Introducing the Common Alerting Protocol

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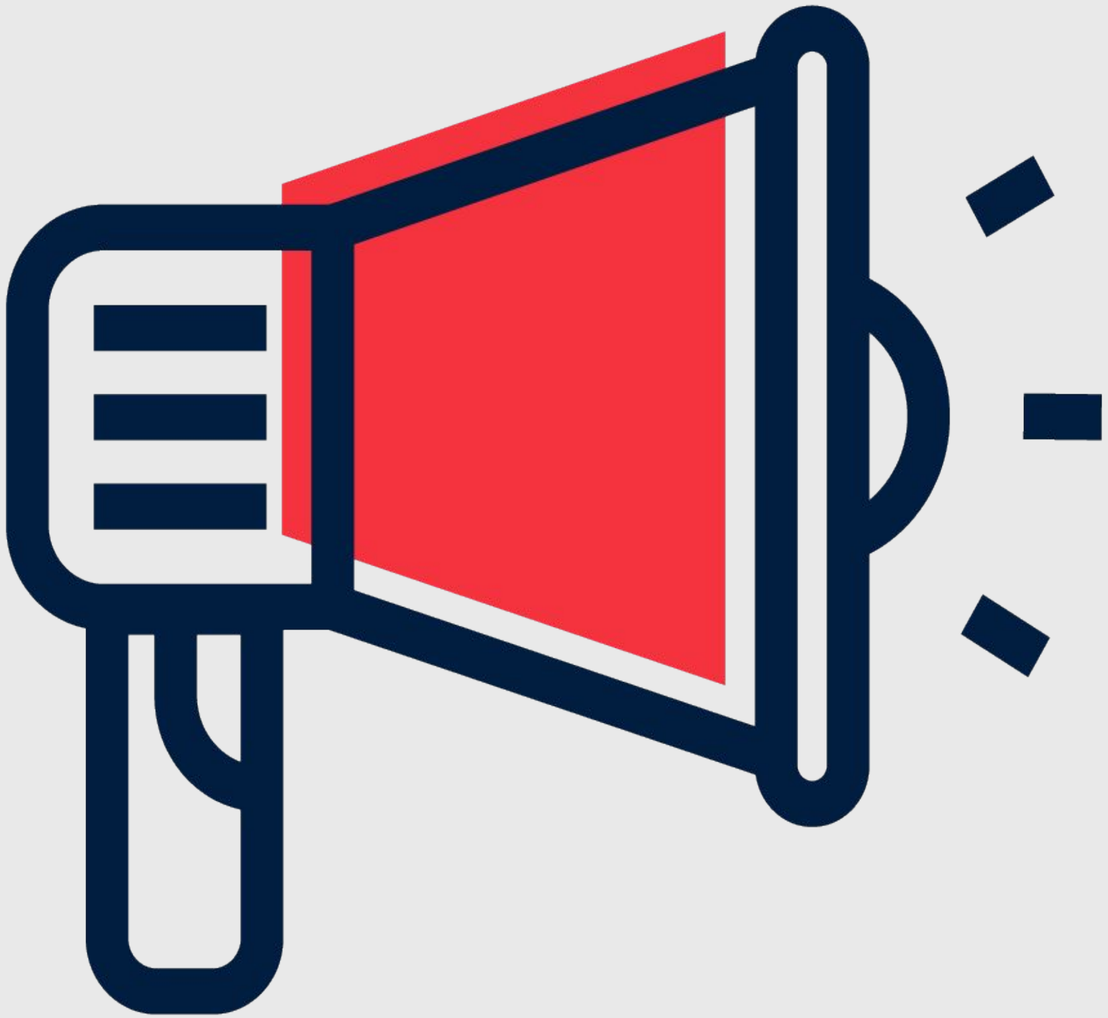


Agenda

1. Key Information
2. Challenge of Alerting
3. **What is CAP?**
4. Benefits of CAP
5. Features of CAP Messages
6. Dissemination to the Public

Key Information

SCENARIO

Consider the instance of an impending flash flood.

