Report of the 2025 CAP Implementation Workshop and Training

Background

[National Fire Corps of Italy](#) and [Alert-Hub.Org CIC](#) hosted the 2025 Common Alerting Protocol (CAP) Implementation Workshop. Co-sponsors were the [International Association of Emergency Managers (IAEM)](#) and the [OASIS Open](#) standards organization.

The 2025 CAP Implementation Workshop and Training was held 21-23 October in Rome, Italy, at the [National Fire Corps Academy (Istituto Superiore Antincendi, ISA)](#). A Zoom Webinar was offered for those who could not participate in person.

The Workshop was a technical meeting intended solely for information sharing among experts. Accordingly, Workshop participants represented themselves; they did not formally represent any organizations with which they were affiliated.

The Workshop and Training events had about 900 persons registered as participants. They were from 143 countries/territories, and many international organizations, commercial companies, academic institutions, or other non-governmental organizations. About 50 people participated in person, and the photo below shows in-person participants on 22 October.

Recordings of the 2025 CAP Workshop and Training Webinars are at the following links. Enter the given passcode when prompted.

Training Day: 22 October [Webinar - 1.5 GB](#) Passcode: N5dVZ.MN

Workshop Day One: 23 October [Webinar - 3.2 GB](#) Passcode: 9q#7@vvG

Workshop Day Two: 24 October [Webinar - 2.2 GB](#) Passcode: &9U*m5j8

The following other documents might be also of interest:

- The [Programme](#) lists all of the Workshop agenda topics and links to the presentations;
- The list of [Speakers](#) includes speaker biographies, portraits and links to the presentations;
- The list of [Participants](#) gives name and organizational affiliation of registered participants.

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Offers to Host the Next CAP Implementation Workshop

Workshop participants were invited to put forward offers for the location of a future CAP Implementation Workshop. The likely time frame for a 2026 Workshop is September-October and it is likely to be in England, hosted by U.K. Environment Agency.

Report Process

At the Workshop, participants agreed on the process for producing this Workshop Report. The Workshop Chair, Eliot Christian, produced a draft Report. The draft was shared among Workshop participants for one week, with the Chair making revisions based on any participant comments received. Thereafter, the Chair published the final Workshop Report and linked to it from the 2025 CAP Implementation Workshop [website](#).

Presentation Summaries by Agenda Item

Training: [Overview of Common Alerting Protocol](#) [video 85 MB]
[A Free, Cloud-based Tool for Creating and Publishing CAP Alerts](#) [video 136 MB]
[Last Mile Media for Emergency Warning](#) [video 127 MB]
Speaker: [Eliot Christian](#)

Eliot Christian, Chief Executive Officer of [Alert-Hub.Org CIC](#), gave three training presentations. The first covered the basics of CAP. His second presentation provided hands-on instruction on how to create CAP alerts using the cloud-based CAP Editor freeware. His third presentation surveyed the diverse "last mile media" that can leverage CAP to reach everyone in harm's way.

Training: [CAP Alerts in Geographic Information Systems](#) [video 68 MB]
[Technology Briefing of Alert Hub](#) [video 43 MB]
Speaker: [Ian Ibbotson](#)

Ian Ibbotson, Chief Technical Officer of [Alert-Hub.Org CIC](#), highlighted in his first presentation a free tool that transforms any CAP Feed into a dynamic, near-real-time Geographic Information System (GIS) Feature Layer, available [here](#). GIS is utilized by emergency professionals who use it to analyze features (roads, bridges, rivers, alerting areas…) within and among "layers". For example, a river feature rising above 80% capacity can prompt a CAP flood warning. Integrating CAP alerts in GIS enriches Situation Awareness resources used by Emergency Operation Centers (EOCs) in cities, countries, and regions worldwide. Ian demonstrated this using the free QGIS software. He concluded by encouraging discussions with emergency operations centers about CAP GIS and inviting feedback, especially where clarification or improvement are needed.

Ian's second presentation focused on his current technology comprising the free Alert Hub. He introduced his "CAPAggregator" that uses Elasticsearch for efficient data handling and links to Esri ARCGis for various services related to CAP alerts. The platform can now graph various dimensions of the CAP archive of over 8 million alerts, opening new opportunities for analysis, data visualization and benchmarking. In this context as well, Ian invited CAP community involvement in suggesting new features and improvements.

