



Discovering the Secret to More Powerful Computers

Dr. Luc Morin relied on tools and technologies provided by CMC Microsystems during his PhD research to tackle one of the holy grails of computer performance—how to “reprogram” silicon to manage more powerful applications

“During my PhD studies, one of the big research questions was how to program software into hardware. Twenty years ago, CMC helped me to address this challenge. Today, my university research teams are using tools and technologies provided by CMC Microsystems to migrate applications onto platform boards. We see many opportunities to collaborate with CMC in the future as the corporation seeks new ways to support university researchers as well as small to medium enterprise.”

Dr. Luc Morin
Founder
Novakod Technologies
Professor
Applied Sciences
Université du Québec à Chicoutimi



(Top, from left to right) The Novakod Team: Jean-Michel Fortin; Marc Lamontagne; Pierre-Jean Boulianne; Dr. Luc Morin; François Blackburn; Patrick Latour.

Twenty years after his PhD research, Dr. Morin is a professor at the Université du Québec à Chicoutimi (UQAC) and founder of Novakod Technologies Inc. The university spin-off has developed new tools that make it both easy and affordable to reprogram computer hardware to process high-end applications such as DNA sequencing.



Novakod Technologies has released two main products: Novakod® Studio and the Novakod® Engine reconfigurable processor unit (RPU). Early research on the technology was supported by CMC Microsystems.

As a professor, he continues to rely on CMC Microsystems. While conducting research at UQAC, Dr. Morin has successfully migrated high-end applications onto platform boards provided by CMC. This experience has allowed Dr. Morin to benefit as an entrepreneur. Novakod will release a commercial version supporting those boards and development tools in 2006.

The company is marketing two main products to boost computer performance. Novakod® Studio is a programming environment for the design and implementation of algorithms for reconfigurable computers. The Novakod® Engine is a reconfigurable processor unit (RPU) that offers phenomenal gains in computing power.

“Computation speed gains of 10 to 1000 times have been achieved by other researchers, but only with great pain and effort,” says Dr. Morin. “The Novakod solution provides a significant speed gain over the Pentium 2.4 GHz, while using a small FPGA (field-programmable gate array) chip that’s highly cost-effective for the consumer.”

“The beauty of this technology is that the computer scientists don’t need to know anything about hardware to program an algorithm. From a business perspective, there is an increasing number of computer scientists working with experts in diverse disciplines. This means our products will have broad applications in many industrial sectors, including health care, pharmaceuticals and security.” *cmc*