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Lemko solutions keep connectivity alive regardless of the circumstances

By **Joe Dyton** July 16, 2020

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The Lemko Corporation would be the first to admit it's not the only company with technology that integrates core network functions into the radio element. However, the company, which provides integrated, mobile network solutions with licensed carriers and entities that wish to access the CBRS band, does so in a much different manner.

Lemko's differentiator is it uses blockchain software technology to enable distributed networks with a database that enables a customer to create a virtualized network with multiple deployments with its Nodes. Lemko also has a network-signaling gateway, the Node2, that provides authentication capabilities between a company-based network and any major carrier network. Lemko currently has customers in the U.S., Canada and Europe that support roaming services with over 120 carriers worldwide.

"We developed the software 15 years ago and it's been powering commercial networks for 12 years," Lemko Vice President, Sales and Marketing Brian Ponte told Connected Real Estate Magazine. "We developed Network Functions Virtualization (NFV) before that term was coined. Our software enables all of core network functions, databases and gateways."

Lemko software in action

When the Lemko solution is deployed, the core software is integrated into customers' radio or into a one-to-one relationship with the radio. The company's EZ Access Point is its Citizens Broadband Radio Service (CBRS) based offering. The EZ Access Point has everything an enterprise would need to run a full LTE network in a complete, hands-off manner. Lemko's products can be connected to an Ethernet based enterprise network. The

Patent Owner, Lemko Corp. - Ex. 2009, p. 1

user just has transmission control protocol/Internet protocol (TCP/IP) packets to deal with when connecting the EZ APs.

"A big part of our secret sauce is the way we handle the database," Ponte said. "When you connect multiple Nodes or EZ APs to create an umbrella of coverage within an area, whether it's a city, rural area, building, or on mobile asset such as a truck or a trailer, the Nodes mesh on the network side. When meshed, a fully functional 4G network is created, which includes handoffs, data and text messages. A lot of people say, 'Oh, that's the network in a box. It's more than that because of the way we have created the database, so when all of the Nodes mesh the end user information is shared across the Nodes ."

As an example, in the military deployments, vehicles with Lemko's devices installed could break off and go down another road, separate from the main coverage umbrella and create their own coverage area. The company's SwarmNet solution allows its military users to break off or reattach to convoys on an as-needed basis. Any user tied to these networks will continue to operate regardless of which vehicle they move with.

Lemko helps people connected during trying situations

Local communications often don't stand a chance against major disasters like hurricanes or tornadoes. Lemko-based platforms can be deployed and activated quickly so personnel on the ground can stay in communication. This is possible because complete network functionality is included in the local network elements. A system that is deployed and not connect to the Internet will provide local communications that are connected to that Node. For rapid Intenet connectivity, Lemko's platform can be connected to the Internet through auto- acquire VSAT (Very Small Aperture Terminal) systems. This approach provides Internet connectivity so critical business, financial and insurance functions can continue. Lemko systems can be connected in less than 10 minutes using an auto-acquire VSAT system.

Meanwhile, first responders and FirstNet users can gain unique capabilities by using the Lemko platform. For example, as the network functionality is contained in the local platform attached to a truck or a trailer, deploying these assets would not depend on the network integration that is required with a standard COW (Cell on Wheels) or COLT (Cell on Light Trucks) that AT&T and FirstNet use. Instead, the primary network function that the Lemko platform would perform would be the authentication through the Node2 of the users that are attempting to access the network.

"Say this is mounted onto a truck or police SUV—now they have 10 people out searching for a lost kid and they're all communicating with each other," Ponte said. "All of those communications stay local. It does not use any satellite. In fact, they don't even need to connect to the satellite to do that. They can fire it up and use at a local communications device."

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Enterprise operations can continue with Lemko

Commercial real estate owners with Lemko solutions do not have to worry about unhappy tenants if there's ever a major network outage and the fiber connectivity goes down. Enterprises can deploy a Lemko-based network using the CBRS band. The Lemko platform allows the network's core functionality be localized within an enterprise facility. Meanwhile, the usual area broadband and fiber providers can still supply the broadband connection.

If there's major outage, the Lemko network will continue to operate locally (assuming there's a backup power source) and a failover VSAT connection can be used to provide network connectivity to the Internet.

"Most other CBRS based solutions use a cloud core solution," Ponte said. "When the network connectivity goes down, so do the cloud core capabilities. Very time sensitive enterprises, such as financial institutions will see the value in the Lemko solution."

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