# UQAM Innovation Revolutionizes Wireless Connectivity With Low-Power UWB Technology

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In an era when connectivity is paramount, one innovative Canadian startup is making waves with its groundbreaking wireless transceiver technology. SPARK Microsystems, founded by researchers Prof. Frederic Nabki and Prof. Dominic Deslandes from the Université du Québec à Montréal (UQAM), is revolutionizing the way the public transmits data with a unique Ultra-Wideband (UWB) solution. Not only does their technology offer high data rates and low latency, but it is also energy efficient, surpassing traditional Bluetooth connectivity by a wide margin.

Recognizing the limitations of existing wireless communication technologies, the UQAM researchers worked to develop a solution that would deliver superior performance while significantly reducing power consumption. Their relentless pursuit led them to create a UWB-based radio communication system that outshines Bluetooth in both efficiency and data transmission capabilities.

"Bluetooth technology is too energy-intensive. It requires batteries, and their limited lifespan doesn't provide an optimal experience for consumers," explained Nabki. "Our system consumes 35 to 40 times less energy than Bluetooth while offering better performance in data transmission."

The groundbreaking nature of SPARK Microsystems' technology did not go unnoticed. In 2018, the company was selected as the winner of the Nokia Open Innovation Challenge, gaining recognition for their low-power wireless transceiver chipset that has the potential to ignite the next industrial revolution. Marcus Weldon, the former CTO and President of Nokia Bell Labs, expressed his enthusiasm, stating, "SPARK Microsystems' solution could help pave the way for a new wave of wireless connectivity innovations."

To ensure the successful commercialization of their invention, the researchers partnered with Axelys (formerly Aligo Innovation), a non-profit organization dedicated to transferring university inventions to the market. Axelys actively supported the deployment of the UWB technology to various industries, managing intellectual property protection and licensing processes. In collaboration with UQAM's Partnerships and Innovation Support Service, Axelys provided essential grants, investments, and assistance in the company's growth and patent management.

With a portfolio of 16 patents, including 14 issued and two pending, SPARK Microsystems has exclusively licensed the UWB wireless transceiver chip from Axelys. Equipped with their patented technologies, the company is now introducing an innovative UWB solution to the consumer electronics market, boasting enhanced power efficiency, low latency, and accurate positioning.

SPARK Microsystems has already made significant strides in the market. They have commercialized two components and developed evaluation and software development kits for application developers, which are distributed through

major platforms like Digi-Key. In 2023, the company plans to launch a second-generation product that promises twice the performance with a four times smaller footprint.

Currently, several original equipment manufacturers (OEMs) across various industries are in the final stages of integrating SPARK's UWB technology into their products. The company anticipates that these high-volume customers will introduce their innovative solutions and begin large-scale production in 2023.

By challenging the status quo and offering a low-power, high-performance wireless transceiver solution, SPARK Microsystems is not only reshaping the consumer electronics market but also fueling advancements in various industries. Their remarkable technology opens up new possibilities for seamless connectivity, paving the way for a future where energy efficiency and superior performance go hand in hand. With SPARK Microsystems leading the charge, the wireless connectivity landscape is set for a transformation that will benefit consumers and industries alike.

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