# Understanding the InfiniG Network

InfiniG provides reliable mobile coverage in commercial buildings at a significantly lower cost than alternatives. Its Mobile Coverage as-a-Service (MCaaS) Cloud-based solution uses small radio nodes that share cellular airwaves, infrastructure, and the building's existing Internet to connect users to their mobile network operator's service.
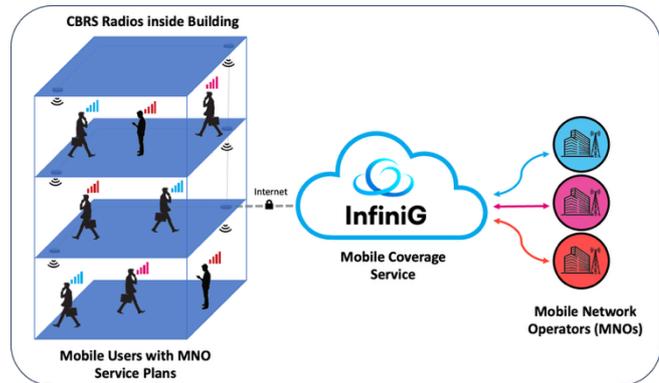
The Road a Bit Travels

This Application Note describes how a voice call, text message, Internet browsing, images, music, or even a Netflix movie gets to and from the user's mobile phones inside your building. Nowadays, every one of those services is digital, meaning that voice, text, audio, video and data is sliced into ones and zeros at the mobile phone before it is sent or received over a packet data network based on the Internet Protocol (IP). Delivering those data bits quickly across maybe thousands of miles requires a fast and geographically optimized network.

InfiniG precisely engineers its MCaaS solution and the overall IP network to maximize data speeds, minimize latency, maintain voice quality, ensure security, and deliver the best user experience possible. The following diagram shows the end-to-end IP network that user data takes when using the InfiniG mobile coverage solution:
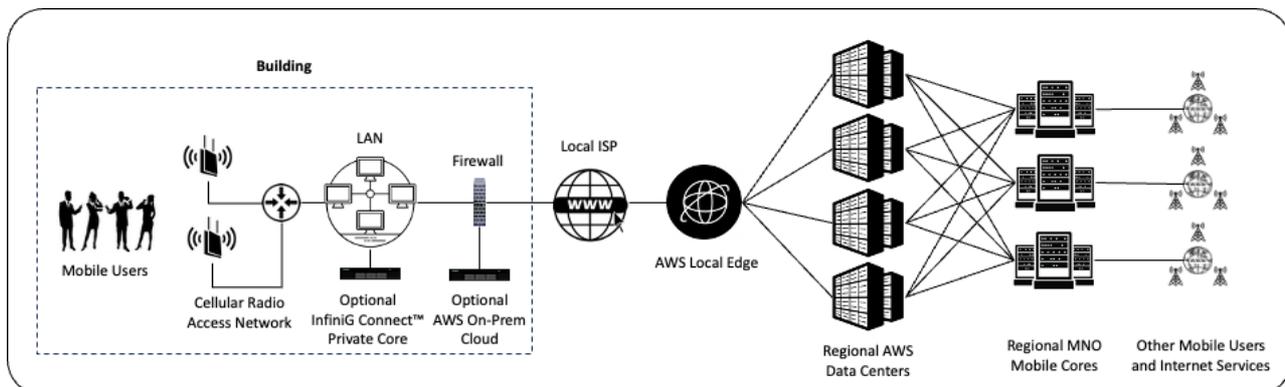
The path of a bit of user data starts at the user's mobile device. Global cellular protocols, based on the 3GPP standards, require that every mobile device holds a secure physical chip or virtual enclave known as the Subscriber Identity Module (SIM). The SIM is provided to the user by the mobile network operator (MNO) when they first sign up for service and get their phone number. It contains the mobile subscriber's information as well as encryption keys to ensure privacy and security across the entire IP network until it reaches the MNOs own security gateways, servers, mobile cores, applications and services.

When InfiniG deploys MCaaS inside a building it broadcasts each participating MNO's unique digital identifier, called a PLMN-ID, over the cellular Radio Access Network (RAN). InfiniG has pioneered, in partnership with MNOs, a standardized approach for sharing cellular infrastructure across multiple mobile networks. So, when mobile users enter the building, their devices detect the PLMN-ID that matches their mobile service provider's SIM and are authorized to connect to the network.

From the RAN, bits are transported inside a secure IPSec tunnel across the local area network (LAN) and through the local edge router or firewall out to the local Internet Service Provider (ISP). The ISP relays the bits to AWS Local Edge locations with direct high-speed fiber connections to regional AWS data centers, and where traffic is dynamically steered based on latency, scale, and policy rather than on fixed

geographic anchoring. Once at the AWS the data centers, InfiniG's cloud-native MOCN gateways sort the bits by mobile service provider and delivers them over secure IPSec connections to each MNO's regional mobile core network. Finally, each MNO decrypts the bits and delivers them as voice calls, texts, images or video to other users or services. For the most demanding environments, InfiniG offers an On-Prem Cloud option for the ultimate in latency performance while preserving end-to-end security.

Throughout the entire process, InfiniG's rich AI-driven analytics continuously observe RAN behavior, subscriber experience, and traffic patterns across the edge-to-cloud continuum, enabling dynamic optimization, rapid fault isolation, and predictive capacity planning.

The Net(work) Result

The InfiniG network approach is unique in that it ensures:

- Fast speed and low latency
- Voice traffic gets the highest priority
- End-to-end security based on industry-leading IPSec security protocols
- Fully standards-based with cost effectiveness throughout
- AWS On-Prem Cloud option to minimize latency even further
- Unprecedented Cloud scale, continuously evolving elastically as enterprise demands change
- Private applications share the same infrastructure by adding optional mobile cores and private SIMs from InfiniG Connect™ partners
- Unparalleled Enterprise visibility into RAN behavior, subscriber experience, and traffic patterns

About InfiniG

InfiniG delivers mobile phone coverage as a service to building owners and enterprises. The company leverages CBRS spectrum, the latest MOCN and Cloud technologies, and close relationships with the major US mobile operators to provide high-quality mobile service to offices, hotels, hospitals, schools, warehouses, campuses and any other location with poor mobile coverage.