RAJANT KINETIC MESH®

The Agile Network to Enable Public Safety Communications – **When & Where Needed**

First responders, emergency response teams, and other public safety personnel have many critical needs to worry about: reliable communications should not be one of them. Unfortunately, they are often dealing with an array of different communications mechanisms, each used for various tasks. Disintegration causes gaps in coverage and fragments much-needed visibility into incidents and events. **What's needed is a network to rapidly fill those voids: Rajant Kinetic Mesh®.**

Rajant's private wireless network is an ideal solution for public safety applications that require real-time situational awareness and mission-critical communications between task forces. Whether used by police and fire departments to optimize deployment of security or emergency response resources, or by bomb squads and HAZMAT teams to operate robotics that disarm and dispose of hazardous packages or materials, Kinetic Mesh provides the resilient, high-throughput connectivity they require—when and where they need it.

That is because Rajant Kinetic Mesh integrates seamlessly with other communications systems, from LTE to satellite, and can be rapidly deployed ad hoc without the need for existing infrastructure.

If It's Moving, It's Rajant:
Expand and Create Networks Where They Did Not Exist Before

The BreadCrumb® nodes that comprise a Kinetic Mesh network can be deployed virtually anywhere, on any asset to extend or enhance mission-critical coverage for voice, video, and data communications. This also makes the network fully mobile, as assets and personnel can take connectivity with them wherever they go. Take a closer look at what makes Kinetic Mesh instantly deployable, self-configuring, and automatically fault-tolerant.

Multi-radio, multi-frequency redundancy to ensure mission-critical reliability.

Rajant BreadCrumbs can hold multiple connections over multiple frequencies simultaneously, creating hundreds of potential paths over which to direct traffic. Each node has the intelligence of Rajant's InstaMesh® networking software on board, which dynamically selects the fastest path(s) for delivery from these meshed connections.

As a result, the effects of interference, even in hostile RF environments like those experienced at large events, in underground settings, etc. can be mitigated. If faced with adverse network conditions, signal blockage, or a jammed frequency, InstaMesh will instantly route communications via the next-best available path(s) and/or frequency, ensuring no single point of failure.

The ability to leverage multiple paths and frequencies also provides high capacity to guarantee performance of bandwidth-intensive applications like those used for CCTV, real-time situation assessment, and machine-to-machine (M2M) communications between surveillance drones, bomb disposal robots, and other autonomous systems. Kinetic Mesh also allows you to take advantage of licensed frequencies, which is ideal for large event management applications.

Hardened, industrial-grade nodes built to function optimally in difficult conditions.

BreadCrumb nodes are built to withstand harsh outdoor environments and extenuating conditions faced by firefighters and other public safety personnel in the field. Nodes can be easily affixed to both stationary and moving equipment or vehicles. They can even be vest-mounted to provide response and security teams with real-time communications and live streaming capabilities on the move. This mobile functionality also makes it the only network that can enable M2M communications for drones and robotics used in public safety and security applications.

Deployable anywhere with self-managing functionality so teams can stay focused on the tasks at hand.

The architecture of a Kinetic Mesh network makes it 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 for instant expansion of coverage.

What's more, deployment does not require a team of network engineers. After initial configuration, when new BreadCrumbs are turned on, they automatically begin communicating with other nodes in the area, autonomously and without outside intervention. Set up and maintenance time is minimized to allow public safety personnel to direct their efforts to the real mission at hand.

Robust security comes standard.

Rajant's technology was originally developed for military applications, and we understand the unique network security requirements that must be accounted for in situations that involve public safety. All of our BreadCrumbs include multiple firmware-enabled security features, from AES 128-bit security to military-grade encryption. This gives you a military-grade solution at a more cost-effective price point than military-spec equipment.

Improving Safety & Effectiveness:
What's Enabled with Kinetic Mesh

With Rajant's mission-critical, highly agile network, public safety operations and emergency response initiatives can run efficiently and with the utmost communications reliability in virtually any environment.

