

Photo: WFP / Mariko Hall



Photo: TSF

PRACTICAL USE OF NEW TECHNOLOGIES IN DISASTER PREPAREDNESS AND RESPONSE




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Summary



- About the Emergency Telecommunications Cluster (ETC)
 - Traditional technologies
 - The use of drones in disaster response
 - Industry efforts - examples:
 - GSMA Humanitarian Connectivity Charter
 - Facebook Disaster Maps
 - Importance of system integrity
 - Recap
- 

About the Emergency Telecommunications Cluster (ETC)

The ETC is a global network of humanitarian,

government and private sector organisations

working together to provide shared communications

services in humanitarian emergencies.

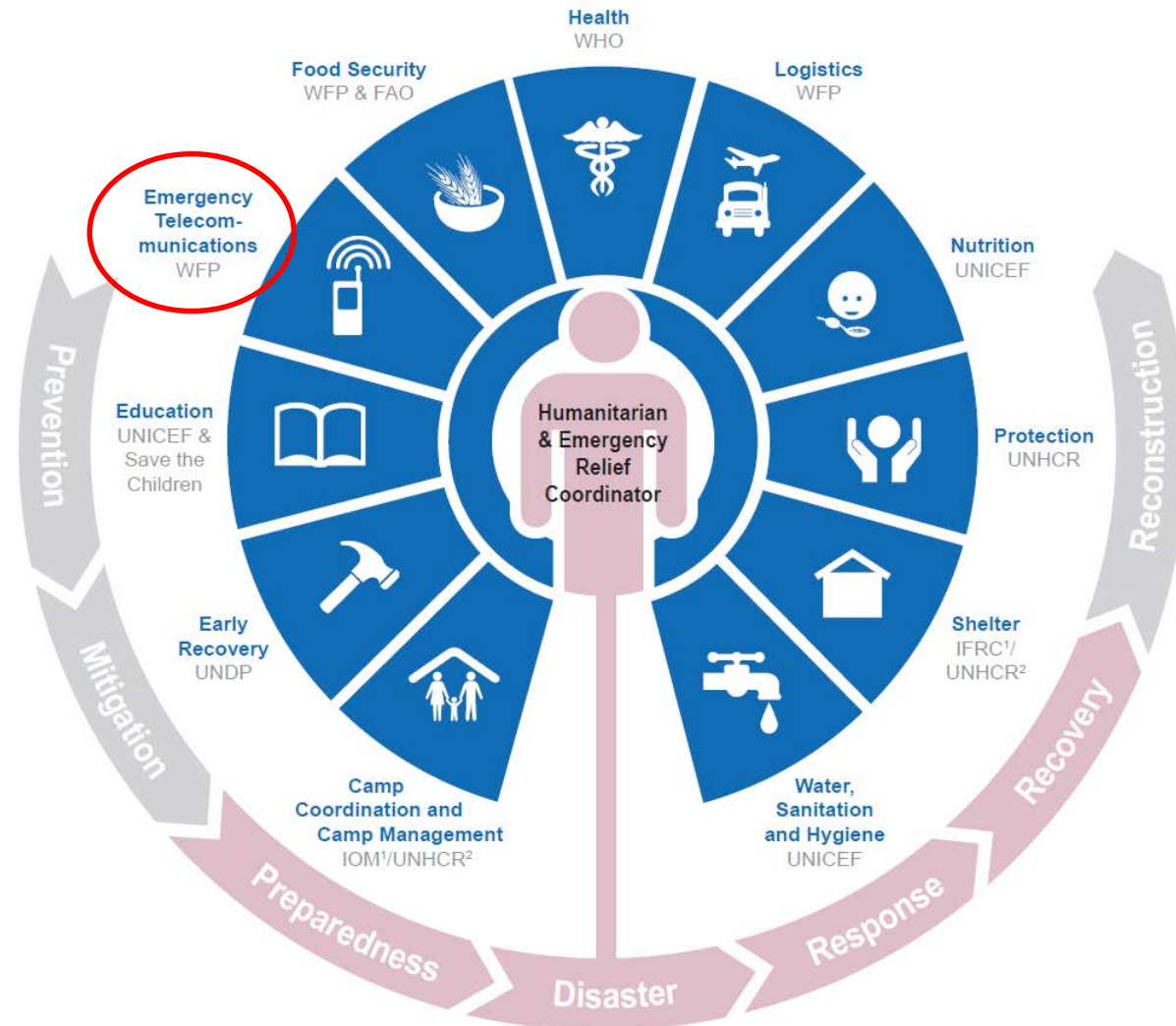


UNDER THE GLOBAL LEADERSHIP OF



Cluster leads & responsibilities

Clusters are groups of humanitarian organizations, both UN and non-UN, in each of the main sectors of humanitarian action, e.g. water, health and logistics. They are designated by the Inter-Agency Standing Committee (IASC) and have clear responsibilities for coordination.



