

First Responder Radio Internet (FRRI)

Enable existing smartphones to interoperate among emergency first responders and citizens.

TARGET: TO CREATE CLIENT SOFTWARE FOR LEADING SMARTPHONES THAT WILL ENABLE INTEROPERABILITY WITH FIRST RESPONDER RADIOS AND WITH OTHER SMARTPHONES OVER ANY IP NETWORK.

- To enable “push-to-talk” (PTT) radio communications via smartphones among disparate groups of emergency first responders.
- To leverage the cost and availability of mass-market smartphone clients (iPhone, Android, Symbian-Nokia, Blackberry) for seamless use in emergency situations.
- To enable modes of citizen response via smartphones.
- To enable teams of first responders to quickly setup “ad hoc”, PTT-enabled, private radio networks using smartphones.
- To provide a flexible, standard, and cost-effective means of communication for first responders on a worldwide basis.

The First Responder Community (FRC) is obligated to operate with a complex mix of communications equipment and protocols, which are used among Federal, State, Local, and International agencies, non-governmental organizations, military, and the amateur radio service. Different jurisdictions and agencies often use incompatible equipment and radio frequencies, and as a result, very often they cannot communicate with one another. The result is a pervasive lack of worldwide interoperability among handheld devices used in FRC communications. Disorganized FRC communications result in confusion, inefficiencies, and loss of life. Commercial cellular systems are often the first infrastructure system to fail in an emergency incident. In the recent earthquake in Haiti, 95% of the existing communications system failed immediately, with the remaining 5% quickly overloaded. FRRI will help solve this problem by enabling voice communications between and among first responders and citizens using legacy radios and smart phones via any hastily formed IP network.

In the next five years, the federal government is expected to allocate large sums for interoperable radio communications, and to provide grants and funding for other FRC technology initiatives. While market estimates for emergency responder terminals is estimated to reach \$3.6 billion by 2013, from \$1 billion in 2007 (ABI Research), smartphone ownership increased from 11% to 17% of mobile users in 2009. Smartphone penetration is estimated to reach 50% of the market by the middle of 2011 (Comscore). Through software development, the ability for first responder radios and smartphones to interoperate is achievable. The value of the investment made in radio equipment will be enhanced to end-users on any scale of FRC operations worldwide.

FINANCIAL: The Disaster Management Initiative (DMI) at Carnegie Mellon University-Silicon Valley will collaborate on the FRRI project in overall proposal development, submissions and supervision. The FRRI Project is seeking sponsors to fund \$1 million to retain key personnel and begin software development to be deployed and tested on leading smartphone platforms.

STATUS: The Project has identified key personnel for the initial team, which will be led by an experienced wireless industry innovator, Charles M. Brown.

ACTION: DMI at Carnegie Mellon University-Silicon Valley to collaborate in the development of the FRRI project through application for public funding or private sources.

Name of Presenter & Date

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