



## HOW MESH NETWORKS CAN ENSURE PUBLIC SAFETY AT LARGE-SCALE EVENTS

A suitable mesh network allows communities to improve situational awareness with the high-bandwidth transmission of security and surveillance monitoring data.

BY CHRIS MASON

Because of their temporary nature, large-scale public events pose many challenges. With every high-profile event comes heightened need to ensure the safety of the public. Police and other public services require always-connected, high-capacity communications and increased situational awareness delivered via secure, high-definition closed-circuit television (CCTV).

These events, whether unplanned or planned, typically occur for only a short period, meaning that a high level of wireless communications of connectivity is not always available. That is why it is critical that a wireless infrastructure can be deployed rapidly to provide public safety organizations with the tools they require to protect the public, personnel and even property, when and where they need it.

### CONNECTIVITY CHALLENGES

Although anytime, anywhere connectivity is critical to public safety operations, ensuring it is in place is no easy feat. Today's public safety organizations are not only tasked with building safer communities, but also they must do so while addressing the requests of government security, law enforcement,

first responders and citizens.

The network they rely on must overcome many complex challenges, including budgetary constraints, which are always a consideration when planning and implementing network enhancements. Incompatible equipment also presents hurdles by restricting access to vital information and applications, to which the public should generally not have access. Such security considerations inevitably prevent public safety organizations from receiving real-time data.

Furthermore, these new applications often require increased bandwidth to support them. If a network has insufficient bandwidth, real-time access to



files such as on-scene video, aerial imagery, maps and missing person images may not be possible. Regrettably, many existing public safety networks lack adequate bandwidth for streaming video from remote cameras to first responders, especially while response teams are racing to an incident. On-the-move visibility is mission-critical to providing first responders with the inclusive situational awareness that is essential to protect citizens, personnel and property.

If public safety organizations don't have the right wireless infrastructure in place, it can result in limited or fragmented connectivity between mobile personnel and vehicles, creating serious and possible life-threatening gaps in situational awareness — which in some cases, can mean the difference between life and death. With so much at stake, it is evident that public safety organizations can't afford to compromise when it comes to security.

### EVENT MONITORING ON THE MOVE

On-the-move visibility is critical to today's policing operations and is certainly the lynchpin in any effective situational awareness strategy,

especially when it comes to monitoring events.

From public and political events to carnivals and outdoor concerts, wireless communications networks can prove to be an excellent solution in enabling officers to effectively monitor events, control crowds, manage traffic and supply more “event eyes” for greater safety — but not all wireless networks are equal.

To support the demands of expected and unexpected events, wireless networks must be able to be deployed easily and quickly to ensure they can provide an ad-hoc network for a short term.

### **ROYAL SOLUTION**

Rajant’s private Kinetic Mesh wireless mesh network is just such a product. It offers reliable, intelligent and secure wireless broadband connectivity that not only survives, but thrives in evolving and mobility-driven environments. It forms a living mesh network that can move with and adapt to the evolving communication requirements of public safety organizations. What’s more, the technology can seamlessly integrate with existing communications infrastructure to support the highly varied users and needs of these organizations, all in a way that lowers total ownership costs and management complexity.

Additionally, the mesh network allows communities to improve situational awareness with the high-bandwidth transmission of security and surveillance monitoring data. Massive amounts of video data can be delivered with high throughput and low latency across the network, bringing public safety workers the visibility they need to identify potential threats and issues early. Furthermore, this

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capability can transform monitoring outcomes from reactive actions to proactive opportunities to advance security, which is particularly crucial at high-profile events where anything could happen at any given time.

**PROTECTING CROWDS AND THE CROWN**

An example of how important the right network is to ensuring public safety at large-scale events was seen during two of the most high-profile events of 2018: the weddings of Prince Harry to Meghan Markle and Princess Eugenie to Jack Brooksbank in Windsor, a town on the River Thames in southeast England, just west of London. Meeting the significantly extended public safety and security arrangements for these weddings was no easy feat. With a large

number of well-wishers expected to come into the town to watch the carriage rides, the security of both the public and the couples was paramount.

As part of its assignment, Thames Valley Police were tasked with providing supplementary CCTV coverage of both the royal weddings. In its initial proceedings, it became quite apparent during the design process that using conventional point-to-point/multi-point would not suffice in the urban environment of Windsor. Only a true mesh network could provide the resilience and coverage that was required.

After being selected as the mesh network provider, Rajant’s team was put to work. But with less than a week to go until the ultra-publicized event of Prince Harry and Megan Markle’s

wedding, this was no task for the faint-hearted. However, Rajant built on its wealth of experience in ensuring public safety requirements are provided quickly and securely for authorities, and this project was no different for the company. Its ease-of-assembly performance justified the decision to adopt it, rather than any other wireless network technology. In just under three days, Rajant was able to deploy 11 cameras with 13 of its wireless network nodes, providing a high-speed, robust network for high-definition CCTV.

**ONE STEP AHEAD**

When it came to the big days of the royal couples, Rajant mesh network technology was able to seamlessly integrate with existing communications



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infrastructure at key locations. This enabled large amounts of mission-critical video data to be delivered with high throughput and low latency across the network, giving the police the visibility they needed. This comprehensive security was deployed with maximum efficiency thanks to the use of the mesh network in key points where network fiber infrastructure, for the essential additional cameras, was unavailable. Thames Valley Police were able to effectively cover every part of the route for the post-wedding processions by the royal couples with dynamically deployed supplementary cameras. This was particularly challenging because the processions took place along the winding streets of Windsor and up through Windsor Castle's Long Walk.

Because the network used multiple high-bandwidth frequencies, it also ensured that the massive amount of wireless output from broadcasters, other security organizations and the general public did not prevent transmission of the key imagery. Furthermore, the imagery provided over the network was several seconds ahead of the television broadcasters covering the event, ensuring that Thames Valley Police were always one step ahead.

Fast, stable and high-definition CCTV effectively covered the hundreds of thousands of visitors and guests in Windsor during both weddings. The crowd was gratified to catch a glimpse of the royal couples, ensuring that both the days were enjoyable, but most important, safe, for all.

Although requirements may be stringent, public safety organizations can't afford to overlook security when it comes to protecting the public and its workers, especially at events. But to do so, they require a wireless mesh network that can empower their operations, ensuring that there is no single point of failure in the network, whether officers are stationary or in motion. This, in turn, ensures that police, firefighters and emergency units can take their data and communications anywhere, for rapid, real-time response. ■

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