



# WLAN and Real Time Mobility

## The problem

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Today, traditional cell-based WLAN systems which are implemented based on 802.11 standard architecture are designed to support portability requirements of organizations. They allow a single client to connect to a WLAN network and move around it while keeping an active connection by roaming between the different AP's. However, it is important to understand that even though such portability is enabled, it doesn't usually enable REAL TIME MOBILITY applications that demand a constant and stable connection without roaming. Such applications are usually very sensitive to any delay to the stream of packets flowing in and out, to and from the applications. Such applications can be related to:

- Mobile / Voice communications
- Emergency and life saving healthcare systems
- Real time monitoring and analytics of mobile activities and events
- Transportation, Logistics and Manufacturing
- Mobile industrial robotics

The traditional cell-based WLAN topology is fundamentally challenged when it comes to delivering REAL TIME MOBILITY due to it being unable to provide seamless AP-to-AP handoffs and also because of co-channel interference. Both cause the client to lose connectivity, which, for however short a moment in time, will critically affect the continuity of performance required by the applications in order for them to provide a guaranteed, often mission critical service.

Traditional WLAN topology uses cell planning to achieve coverage. As mobile users move from cell to cell, inter-AP handoffs are required. As the cell size decreases to provide higher capacity, inter-AP handoffs occur more frequently, therefore increasing the amount of disconnections and adversely affecting performance. Historically, organizations dealt with such application requirements by either neglecting them completely or by compromising their position by adopting wire-based solutions, which in turn diluted the wireless offering. This approach is completely unviable in our dramatically changing Mobile IP environment. Today, in order to achieve their business goals, enterprises need to accept that traditional wireless will not provide the performance they need to gain the competitive advantage they want.

## The Solution

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Extricom's patented Interference-Free WLAN architecture is built from the ground up for Real Time Mobility applications. Extricom's unique and patented solution consists of UltraThin™ APs containing little more than WLAN radios, and a central WLAN switch that controls the entire network.

Extricom's WLAN gives ubiquitous coverage across single-channel blankets, each providing maximum data rate. There are no black holes or areas of poor coverage, and the latencies of inter-AP handoffs are eliminated by the one continuous channel. APs can be added at will without limitation, dismissing the high costs of RF site surveying and maintenance, and providing a highly scalable WLAN deployment truly addressing the Real Time Mobility applications needs.



Extricom's patented TrueReuse™ technology allows frequency re-use with high spatial density, while avoiding co-channel interference. Blanket coverage allows all stations to support the highest data rate. Since multiple radios can be placed in each UltraThin AP, multiple blankets of high data rate coverage are provided.

### The Channel Blanket Difference

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Centralization of the Wi-Fi environment enables enterprises to deploy 802.11a/b/g/n channels at every AP, creating multiple overlapping "Channel Blankets" that leverage each of the radios in the multi-radio UltraThin AP. Each channel's bandwidth is delivered across the blanket's service area (i.e. the combined coverage of all APs connected to the switch), with interference-free operation and consistent capacity throughout.

As the client moves, different APs will be in the best position to serve it at different times. The switch always chooses the best uplink and downlink path to serve the client. While this is going on "behind the scenes," the client never experiences an AP-to-AP handoff (i.e. de-association and re-association), resulting in seamless mobility. And with the inter-AP handoffs eliminated, your organization now has the flexibility to choose any mix of clients, with the confidence that they will all operate with consistent behavior on the same network. Within each Channel Blanket, the switch avoids co-channel interference by permitting multiple APs to simultaneously transmit on the same channel but only if they won't interfere with each other.

At the same time, the diversity receiver inherent in the channel blanket means that the communications link is rock-solid, virtually eliminating the problem of frequent disconnections common in all other systems. No other system can provide the link robustness of Extricom, ensuring that Wi-Fi communications succeed even in the toughest of environments.

### Zero-Latency Roaming, Secure Mobility

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Extricom's uplink AP diversity enables client mobility with zero-latency roaming. Zero-latency roaming eliminates the latencies and jitter associated with inter-AP handoffs. The station associates once to the entire network, and seamlessly roams throughout the enterprise without having to re-associate. The difficult decisions are made by the infrastructure, allowing the station to roam unaware of the inter-AP handoff.

Furthermore, by providing zero-latency roaming, Extricom avoids the latencies associated with security measures. This allows Extricom to use WPA, AES, and 802.11i, the most advanced security mechanisms available, providing secure and seamless mobility without additional latency and jitter.

Result: Extricom provides zero-latency roaming throughout the enterprise, eliminating inter-AP handoff latencies and jitter, and allowing true Real Time Mobility for applications.

### One Infrastructure, Many Uses

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Extricom has the ability to enable multiple blankets from the same infrastructure. The system is therefore unique in combining multi-channel capacity with channel blanket mobility and robustness. This makes an Extricom WLAN the most operationally flexible system in the market, and has profound implications for the All Wireless Enterprise.

Extricom is able to address the ultimate challenge to Enterprise WLAN - how to support multiple applications with conflicting system requirements, such as voice and data. It is doing it by separating the applications on different Channel Blankets. The result is the only integrated system that delivers a predictable grade of service, by enabling different applications to operate in parallel, without contention, on the same physical infrastructure.