Lives are at stake. People need to be warned.

They need to know the **Key Facts** for this emergency.

- **What** is the emergency?
- **Where** is the affected area?
- **How soon** do we need to act?
- **How bad** will it be?
- **How certain** are the experts?
- **What** should we do?

The Challenge of Alerting

The Challenge of Alerting

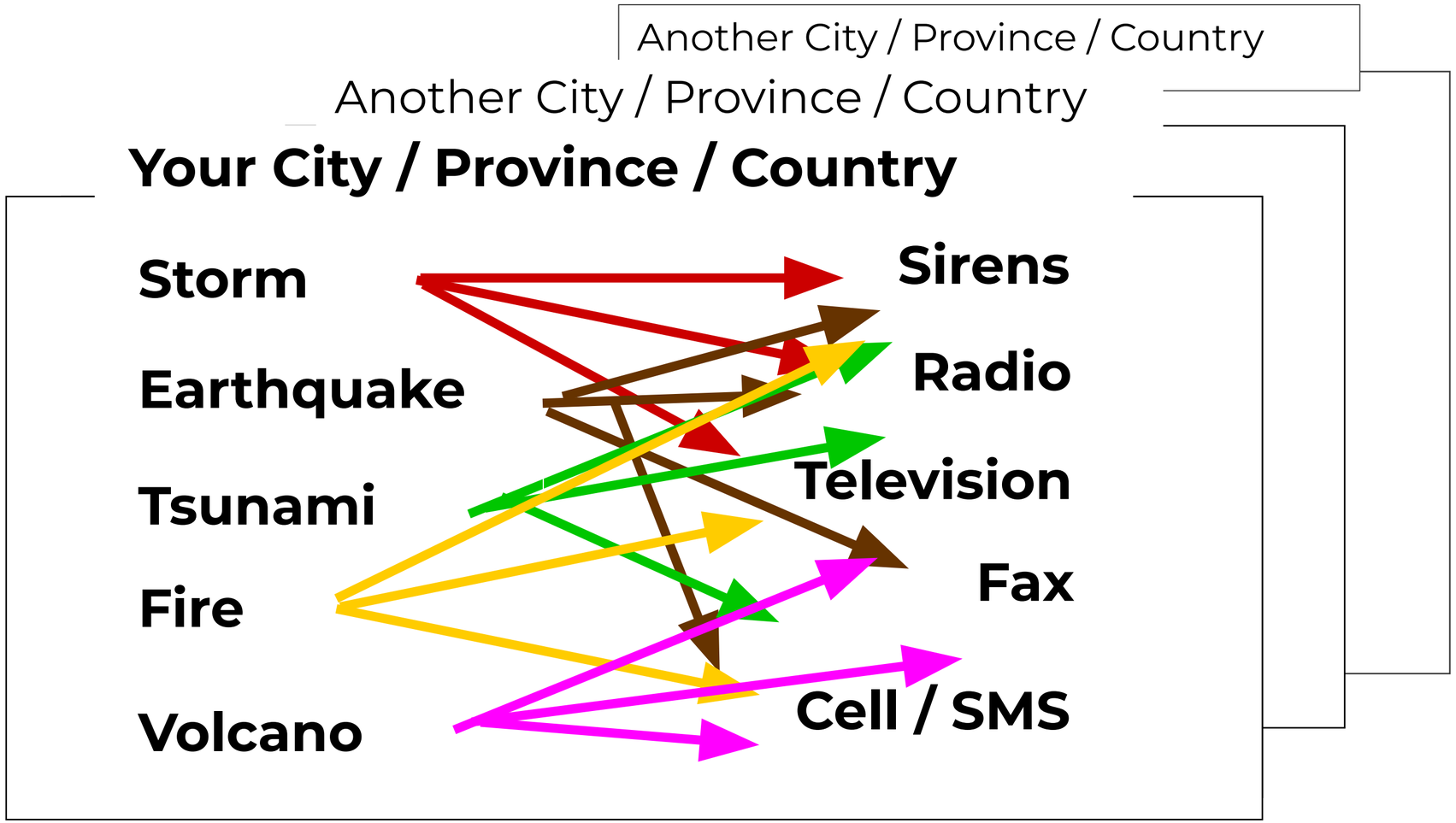
Many governments have multiple public alerting systems specific to hazards.