ETC services in disaster response



SECURITY COMMUNICATIONS
Through VHF radio



TECHNICAL HELP DESK
For users



PREPAREDNESS



INTERNET CONNECTIVITY
Through quick-deploy satellite terminals and Wi-Fi hotspots



COORDINATION AND INFORMATION MANAGEMENT
Including liaison with government authorities.



SERVICES FOR COMMUNITIES (S4C)



DRONE COORDINATION



IN HUMANITARIAN EMERGENCIES,
COMMUNICATIONS MEANS
**INFORMATION,
CONNECTION,
LIFE.**

Traditional tech for emergency responders

- HF and VHF radio



- Satellite phones



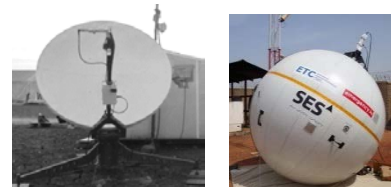
- Satellite-based SMS & tracking



- BGAN (satellite data device) – highly portable



- VSAT (satellite data system) – dish / balloon



Last mile – communicating with the public

- Broadcast radio 
- SMS / text messaging 
- Siren & PA systems 
- Television 
- Social media (eg. Facebook, Twitter, WhatsApp)
- Hotline 
- Community internet hotspots 
- Phone (landline, mobile) 
- Low-tech (eg. church bells)

Drone technology

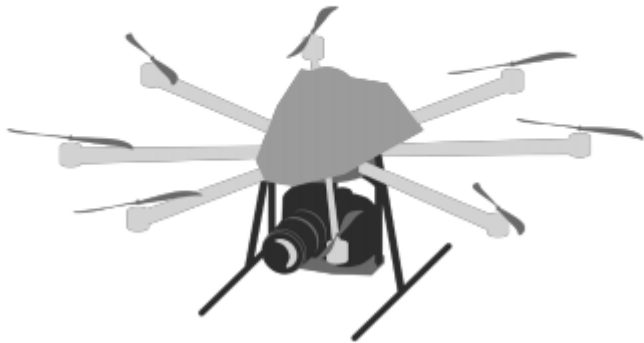
- An unmanned aerial vehicle (UAV), commonly known as a drone, is an aircraft without a human pilot aboard.
- The use of drones is rapidly expanding to commercial, scientific, recreational, agricultural, and other applications, such as **humanitarian emergency response operations**.



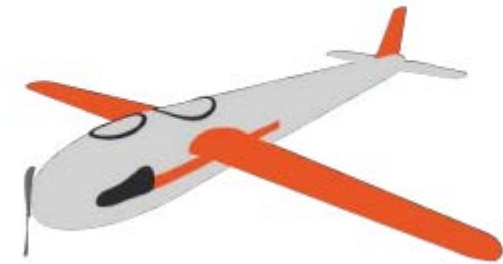
Types of drones

An Unmanned Aerial Vehicle (UAV), also known as remotely piloted aircraft (RPA) or “drone” is a small aircraft that can fly by remote control or autonomously.