Enhance Situational Awareness

In times of emergency response and during events when the public's security is critical, real-time situational awareness ensures proper allocation of efforts and resources in line with changing conditions. Rajant's network provides local connectivity that enables first responders and security teams to broadcast telemetry and video live from the scene of incidents and events back to offsite commanders, so they can rapidly assess resource needs and deploy appropriate personnel and assets as situations evolve—mitigating lag times in response when time is of the essence. The high capacity network also easily runs bandwidth-intensive CCTV and supports communications for surveillance drones.

IDEAL BREADCRUMBS FOR PUBLIC SAFETY NETWORKS

The BreadCrumb ES1 is an IP67 device with multiple mounting options, making it ideal for deployment in a variety of public safety settings and on light-duty vehicles.

Rajant has partnered with Vorbeck to create a communications harness which embeds the ES1 to enable live streaming of video, voice, and data by personnel in hot zones.

The BreadCrumb DX2 is designed for deployment on lightweight autonomous vehicles, and its small footprint and very low payload make it ideal for drone swarms, small robots, remote CCTV, and more.

Secure Large Events & Gatherings

Effective event management communications are necessary to protect the security and safety of large crowds. Whether held in large stadiums or sprawling outdoor settings, Rajant's solution can be used to extend the range of existing network systems or add coverage to fill temporary needs, all while adding fully mobile coverage throughout the event site. The ad hoc network is ideal for ad hoc event settings where permanent communications infrastructure is not already installed, such as in large parks. The ability to leverage multiple frequencies also helps keep lines of communications between event personnel open without interference from the public connecting to the network with their own personal devices.

Optimize Crisis Management

In emergency response situations, every second counts. With the ability to rapidly deploy a network where needed, without a network technician, Rajant gives first responders a jump start on establishing communications necessary to assess and effectively react to incidents as they occur. Throughout these events, Kinetic Mesh provides mission-critical coverage with ultra-reliable network resiliency, using InstaMesh to dynamically self-optimize and ensure availability. It simultaneously supports multiple real-time applications to track locations and movements of response teams, monitor environmental conditions, and livestream video from the frontline perspective to improve safety and effectiveness.

Enable Autonomous Systems to Keep Personnel Out of Harm

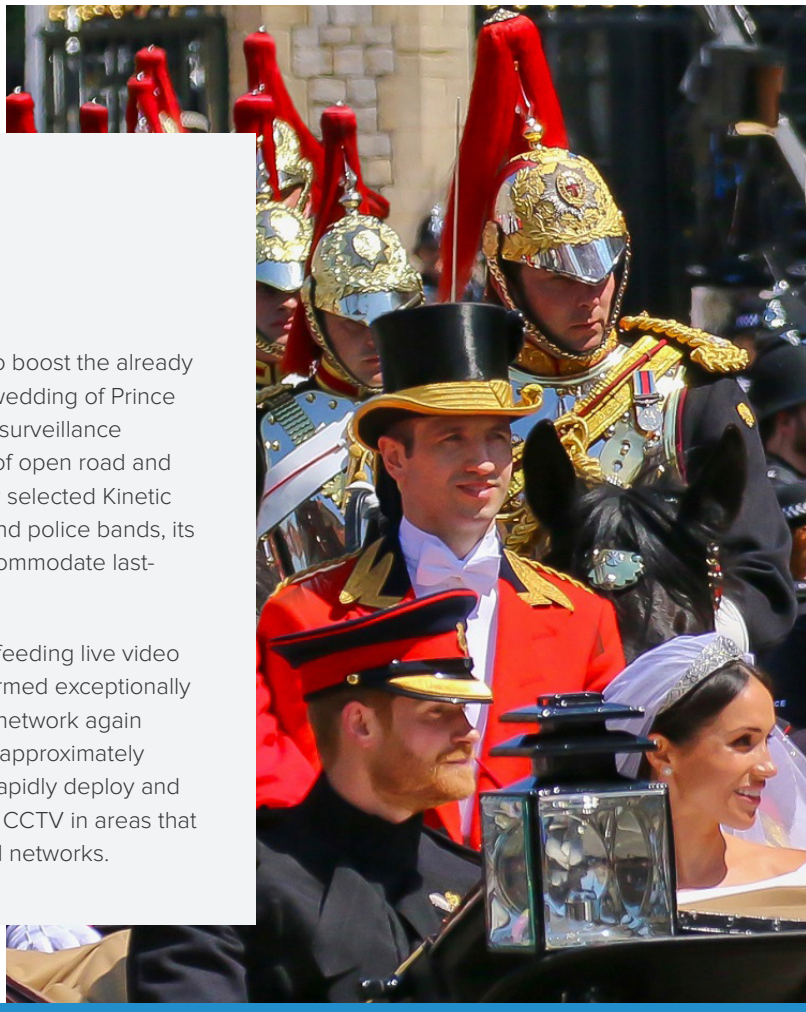
A highly differentiated aspect of Kinetic Mesh lies in its ability to enable M2M communications. BreadCrumbs deployed directly on drones or small robots mesh together so that these autonomous systems can communicate directly and orchestrate their operations. Drone swarms, for example, can be used for widespread security monitoring of expansive event settings. Autonomy has also become a major focus in the public safety market to help keep human teams out of dangerous situations. With Rajant, bomb squads and HAZMAT teams can communicate with and remotely control robots to disarm hazardous packages and handle hazardous materials.