Depending on when the infrastructure was developed, different types of media may have been prioritized. These systems may have been updated as users access information via newer technology, or they may have remained the same.

For example, in a single country, the following could be true:

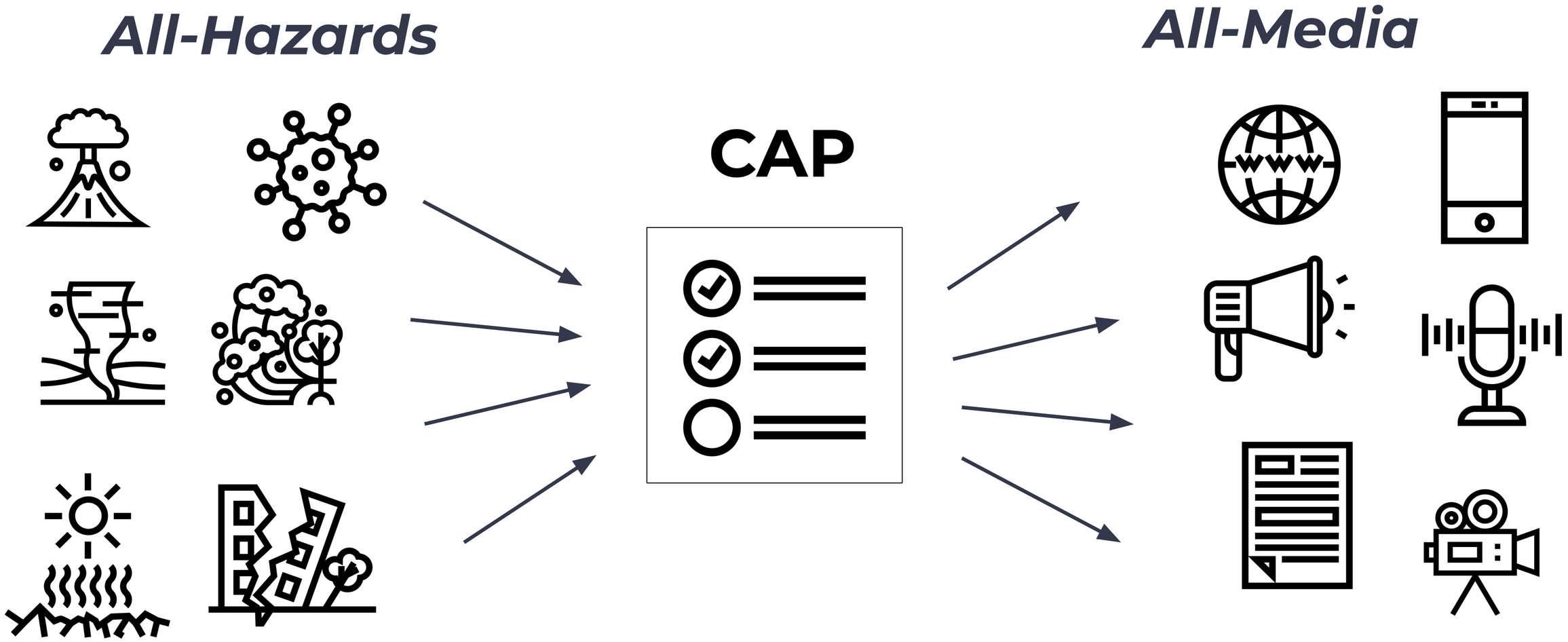
- **Earthquakes/tsunami** by e-mail, news wire, websites, pagers, phone calls …
- **Weather** by news wire, fax, radio, television, SMS text on cell phones …
- **Fire, Security, Transportation** by television, radio, sirens, police with bullhorns…

Across communities, nations, regions— a “public alerting patchwork”



What is CAP?

