Emergency Management Technical Committee
Update to EIC 4/23/2019

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Agenda

▪ CAP Around the World
▪ EDXL Guiding Principles
▪ EDXL Specifications for Health Care
▪ Call for Code 2019 Global Challenge
CAP Around the World
Usage
Implementations

National

- Americas: Anguilla (UK), Antigua and Barbuda, Argentina, Aruba (Netherlands), Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Cuba, Curacao (Netherlands), Dominica, Grenada, Guyana, Jamaica, Mexico, Montserrat (UK), Puerto Rico (US), Saint Kitts and Nevis, Saint Lucia, Sint Maarten (Netherlands), Trinidad and Tobago, United States, US Virgin Islands. South America: Argentina, Brazil, Chile, Colombia, and Guyana.

- Europe, Middle East, Africa: Austria, Belgium, Bosnia and Herzegovina, Botswana, Bulgaria, Burundi, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kenya, Kuwait, Latvia, Lithuania, Luxembourg, Macedonia, Malawi, Malta, Mauritius, Moldova, Montenegro, Netherlands, Nigeria, Norway, Poland, Portugal, Romania, Rwanda, Serbia, Slovakia, South Africa, Spain, Sweden, Switzerland, Tanzania, Togo, United Kingdom, Zimbabwe
Implementations

▪ National - continued
  – Asia/Pacific: Australia, China, Fiji, Hong Kong, India, Indonesia, Kazakhstan, Kyrgyzstan, Maldives, Madagascar, Myanmar, Nepal, New Zealand, Papua New Guinea, Philippines, Russia, Samoa, Solomon Islands, Sri Lanka, Taiwan, Tajikistan, Thailand, Tonga, Uzbekistan, Vanuatu

▪ NGO and Commercial
  – International Federation of Red Cross and Red Crescent Societies (IFRC)
  – Google Public Alerts
  – Federated Internet Alerts

▪ Commercial Weather Alerting
  – AccuWeather
  – MeteoFrance Vigilance
  – MeteoFrance International, MeteoFactory
  – The Weather Company
Implementations

- **Sensors that Emit CAP**
  - In-home monitors becoming all-hazard alarms
    - Halo+ smoke alarm
    - Speck sensor
  - Earth Networks (lightning detection)
  - Earthquake Building Damage Assessment

- **Other CAP-based Systems**
  - IBM Intelligent Operations Center for Emergency Management *video Users Guide*
  - Microsoft CityNext
  - Hate Group Monitoring
  - Neighborhood Watch
  - RSOE Emergency and Disaster Information Service
CAP Event Presentations

- Eliot Christian – CAP Introduction and Implementation Showcase
- Elysa Jones – OASIS Emergency Technical Committee Update
- Mr. Darmen Elhayah, from the National Disaster Risk Reduction Management Centre of Mauritius
- Mr. Darmen Barker, from the Department of Disaster Management of Anguilla
- Dr. Kim Mallalieu from the West Indies University
- Dr. Jessica Robbins from the Global Disaster Preparedness Centre (GDPC)
- Mr. Cao Zhyu from the National Early Warning Centre of China
- Mr. Saurabh Basu from the Centre for Development of Telematics (CDOT) of India
CAP Information Resources

- CAP Implementations by Country
- CAP References (PrepareCenter.Org)
- CAP Video (10 minutes, made by IFRC)
- Guidelines for Implementation of CAP-Enabled Emergency Alerting (PWS-27)  
  free to download in English  Arabic  French  Russian  Spanish
- CAP Training Courses - contact me
  Eliot Christian eliot.j.christian@gmail.com
Innovating Together to Save Lives

- Role of telecommunication and information communication technologies (ICTs) supporting disaster management
- Disaster risk reduction strategies
- National telecommunication planning and policies
- Disruptive technologies
Ten Guiding Principles for Emergency Management Framework (EMF) using the Emergency Data Exchange Language (EDXL)

Presentation of the OASIS Emergency Management Technical Committee
OASIS Emergency Data Exchange Language

- **Goal:** A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL
  
  - **Principle 1:** Empower people to obtain and secure their own personal data
    
    - Includes electronic health records or individual access control of those EHRs.
    