RAJANT IN ACTION

Securing Large Events from Royal Weddings to Royal Ascot

Recently, Rajant worked alongside Thames Valley Police (TVP) to boost the already significant public safety and security arrangements at the royal wedding of Prince Harry to Meghan Markle. Their challenge was to increase video surveillance coverage along the processional route, which spanned 7 miles of open road and parkland – and the solution had to be implemented quickly. TVP selected Kinetic Mesh because of its ability to operate on both license-exempt and police bands, its high throughput, and importantly, its scalability and agility to accommodate last-minute changes, which was an absolute must.

On the wedding day, Rajant delivered secure and stable CCTV, feeding live video with no control lag to multiple control rooms. The network performed exceptionally well in the hostile RF environment. TVP decided to use Rajant's network again to support security at its annual Royal Ascot race, which attracts approximately 300,000 fans. Now familiar with Kinetic Mesh, TVP was able to rapidly deploy and manage the network on their own, which provided coverage for CCTV in areas that were difficult to reach or not yet served by permanently installed networks.



APPLICATIONS ENABLED

Kinetic Mesh enables a range of public safety applications with extreme reliability and robust security, providing fully mobile communications when and where they are needed.

Situational Awareness

- Video Surveillance
- Perimeter Security
- CCTV
- Drone Surveillance
- Livestreaming from Incidents & Events

