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Integrating Computer-Aided Dispatch Information with the Multi-Agency Situational Awareness System

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INTRODUCTION & BACKGROUND

In April 2013, Defence Research and Development Canada's Centre for Security Science (DRDC CSS) initiated a project with the City of Kelowna, British Columbia, to determine the feasibility of integrating local situational awareness from a Computer Aided Dispatch (CAD) system into the national Multi-Agency Situational Awareness System (MASAS). MASAS enables a system-of-systems collection of interoperable systems that can exchange real-time, location-based incident information relevant to emergency managers and responders, using common technologies that are based on national geospatial and public safety communication standards. MASAS enables pan-Canadian and Canada/United States (U.S.) interoperability and is recognized as a leading operational pilot project enabling national public safety community interoperability.

The project was funded through the Canadian Safety and Security Program, a federal program led by DRDC CSS, in partnership with Public Safety Canada.

STUDY AIMS

The aim of the study was to contribute to the related body of knowledge and to enhance national situational awareness in Canada. The study documented operational requirements, best practices and technical approaches related to the integration of CAD systems into MASAS. The study endeavoured to test the interoperability between the Kelowna CAD system and MASAS, and to move content from MASAS to the Kelowna CAD System. The City of Kelowna's operational requirement was to automatically pass information between both systems.

METHODS

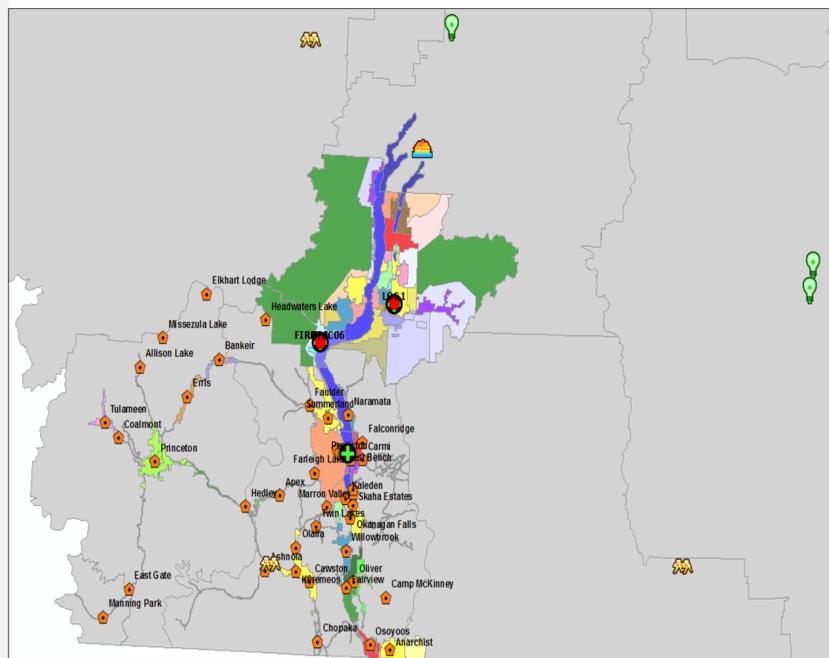
To achieve CAD integration with MASAS, two technical approaches were proposed. One was a direct approach, in which systems connect directly to MASAS through their built-in adapters or integration capabilities. The other was an indirect approach, in which an intermediate service is created to connect the CAD system to MASAS. For this study, the direct approach was determined to be optimal because of its simplicity and expected higher reliability.

RESULTS

The project demonstrated that CAD systems are valuable sources of first responder information that can contribute to national situational awareness. The key to this workflow is to ensure that information procedures and technical capabilities are in place to limit the amount and type of information that is shared. During the study, the City of Kelowna started by sharing nearly all processed calls. The city quickly decided against this once it became clear that not all information should be shared. For example, after testing, Kelowna stopped sharing a significant number of non-collaborative, minor type incidents because it led to over-alerting. Health related calls were also stopped due to information privacy concerns.

The study demonstrated that local governments have a requirement for national situational awareness information. The key to accessing it is having a standards-based interface that can be integrated into their existing system. The study also showed that a modest investment (under \$20K) can integrate CAD systems with MASAS. In other words, existing CAD systems can be interfaced to access and feed highly useful situational awareness information into the national MASAS data aggregation hub with minimal engineering required. Figure 1 (below) shows MASAS data being accessed in the Kelowna CAD system.

Figure 1: MASAS Data integrated into the Kelowna CAD System (below)



DISCUSSION

This study illustrates how local/municipal governments and service providers can leverage national situational awareness capabilities, such as MASAS, and demonstrates the potential capability of a multi-agency 'Virtual Operations Centre'. The project can provide the footing for broader stakeholder discussions about integrating local situational awareness from a CAD system into MASAS. From past emergencies, it was estimated that the time required for agencies to become functionally aware of a situation can be between 15 and 90 minutes. With the implemented technical capabilities of MASAS and CAD, this time is substantially reduced and emergency management personnel can be informed regardless of their location.

CONCLUSIONS

The project resulted in a methodology and approach to achieve interoperability between local governments and federal/provincial/territorial Emergency management agencies and successfully demonstrated the benefits of national situational awareness. Although the project was relatively small and only scoped to be a study, Kelowna was able to leverage this activity as a catalyst to help them implement a production version of the MASAS interface to their CAD system. Today, this has resulted in an operational system which shares Kelowna local situational awareness into MASAS.

REFERENCES

This 'Scientific Letter', DRDC-RDDC-2014-L169, is a publication of Defence Research and Development Canada.

Pagotto, J. and O'Donnell, D. (January 2012) *Canada's Multi-Agency Situational Awareness System – Keeping it Simple*, (DRDC CSS SL 2011-035) Defence R&D Canada – Centre for Security Science.

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