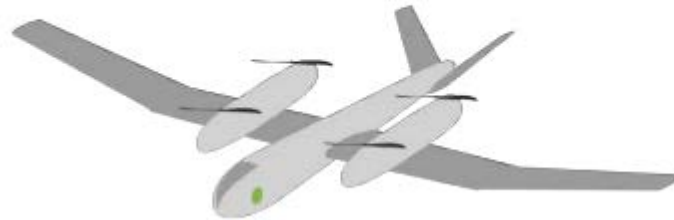
Multi-rotor drones



Fixed-wing drones

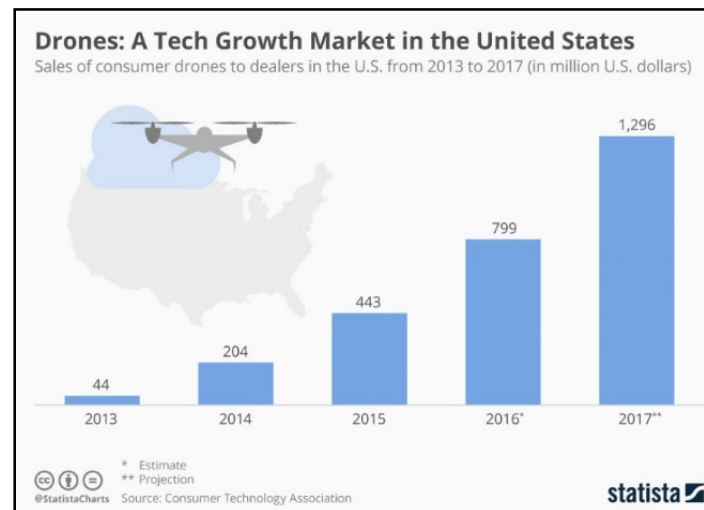


Hybrid drones



Why drone technology?

- Drones are rapidly emerging as a useful tool for addressing the needs of people in humanitarian crises.
- As prices drop and the technology becomes easier to use, barriers to their use are reducing.
- Immediate UAV assessment allows for a diverse portfolio of rapid planning applications that are now being used in humanitarian disaster response.

