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CBRN Research & Technology Initiative

Projects

CRTI 0105TA **Mobile Real-Time Radiation Surveillance Network for the National Capital Region**

Project Lead: McFadden Technologies

Project summary

Since September 11, 2001, the likelihood of future terrorist attacks is acknowledged to be higher than in the past. As a result, the Canadian public has greater expectations for security, prevention, interdiction and incident site management. Radiological agents have a particularly high potential for psycho-social impacts on political and economic systems. The malicious dispersal of radioactive materials could be used to attack civil, governmental and economic targets. Thus adequate prevention and response systems are needed.

Significant radiological sources could be acquired by terrorists through clandestine theft or low level military operations and moved, possibly undetected, to urban population areas or to targets of high symbolic value. First responders need better tools and training to detect and report radiological incidents. There is currently a need for increased capability in Canada to collect radiological forensics, which would provide more consistent, reliable and prompt data for incident management by municipal, provincial and federal authorities.

A surveillance system of mobile radiation sensors reporting in real time will make possible early detection of illicit radiological transport and storage and increase the time available to respond.

Health Canada's Radiation Protection Bureau, the RCMP, the Geological Survey of Canada and private industry are collaborating on this project to integrate existing cutting-edge technological solutions to develop a limited capacity to fill the radiological surveillance gap. This project will develop a system usable in routine RCMP patrol work and by Health Canada. The system will automatically transfer radiation data in real time by radio communications systems for analysis by the most sensitive available signal detection technology. Municipal, provincial and federal decision makers will, for the first time, have access to prompt, well-defined and reliable radiation data for attack prevention and interdiction, incident response and management, safety, and forensics. The shared objectives will ensure development of field and command and control technology that is both relevant to terrorist attack prevention and mitigation objectives, and acceptable for routine police use. The collaborative approach will foster mutual understanding of partners' operational issues and provide the radiation information base needed for the coordination of enhanced response in complex events.

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The system will detect the transport and storage of illicit radiologicals before an attack achieves target proximity, thus meeting security needs for early detection and warning. Early detection will make interdiction possible. The system, with its technology and training, provides greatly enhanced capabilities for police and command and control to assess radiation data in real time for public safety and incident management.

The mobile system brings state-of-the-art field tested radiation sensors and radio communications together with the highest-sensitivity event-detection algorithms to provide on-site rapid detection and identification of radiologicals. The system provides forensic capabilities for radiologicals by promptly deploying real-time evidence collection sensor technologies capable of gross contamination mapping and species identification.

The successful integration of these technologies into a system co-designed by law enforcement professionals will result in a system usable in routine police patrol. This use will point the way for the addition of other terrorist agent sensors for the protection of the public and first responders.

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