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Training: [The What and How of CAP? - An OASIS Open Training Overview](#) [video 230 MB]
    Speaker: [Norm Paulsen](#)

Norm Paulsen, an Alerting Systems Analyst and retired Meteorologist from Environment Canada, gave a presentation focusing on the What and How of CAP - an OASIS Open Training session covering concepts applicable to a CAP Alerting Service. CAP is a technology neutral standard that functions as a tool in practice for system agents when conveying alerting information between parties. How this tool is used, and what CAP is responsible for (and not responsible for), is not always well understood by alerting practitioners. This session introduced various topics on the subject, explored a few concepts, and outlined OASIS Open's plans for resource documents and training modules. The objective for these documents and modules is to cover both the originating and consuming side of the alerting equation using CAP.

Training: [A Deep Dive on Cell Broadcast](#) [video 203 MB]
    Speakers: [Mark Wood](#) and [Thomas Wood](#)

Mark Wood and Thomas Wood, father and son and both with Disaster Relief Communications Foundation (DRCF), gave a presentation focused on alert dissemination media—the systems used to send alerts to the public or specific recipients (TV, sirens, radio, pagers, satellite, mobile phones, etc.). They contend that an effective dissemination media is whatever gets attention and causes people to act. Among the key factors in that regard are: frequency, reliability, trust, readability, redundancy, and reach. Special attention was given to explaining Cell Broadcast strengths and limitations, how it interacts with CAP, and likely future developments. When used for public alerting, the Cell-Broadcast mobile phone technology is an important component of all-media public alerting, especially in contrast to location-based Short Message Service (SMS). This is because Cell-Broadcast avoids the mobile network traffic overload condition that is common during a major emergency. The presentation shed slight on the translation process needed for a Cell Broadcast Center to interface with CAP messaging. Unfortunately, these translations are performed differently across Cell Broadcast implementations, and a proposal is made to have a systematic mapping that would facilitate compatibility. The presenters highlighted a work-in-progress OASIS Committee Note, Mobile Alerting Practices (MAP), that will discuss practices and variations for Cell Broadcast in several countries. Overall, the presentation emphasized: leveraging all available infrastructure; the unique strengths of Cell Broadcast for mass alerting; and the importance of CAP as the glue that enables consistent, multi-channel alerting.

3.1 [The AlertWise Tool for Creating and Publishing CAP](#) [video 107 MB]
    Speaker: [Marta Baraibar](#)

Marta Baraibar of the World Meteorological Organization gave this presentation about the [AlertWise](#) tool (aka WMO CAP Composer, CMS ClimWeb) that supports creation and publishing of CAP alerts. This free and open-source software, promoted for African National Meteorological and Hydrological Services especially, is based on the WagTail content management system. It can be installed on the cloud or on premises (local server). At present, there are 25 operational instances, another six are in development, and seven others are set to install it. [Chair note: The AlertWise tool follows guidance provided in the [Common Policies and Practices](#) document.] In addition to publishing via a CAP Feed using the RSS standard, a connection can be added for the warnings to be sent via MQTT as part of the WMO Information System, WIS2, infrastructure. Marta said that the initiative aims to expand its reach and impact globally, as well as to encourage a pan-African, multilateral approach to collaboration and development.

3.2 [Public Warning Systems as Implemented in European Countries](#) [video 175 MB]
  Speaker: [Benoit Vivier](#)

Benoit Vivier is Public Affairs Manager at the European Emergency Number Association (EENA). He introduced the role and purpose of EENA, his own focus areas, and the current state of Europe's public warning implementations under the "EU-Alert" mandate. Three technologies using mobile phone were described: Cell Broadcast which sends alerts immediately to all phones in a defined area; Location-Based SMS (LB-SMS) which sends alerts individually to users in a specific area; and Apps which send alerts to smart phones that have already installed the particular app. Benoit explained the legal requirement that EU Member States must ensure public warnings about imminent or developing major emergencies are transmitted via mobile number-based interpersonal communications services to end-users. He reported that, as of October 2025, implementations across Europe includes implementations of Cell Broadcast, Location-Based SMS, or both, with a clear increase of Cell Broadcast implementations. Most of the EU-Alert national implementations leverage existing national CAP-enabled public warning infrastructures.