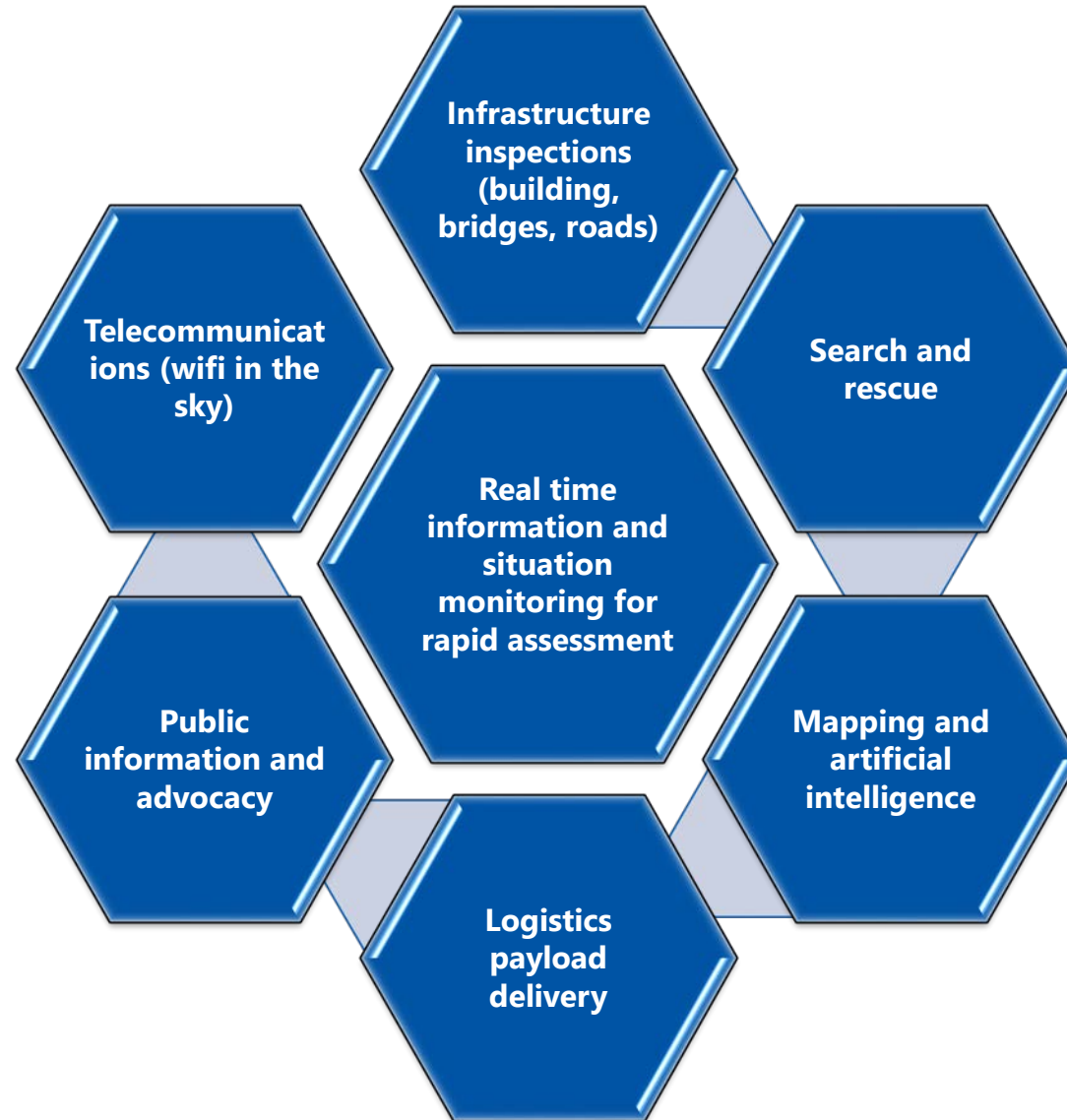


Uses for drones in emergency preparedness & response (EPR)



Source: FSD – Drones in Humanitarian Action Report 2016

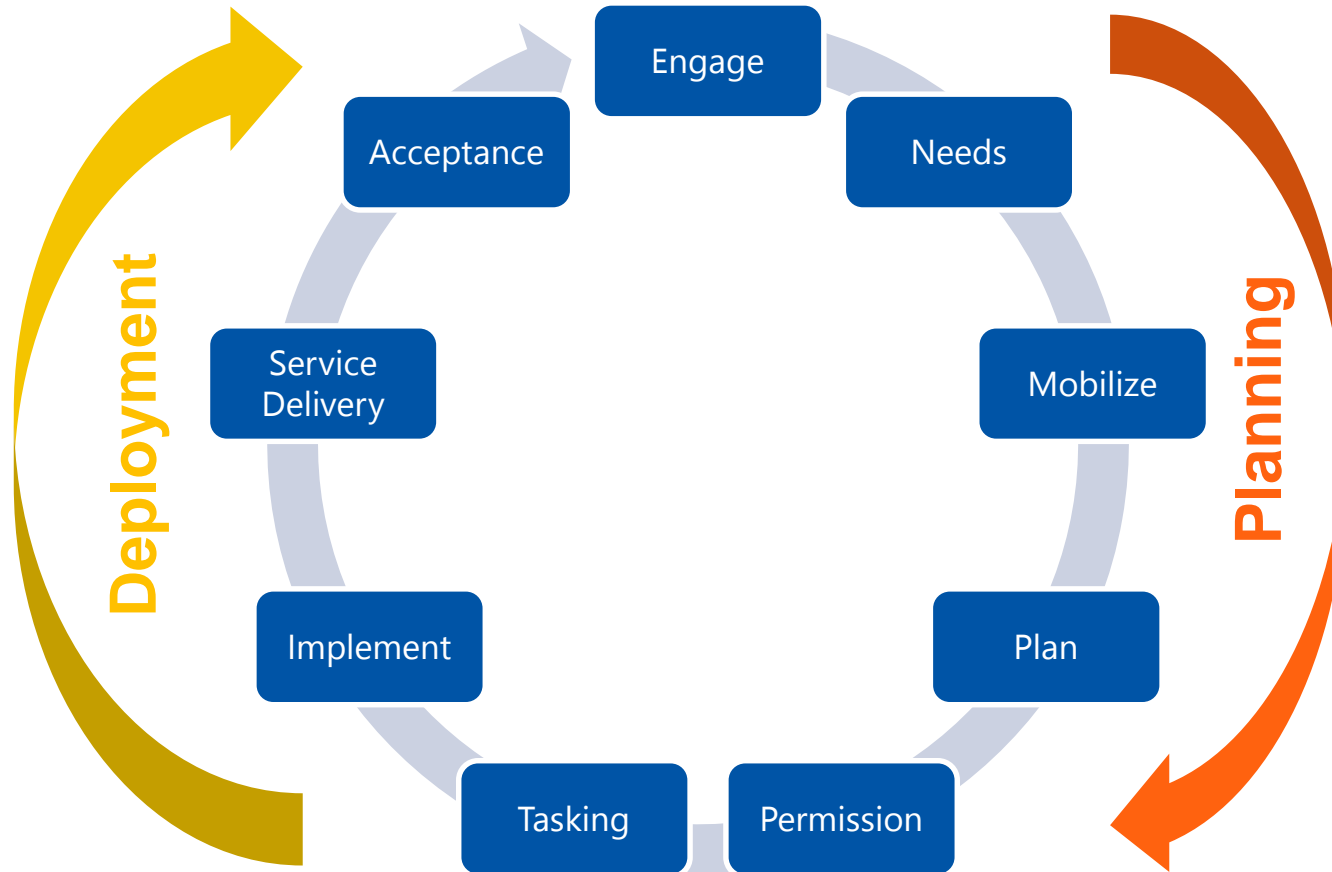
Drone services in emergencies



Challenges of drones



UAV coordination model



The ETC has been working to develop a humanitarian UAV coordination model for disaster response.



