SECTION A: DETAILS

Country:	Montserrat
Population:	4,900
Primary hazards faced (i.e. flooding, earthquakes, drought etc.):	Hurricane, Flash Flood, Earthquake, Fire, Tsunami, Volcano

Identifying the Background / Problem:

The Caribbean is a region affected by many hazards with many islands having volcanic origins. The region is also in the Atlantic Hurricane belt and therefore exposed to severe weather in the form of tropical systems on an annual basis. For six months of the year most islands in the region are in a state of heightened awareness for these phenomenon and although preparedness efforts are understandably significant, tropical systems and their associated secondary hazards still result in loss of life as well as damage and loss to countries.

Over the past decade, Montserrat has come to be identified based on the activity surrounding the Soufriere Hills Volcano. After having been dormant for more than 400 years, this volcano first erupted in July 1995, following a three-year period of precursor seismic activity. The current activity of the Soufriere Hills has shown a cycle of periods of extrusion and growth of a lava dome and explosions and collapses of the dome. In the June 1997 eruption, 19 people were killed, the capital evacuated and the southern half of the island devastated and designated an exclusion zone. Additionally, the collapse of the lava dome on 12 July 2003 was the largest event in the entire eruption. It produced pyroclastic flows that entered the sea on the eastern and western sides of the volcano and accompanying pyroclastic surges that blanketed the northeaster flank of the volcano.

Earthquakes have also occurred on several occasions during the last century however they have general been interpreted as failed eruptions.

(Siren in Montserrat)

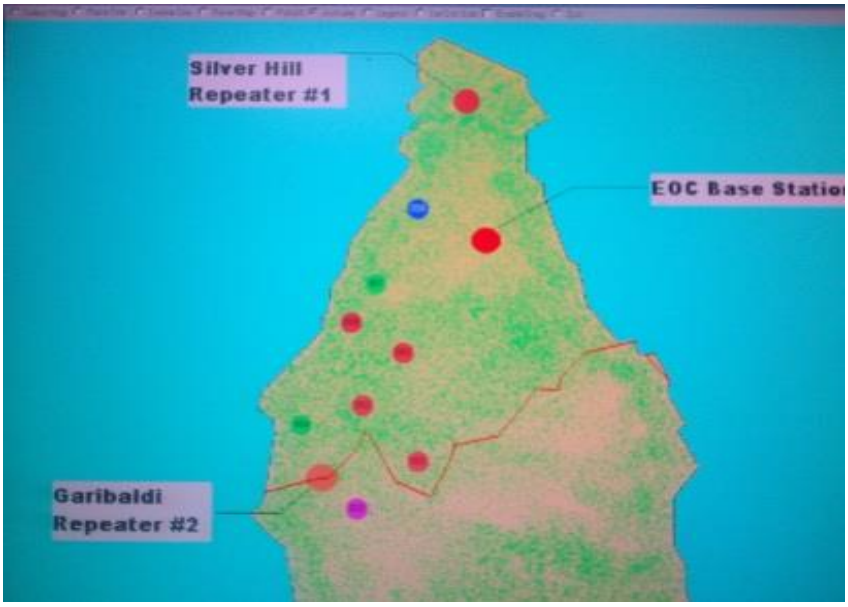
Noting this Montserrat subsequently installed an eight site siren system and a separate radio alerting system utilizing the Common Alerting Protocol (CAP) methodology to provide early warning. The CAP was seen as an opportunity to add to their current system by sending the same message on both systems while adding email capability and text to speech.

