

# The Responsive Network to Enable Rapid Deployment of Emergency Care Communications

From seasonal flu epidemics to the recent onset and global spread of Coronavirus (COVID-19), crisis situations in healthcare are highlighting how easily the medical system's capacity can be overrun. Hospitals need the ability to respond rapidly to such emergencies with the build out of temporary medical space capacity when and where it is needed. **Readily deployable where no infrastructure yet exists, Rajant Kinetic Mesh® is ideal for connecting pop-up and mobile environments for emergency care.**

Critical to the setup of emergency medical spaces – from medical tents to inflatable hospital shelters to repurposed buildings – is a communications network to connect healthcare workers within the triage space and back to personnel at the main hospital location. Triage teams need connectivity to pull up medical records, access digital images like X-rays or CT scans, and place prescriptions, as well as to track medical carts and supplies statuses to manage resource allocation for the temporary facility. In these situations, every minute wasted can put the health of many at risk, so the network must be easily and rapidly deployable, and must work reliably no matter the conditions or environment.

Rajant's private wireless network meets all the vital communications requirements for emergency care space expansion because it has been architected from the ground up for ad hoc deployment in virtually any setting – without the need for existing infrastructure.

## Agile Deployment & Network Security for Rapid Mobilization of Emergency Care

Rajant's private wireless network technology was born to combat the shortcomings our founders saw in traditional wireless architectures used for emergency response following the September 11 attacks, particularly in supporting first responders' mobile voice and data communications. They succeeded in creating a highly differentiated network system that is rapidly deployable, easily transportable, self-healing, and highly secure. Here's how.

## Deploy Rajant's ruggedized BreadCrumb® nodes and network virtually anywhere.

The BreadCrumb nodes that comprise a Kinetic Mesh network are ruggedized to withstand harsh outdoor environments and can be easily affixed to both stationary and moving equipment or vehicles so they can take connectivity with them as they roam. BreadCrumbs work peer-to-peer and are able to hold multiple connections over multiple frequencies simultaneously, making Kinetic Mesh uniquely able to both augment existing mobility-challenged networks and to be deployed where no infrastructure yet exists. It seamlessly integrates with existing network infrastructures in use, making it possible to readily fill gaps in coverage where other network systems do not or cannot reach, providing instant expansion of coverage.

## Ensures uptime for emergency care communications with multi-radio, multi-frequency redundancy.

Rajant's proprietary InstaMesh® networking protocol allows multi-radio BreadCrumb nodes to automatically make redundant connections with other nodes, creating hundreds of potential paths over which to direct traffic. This invisible mesh provides a backbone for unmatched reliability, with InstaMesh dynamically selecting the fastest path(s) for delivery from the meshed connections. If one path becomes blocked or is affected by interference, InstaMesh will instantly route communications via the next-best available path(s) and/or frequency, ensuring no single point of failure.

A Rajant Kinetic Mesh network is a full-duplex network, where each radio transceiver within a BreadCrumb node can operate independently and simultaneously. This allows the network to make multi-hop transmissions with no loss of throughput.

## Enables fast and simple deployment and management without technical network resources.

BreadCrumbs are intelligent devices that manage their own routing. This dramatically simplifies deployment because you can simply place a BreadCrumb where network coverage is needed and it will automatically connect to other BreadCrumbs in the area and find the fastest path back to the wired LAN. The network continuously self-optimizes in line with changing network conditions, so you don't need technical network engineers to manage maintenance and can keep personnel focused on their real mission to provide critical care.

## Military-grade security is built-in.

Because Rajant's technology was originally developed for military applications, we understand the unique network security requirements that must be accounted for in situations involving sensitive data like personally identifiable patient records. Rajant is the only wireless network manufacturer with a certification from the U.S. government for its highest level of encryption, and with security features including per-hop, per-packet authentication, you can rest assured your data is secure.



## Mobile Healthcare Connectivity: What's Enabled with Kinetic Mesh

With Rajant's network, hospitals and medical care units can rapidly mobilize temporary shelters and medical personnel to address overflow patients during times when existing capacity and beds are being taxed.