    - Includes all other individual records from work histories to social memberships. This principle is supported by several of the EDXL standards and specification including TEP and HAVE.

  - **Principle 2:** Empower people to share information with each other in an emergency.
    
    - Individuals should be supported with information sharing command & control capability to organize themselves, accept tasks/responsibilities, work together and support themselves in an emergency, independent of any third party organization.
Goal: A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL

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Goal: A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL

- Principle 3: Emergencies don’t respect government or organizational boundaries.
  - For example, an auditing policy (to enable after-the-fact review and accountability) may be favored over Permission-based access because it enables more flexible and rapid information sharing.
  - Pre-planned smart routing rules are recommended.
Goal: A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL

- Principle 4: Any and all levels of “emergency” response should be supported, from the national, state and local or tribal jurisdictional context.
  - A telephone is useful for many purposes but a fire extinguisher is only useful in certain circumstances, so an EDXL EMF should be, in effect, the swiss army knife of emergency response at all levels.
Goal: A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL

- Principle 5: All phases of an emergency should be supported including planning, situational awareness, action, assessment and recovery.
- Principle 6: Smart devices should be supported by EDXL as a common language that is interoperable, flexible and extensible.
OASIS Emergency Data Exchange Language

- Goal: A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL
  - Principle 7: The modern EDXL-based EMF should include working software that includes both a front end running on smart devices and backend support services to serve as a reference implementation.
    - It’s a working example of how to share information in an emergency situation.
Goal: A Modern Emergency Framework (EMF) Based on Guiding Principles using EDXL

- Principle 8: The EMF should be an open-source, community effort, supported by, but independent of, any third party organization or government.
- Principle 9: The EMF should provide an open architecture to enable users, organizations, partners to expand support and extend the basic framework capabilities.
- Principle 10: The EMF should be freely available to all at no cost.
EDXL Specifications for Health Care
Emergency Data Exchange Language (EDXL)

EDXL is a family of standards, providing a common language, or interface, for data exchange across emergency-related systems

- **Tracking of Emergency Patients (EDXL-TEP)**
  Emergency patient and EMS tracking information

- **Distribution Element (EDXL-DE)**
  Wrap and route any emergency information (XML and non-XML)

- **Hospital AVailability Exchange (EDXL-HAVE)**
  Hospital status, services, resources

- **Tracking of Emergency Clients (EDXL-TEC)**
  Emergency Evacuee tracking and Shelter information

- **Resource Messaging (EDXL-RM)**
  Emergency resource information

- **Situation Reporting (EDXL-SitRep)**
  Situation / incident / event and response information

- **Common Alerting Protocol (CAP)**
  Emergency alerts, notifications, and public warnings
EDXL-HAVE
Hospital Availability Exchange

- EDXL-HAVE enables communication on the status of a hospital, its services, and its resources

- Multiple use
  - Flexible format that can be used during disasters, everyday emergencies, reporting, etc.

- Joint OASIS/HL7 work

- EDXL-HAVE 2.0
  - Incorporates additional hospital resources.
  - Addresses the exchange between
    - EDXL-based Emergency stakeholders
    - HL7 v2-based Hospital systems
EDXL-TEP

Tracking of Emergency Patients

- Provides tracking for Emergency Medical Services (EMS) and others across the emergency medical care continuum
  - From patient encounter to patient release, hospital admission or morgue

- Can be used for all types of events
  - Day-to-day (e.g., EMS, patient transfers)
  - Mass casualty incidents
  - Hospital evacuations

- Facilitates cross-jurisdiction and cross-profession information sharing, collaboration, and coordination
EDXL-TEP 1.1/HL7 2.7.1 ADT Transform

- Joint effort between OASIS Emergency Management Technical Committee (EM-TC) and HL7 Public Health and Emergency Response (PHER) Working Group
  - Data transform between OASIS EDXL-TEP 1.1 and HL7 2.7.1 Messaging