3.3 [Impact of AI on CAP-enabled Crisis Management](#) [video 234 MB]
  Speaker: [Ahmed Lyahou](#)

The impact of Artificial Intelligence (AI) on CAP-enabled crisis management was the topic of this presentation by Ahmed Lyahou of Intersec. He opened by emphasizing a shift from reactive to proactive alerting. Earlier systems waited for crises to unfold; now, AI tools allow authorities to anticipate climate-driven threats, run scenario planning, and train staff ahead of the event. His second major theme addressed how AI enables faster reaction and adaptive response: real-life simulation training, automatic alert-message generation, intelligent selection of communication channels and zones, continuous monitoring with automatic update of CAP alerts, and finally full-scale predictive monitoring and automatic alert creation. Importantly, the discussion repeatedly emphasized that human validation remains essential: AI supports crisis-management experts but does not replace them. It is a force multiplier rather than a substitute for human judgement.

3.4 [Experiences and Views of Private Weather Services](#) [video 191 MB]
  Speaker: [Karl Gutbrod](#)

Karl Gutbrod, co-founder of meteoblue AG, a private weather service, gave this presentation highlighting experiences and views of private weather services using CAP to consume and redistribute official warnings. The overall conclusion is that CAP has the clear potential to improve early warning reach and usefulness, but real-world benefits are limited today by inconsistent implementations, incomplete feeds, and geospatial/metadata gaps. The presentation covered the topic through six agenda points: introduction/background, technical integration, content, customer response, strategic priorities, and conclusions. A major point is that CAP documentation is solid, but the standard is permissive—this allows many different implementations and creates interoperability challenges for third-party integrators. Another point is that use of administrative-area geocodes and complex polygons slows parsing and introduces inconsistencies. Karl noted that the [Common Policies and Practices](#) document is a positive development, but implementation is still limited and uneven. To be most effective, CAP adoption would benefit from clearer, less ambiguous implementation rules, better feed reliability, standardized geocode/polygon handling, and more complete national publishing. Further, the private sector experience shows that a better understanding of CAP by the population requires a clearer distinction between: 1. "Alarms" with urgency, serious impact and consequences", Authoritative (for conditions with change of rules: blockage, evacuation, draft) and just 2. "Alerts" With an advisory (but not authoritative) role.

3.5 [The GDACS Experience](#) [video 37 MB]
     Speaker: [Daniele Galliano](#)

Daniele Galliano is part of the Global Disaster Alert and Coordination System (GDACS), a cooperation framework between the United Nations, the European Commission, and disaster managers worldwide to improve alerts, information exchange and coordination in the first phase after major sudden-onset disasters. His presentation outlined twenty years of progress in crisis management information sharing, focused on early adoption and operational use of the CAP standard and the development of the European Crisis Management Laboratory (ECML). ECML and associated systems comprise an integrated research-to-operations ecosystem that advances early warning, situational awareness and interoperable alerting across international disaster-management communities. ECML supports crisis preparedness, rapid response, scenario exercises and systems interoperability. Its core capabilities include geospatial analysis and intelligence, ontology modelling and knowledge graphs, event anticipation and impact estimation, post-disaster needs assessment, and AI for disaster risk management. Among its partners are OCHA, UNOSAT, WFP, WHO, IFRC, WMO, UNESCO, and many EU bodies. GDACS has a long history of promoting CAP and continues to provide an RSS feed with a CAP alert for every new event. The presentation included the experience of CAP used as the backbone of an early warning system based on the integration of sensor grids and alerting systems. The initiative coordinated by UNESCO involved several countries across the North-East Atlantic and Mediterranean Sea (NEAMS) and Indonesia.

3.6 [Using CAP to Alert Healthcare Workers of Heat Events](#) [video 259 MB]
     Speakers: [John Nairn](#) and [Shona Kamps](#)

This presentation focused on using CAP to alert healthcare workers of heat events. It was given by John Nairn and Shona Kamps, both involved in a project of the World Health Organization–World Meteorological Organization (WHO-WMO) Joint Office for Climate and Health. In the context of Multi-Hazard Early Warning Systems, the challenge is to connect observation/monitoring systems, weather models, forecast generation, and last-mile communications to deliver warnings that prompt action. The presenters framed extreme heat as a cross-border weather hazard that requires standard definitions, use of CAP, and coordinated forecasting services. Their practical advice is to standardize definitions and CAP messaging to separate temperature (climate), thermal (health), and heatwave (weather) information. John cited as examples the Australian Bureau of Meteorology heatwave service and ECMWF thermal indices. John also asserted that weather services must include both severe-intensity and low-intensity services because low-intensity services are critical for prevention and resilience.

