Benefits of Adding Broadband PTT

Many organizations that use LMR systems can reap great benefits from adding broadband PTT capabilities. For example, public-safety agencies benefit from these scenarios:

- Agency administrators using broadband PTT can stay in touch with dispatchers and other LMR users, even while traveling outside of their LMR system coverage area.

- Non-critical users (such as schools and public works) can be issued inexpensive cellular smartphones with low monthly fees instead of expensive LMR handsets and can still maintain interoperability with dispatchers and LMR users when needed. These same devices can also host workforce applications.

- Undercover police can carry unobtrusive consumer devices rather than conspicuous LMR radios and still interoperate with dispatchers and LMR users.

- Critical users (such as first responders) who rely primarily on LMR radios can use their smart devices running the PTT app as a backup in areas where the LMR coverage is poor (e.g. inside buildings or beyond LMR coverage area).

1. OTT PTT-over-cellular vendor has announced the addition of QoS, but this requires deployent of cellular standards that, as of this writing, have yet to be implemented. Only Kodiak provides QoS on existing commercial carrier networks.

Zetron's Radio Dispatch-Broadband PTT Integration

Zetron offers an interface option that enables the integration of Zetron's AcomNOVUS and MAX Dispatch console systems with the Kodiak Broadband Push-to-Talk (PTT) solution.

This overview briefly explains this radio dispatch-broadband PTT integration capability, what it offers, and how users of Zetron's MAX Dispatch and AcomNOVUS systems can benefit from it.

Radio Dispatch-Broadband PTT Integration

Zetron's AcomNOVUS and MAX Dispatch console systems are both able to integrate with Kodiak's Broadband PTT solution. This integration capability—the result of a partnership between Zetron and Kodiak—connects Zetron land mobile radio (LMR) dispatch consoles to the world of broadband PTT communication, also known as LTE Push-to-Talk over cellular. Other examples of Zetron's move to broadband include its support for Text-to-9-1-1 in its MAX Call-Taking system and the addition of the AVL Map system to its offerings.

A key aspect of Zetron's PTT integration is that it is built with the future of public safety in mind. That is, it is based on Third Generation Partnership Project (3GPP) cellular initiatives that will lead to industry standards for mission-critical PTT. This is important because these are the standards that will eventually be applied to FirstNet and other public safety broadband networks.

Interface and Call Features of Zetron Radio Dispatch-Broadband PTT Integration

Interface Features

- Available on Zetron's AcomNOVUS and MAX Dispatch console platforms.

- Connects users using smart devices with workers on LMR systems.

- Interoperates with virtually every type of LMR system, including Project 25 (P25), Astro 25, DMR, NEXEDGE/NXDN, OpenSky, EDACS, SmartNet/SmartZone and Analog FM.

- Enabled by Kodiak and available on AT&T and Verizon networks in the U.S.A.

- Built on emerging standards for Mission-Critical PTT (MCPTT).

- Delivered over carrier-integrated services that give better performance than Over-the-Top (OTT) PTT apps.

- Operates over 3G, 4G/LTE and WiFi.

- Interfaces with Zetron consoles using the P25 Console Subsystem Interface (CSSI) standard protocol.

- Dispatcher-controlled LMR interoperability prevents overloading LMR systems with unnecessary cellular PTT traffic.

Call Features

- Talker (PTT) ID with Alias
- Group Calls (one to many)
- Individual Calls (one to one)
- Call Alert
- Pre-emptive Dispatch
- Broadcast call from dispatch console

Candidates for Broadband PTT Integration

The following list provides several examples of users who can benefit from broadband PTT integration:

- Non-mission-critical users (e.g., utilities, transportation, public works, schools, the hospitality industry).

- Mission-critical users needing backup to LMR for indoor or extended-range coverage.

- Agency supervisors and administrators.

- Under-cover agents.

Benefits of Carrier-Integrated Services

The Kodiak Broadband PTT solution is integrated into the networks of some of the largest cellular carriers, including AT&T and Verizon. This means that unlike OTT[1] smartphone PTT apps, whose data is given the same priority as all other data, the Kodiak Broadband PTT data traffic can be given higher quality of service (QoS) in its partners' networks. This also improves latency, which in most cases is not unlike the latency of modern digital LMR systems. While true mission-critical-grade operation awaits the completion of emerging LTE standards, broadband PTT powered by Kodiak provides the best grade of service currently available.

Benefits of PTT Integration via the CSSI

The interface to Kodiak occurs via the open-standard P25 CSSI, which has been widely adopted throughout the LMR industry. The integration requires a software license that is an add-on to the CSSI license. Once the integration has been completed, dispatchers on Zetron's consoles can communicate with broadband PTT users just as they would any other LMR system.

This integration supports the following features:

- Talker (PTT) ID with Alias.
- Group Calls supporting up to 100 talk groups.
- Individual Calls supporting up to thousands of unit IDs (up to 250 users per talk group).
- Outgoing Call Alert (request for call back).
- Pre-emptive Dispatch; able to override talk-group traffic in progress.
- Dispatcher-controlled patching of broadband PTT talk groups/users to any other LMR network, talk group, or user on the Zetron console system.

