

## **Disaster Management and Emergency Services Workshop**

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### **How can new technologies and approaches improve outcomes, reduce costs and/or improve response times for an emergency?**

1. Newer technologies can be smaller and therefore more portable.
2. New applications (such as localization techniques) can help emergency responders locate people quickly in unsafe areas including buildings on fire or damaged by an earthquake.
3. Smaller devices that are easier to setup during an emergency would take less time to setup, so emergency responders would be ready more quickly.
4. Cell phone / smart phone software applications can ease the burden on hardware development to achieve the same tasks. Examples: Localization software running on iPhones, Blackberries, and other smart phones.
5. Communication devices and networks that are dedicated (a.k.a. separate from conventional / commonly used communication networks) can clear communication bottlenecks between emergency response / service organizations. Example: Local cell phone networks clogged when people try to communicate at the same time with outside relatives to tell these outsiders that they are OK / not-OK versus first responder communication networks that stay unclogged because they are used only by the first responders.
6. WiMax networks could be setup quickly on short notice, so first responders have voice and Internet connections.

### **If you were offered 10-15 minutes to give a short talk, what would it be?**

I would discuss how collaboration with Amateur Radio Emergency Communication Organizations would help us achieve our goals and how we could help these organizations serve the community more effectively.

### **What are the most pressing business, process, organization and technical issues?**

1. The DMI should make contact with the amateur radio community especially through the American Radio Relay League (ARRL), Amateur Radio Emergency Services (ARES), and Radio Amateur Civil Emergency Services (RACES). The people who are active in these amateur radio organizations have years of experience and expertise in emergency communications. Below are several amateur radio related websites that provide useful information, and Amateur Radio groups with whom we should collaborate:
  - a. <http://www.arrl.org> (American Radio Relay League Website)
  - b. <http://www.emergency-radio.org/> (Information Site on Emergency Services Provided by Amateur Radio)
  - c. <http://www.hamradio.arc.nasa.gov/> (NASA AMES Amateur Radio Club)
  - d. <http://www.blackberryreact.org/> (Blackberry REACT website, located in Mountain View)
  - e. <http://www.arrl.org/sections/?sect=SCV> (Information on ARRL Santa Clara Valley Section)
  - f. <http://www.arrl.org/FandES/field/pscm/sec1-ch1.html> (Information on ARES)
  - g. <http://www.k6mtv.org/> (Mountain View ARES / RACES)
  - h. <http://www.cupertinoares.org/> (Cupertino Amateur Radio Emergency Services)

- i. <http://santaclara-ares.org/> (Santa Clara ARES)
  - j. <http://www.svecs.net/> (Silicon Valley Emergency Communications System)
  - k. <http://sjraces.org/> (San Jose RACES)
  - l. <http://www.sunnyvaleares.org/> (Sunnyvale ARES)
  - m. <http://www-suares.stanford.edu/> (Stanford University ARES)
  - n. <http://www.qsl.net/mares/> (Milpitas ARES / RACES)
  - o. <http://www.qsl.net/races/links.html> (Inclusive list of Amateur Radio Emergency Communication Organizations in the USA)
2. Wireless technologies (whether 3G or 4G) need to be made portable and easily setup in emergencies. Permanent basestations / towers might be damaged or rendered inoperable during disasters.
  3. The same portable technologies need to be dedicated to the emergency personnel who would use them. Otherwise, the networks could get clogged with people trying to contact relatives, friends, coworkers / employers, etc. outside of the disaster area.
  4. As one can tell from bullet # 1 above, there are a plethora of emergency service organizations in the Silicon Valley. In major disasters, it is important that all of these groups collaborate smoothly and effortlessly. We could discuss how 3G and 4G / WiMax technologies could help all of these organizations collaborate easily during emergencies.

**What is the role of university research in this area?**

University research can develop software applications and hardware for emergency responders.

**Do you want to propose and help run a new breakout group?**

If needed, I could help run the current breakout group "Collaboration Environments for Emergency Response and Solution Development."

**What is the most important action the DMI can take?**

Collaborate with all of the emergency groups (whether amateur radio based or government based) in the area and make sure that we are meeting their needs.