### Implement Connectivity Across an Array of Temporary Shelters

In times of crisis, emergency medical care locations will often be set up where available to urgently meet the demand. From state fairgrounds to convention centers, recently vacated buildings, schools, and recreation centers to setting up emergency medical tents and inflatable hospital shelters right outside of a medical facility or within a short distance of it, Rajant can be deployed to facilitate communications within these temporary shelters and between the remote shelter location and main hospital.

## IDEAL BREADCRUMBS FOR EMERGENCY CARE EXPANSION NETWORKS

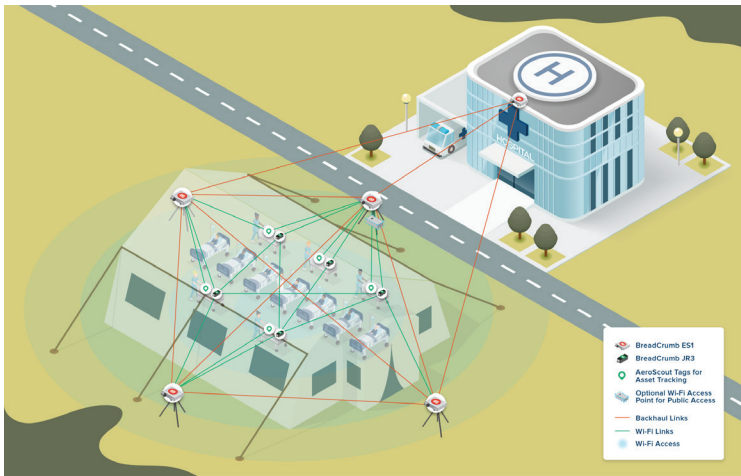


*The BreadCrumb ES1 is an IP67 device with multiple mounting options, making it ideal for deployment in and around pop-up triage centers and on mobile hospital surge units.*

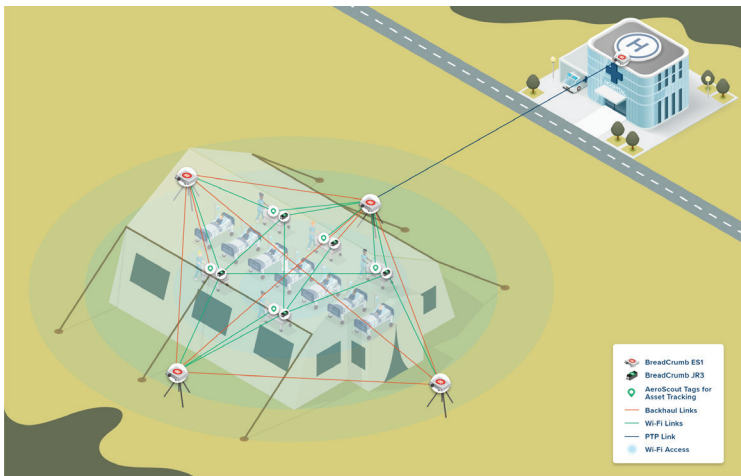


*The BreadCrumb JR3's small footprint makes it ideal for deployment on crash carts and other mobile medical equipment to provide them with resilient Wi-Fi connectivity.*

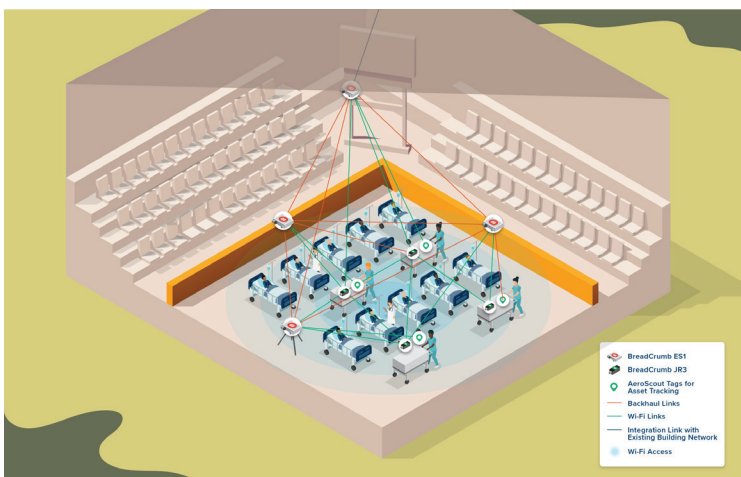




*Rajant's technology can be used at pop-up hospital facilities located adjacent to an existing hospital, using BreadCrumbs for backhaul links to connect the triage area and main hospital location.*