Overview: The Humanitarian Connectivity Charter



WHAT?

An industry initiative to enhance support in times of disaster, highlighting and amplifying existing activities



WHEN?

Launched at MWC15, the signatory group is growing and welcomes MNOs wishing to uphold and contribute to the principles of the Charter



WHY?

Access to mobile can be critical in both preparing for, withstanding and recovering from natural disasters and complex emergencies. The value of the industry in this space is huge. The Charter aims to facilitate industry action in performing this role as well as putting forward a consolidated advocacy message



HOW?

Participation requires a mapping of current activities, and an agreement to integrate the principles of the Charter where appropriate

An initiative from the **mobile network industry** to enhance support in times of disaster.



The Charter principles:



To enhance coordination within and among Mobile Network Operators before, during and after a disaster



To scale and standardise preparedness and response activities across the industry to enable a more predictable response



To strengthen partnerships between the Mobile Industry, Government and the Humanitarian sector

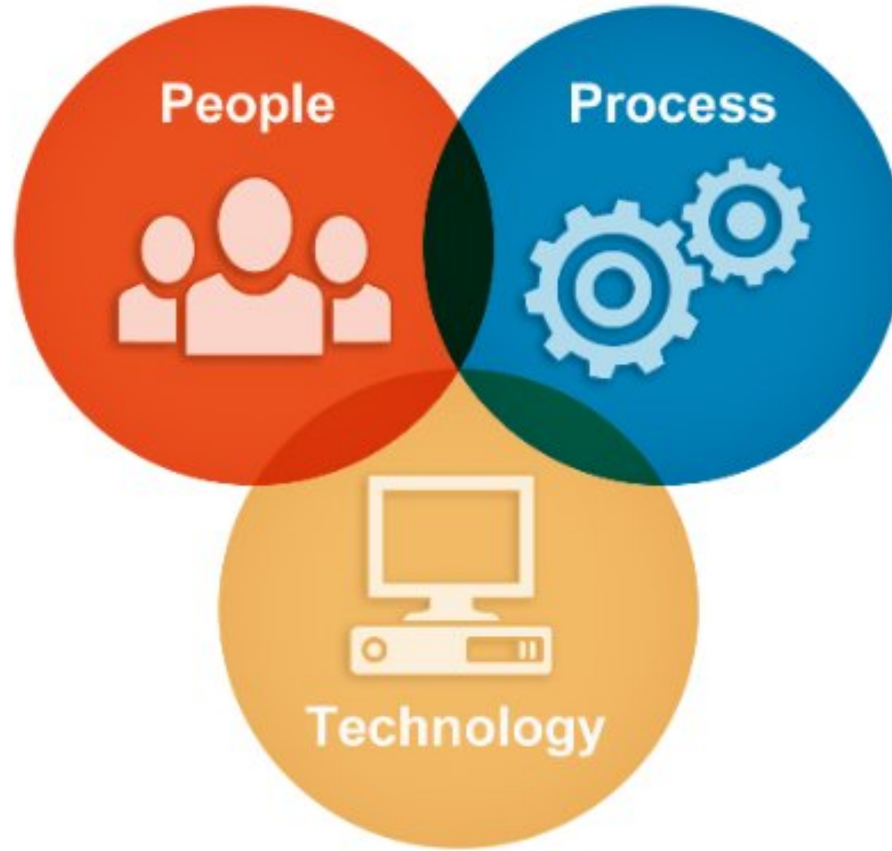
The ultimate aim of the Charter is to strengthen access to communication and information for those affected by crisis in order to reduce the loss of life and positively contribute to humanitarian response