CAP Carries Key Facts



An International Standard

The Common Alerting Protocol (CAP) is an **international standard designed for global use.** It is a digital format for exchanging emergency alerts that allows a **consistent alert message** to be disseminated simultaneously over multiple communications pathways.

The standard was developed over several years, has been adopted and promoted by organizations such as International Telecommunication Union (ITU), World Meteorological Organization (WMO), and IFRC.

CAP is actively maintained by a working group of experts under the direction and guidance of OASIS.

CAP Definition and Design Philosophy

Simple and extensible **format** for digital representation of **warning messages** and notifications

Interoperability

Completeness

Simple implementation

Simple XML

Multi-use format

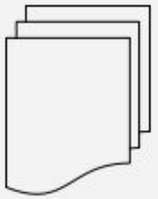
Targeted

<area> Geneva </area>

Contextualized and actionable

#WhatNow

Consistent



Many Actors, Cohesive Messaging

In an emergency, multiple trusted authorities often have separate responsibilities.

- Scientific and technical agencies
- Civic authorities

In a complex, extensive, or evolving emergency, there may be overlapping jurisdictions and multiple authorities involved within each category.

- A disease outbreak in a flooded area
- An earthquake that triggers a tsunami warning
- Heavy rainfall that can cause flash floods and landslides

CAP helps ensure all trusted authorities communicate the Key Facts coherently. It supports harmonized delivery of messaging, and enables redundancy and consistency in alerting.

What is an Alerting Authority?

An **official alerting authority** is any organization authorized to perform the function of alerting (i.e: National Meteorological or Hydrological Service or Emergency Management Agency)

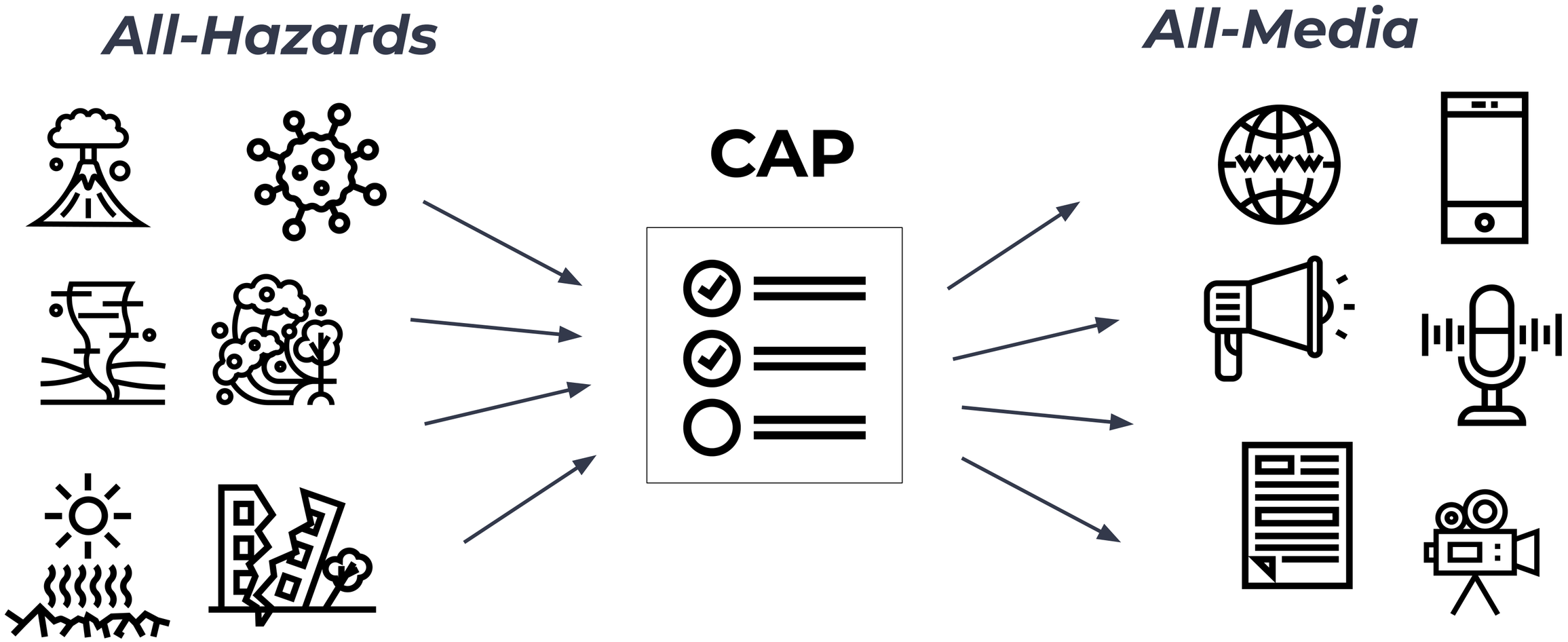
Register of Alerting Authorities https://alertingauthority.wmo.int/