3.7 [Challenges in CAP Implementation in Developing Countries](#)
     [and the Way Forward](#) [video 50 MB]
     Speaker: [Giorgi Grigolashvili](#)

Giorgi Grigolashvili (George) is an expert in emergency management and disaster risk reduction and served at the National Forestry Agency of Georgia. His presentation discussed CAP implementation challenges in developing countries and the way forward. He examined the main obstacles to implementing CAP in developing countries and outlined practical steps for policymakers, agencies, and development partners to overcome them. Specifically, he called out challenges in several areas: 1. Institutional and governance (unclear policies, weak inter-agency coordination, and limited political priority and funding for CAP); 2. Technical and infrastructure (missing or outdated technical systems, inadequate budgets for upgrades, and

heavy reliance on donor support); 3. Financial (insufficient budget allocations and funding interruptions); 4. Capacity and awareness (low institutional understanding of the benefits of CAP benefits and gaps in training); 5. Socioeconomic and cultural (low digital literacy in parts of society and the need to tailor messages across multiple languages and cultural contexts). George ended by proposing a forward path focused on: strengthening regulatory frameworks, investing in workforce capacity and public awareness, and improving infrastructure and financial sustainability to ensure reliable, inclusive alerting systems.

3.8 MeteoAlarm [video 40 MB]
    Speaker: Joseph Siegl

This presentation was given by Joseph Siegl, Programme Manager of MeteoAlarm, which aggregates, visualizes, and provides access to natural-hazard–related early warnings from 41 European National Meteorological and Hydrological Services (NMHSs). He noted that their key objectives include: strengthening collaboration among NMHS participants, redistributors and the development team; harmonizing warning content and presentation; maximizing reach through accessible channels; and ensuring platform stability. Regarding their harmonization work, he referenced MeteoAlarm CAP Profile v2.0 which standardizes critical parameters while allowing country-specific details. [Chair note: MeteoAlarm practices for CAP Alerts also feature in the Common Policies and Practices document.] Joseph also referenced the MeteoAlarm Style Guide v1.0 which helps to unify visual presentation and preserve warning integrity. He explained that MeteoAlarm has established forums and tools for participant and redistributor engagement. His message overall emphasized the importance of harmonization, clear presentation, structured collaboration, and reliable delivery to improve public understanding and response to weather-related and water-related hazards across Europe.

3.9 Google Public Alerts [video 167 MB]
    Speakers: Kasia Mohammed and Novita Mayasari

Representing Google's Crisis Response Team, Kasia Mohammed and Novita Mayasari introduced Google Public Alerts and the Android Earthquake Alerts System, and explained more generally how Google delivers life-saving information during crises. The presenters sketched Google's mission to surface critical, timely information in emergencies and support users when they need it most. The presenters offered practical guidance about Google's alerting capabilities, partner integration, and how CAP alerts can reach users through Google products. [Chair note: Google requirements for CAP Alerts and Feeds are included in the Common Policies and Practices document.] The presentation noted core offerings used across Google Search and Google Maps, such as SOS Alerts, Public Alerts, Earthquake Alerts, wildfire boundary layers, flood forecasting, and safety tips. The presentation also provided a detailed description of how the Android Earthquake Alerts System operates.

3.10 A Flood Forecasting AI Initiative at Google [video 65 MB]
    Speaker: Grey Nearing

Grey Nearing of Google gave a presentation that described Google Research's FloodHub and related AI work to improve flood forecasting worldwide. He explained that flood-relevant data are unevenly available across regions, which limits local forecasting capabilities. One approach is to build models trained on all available global data, with the intent that the forecasts would work everywhere and for many flood types. His specific focus at Google Research is FloodHub: a platform with historical reforecast archives, a real-time API (access by request), and integrations into Google Search, Maps, Weather and Android notifications. (g.co/floodhub). They have found that training on large, multi-watershed datasets improves performance. Grey

noted that benefits differ depending on whether data is from gauged, ungauged, hydrologically-separated, or hydrologically-connected locations. Local streamflow (gauged) data are especially valuable for real-time assimilation. Google implemented a 2-layer LSTM (Long Short Term Memory) model, a type of Recurrent Neural Network, to encode historical weather and make predictions using weather forecasts. Grey said a new open-source hydrology model is coming soon. He cited the project page as https://sites.research.google/gr/floodforecasting/

3.11 England's New Flood Warning System [video 154 MB]
Speakers: Alexander McKillop, Charlotte Cardona, and Kimbereley Marsh