- Bridges the electronic gap between the emergency management services and the hospital communities
  - Bidirectional data exchange
  - Eliminates need to enter patient information received from EMS upon arrival

- Facilitates ER preparation
  - Tracks incoming patients from emergency services in the field

- Used in day-to-day transfers, Mass Casualty Events (MCEs), and hospital evacuation
Hospital Availability at the scene

1. Emergency Services monitor local hospital availability.
As EMS encounters patients, data is collected and shared - triage, treatment, and/or transport.
Patient Tracked

Routing decisions are relayed based on hospital availability, and patients are transported and tracked.
Patient information is transmitted to each destination emergency department.
Bridging Hospital Systems and Emergency Services

- Cross-domain automated, real-time data exchange
- Advanced hospital preparedness
- Eliminate manual ED data entry & errors
  - Daily operations, EMS hospital evacuation & mass casualty
- Effective family notification and reunification
- Seamless, patient-specific ED transition of care
- “Force Multiplier” & resource optimizer
- Leverage existing systems, minimize training & duplicate data entry EMS, ePCR, EHR
Call for Code 2019 Global Challenge

- Presented at the GET2019
- Challenge underway through July 31
- Focus on humanitarian health solutions
- OASIS approved MOU for sponsorship
- Upcoming Ted-style talk on HAVE and TEP
- Cash prizes
- Details [https://callforcode.org/challenge/](https://callforcode.org/challenge/)
TECHNOLOGY—AND THOSE WHO WIELD IT—HAVE THE POWER TO FUNDAMENTALLY CHANGE THE WORLD

CALL FOR CODE

HOW WOULD 22 MILLION DEVELOPERS SOLVE SOME OF THE WORLD’S GREATEST PROBLEMS IF GIVEN A CHANCE TO ANSWER THE CALL?

START BUILDING: CALLFORCODE.ORG

TOP THREE BENEFITS TO PARTICIPATING:

Save the world: Call for Code gives employees the opportunity to use their skills to save lives

Access IBM technology: We’re helping build skills across Cloud, Data, AI and Transactions – for free

Become part of a movement: Join an ever growing and highly eminent partner ecosystem
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WHAT IS CALL FOR CODE?

A call to action for developers: Build sustainable software solutions that address natural disasters.

A global contest: The team with the top solution wins $200,000 and sees their app put into production.

A ‘Nobel Prize’ for developers: A chance to elevate the profession of developer and show the world that technology can save lives.

HOW CAN YOU GET INVOLVED?

Commit to the Cause: Share Call for Code with your teams and your communities.

Push for Change: Run a Call for Code Day at your organization to spark creative solutions.

Answer the Call: Join an ever growing and highly eminent partner ecosystem.

START BUILDING: CALLFORCODE.ORG
IBM's $25 million, four-year initiative deploys open source technologies in communities where they're needed most:

- **Coding challenges:** CALL FOR CODE, Clinton Global Initiative University-affiliated codeathons, IBM BlueHacks and more.

- **Solution deployment:** Testing and implementing Call for Code winner Project OWL and future challenge winners.

- **Volunteer programs:** Marshalling volunteers to help in disaster relief efforts with the American Red Cross and other partners.

Code and Response™ is supported by NGOs, governments, global technologists, as well as the IBM Corporate Service Corps.

Get involved:
Developer.ibm.com/code-and-response

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**CALL FOR CODE**

IBM is founding partner in this global coding challenge. It asks developers to build tech solutions that address natural disaster preparedness, response and recovery. The winning solution receives:

- A **$200K** cash prize
- Open source support from The Linux Foundation
- Introduction to mentors and potential investors
- Implementation support through Code and Response™

The 2019 Call for Code Global Challenge focuses on **healthcare and natural disasters**, specifically:

- Addressing mental health needs
- Providing access to medical care in the wake of a natural disaster
- Ensuring access to medical records
- Providing equal access to food, supplies and clean water
- Securing supply chains for medication, etc.

Visit CallforCode.org to learn more and participate in the challenge!
Questions