Specialized Safety Teams

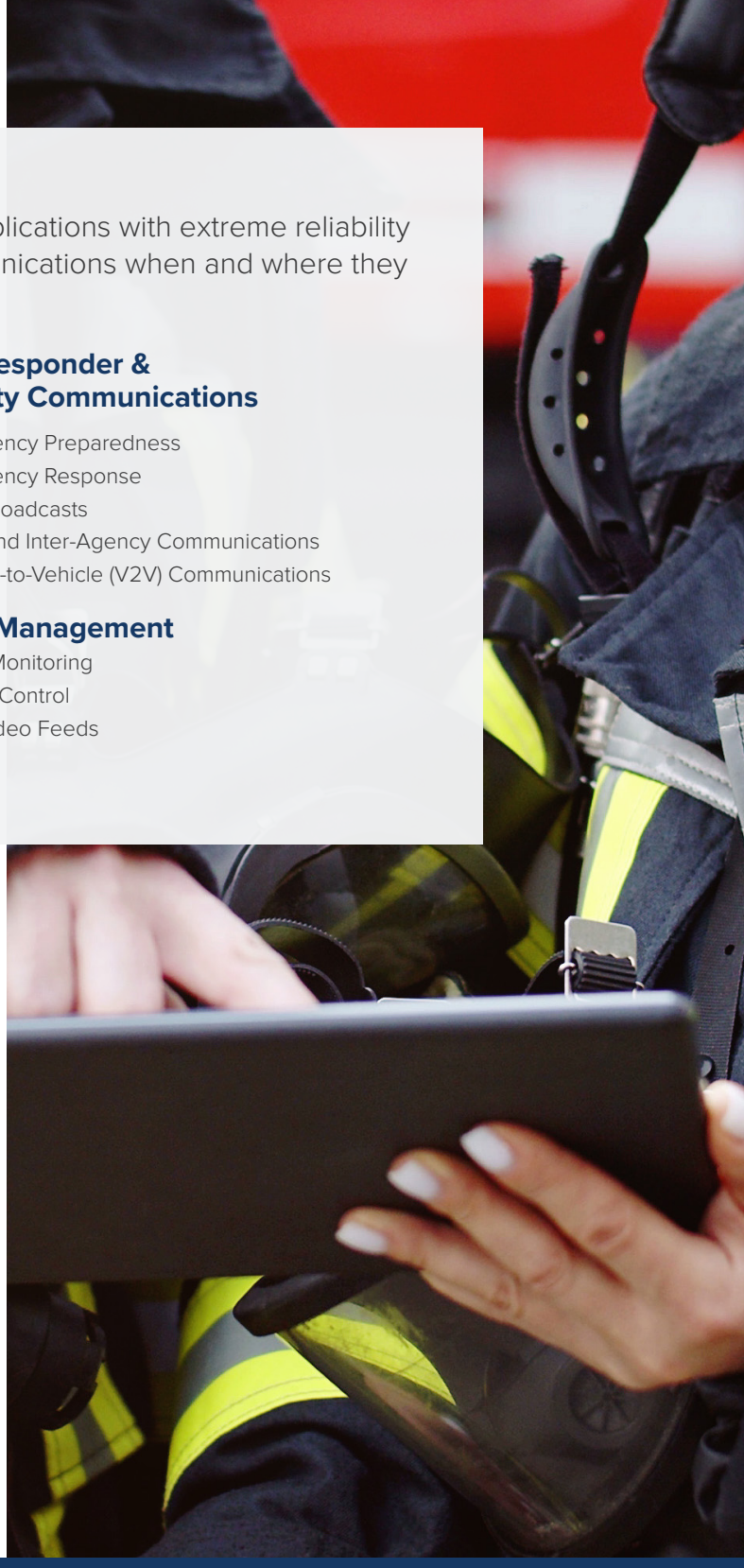
- Bomb Squad Robotics
- HAZMAT Robotics for Material Disposal
- Real-Time Communications
- M2M Communications

First Responder & Security Communications

- Emergency Preparedness
- Emergency Response
- Alert Broadcasts
- Intra- and Inter-Agency Communications
- Vehicle-to-Vehicle (V2V) Communications

Event Management

- Event Monitoring
- Crowd Control
- Live Video Feeds



Rajant Private Wireless Networks: **Readily Deploy Reliable Communications to Enhance Public Safety**

Emergency response, crisis management, and public safety activities are mission-critical, and Kinetic Mesh is too. With the capacity to expand and create networks without infrastructure, it enables data, voice, video, and autonomous applications where they are needed, and in a rapid fashion. Rajant's multi-radio, multi-frequency architecture provides the low-latency, high-throughput, resilient performance required to ensure the uptime of bandwidth-intensive communications, helping deployed public safety personnel better protect citizens while keeping safe themselves.

See how Rajant's network supports diverse public safety applications with unmatched real-world success. **Visit rajant.com/public-safety to get started.**

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20+ Years OF GAME-CHANGING WIRELESS

RAJANT

*MAKING THE COMPLICATED **SIMPLE***

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