Broadband PTT and LMR Integration Using the P25 CSSI
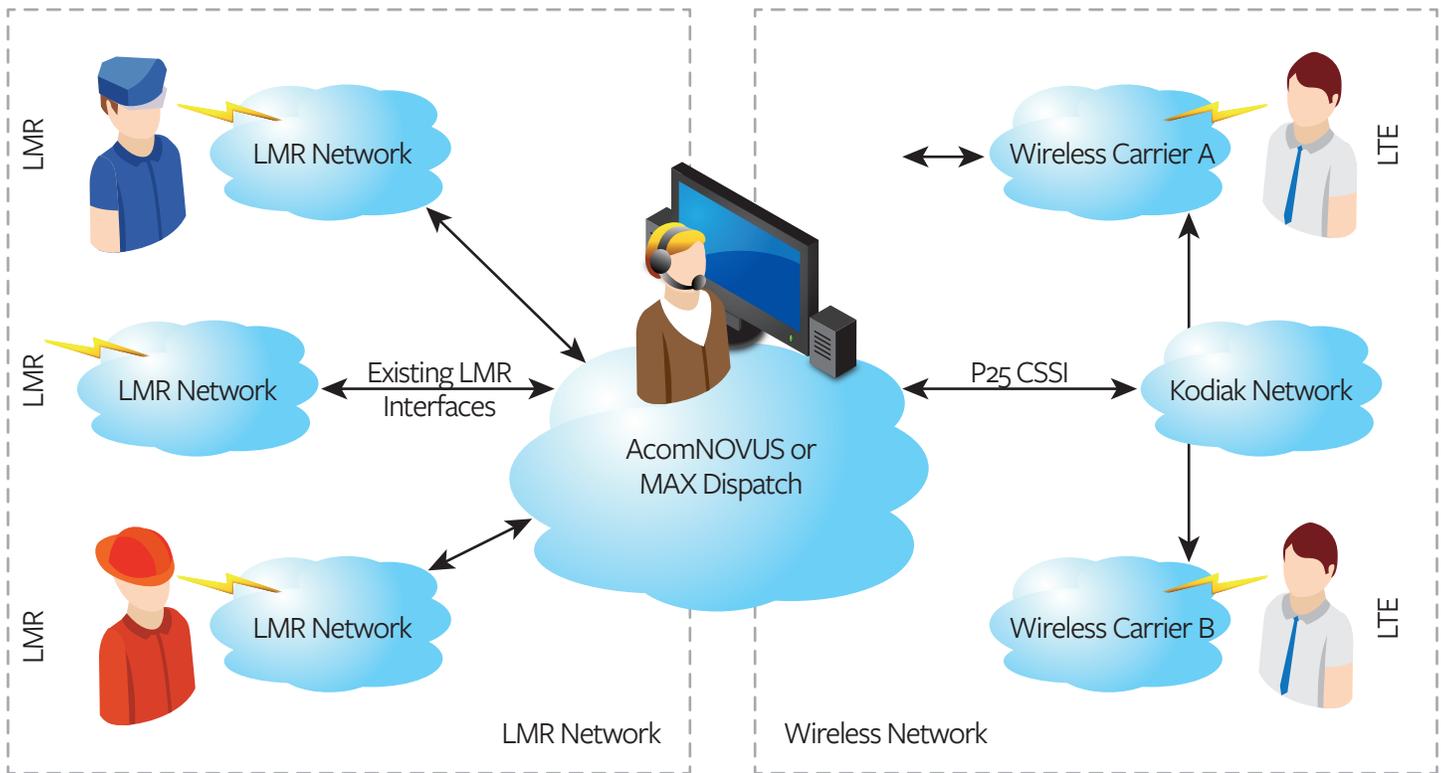
Benefits of Zetron's Console-Based Integration

While Kodiak also supports direct LMR interfaces (such as RoIP via LMR donor radios and the P25 Inter RF Subsystem Interface (ISSI) to LMR radio fixed-network equipment), Zetron's console-based integration offers several advantages over direct LMR-to-broadband interfaces:

- Console operators see broadband PTT traffic just like they see LMR traffic. Using the same standard operating procedure (SOP) as LMR ensures that important broadband traffic is heard.

- When a console is used as the interoperability gateway from broadband PTT to LMR, there is no need to add or license new LMR interfaces to the radio network(s). Interoperability is provided through existing LMR interfaces that are already connected to the console system.

- Using a console as the gateway allows console operators to decide when and with whom to patch broadband PTT groups and users to LMR groups and users (whereas with

direct interface methods, interoperability is controlled by field users selecting common talk groups). This prevents field users from accidentally selecting the wrong talk group and causing traffic on one system to load the other system. This is particularly important if there is a high number of broadband PTT users whose traffic could potentially swamp an LMR system. Thus, while under dispatcher control, interoperability will only occur if and when it is needed.

- Zetron consoles can provide special provisions when patching between the Kodiak Broadband PTT solution and a P25 LMR system. The patched audio is maintained in its native digital format rather than transcoded (which preserves rather than degrades the original audio quality). The originator's Talker ID (a.k.a. PTT or Unit ID), rather than the ID of the console system, is sent all the way to the destination user or group, regardless of whether the direction of the call is LMR-to-broadband or broadband-to-LMR.