

CASE STUDY: PUERTO RICO AND HURRICANE MARIA



On September 20, 2017, Hurricane Maria struck the island nation of Puerto Rico. The ensuing devastation was a tragic event that still requires significant work to restore the island's infrastructure and services to pre-event conditions. The timelines associated with the disaster and follow-on relief efforts have been well documented as have the lessons-learned discussions and debates as to what could have been done differently to improve conditions for the residents prior to, and following, the devastation.

The complete destruction of the electrical infrastructure from winds and flooding along with every cell phone tower being rendered inoperable created a communications void which limited and lengthened relief coordination efforts. This not only impacted resupply of critical response supplies such as food, water, and fuel, it also left a void in providing medical evacuations and support, external communications, and a concise way to communicate with the residents of Puerto Rico post-incident to coordinate relief efforts.

REDCOM has developed a communications system for use in this type of environment to provide intra-communications that is not tethered to existing infrastructure while providing external or long-haul links for use in off-island communications. This man-portable capability was designed with first-responders and disaster relief efforts in mind that stress ease of use, scalability, and interoperability with disparate terminal devices.

The core of this capability is REDCOM's CrucialConnect™ suite which was designed as a ruggedized communications platform for use in fast-paced, austere, and multi-faceted environments for command and control applications. Portable LTE is seamlessly integrated into the product to provide up to 75km of coverage in optimal conditions. In the case of Puerto Rico, two of these suites could have provided LTE coverage for the main island, allowing for point to point communications.

REDCOM CrucialConnect supports a low-cost terrestrial transport backhaul option in the form of an HF radio link specifically engineered for communication in denied environments. As transport assets become available, the system can be configured to accommodate additional capacity. Preset configurations allow



An example of a REDCOM CrucialConnect™ system, housed in a ruggedized transit case.

for rapid employment of the package which can be powered by a small generator. The system can also be provided in a pre-fabricated container that can sustain hurricane-like conditions while running on solar power.

A pre-staged CrucialConnect system with a properly configured database would have provided a true disaster relief recovery communications capability that allowed residents of the island to maintain connectivity immediately after the hurricane via cell phones, provided they had a adequate power for cell phone use. Additionally, the system could have been used to integrate voice communications from radio-based devices that would have enhanced first responder awareness and connectivity both on- and off-island. This would have reduced the time needed to open airfields and ports, facilitating the flow of relief assets, while allowing a prioritized approach for medical support, food and water distribution, and off-island requests for critical items needed. The flexibility of the system would allow for a seamless integration of fixed communication solutions, such as cell towers, and public branch exchanges as they came back online while the scalability of the system will allow for integration of communication resources as they became available or arrived at the scene as part of relief assets sent.

In most scenarios, a pre-staged set of equipment is not available or desirable. REDCOM's capabilities are expeditionary in that they can be moved and transported easily, configured quickly, and integrated seamlessly that allow for the establishment and sustainment of critical communications in the most demanding environments.

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Talk to the experts at REDCOM

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