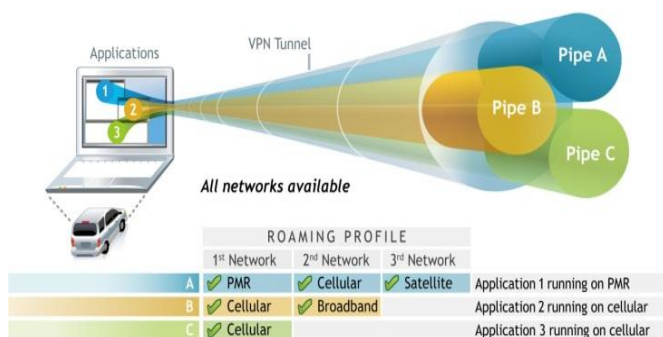Mult-IP

Leveraging 4G networks is a must for today's mission-critical communications. Public safety, utility and transportation agencies are incorporating 4G cellular or private 700 MHz solutions into their overall network strategies to benefit from better performance and improved response times. The right Mobile VPN (MVPN) is key to enabling these value added features without sacrificing Quality of Service and security.

Capitalize on the Performance and Flexibility of 4G Networking…TODAY!!

Maximizing the benefits of 4G wireless networks in a MVPN begins with ensuring support for the new networking protocols. Mult-IP is a 4G-ready and highly secure MVPN software solution that supports all 4G networks (cellular and 700 mhz LTE, WiMAX, etc.) and is the only network agnostic MVPN solution in the industry with simultaneous support for all wireless network technologies, including IP/non-IP based Land Mobile Radio (LMR) networks, public/private 2G/3G/4G wireless networks and broad based satellite networks.

Because users may at times venture out of their primary network's coverage area, Mult-IP lets them automatically roam— seamlessly and efficiently— between an unlimited number of different wireless networks without losing connection to their applications, such as dispatch.

> **If not properly designed, a MVPN will disable all QoS functions and benefits over 4G networks**

Concurrent Network Technology

Control 4G Costs…

Not every application needs 4G speed and capacity. Controlling network costs requires the intelligent allocation of network resources, which demands robust, granular bandwidth allocation capabilities.

Mult-IP enables automated and real-time management of multiple, independent networks simultaneously within one mobile VPN, assuring uninterrupted connectivity for various mobile workforces — regardless of their location — while exceeding data protection regulations and enabling cost optimization.

Radio IP's patent-pending concurrent networks technology provides the ability to parse a single MVPN tunnel into multiple virtual routes through the use of intelligent roaming profiles, which define the priority sequence of wireless network paths to be used to establish a connection. 4G networks can be assigned to any virtual routes with any priorities.

→ Leverage legacy infrastructures and 4G networks concurrently– generating additional ROI.

→ Increase 4G network performance by combining the use of several networks concurrently. Even a combination of several high speed networks can be made for bandwidth hungry applications.

→ Ensure application-level QoS in 4G 700MHz LTE networks with premium traffic prioritization and bandwidth reservation

Radio IP
Redefining Secure Mobility

Plan for the Worst…

Bandwidth Allocation and Packet Prioritization

Public safety environments often involve emergency situations where day-to-day application/QoS priorities change dynamically to ensure allocation of resources to the most critical response teams. First responders benefit from full access to available network bandwidth, but as supporting teams arrive on site bandwidth needs to be allocated across all teams, and then that bandwidth needs to be further allocated among the top priority traffic from any given team.

The pending allocation of the 700 MHz spectrum for 4G will allow service providers to reserve bandwidth for very high priority traffic to ensure emergency response teams have access to "private" LTE bandwidth, i.e. bandwidth that is not available to cellular users of the general public. As an example, a critical voice or video application will have 100 kb/s of bandwidth reserved regardless of site location or what bandwidth other applications may use. Additionally, 3G/4G networks like EVDO can give specific application packets priority in the network over other, less critical packets, ensuring priority traffic passes through the network as fast as possible. Mult-IP enables these mission-critical bandwidth allocation and packet prioritization features, allowing Administrators to take full advantage of new 4G LTE infrastructure.
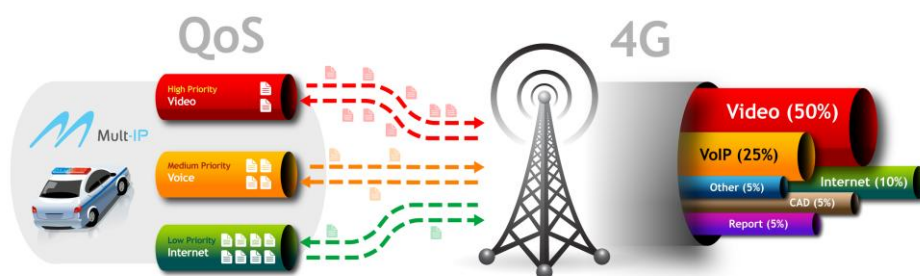
Dynamic Application-Based QoS across Private 700 MHz LTE Networks
Ensure service delivery, prioritize applications and manage network resources

Ensuring unencumbered and automatic access to private 700 MHz networks

Leveraging intelligence gathered from previous emergency situations, Administrators can now proactively configure the MVPN to prioritize packets from specific applications, thereby ensuring unencumbered and automatic access to private 700 MHz 4G LTE networks in times of crisis without user intervention, without impacting mission critical communications and in a cost-effective, secure manner.

Enable and Optimize QoS across all LTE Networks

Mult-IP is the industry's only MVPN solution currently supporting the integrated QoS mechanisms of 3G/4G (as defined by various standards organizations):

➡ LTE: 3GPP TS 23.401, Section 4.7
➡ WiMAX: IEEE 802.16e
➡ EV-DO: 3GPP2 A.S0012-D (v2.0)
              Section 2.4.4 and 3.3.1.1

Mult-IP supports all QoS standards through the use of the DSCP field in the header of encrypted IP packets. By keeping this data, Mult-IP is able to implement the QoS parameters set at the network level in both upstream and downstream communications. This approach allows administrators to respect bandwidth reservation and packet prioritization policies across applications (such as VoIP versus video streams) without having to reconfigure settings across all VPNs.