Alexander McKillop and Kimbereley Marsh of England's Environment Agency were joined by Charlotte Cardona of Intersec to deliver this presentation. It described the agency's Next Warning Service: a modern, multi-channel, cloud-ready warning ecosystem designed to reach people and organizations faster and more reliably, backed by forecasting and partner services such as the Met Office and the Flood Forecasting Centre. Today, about 5.5 million homes and businesses in England are at risk from river, sea and groundwater flooding. The current service has about 2.6 million registered users and issued 2,700 warnings/alerts in 2022. The new system aims to provide timely, reliable emergency messages even as flood risk increases, so that people, businesses and organizations can take appropriate action during flood events. It is designed to be a future-proof, scalable warning platform that reaches everyone at risk—registered or not. It includes dissemination via SMS, email, voice calls, telephone Interactive voice response (IVR), gov.uk Web pages, and a CAP Feed that can be used by Google Public Alerts and other re-publishers.

3.12 CAP implementations in the new Italian Fire Corps National Control Centre and interoperability system [video 104 MB]
Speakers: Marco Di Leonardo and Marcello Marzoli

Marco Di Leonardo and Marcello Marzoli of the Italian National Fire Corps (CNVVF) presented this session addressing CAP implementation specific to operational data interoperability services. CNVVF encompasses 18 Regional Directorates, over 900 fire stations and 35,000 firefighters, and it conducts over 100,000 fire safety controls annually. By policy, CNVVF has used CAP for 14 years to support two-way sharing of information among emergency services--from emergency call to incident closure, involving multiple dispatch and alert systems. A CAP re-engineering project aims to align with a new centralized architecture that complies with Italian National Cybersecurity Agency regulations. The re-engineering will enhance information sharing reliability and address limitations in synchronizing events and ensuring functionality across Provincial HQ stations. It also anticipates integration with IT Alert. (IT Alert is Italy's component of EU-Alert, mandated since 2022 for all European countries.) Adoption of CAP by the National Alerting system of Italy enhances the effectiveness of public warning throughout the country. Necessary agreements already exist with various regional civil protection authorities and there are ongoing negotiations in other regions.

3.13 CAP Enabled Siren in the Aeolian Island [video 100 MB]
Speaker: Massimo Cristaldi

Massimo Cristaldi, with Webgenesys S.p.A, gave a presentation concerning use of CAP-enabled sirens in the Aeolian Islands of Italy, which includes two active volcanoes (Stromboli and Vulcano). The presentation described a fully integrated tsunami early-warning system designed for the Aeolian Islands, showcasing one of the first large-scale European deployments of CAP-enabled electronic sirens. The solution combines 25 high-power, IoT-based sirens equipped with redundant communication channels — DMR Tier 3 radio, LTE/5G, Wi-Fi mesh,

and Ethernet — orchestrated through a cloud and on-premise architecture to ensure high availability and fault tolerance. Sirens feature fanless design, solar-powered autonomy, and real-time remote monitoring for predictive maintenance. Activation relies on CAP messages generated from local or cloud servers. A "best-effort" logic selects the first available channel to guarantee timely activation even in degraded network conditions. The system interoperates with national alert networks through CAP interfaces, representing a concrete implementation of end-to-end interoperability from detection to population alerting. The talk emphasized lessons learned in managing heterogeneous connectivity, ensuring synchronization across multiple siren nodes, and validating system reliability under extreme environmental conditions. The Aeolian deployment demonstrates how CAP-centric architectures can support resilient, modular, and standards-based early-warning infrastructures for multi-hazard scenarios.
 [Chair note: The Advancing Volcanic Hazards in Early Warnings for All report includes this Key Recommendation: "Adopt inclusive, multi-channel warning dissemination for hazardous volcanic events (ideally by the mandated national authorities) through the implementation of Common Alerting Protocol (CAP) globally at Volcano Observatories, ensuring redundancy, and fostering trust through community engagement and scenario based messaging.]

