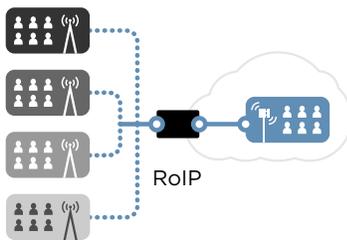**KODIAK**

Broadband PTT and LMR Interoperability

Enabling Seamless Communications Between LMR and Broadband PTT

As the leader in standards-based Broadband Push-to-talk (PTT) over 4G/LTE, 3G, and Wi-Fi networks, Kodiak places interoperability at the center of who we are and what we do. As part of Kodiak's commitment to interoperability, Kodiak has implemented multiple IP-based interfaces between our Broadband PTT solution and land mobile radio (LMR) networks.

The IP interfaces open up a new level of interoperability, transporting the voice and call data that makes it possible for Kodiak Broadband PTT users, LMR users, and dispatchers to communicate directly as well as enjoy a consistent user experience.

LMR Interoperability Benefits

- Fast, secure, reliable PTT communications unbounded by coverage area or network type

- LMR access for those who cannot or will not carry a radio

- One device to access broadband data apps and LMR PTT

- Ability to quickly add PTT users as required

- Lower costs, without need for new sites, frequencies, or radios

RoIP

Any LMR Group to Broadband PTT Group - Group-oriented voice communications between Kodiak PTT users and users on all types of LMR networks

Entire LMR Network to Broadband PTT Network - Network-to-network interface for direct communications between Kodiak Broadband PTT users and those on P25 LMR systems
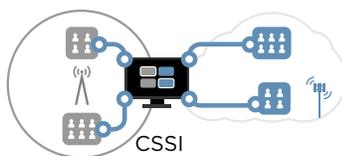
ISSI

LMR Dispatch Console to Broadband PTT - IP-based connectivity for direct communications between Kodiak Broadband PTT users and dispatch consoles

CSSI

The IP-based wireline interfaces (ISSI & CSSI) provide fast, reliable setup of communications sessions between the Kodiak Broadband PTT solution and LMR systems, supporting features such as Group Registration, Group Calling, Talker ID, One-to-One Calling, and Call Alerting. The IP interfaces also simplify the effort required to expand the number of push-to-talk users, LMR users and dispatchers that can communicate simultaneously, with a single interface capable of supporting a large number of concurrent sessions.

To protect all users from unauthorized call interception and monitoring, as well as provide secure alerting and contact management, the call is encrypted while traversing the carrier radio access network using the Advanced Encryption Standard (AES) 256. That session is terminated at the Kodiak Interoperability Gateway and the information decrypted because the voice codec used by Broadband PTT is different from the codec used by the LMR system. Once decrypted, the audio is then inserted into the 256-bit encrypted VPN tunnel and forwarded to the LMR network. In addition, the Kodiak Broadband PTT cryptographic module is also FIPS 140-2 Level 1 certified, confirming that it meets the standards for use by U.S. government and other regulated industries that collect, store, transfer, share and disseminate sensitive but unclassified (SBU) information.

Benefits of LMR Augmentation

The implementation of IP interfaces between the Kodiak Broadband PTT solution and land mobile radio networks provides the seamless interoperability needed to augment LMR communications, making it possible to expand the number of users, extend network coverage, and enhance feature/functionality without adding new radios, sites, or frequencies. Whether the need is for PTT communications outside the LMR coverage area, LMR access for those that cannot or will not carry a radio, or a single device to access both mobile data applications and an LMR network, the Kodiak LMR Interoperability solutions deliver the carrier-integrated push-to-talk services necessary to increase connectivity, improve productivity and reduce costs.

About Kodiak

The leading provider of standards-based broadband Push-to-Talk, Kodiak delivers clear, reliable, sub-second calling performance with LMR interoperability over 4G LTE, Wi-Fi, and 3G networks. The Kodiak solution allows organizations to cost-effectively scale their LMR networks, add users, extend coverage, and access broadband data capabilities. The Kodiak-powered platform supports a robust partner ecosystem including iOS, Android handsets/tablets, ruggedized devices, dispatch consoles, accessories, and enterprise productivity applications. Kodiak has the largest carrier-integrated PTT network footprint in the world, with deployments across a number of carriers in North America, Latin America, and Europe, including AT&T, Bell Canada, KPN, Telefónica, Verizon, and Vodafone. For more information, visit kodiakptt.com.