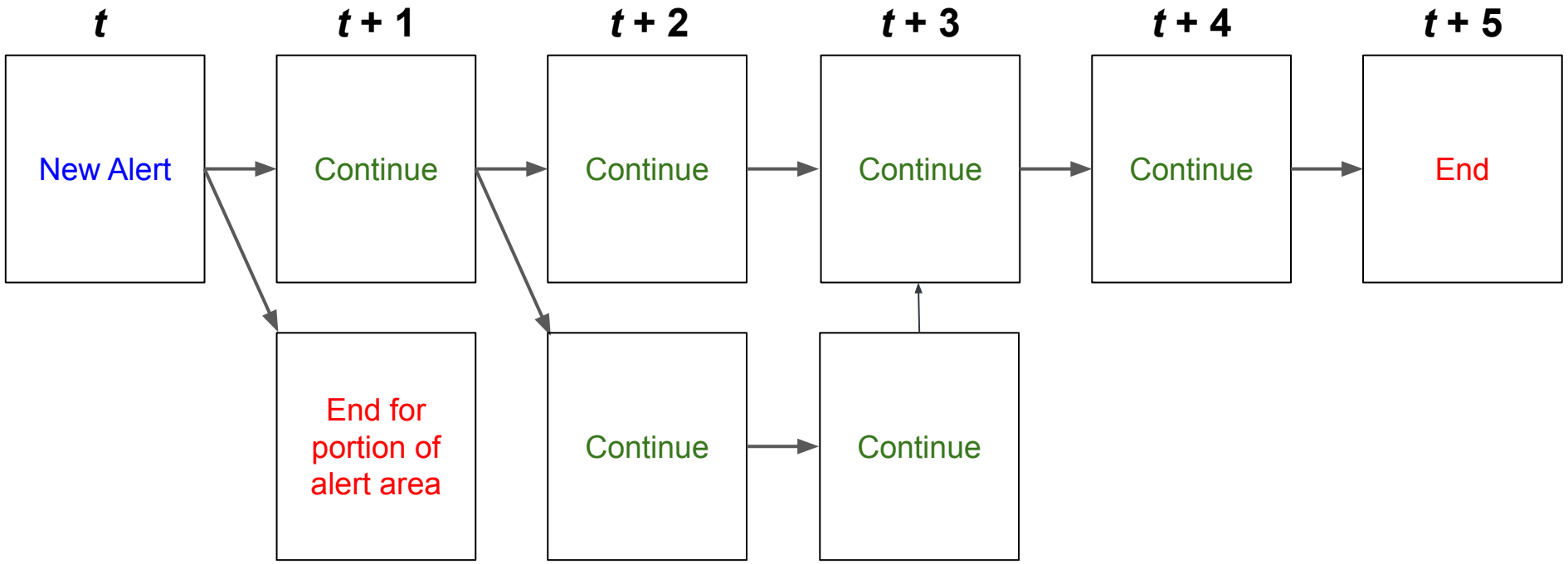
Short Fused Alerts Expiration and event end date/time are same	Long Fused Alerts Event end date/time is often later than expiration date/time.
<event>Severe Thunderstorm Warning</event> . . . <expires>**2023-09-15T06:45:00-05:00**</expires> . . . <parameter> <valueName>eventEndingTime</valueName> <value>**2023-09-15T06:45:00-05:00**</value> </parameter>	<event>Flood Watch</event> . . . <expires>**2023-09-14T01:15:00-04:00**</expires> . . . <parameter> <valueName>eventEndingTime</valueName> <value>**2023-09-17T08:00:00-04:00**</value> </parameter>

NWS Alert Lifecycle (Canada is similar)