Why is a Register Needed?

- Some, particularly those outside the country, may lack direct knowledge needed to distinguish an authoritative source of alert messages.
- This lack becomes critical and can be a barrier to efficient distribution of alerts.
- Each entry asserts a particular alerting source as authoritative, with its typical hazard types and its typical alerting area

Benefits of CAP

A Standard Format for Alerts



Quicker and Easier to Issue Alerts

Without CAP:
Making phone calls, sending Faxes, sending e-mails, posting to a Web page, posting to Facebook and Twitter, …

With CAP:
Posting a single message can trigger most alerting methods

Shared Situational Awareness

In a complex emergency, many types of information has to be assimilated, from many sources, at a broad range of scales, and a lot of that information involves alerting

Without CAP:
Alerts are difficult to ingest, use, and share

With CAP:
Sharing of alert information is much easier

Alerting Areas Are More Precise

People should not miss out on alerts; they should only get alerts intended for them

Without CAP:
Text-based alerting not precise enough

With CAP:
Precise alerting area with polygons or circles in addition to text description

Inclusion and Accessibility Barrier

Without CAP:
Traditional public alerting infrastructure and systems may unintentionally leave out people who can not receive messages in the same way as the rest of the community. For example, those with hearing or sight impairment may not hear be reached. Language barriers, remote locations, and other factors may result in some segments of the populations being left out of alerting.

With CAP:
CAP data features enable custom messaging, automated translation, and dissemination to multiple media mechanisms at once.

Alerting Sudden-Onset Events

Seconds are critical for sudden-onset events,
e.g., earthquakes, tornadoes, tsunami, flash floods, volcanoes, landslides, avalanches, terrorism

Without CAP:
Life-saving messages might arrive too late

With CAP:
An alert can be disseminated in seconds

Because a CAP alert is digital, receivers can include devices -- sirens, highway signs, train controls, and other automated mechanisms -- that help save lives

Features of a CAP Message

Common Alerting Protocol (CAP) Message Content

Message should get to the **key facts**

What?
(Description)
(Category*)
(Event)

What to do?
(Instructions)

Where?
(Polygon)
(areaDesc)
(area)

How soon?
(Urgency)
I E F P

How bad?
(Severity)
E S M M

How sure?
(Certainty)
O L P U

And give a **message context**

Who says?
(SenderID)
(Source)

When?
(Sent Date/Time)

Relations?
(References)
(Incidents)
(Note)

Actionable?
(Status)
A E S T D

Typology?
(Msg Type)
A U C A E

Shareable?
(Scope)
P R P

* Geophysical, Meteorological, Safety, Security, Rescue, Fire, Health, Environmental, Transport, Infrastructure, CBRNE, Other

Key Elements of a CAP Message

CAP messages contain a combination of coded values and text values.

- **Text values** are open fields - they may include a description of the hazard or affected area, or instructions such as WhatNow messages.
- **Coded values** are pre-defined categories and can be used to filter and prioritize messages to determine how and when the message is delivered to affected communities.