3.14 CAP Implementation in Ghana [video 37 MB]
Speaker: Joshua Asamoah

This presentation by Joshua Asamoah of Ghana Meteorological Agency asserted significant strides in implementing CAP to strengthen its multi-hazard early warning system. He provided a comprehensive overview of Ghana's CAP implementation journey, highlighting achievements, challenges, and strategic plans for the future. Ghana faces diverse meteorological and hydrological hazards including floods, droughts, severe storms, and coastal impacts. Adoption of CAP addresses the critical need for standardized, interoperable alerting mechanisms that can reach vulnerable populations through multiple dissemination channels simultaneously. Key accomplishments include establishing the CAP message generation infrastructure, training technical staff and stakeholders, integrating with national disaster management frameworks, and expanding alert dissemination networks. The presentation examined real-world applications, quantifiable impacts on disaster risk reduction, and lessons learned from operational experience. Looking ahead, Ghana's strategic priorities focus on enhancing system reliability, expanding last-mile connectivity to underserved communities, and leveraging emerging technologies for improved alert effectiveness. The presentation highlighted the need for international partnerships and knowledge exchange to advance CAP implementation.

3.15 CAP Implementation with 'Sachet' in India [video 453 MB]
Speaker: Sumit Kumar Jha

Sumit Kumar Jha of India's Centre for Development of Telematics (C-DOT) presented key aspects of India's CAP-based Early Warning System and the 3GPP-based Cell Broadcast Solution developed to support nationwide public alerting. Early warning systems are critical, as natural disasters globally have caused enormous losses over the past five years—running into hundreds of billions of USD, impacting hundreds of millions of people, and resulting in significant loss of life. India's CAP-based platform has been designed as a unified, standardized and citizen-centric system supporting multiple hazards, stakeholders, communication channels and languages, in alignment with national disaster risk reduction priorities and international best practices. The system addresses key limitations of legacy alerting mechanisms, particularly in countries with significant linguistic and geographic diversity, such as inadequate coordination among authorities, limited reach during non-prime hours, poor geo-targeting, lack of localized alert text, network congestion, and regulatory/SOP gaps. The presentation also highlighted the role of Cell Broadcast technology as an integral dissemination channel. Cell Broadcast enables

near–real-time, location-based and multi-lingual public alerts over mobile networks without requiring user subscription or Internet access. The adoption of a multi-channel, multi-modal last-mile dissemination strategy is central to strengthening early warning capabilities, enhancing preparedness and rapid response, reducing loss of life and property, and supporting overall community resilience and sustainable development.

3.16 The UN Emergency Telecommunications Cluster [video 136 MB]
    Speaker: Ria Sen

Ria Sen is Preparedness Officer with the Emergency Telecommunications Cluster (ETC), led by the UN World Food Programme (WFP). Her presentation was an overview of the ETC, a global network of humanitarian, government and private-sector organizations which is a part of the UN Cluster Approach to coordinating non-refugee humanitarian emergencies. Operating since 2005, ETC has responded to more than 45 crises. Supported by 20 global members and 15 partner organizations, ETC in 2024 reported over 10,500 humanitarian users from 145 organizations with a 90% satisfaction rate. ETC services include Internet connectivity and telephony to keep responders and affected communities connected, and support for local broadcasters to maintain information flows after disasters. The preparedness work of ETC includes stakeholder engagement, ICT capacity assessments, training, and simulations. ETC preparedness and response work spans many countries and regions including Ukraine, Syria, Nigeria, Sudan, Yemen, Bhutan, Mongolia, Bangladesh, Mozambique, Pacific island nations and Madagascar, among others.

3.17 Community Radio as the Last Mile Media [video 188 MB]
    Speaker: Rob Hopkins

Rob Hopkins is the founder of OpenBroadcaster, an open-source platform enabling unattended CAP emergency broadcasting across community radio and other media channels. Rob underscored the continued global importance of radio as a resilient "Last Mile" medium for emergency warning—especially in regions lacking reliable telecommunications or internet infrastructure. His presentation showcased real-world deployments and outlined four flexible implementation options: (1) free source code for do-it-yourself (DIY) users, (2) remote installation on existing PC/server infrastructure, (3) managed "Emergency Alerting as a Service" via the cloud, and (4) a dedicated Alert Player built on Raspberry Pi hardware. Rob stressed that delivering alerts in local languages dramatically boosts message effectiveness. He also highlighted the availability of training resources, ensuring that even staff without technical backgrounds can manage emergency alerting systems effectively.