*Kinetic Mesh can also be deployed at pop-up hospitals located long distances away from the main hospital facility. In the diagram example above, the backhaul connection to the hospital is made via a PTP link although it can also be done through LTE. Alternatively, the network can operate as standalone infrastructure with an on-site server and no connection to the hospital.*



*Additionally, Rajant's network can be deployed in large indoor settings temporarily repurposed for triage, such as expansive convention centers. BreadCrumbs can be deployed on tripods or affixed to existing poles and rails, and the network integrates with the existing communications infrastructure used by the building.*

## Provide Comprehensive Coverage to Triage Care Teams

Rajant has the critical deployment speed needed to extend your data network to temporary facilities, fast, and provides robust coverage for the range of emergency healthcare workers' needs. They gain connectivity for VoIP telephones and private Wi-Fi to connect tablets and laptops that give them real-time access to patient records, digital imaging, prescription portals, and more – all in a secure manner. What's more, the network enables the ability to keep track of and locate equipment using AeroScout asset tags, so they always know where their needed resources are.

## Ensure Rapid Network Deployment without Safety Hazards

Running cable to every device in temporary medical spaces is not only time-consuming but also creates safety hazards for personnel and patients moving throughout the site. It also does not provide Wi-Fi capability unless Wi-Fi access points are also installed using cable. Deploying a Kinetic Mesh network provides wireless backhaul and Wi-Fi access in one, eliminating all cables and providing the range of connectivity required.



# Prevent Loss of Lives in a Time Where **Every Minute Counts**

Rajant offers our **Emergency Response Rapid Deployment Kit** to help hospitals quickly deploy a private wireless network for mobile field hospitals and inflatable emergency shelters. It includes:

## Infrastructure

- Rajant ES1-2450R BreadCrumbs with integrated antennas
- Power Over Ethernet (PoE) injectors (these require 120/240-volt AC power)
- Pop-up self-supporting tripods

## Crash Cart/Med Equipment Connectivity

- Rajant JR3-52 BreadCrumbs with integrated antenna
- Power cables

## Deployment Guide

- Documents how to deploy and configure an instant Rajant Kinetic Mesh Network
- 24x7 toll-free number for support



## FREQUENTLY ASKED QUESTIONS

### Q: How long does this system take to deploy?

A: As little as 30 to 60 minutes.

### Q: How are the devices managed?

A: Rajant has a best-in-class network management software called BC Commander, which is free with the purchase of BreadCrumbs. BC Enterprise can also be used for remote cloud-based support.

### Q: How much configuration is necessary?

A: BreadCrumbs will connect to one another right out of the box. If you want to assign IP addresses, create VLANs, modify buffer sizes or set up network security, this is all done via BC Commander.

### Q: Can the network scale larger than what is shown in the diagrams?

A: Yes, you can add as many of these kits together as you need. Furthermore, you can make as many ingress/egress points between your Rajant network and your LAN as you need to accommodate bandwidth requirements. Wi-Fi access is limited to 20 clients per BreadCrumb.

### Q: How secure are the Rajant BreadCrumbs?

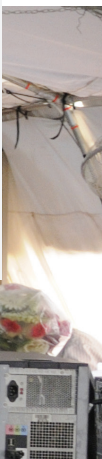
A: From AES 256 to peer to peer encryption, Rajant has our own crypto team to ensure every connection is secure.

### Q: Who can deploy the network?

A: Rajant has a global network of partners who are trained on deploying Rajant networks.

### Q: Where can Rajant networks be deployed?

A: In addition to emergency medical spaces set up both indoors and outdoors, Kinetic Mesh can be used to connect pop-up and drive-through testing centers like those used for COVID-19, for temporary loan centers, and pop-up locations for other emergency services.



Let us help you prepare for and more effectively address emergency care expansion demands with robust, resilient mobile healthcare connectivity.

Call **484.595.0233** or **visit [rajant.com/healthcare](https://www.rajant.com/healthcare)** to get started.

Tel: 484.595.0233 | [www.rajant.com](https://www.rajant.com)

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