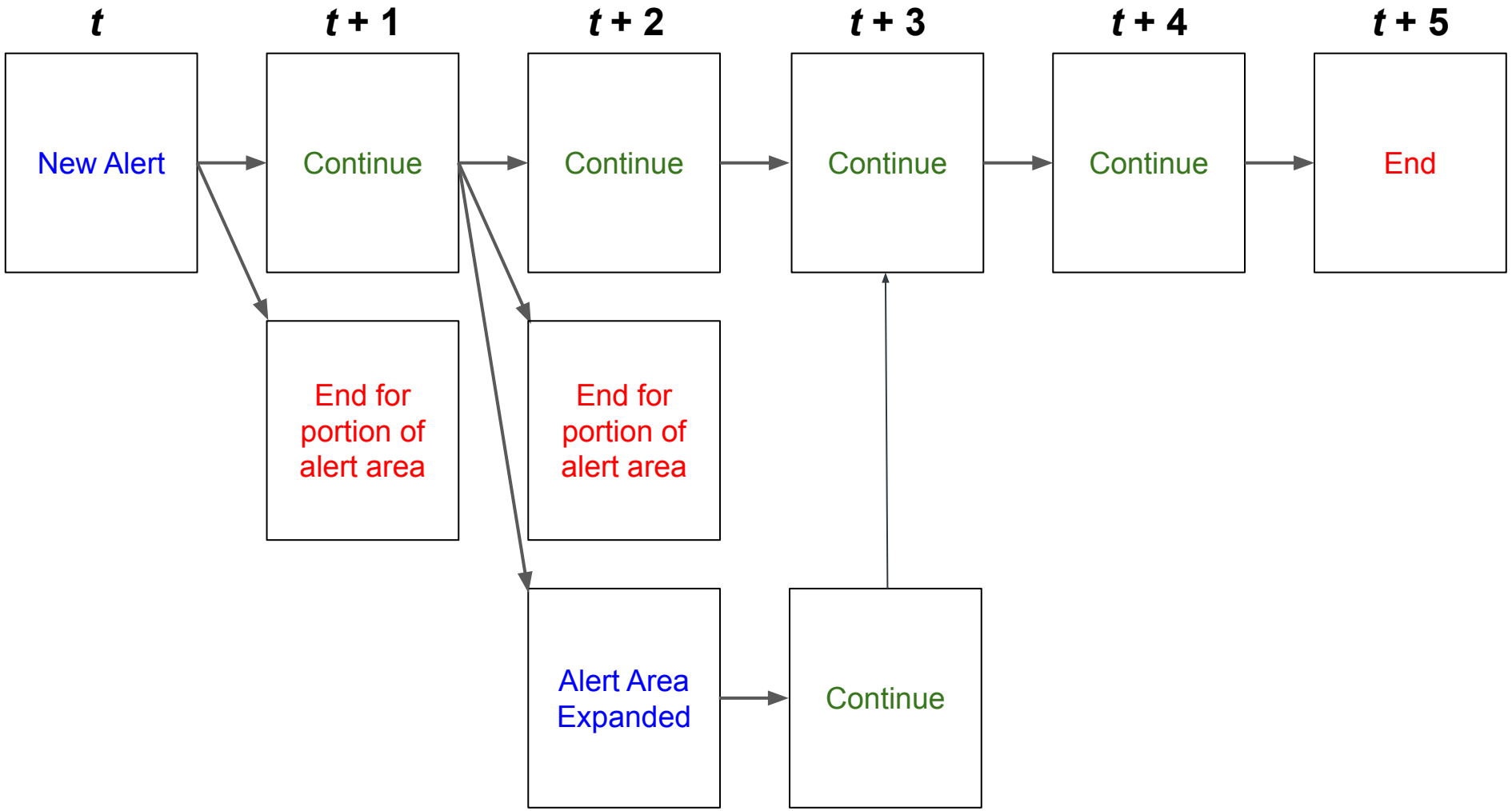
Alert bifurcates as the threat moves in time and space.



Complexity of NWS Alert Lifecycle



Complexity of NWS Alert Lifecycle



Future of NWS CAP

Current: CAP available from NWS via satellite push (NWWS and NOAAPORT) and Internet pull (NWS API).

Future: CAP available via Internet push (NWWS OI)

Current: CAP created by parsing traditional World Meteorological Organization (WMO) teletype style alerts into their most atomic parts and reassembling as CAP.

Future: CAP natively generated from Hazard Services which is NWS' next generation alert authoring tool.

Current: CAP designed to comply with IPAWS constraints. NWS must sometimes issue multiple CAP messages to convey information about a single alert that could otherwise be conveyed in a single CAP message. Impact is users must piece together multiple CAP message in order to properly track and get the full picture for a single alert.

Future: Simplify processing requirements for CAP users by doing similar to Environment Canada where a single CAP message can contain multiple info blocks. Each info block represents a segment of the alert area and clearly conveys the reasoning for the segment (e.g., upgrade/downgrade, extension in time, expansion of geographic area in alert, etc.)

Links

OASIS CAP v1.2 Standard
https://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html

NWS CAP Documentation
https://vlab.noaa.gov/web/nws-common-alerting-protocol

CAP v1.2 IPAWS Profile
https://docs.oasis-open.org/emergency/cap/v1.2/ipaws-profile/v1.0/cap-v1.2-ipaws-profile-v1.0.pdf

NWS Service Change Notices
https://www.weather.gov/notification

NWS Application Programming Interface (API)
https://www.weather.gov/documentation/services-web-api

NOAAPORT
https://www.weather.gov/noaaport

NOAA Weather Wire Service (NWWS)
https://www.weather.gov/nwws

NWS System Status
https://www.nco.ncep.noaa.gov/status

Points of Contact

General questions about WEA or CAP

mike.gerber@noaa.gov

Technical 24x7 outage assistance

nco.ops@noaa.gov or 301-683-1518

General API assistance

idp.support@noaa.gov

API Feature Requests

brian.miretzky@noaa.gov