3.18 Lessons from Brazil's CAP Operational Rollout: Federal Coordination, Local Emission, and Inclusive Alerting [video 23 MB]
    Speaker: Ricardo Branco

Ricardo Branco oversees Brazil's national CAP-based Public Alerts Interface (IDAP) at the National Center for Risk and Disaster Management (CENAD). His presentation summarizes Brazil's experience rolling out IDAP and some institutional, technical and social lessons learned. He opened by explaining that Brazil is a vast territory with diverse hazards (heavy rain, floods, landslides, droughts, wildfires) and more than 200 million people concentrated in coastal and urban risk-prone areas. He noted that IDAP leverages many dissemination media (Google, SMS, pay TV, Telegram, WhatsApp, and Cell Broadcast). Federal coordination provided standardization, cross-agency collaboration (INMET, CEMADEN, ANA and others), and nationwide coverage while enabling local adaptation. Local issuance remains essential for context-specific, rapid alerts. Inclusive alerting is a central principle of IDAP: simple language,

multiple redundant channels, radio and out-of-home media partnerships, Waze integration, and AI-assisted translation for broader reach. Ricardo referenced an Angra dos Reis case in 2025 where IDAP supported large evacuations with no fatalities, demonstrating effective coordination between national authorities and both SMS and Cell broadcast alerts. Looking ahead, IDAP priorities are: to expand alert-authority access to all municipalities, to scale continuous training, to update legal frameworks, to apply AI where it enhances effectiveness, and to strengthen regional cooperation.

3.19 [The Italian National Environmental Protection System in the Emergency Management of a Seveso Event using the Common Alerting Protocol](#) [video 112 MB]
      Speaker: [Romualdo Marrazzo](#)

Romualdo Marrazzo is part of the National System for Environmental Protection (SNPA) in the Italian National Institute for Environmental Protection and Research. SNPA plays a strategic role in managing environmental emergencies, providing technical and scientific support across all phases: prevention, preparedness, response, and recovery. SNPA Guidelines No. 131/2021 offer a shared methodological framework to ensure an effective approach to emergencies impacting the environment. These guidelines promote close integration between SNPA agencies, competent authorities, and industrial operators, including Seveso establishments, in line with the European regulatory frameworks. This contribution presents the practical application during a major accident in a Seveso and IED petrochemical site, involving the release of hazardous substances with impacts on the environment and the population. The emergency management included the activation of the CAP, considering that its integration within SNPA's operational framework enabled effective inter-agency communication, timely response, and real-time monitoring. The case study highlights the effectiveness of the SNPA model in delivering technical support during emergencies, strengthening the overall system's response capacity, and contributing to the environmental protection. The experience confirms the need to further enhance the integration of alert systems, environmental expertise, and emergency planning within a systemic and resilience-oriented perspective, highlighting the role of coordination between the obligations that come from the main legislative reference for industrial sites.

3.20 [Free and Open CAP Alert Aggregation](#) [video 146 MB]
      Speakers: [Volker Krause](#) and [Nicolas Kruppa](#)

Volker Krause and Nicolas Kruppa, both advocates of Free and Open Source Software (FOSS) gave this presentation about CAP Alert aggregation as performed via the [FOSS Public Alert Server](#), launched as a [KDE Project](#). The purpose is to help people easily receive potentially life-saving alerts and the approach involves building a free and open infrastructure for aggregating CAP alerts, allowing applications, from dedicated mobile apps to smart home integration, to efficiently watch an area of interest for any published alerts. The presentation describes this CAP alert aggregation server and the surrounding ecosystem, the motivations for building it, and several operational and data-quality challenges encountered in practice. The server collects alerts from 200+ CAP feeds publishing about 300,000 updates per day. It offers a subscription interface for geographic areas of interest and provides push notifications to clients. The presenters noted some practical access problems. For instance, some providers block automated access or assert access or use restrictions on the alerts or on the associated geocodes. Also, national boundaries respected by alerting authorities can result in an incomplete or misleading sense of the emergency extent. Any alert aggregator also has challenges in classifying alerts by the event type (e.g., fire, flood, tsunami, disease, etc.).