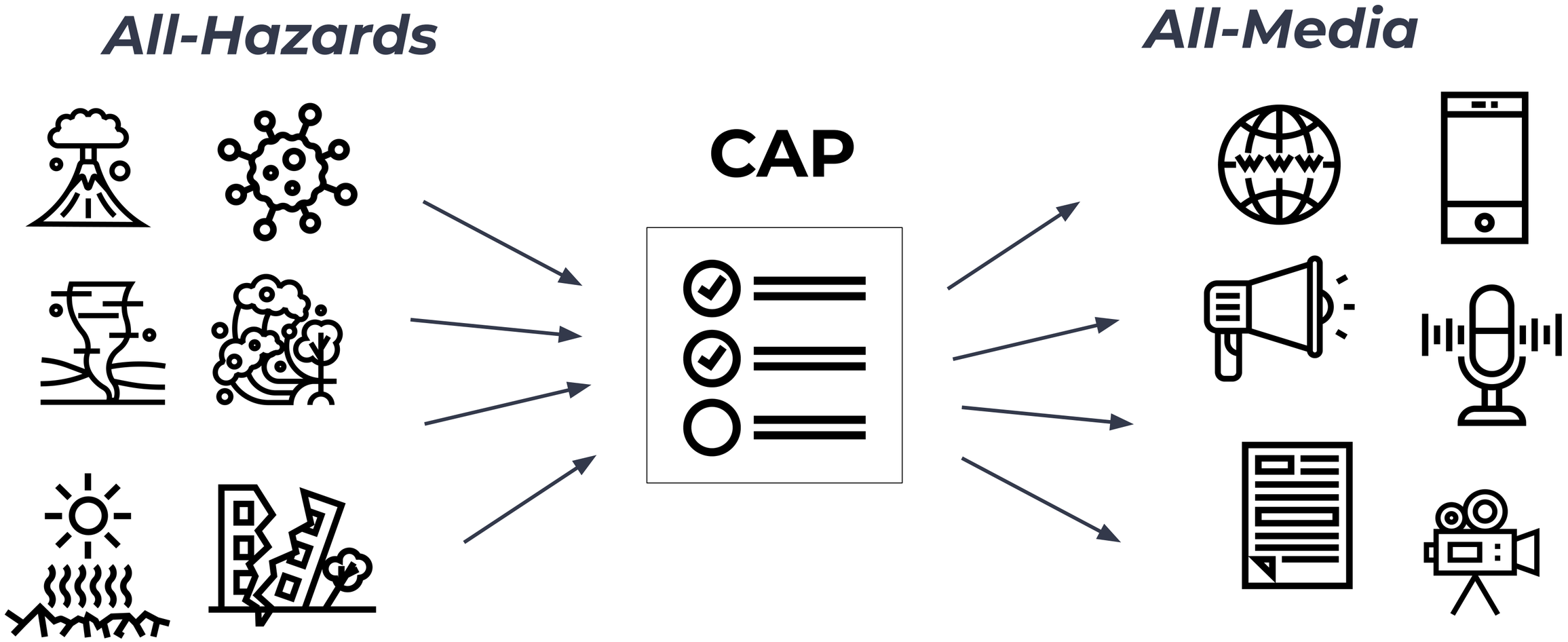
Urgency: Timeframe for responsive action
(Immediate, Expected, Future, Past)

Severity: Level of threat to life or property
(Extreme, Severe, Moderate, Minor)

Certainty: Probability of occurrence
(Very Likely, Likely, Possible, Unlikely)

Dissemination to the Public

Dissemination of CAP Alerts



Dissemination Mechanisms

- Traditional Media
  - Television
  - Radio
  - Sirens
  - Landline telephones or faxes
- Mobile Phones
  - SMS Alerts
  - WhatsApp Messages
  - Weather and Hazard Apps
  - AccuWeather widget on Android
- Online
  - Google Public Alerts
  - Ad Overlays
  - Social Media (Facebook & Twitter)

Thank you!

If you have questions or comments please contact Jessica Robbins
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