Founders of Modern Mobile Handoff: How Two Researchers Built the Backbone of 4G/LTE Connectivity

Dr. Abdelsalam "Sumi" Helal and Dr. Edwin A. Hernandez, developed patented foundational 4G/LTE handoff technology years before the smartphone revolution

Dr. Edwin A. Hernandez, Co-Inventor of patented seamless wireless handoff technology and Co-Founder of Mobility Workx

GAINSEVILLE, FL, UNITED STATES, December 31, 2025 /EINPresswire.com/ -- If you have ever taken a phone call on a train, streamed video while riding in a car, or used your phone in motion without interruption, you've relied on the patented wireless mobility technology created decades ago, long before smartphones or mobile streaming existed.

That technology was developed by Dr. Abdelsalam "Sumi" Helal and Dr. Edwin A. Hernandez, the inventors behind patented wireless handoff innovations that allow cellular networks to anticipate where a device is moving and prepare the next connection in advance. The result is seamless transitions between cell towers, an invisible system that supports modern 4G LTE and 5G connectivity.

"When my mom watches Facebook on her phone while I'm driving, she doesn't notice anything happening," Hernandez said. "She's switching between thousands of network cells, but it feels like one continuous connection. That's what our technology enables."

The origins of that innovation trace back to 1999 at the University of Florida, where Helal taught one of the nation's earliest wireless classrooms. As part of the course, he challenged students to consider how reliable internet connectivity might work on a high-speed bullet train, an idea that seemed impractical at the time.

"Back then, you could barely stay connected driving across town," Helal said. "The idea of

streaming video while moving at high speed felt like science fiction."

One student, Hernandez, a Honduran entrepreneur who had come to the United States after Hurricane Mitch destroyed his internet service provider business, took the assignment far beyond its scope. What began as a class project became his doctoral research and ultimately a portfolio of patents that now support modern cellular networks worldwide.

Solving seamless mobility was only part of the challenge. At the time, testing wireless performance required loading vehicles with phones and driving around cities, an approach later popularized by the "Can you hear me now?" era of wireless advertising. Helal and Hernandez instead developed Ramon, a hardware-based system capable of simulating high-speed mobility in a laboratory environment, laying groundwork for testing principles later adopted by the mobile industry.

Dr. Abdelsalam "Sumi" Helal, Co-Inventor of patented seamless wireless handoff technology and Co-Founder of Mobility Workx

Today, the technology is widely licensed and recognized across the wireless industry. Helal and Hernandez later founded Mobility Workx to steward and license their intellectual property and to continue engaging with industry leaders on the future of wireless infrastructure. As connectivity demands grow across autonomous transportation, smart cities, artificial intelligence systems, and massive device ecosystems, the need for seamless mobility continues to intensify.

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> *Dr. Abdelsalam "Sumi" Helal, Co-Founder of Mobility Workx*

About Mobility Workx

Mobility Workx is a Florida- and Texas-based technology company focused on patented solutions for wireless mobility, network handoff optimization, and mobile communication performance. Founded in 2015 by Dr. Abdelsalam "Sumi" Helal and Dr. Edwin A. Hernandez, the creators of patented foundational wireless mobility technologies, the company was established to steward, license, and advance innovations that enable seamless connectivity at scale. Helal and Hernandez are co-inventors of U.S. Patent 7,697,508 and related patents covering wireless handoff technology.

Helal and Hernandez are widely recognized as pioneers in mobile computing and network

mobility, with intellectual property that has played a significant role in shaping modern cellular networks, including 4G and 5G systems. Through Mobility Workx, they continue to engage with industry on the future of wireless infrastructure, supporting technologies that allow devices to remain reliably connected while in motion across increasingly complex network environments. To learn more, visit www.mobilityworkx.com

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