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Neurological image transfer system and canine rescue technology take home IT Hero Awards

Corporate and community heroes recognised by Information Technology Association of Canada

Toronto, ON – June 24, 2009 – Wi-Fi video-enabled urban rescue dogs and a system allowing Ontario hospitals to quickly and easily share neurosurgical scan images were the big winners at last night's Information Technology Association of Canada (ITAC) **IT Hero Awards**, presented by Intel. The ninth annual awards were presented at the ITAC Chairs' Dinner in Toronto.

The Community IT Hero Award, sponsored by Innovapost, which recognizes an individual, group or not-for-profit organization that can demonstrate the creative application of information technology in improving the lives of Canadians, went to **Professor Alex Ferworn of Ryerson University**, who has driven the research and development of Canine Augmentation Technology (CAT), which fits urban search and rescue (US&R) dogs with Wi-Fi-enabled video systems that allow rescuers to see into areas that may be inaccessible by a human.

GE Healthcare IT won the Corporate IT Hero Award for its deployment of an Emergency Neuro Image Transfer System, which allows neurosurgeons and CT technicians to communicate and consult remotely between hospitals throughout Ontario, reducing the need for unnecessary hospital transfers and providing patients with added peace of mind.

Winners were determined by a panel of judges who assessed the nominees and their projects for innovation and creativity, as well as initiative and leadership, positive and measurable impact on Canadians, and effectiveness, efficiency and sustainability.

“As I reviewed the community and corporate nominees for this year's IT Hero Awards, I felt privileged to play a role in recognizing some incredibly creative and innovative applications of information technology in Canada,” said awards judge **Emma Cochrane, VP of strategy and operations, Tyze Personal Networks**. “Technology is so often just used for technology's sake, but our nominees clearly demonstrate the power of technology to fundamentally improve the lives of Canadians ... through everything from improvements in healthcare to addressing environmental concerns and expanding educational opportunities.

“I am always amazed by the excellent quality of the nominations. We are now into our ninth year of the IT Hero Awards, and the great stories just keep on coming,” said **Bernard Courtois, ITAC President**. “These awards continually demonstrate Canada's great pedigree in developing

technology unselfishly designed for the benefit of others. Hats off to the two winners, they fully deserve the recognition and are a credit to us all.”

Corporate IT Hero Award – winner profile

Without a provincial image exchange system to support tele-consult, diagnosis and emergency medical transfer decisions, it is estimated that 35-50 percent of transfers are unnecessary. The impact of this lack of technology can be measured in undue stress to many patients as well as millions of dollars in time and transfer costs. Furthermore, this shortcoming particularly affects rural areas that tend not to have timely access to neurosurgical specialists.

Working together with eHealth Ontario and London Health Sciences Center (LHSC), GE Healthcare IT embraced the challenge of building the Emergency Neuro Image Transfer System (ENITS), which allows the transfer and storage of neuro-treatment head-scan images from facilities throughout Ontario to a central site from which experts can access the images, determine treatment options and provide consultation at once for patients across the province.

ENITS is built using GE’s high-availability Centricity Enterprise Archive (EA), which allows for web-based distribution of images to collaborating hospitals and enables neurosurgeons to access stored images over the internet from any remote location.

By leveraging data centre infrastructure already established in the LHSC in South-Western Ontario, GE is set to complete the 12-month delivery of an Ontario-wide system, connecting 175 CT scanners in 130 hospitals across the province. The technology will provide nearly 70 neurosurgeons and approximately 200 CT technicians with the ability to communicate and consult remotely throughout Ontario.

The first phase was rolled out in December 2008 and connected 9 sites across Ontario. The remaining sites are on schedule to be connected. This initial rollout was an immediate success, with 40% of all neurosurgical referrals being processed through ENITS to date. Of those referrals, approximately half would have normally resulted in unnecessary transfers, resulting in a savings of approximately \$9 million and providing peace of mind for patients and family members.

“We are delighted to have been recognised by ITAC with an IT Hero Award, and would like to thank eHealth Ontario and the leadership at LHSC for their close cooperation and collaboration on this project,” said **Mike Clarke, general manager, GE Healthcare IT Canada**. “With ENITS, we have developed a system we are very proud of as it improves the quality, access and cost of neurosurgical care throughout Ontario and saves patients and their families the hardships and the stress of unnecessary hospital transfers.”

Community IT Hero Award – winner profile

Frequently, when urban search and rescue dogs are used to search through the debris and rubble of buildings that have suffered a structural collapse, they are able to access areas that their human handlers and other rescuers are unable to. For the past four years, Professor Alexander Ferworn of Ryerson University has been working with the Provincial Emergency Response Team (PERT)

of the Ontario Provincial Police on technology designed to enhance the ability of canine units to find and help trapped disaster victims.

Professor Ferworn's work has resulted in the creation of Canine Augmentation Technology (CAT), which essentially turns rescue dogs into mobile web servers. By fitting durable fisheye cameras on to the dogs, the encoded video streams can be transmitted to emergency workers via a ruggedized Wi-Fi network, allowing them see what is around the dog, even when they may not be able to follow where the dog goes. Developing CAT required overcoming significant challenges such as the substantial stresses and impacts associated with being attached to a rescue dog, while simultaneously guaranteeing that the animal will not be impeded or potentially harmed in any way by the system. There are also significant complications with maintaining a continuous Wi-Fi connection with a freely roaming dog to allow real-time video streaming.

In addition, Professor Ferworn has developed the patented Canine Remote Deployment System (CRDS), which uses bark-recognition technology to automatically deploy a payload, such as food, bandages or a radio, when the dog finds a trapped person.

The chances of surviving a structural collapse are greatly improved if rescue can occur within 24 hours, and Professor Ferworn's work goes an extra step to improving the chances of urban-disaster victims in Canada and across the world. His technology has been tested by the OPP and by four of the five Canadian Urban Search and Rescue Task Forces, and he has developed relationships with other organisations such as the U.S.'s Federal Emergency Management Agency (FEMA). Professor Ferworn's outstanding work in this area was recently recognized by the OPP when he was invited to join the PERT team as an auxiliary member.

"It's wonderful to have been recognised by a great organisation like ITAC for a project that I essentially do for free, as we don't get much funding for this kind of work," said Ferworn. "I'd like to thank the research students that work with me in this area, in particular Salah Sharieh for nominating me, and also thanks should go to Constable Kevin Barnum, a canine handler at PERT, who believed in the product from the very beginning, even when I wasn't sure if I did!"

About the ITAC IT Hero Awards

The ITAC IT Hero Awards, presented by Intel, celebrate and recognize creative applications of information technology that significantly improve the lives of Canadians and readily demonstrate social and economic benefit. The IT Hero Awards program was developed in 2001 by ITAC in partnership with Industry Canada. By naming winners in both Corporate and Community categories, the awards celebrate and recognize the achievements of people across Canada who used technology in innovative ways to help others. The award was launched as a feature of IT WEEK, a time to reflect on the successful impact of IT on society. For more information, visit www.itheroawards.com.

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