DARI Delivers & Manages Instant Human Motion Analytics With Connectivity by Cradlepoint

Pop-Up Networks Keep M2M/IoT Technology Running With 4G LTE & Cloud Management

SUMMARY

3D biomechanical data has great potential to predict and prevent injuries, but until recently it's been time-consuming and tedious to collect and process. DARI and its custom, mobile motion labs are helping lead a paradigm shift toward rapidity and preventive service in healthcare—thanks in part to Internet connectivity that is mobile, cloud-managed, and always on.

Through Cradlepoint's AER3100 Advanced Edge Router and NetCloud Manager, DARI has constant, cloud-managed 4G LTE connectivity that keeps important data moving quickly, anywhere in the world.

SOLUTION:

AER3100 & NETCLOUD MANAGER

APPLICATION:

M2M/IoT
POP-UP NETWORKS
CLOUD MANAGEMENT

MARKET:

HEALTHCARE / ATHLETICS

CUSTOMER PROFILE

DARI, powered by Scientific Analytics, Inc., produces the world's only markerless predictive human motion analytics system, and offers the most advanced data management software for human movement. These technologies help predict injuries based on body compensation and other factors.

For clients ranging from professional and collegiate sports teams and the military to healthcare and physical therapy groups, DARI offers systems including:

+ Custom motion labs that use machine vision technology and eight video cameras capturing and analyzing information about each individual.
+ A cloud-based data management system that creates extensive reports.

DARI trains its customers' staffs to collect movement protocols and upload movement files to the cloud. From there, DARI's cloud software processes all data automatically—producing data-rich reports.

Traditional methods for collecting and processing 3D biomechanical data have taken weeks, factoring in setup, collection, processing, and reporting. With DARI, motion capture is possible in minutes, processing takes seconds, and actionable reports are available almost immediately.

BUSINESS NEEDS

With its customers requesting custom motion labs that could be used either at headquarters or on location, DARI recognized the need for one device that could accommodate both wired and cellular-based connectivity, and that would work both domestically and internationally. The hardware also needed to provide reliable WiFi coverage.

What if that device were to quit working, though? DARI needed a router that could be managed from a central location via the cloud.

DARI also needed a bidirectional firewall to protect its industry-leading technology from intrusion and to restrict outbound traffic from its system to each customer's network.

DARI's intricate mobile system is based on a network of eight cameras that stream to GPUs for processing at 8 GBits per second, and then upload data immediately to the cloud for analysis. DARI needed a secure router with a robust processor and always-on cellular connectivity.

SOLUTIONS

After experiencing the success of Cradlepoint Advanced Edge Routers (AER) in providing wireless broadband access to demo units in the field, DARI integrated the Cradlepoint AER3100 into the mobile hardware racks that run each custom motion lab.

> *"Our customers need to deploy our technology anywhere in the world—and rapidly. Cellular connectivity meets that need," said Jared Starkey, CTO at DARI.*

DARI also chose NetCloud Manager (NCM), the cloud management service within the Cradlepoint NetCloud platform, to provide inbound remote technical support.

BENEFITS

RELIABLE NETWORK CONNECTIVITY

While some of DARI's clients use Cradlepoint for wireline connectivity at headquarters, all of them use the AER3100's cellular WAN connection when using their custom motion labs in the field.

Before Cradlepoint, if one of DARI's customers wanted to take its motion lab into the field, it did so without reliable connectivity. DARI's equipment interfaced the customer's network via a switch, and the customer had to configure its network to allow DARI's hardware to work.

If the customer's network experienced problems, DARI had to troubleshoot through its own equipment without reliable inbound access. If the customer's Internet connection went down completely, it had to wait to process its data.

CENTRALIZED, CLOUD-BASED MANAGEMENT

With these mobile motion labs deployed all over the world, DARI uses NCM to make configuration changes at the group level from headquarters—saving substantial time and resources.

Additionally, if a customer is traveling to a location where a certain cellular carrier's service is poor, DARI can utilize the AER3100's dual-SIM functionality and quickly switch to a different carrier through a remotely deployed firmware upgrade.

ROBUST WIFI

DARI and its customers take advantage of the AER3100's dual-band, dual-concurrent 802.11 (a/b/g/n/ac) WiFi to cost-effectively connect tablets and laptops that help operate each motion lab.

STRONG PROTECTION OF SENSITIVE DATA

The AER3100, with its stateful firewall and unified threat management (UTM), allows DARI to "Bring Your Own Network" (BYON) with best-in-breed security. This protection is vital for DARI's customers, who manage sensitive patient data that calls for HIPAA Compliance.

> *"Putting GPUs on the edge of our cloud platform had been a challenge. We've really relied on Cradlepoint for a flexible option that's secure, but not a nightmare for our system administrators," said Starkey.*

LEARN MORE: **CRADLEPOINT.COM**

"Cradlepoint has given us a level of consistency and guaranteed uptime that people expect when dealing with a technology like ours."

— Dennis Schulz, Chief Innovation Officer, Scientific Analytics