Facebook Disaster Maps

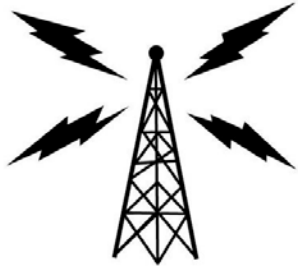
facebook

- As more people connect and share on Facebook, Facebook data is able to provide insights to help humanitarian organizations fill crucial gaps in information during disasters.
- When people use the Facebook app with Location Services enabled, their latitudes and longitudes are received at regular intervals. This geolocation data, when aggregated and de-identified, can provide insights after a disaster.
- Facebook dataset types may include people movement and density, and FB safety-check information collected post disaster.
- The Facebook Disaster Maps concept was launched in 2017 and is a product that Facebook is developing.
- This is an example of the use of big data.



Technology does not stand alone. It must be accompanied by trained people, supporting processes, and an overall plan.

System integrity is critical



Friday 7 April 2017:



The Washington Post
Democracy Dies in Darkness

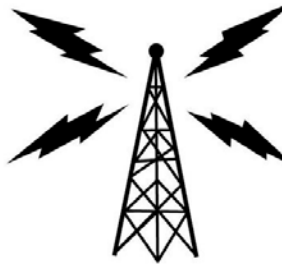
Someone hacked every tornado siren in Dallas. It was loud.

By [Avi Selk](#) April 9 

- 156 sirens
- 11:42pm on a Friday night
- 90 minutes of ringing before sirens were manually deactivated.

System integrity is critical

Friday 13 January 2018:



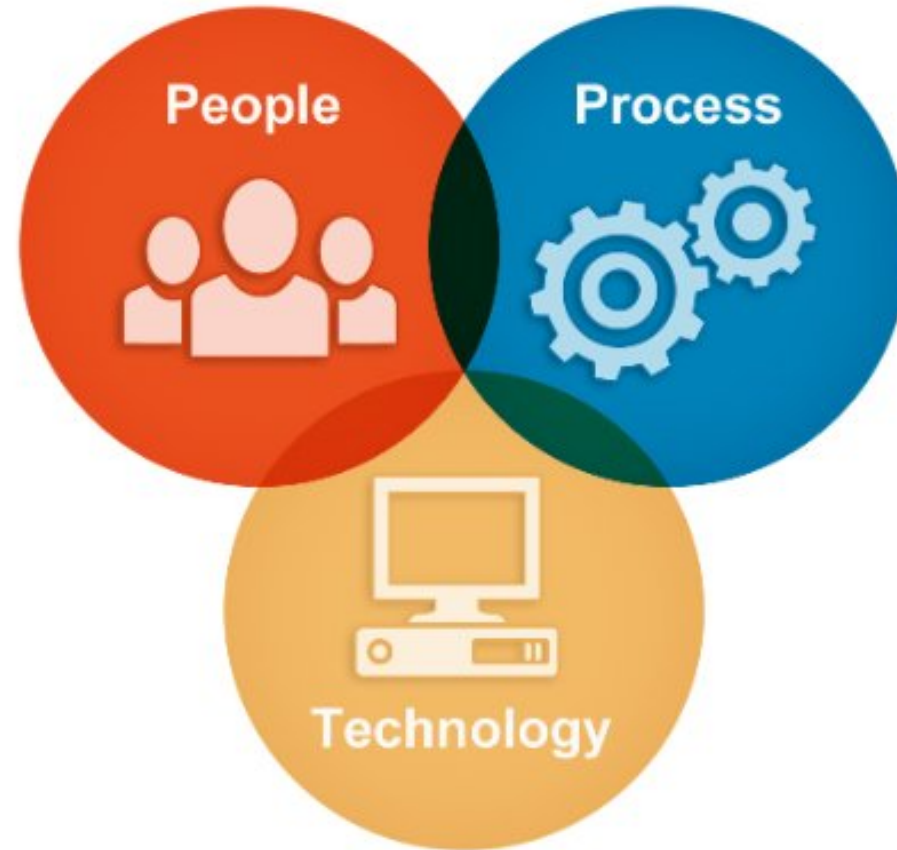
Hawaii Panics After Alert About Incoming Missile Is Sent in Error

By ADAM NAGOURNEY, DAVID E. SANGER and JOHANNA BARR JAN. 13, 2018



- 38 minutes before the message was revoked
- Caused by human error – confusing user interface
- The process for issuing alerts has now been revised.

Building blocks: people, processes, technology



Haiti – emergency telecoms coordination



Thank you!



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