3.21 Emergency Warning Services for 14 Cities, including Los Angeles [video 186 MB]
    Speaker: Soraya Sutherlin

Soraya Sutherlin is a seasoned executive and Certified Emergency Manager (CEM) with over 20 years of experience in crisis communications and emergency management. She plays a key leadership role in emergency alert and warning services across fifteen cities in the South Bay region of Los Angeles County, California, United States. Her presentation provided an in-depth overview of the development, implementation, and operational insights gained from leading Alert SouthBay, a regional alert and warning system serving over one million residents. The system issues alerts for a wide range of incidents and events, including natural disasters (fires, earthquakes, tsunamis), industrial incidents (refinery explosions, chemical spills), public health emergencies, and large-scale events (Olympics, FIFA World Cup, Super Bowl). As with any modern communication system, multi-platform and multimodal approaches are essential. These include Wireless Emergency Alerts (Cell Broadcast in the U.S.), text and SMS, email, radio, social media, streaming services, sirens, and conventional media. Effectiveness depends on clarity, personalization, and actionable guidance, principles she exemplifies through her "Rule of Three" or "27/9/3 Tool", which advises no more than 27 words, 9 seconds to read, and 3 key points: impact, disruption, and call to action. The system currently includes 279 message senders who receive ongoing training in alert and warning operations. Training focuses on effective alerting practices and emphasizes accuracy, clarity, and proactive planning through pre-scripted language and alert templates. Soraya highlighted the January California Wildfires as a critical case study in which a system glitch caused erroneous evacuation alerts to reach 10 million people countywide. The issue stemmed from cell tower outages that queued messages, which were then transmitted up to two weeks late. She stressed that effective regional alerting requires advanced technology, structured governance, standardized procedures, and culturally aware messaging. She also emphasized the need for continuous training, public engagement, and system testing, as well as the importance of adaptability, proactive integration of emerging technologies, and the iterative refinement of communication practices as keys to emergency management success.

3.22 CAP Enabled Mobile Alerts and Perspectives from the Mobile Industry [video 55 MB]
    Speaker: Emma Pearlstone

This presentation was given by Emma Pearlstone, Strategic Partnerships Manager in GSMA Mobile for Humanitarian Innovation. As the trade association for mobile network operators, GSMA coordinates industry action and facilitates partnerships. In the case of humanitarian assistance, GSMA helps in the application of mobile network technology. Emma presented GSMA's perspective on CAP-enabled mobile alerts and the mobile industry's role in Early Warning Systems (EWS). Her remarks outlined how mobile technologies can expand access to life-saving alerts and she described industry commitments and practical experience supporting governments and humanitarian actors. She highlighted the EWS gap by noting that one-third of the global population lacks EWS (rising to 60% in Africa). She pointed to mobile phones as a potential opportunity, given that mobile broadband networks cover 94% of the world and there are 5.8 billion unique mobile subscribers. She noted that many mobile network operators have supported development and deployment of mobile-enabled EWS in partnership with governments and humanitarian organizations. Two cases were highlighted for deeper reading: a May 2025 report on India's SACHET public warning system and a September 2025 report on Chile's Emergency Alert System (SAE). Emma also referenced the November 2023 GSMA report, Cell Broadcast for Early Warning Systems, that highlighted the importance of CAP. [Chair note: This GSMA report also states: "…it is important to recognise that mobile alone will not be sufficient. Multi-channel EWS are essential to ensure the maximum number of people are reached. Channels like radio, television, billboards, satellites, social media and

sirens, all serve an important purpose, and each have strengths that can be leveraged for certain contexts and use cases. Only by leveraging multiple channels can everyone at risk be reached"]

3.23 OASIS Emergency Management Technical Committee [video 42 MB]

Speaker: Elysa Jones

Elysa Jones is chair of the OASIS Emergency Management Technical Committee (EMTC). She noted that EMTC emphasizes global collaboration and the continued importance of CAP for all types of hazard types and dissemination methods. She explained that the EMTC meets monthly and oversees voting-level EMTC Subcommittee work. She also mentioned several other EMTC products: Emergency Data Exchange Language Distribution Element (EDXL-DE), Hospital Availability Exchange (HAVE), Tracking of Emergency Patients (TEP), Resource Messaging (RM), Situation Reporting (SitRep), and Tracking of Emergency Clients (TEC). There are two active ETMTC Subcommittees that meet on a bi-weekly basis: the CAP Subcommittee, and the Reference Information Model (RIM) Subcommittee. There are two main work products of the CAP-SC: The Mobile Alerting Practices (MAP) Committee Note for documenting the details for mobile alert dissemination. There are currently submittals for United States, Canada, France, Netherlands, Germany, and Romania. The other activity in the CAP-SC has been the development of two Committee Notes on the OASIS Event Terms List. These two documents are ready for public review through Jan 31, 2026: Event Terms List – Lookup Table Version 2.0 Committee Note 01 Public Review 01 and Event Terms List – User's Guide Version 1.0 Committee Note 01 Public Review 01. Elysa concluded by inviting anyone interested in supporting the work of the OASIS EMTC to contact her.