

Application Note



Mobility

Benefits of the SkyPilot Synchronous Mesh Network Solution:

- **Integrated single or dual access points (2.4 and/or 4.9 GHz) support mobility for both public access and public safety needs**
- **Sophisticated spectral and traffic management features together enable fast handoffs between access points at speeds up to 60 MPH (100 KPH)**
- **The extended range and non-line-of-sight capabilities combine to lower the cost of deploying metropolitan area HotZone**
- **Built-in security provisions protect the privacy and integrity of all traffic while roaming the Wi-Fi mesh network**
- **Meshwide traffic coordination via directional antennas provides industry-leading performance and scalability**

In today's fast-paced world, people are constantly on the move—commuting daily, traveling frequently, and working out in the field serving customers and the community. Wireless communications has helped sever the tether, enabling people to access the public Internet and private intranets via the growing number of Wi-Fi HotSpots and wireless municipal networks. The cellular phone network even supports full mobility where people enjoy continuous communications as they roam from place to place.

Ideally, users could get the best of both wireless worlds: the broadband data rates, reliability and affordability of Wi-Fi mesh combined with the seamless roaming of the cellular phone network. And now they can with technologies that enable Wi-Fi mobility.

Wi-Fi mobility adds high-speed roaming to public Internet access services in public transportation systems, such as commuter trains, subways and buses. It also provides public safety officials and public works crews with powerful mobile multimedia communications while they protect and serve the community—out in the community.

Accessing a Mesh on the Move

Wi-Fi mobility involves the ability to connect seamlessly to the nearest HotSpot while traveling at a high rate of speed through a HotZone, which is essentially a network of multiple HotSpots that extends throughout an area, such as a railway, a major thoroughfare or harbor, or an entire metropolitan region.

The potential to roam among Wi-Fi HotSpots became possible only after large-scale Wi-Fi HotZones were made practical and affordable with the advent of wireless mesh networking. The wireless mesh is a self-forming, self-healing network that installs quickly and easily, and requires minimal ongoing management. The mesh topology utilizes multiple wireless paths, which allow the network to overcome obstacles, expand readily into new territory and deliver mission-critical reliability.

With ubiquitous and contiguous Wi-Fi coverage, wireless mobility routers are able to roam automatically from HotSpot to HotSpot in the HotZone mesh network. The result is constant connectivity that is secure and seamless enough to accommodate voice over Wi-Fi (or VoFi) using dual-mode phones that also support traditional cellular services. The ruggedized mobility router can be mounted in virtually any moving vehicle—from a squad car or ambulance to a bus or train. The mobility router can even serve as a multi-user gateway for a “vehicle area network” or VAN that creates a mobile HotSpot in and around the vehicle—in each passenger car of a train, for example—allowing all occupants to enjoy full roaming without the need for special mobility software.



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