Challenges and how they were met:

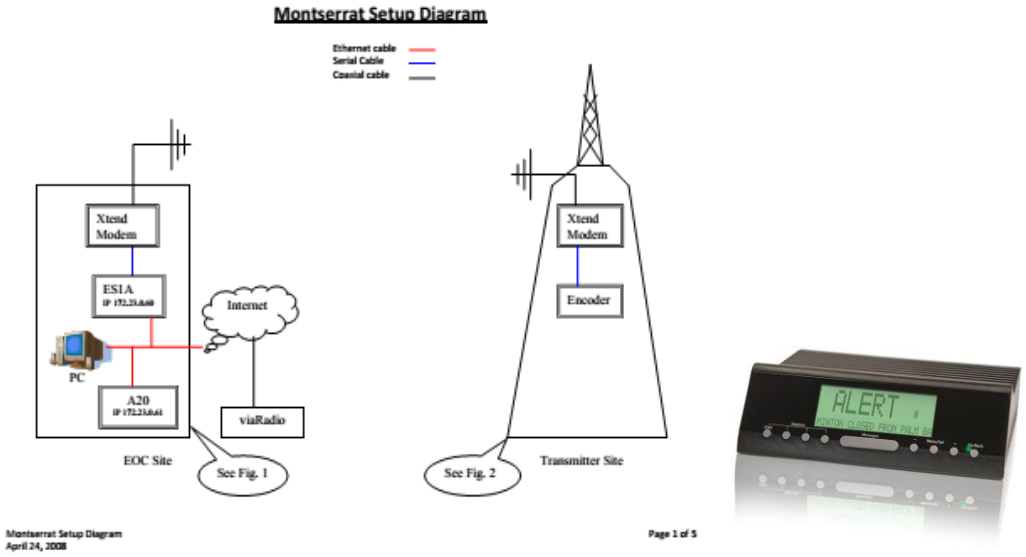
- No internal capacity to assess the situation or design a solution
- No knowledge of what was available in country to fix the problem
- Cost, which can be very prohibitive as least initially
- No project management or quality control ability for IT
- Vendors desiring to oversell for their products. Some did not want to customize for cost and capacity
- The original contractor, and subsequent buyer of the company, did not report faults adequately and had to be pursued during the post installation period
- Governments IT department had no experience or interest in alerting systems
- Limited options for redundancy – If the Department of Information Technology and E-Government Services (DITES) intranet goes down we are unable to switch to our department specific DSL
- Only one telecoms service provider on island
- In hindsight, the contractors and experts did not offer all the available solutions for the project, and did offer enough options for sustainability.

b) What was done to overcome them?

- Implementation of CAP system which allowed for sending a single message to multiple platform (voice message to sirens, emails, home alerting radios, radio station interrupt
- Capacity built through training to handle all of Government of Montserrat needs
- Independent server managed externally to facilitate operation of the EWS. There was a two-year contract for this system.
- Redundancy incorporated if unable to send alerts. This has been achieved via another Overseas Territory (OT) with similar systems whose servers mirror each other
- Sirens and via radios work independently of the CAP server which helps with the redundancy of the system



(Montserrat Set Up)



SECTION : LESSONS LEARNED

This section should be specific and applicable, using examples to explain how and what the lesson(s) learned are evident.

- Capabilities are normally available in country even if limited. Thorough country analysis is needed to be conducted beforehand.
- Care should be taken when dealing with sales and engineering sides from vendors as they may not always have the best interest of the country as the primary objective.
- Use a Quality Control Consultant who will protect the interest of the Government, instead of being skewed towards a North American design

- Most important to have human capacity to manage the systems and trained in IT with a disaster management perspective
- Ensure the local office is sufficiently involved in the designing of the product.
- Consider the potential repair and maintenance cost of any system selected. This should be part of your decision making process for the EWS system
- Agree on a testing regime with local stakeholders relating to the system
- Consider the coverage terrain when selecting a system. The mountainous terrain will affect the reach of some of the systems
- Public Awareness and Education (PAE) relating to the system is not to be underestimated and should be completed before and in parallel with installation of the system. Remember:
    - All residents should be treated as customers
    - The public needs to know what is available
    - Reinforce the message conveyed with signs and poster displays where possible
    - Establish a feedback mechanism so the public can comment