Alberta

News release

January 25, 2007

Frontrunner in digital information security recruited to Alberta

*Calgary…*An internationally recognized Geneva physicist enticed to work in Alberta will use quantum techniques for what could mean quantum leaps in information security for our bank records or our telephone conversations.

Dr. Wolfgang Tittel joined the University of Calgary to lead the new iCORE/General Dynamics Canada Industry Chair in Quantum Cryptography and Communication. Tittel is among the first of only eight or 10 scientists in the world to apply quantum information techniques to real-world applications. As a physics professor at the university, Tittel's expertise will be shared with Alberta's post-secondary students.

"Dr. Tittel's research represents the future of information security," said Doug Horner, Minister of Alberta Advanced Education and Technology. "With applications ranging from fibre-optics to satellite communications, his work will enhance Alberta's reputation for information and communications technology expertise."

Sandy Murphree, Dean of the Faculty of Science, said the possibility for collaboration among physicists, mathematicians, engineers and computer security experts was instrumental in convincing Tittel to make his international move. "It's a testament to the richness of expertise at the University of Calgary and in Alberta," said Murphree. According to Tittel "only a few groups in the world do information security research as broad as the University of Calgary group."

Tittel's research chair is supported by an iCORE Industry Chair Establishment (ICE) grant of $150,000 per year over five years as well as industry support from General Dynamics Canada. Mark Adcock, Chief Scientist for General Dynamics Canada, said "Our customers expect technology from us that allows them to get information when and where they need it most. This collaboration with Dr. Tittel will ensure they have access to leading technologies in secure communications and information." Additional funding will be provided through the Leaders Opportunity Fund from the University of Calgary and the Canada Foundation for Innovation. The University of Calgary and SAIT Polytechnic will provide in-kind support.

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Editor's Note: See attached backgrounder for more information.

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Dr. Wolfgang Tittel

iCORE/General Dynamics Canada Industry Chair, Quantum Cryptography and Communication

Research Program Overview

The goal is to create a more secure Alberta-wide communications network, adapting quantum techniques to enhance the security of existing fibre-optic lines. Quantum information holds great promise in the area of information security, because it's carried in bundles which immediately scramble information when someone is listening. Such features differ from current encryption (or scrambling) technologies that only scramble information during short periods of time. Traditional technologies are becoming increasingly fallible as computers become faster and more sophisticated.

Biography

Dr. Tittel studied physics in Germany, was a Ph.D. student at the University of Geneva in Switzerland, did post-doctoral work at the University of Aarhus in Denmark and again in Geneva before being recruited through the iCORE funding partnership to the University of Calgary. His research has been published in internationally recognized journals. www.iqis.org/people/home/wtittel/

iCORE (Alberta Informatics Circle of Research Excellence) is an agency of Alberta Advanced Education and Technology. It operates several grant programs and develops iCORE Chairs at Alberta universities around which world-class research teams are centered. Since its inception, more than 24 research chairs have been established to focus on emerging areas such as wireless communications, artificial intelligence, and quantum and nanocomputing. www.icore.ca

General Dynamics Canada is an world class provider of comprehensive integration of command, control, communications, computing, intelligence, surveillance and reconnaissance (C4ISR) solutions. www.gdcanada.com.

Institute for Quantum Information Science at the University of Calgary is a multidisciplinary group of researchers from computer science, mathematics, and physics. www.iqis.org

Centre for Information Security and Cryptography at the University of Calgary is a multi-disciplinary research centre devoted to the study of theoretical foundations and practical aspects of information protection in every facet of daily life. cisac.math.ucalgary.ca

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