

Data Interoperability Approach during Major Accidents

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ABSTRACT

This abstract discusses the methods of data interoperability among various first responder and associated agencies. The main motivation is to support the rescuers facing operational problems in accessing information from various sources and providing advanced features for command and control centers. Useful information is often heterogeneous and distributed among many organizations in the diverse information sources with the different access rights and with the different qualities. Timely exchange of relevant information among competent authorities, a common understanding of data and a swift transmission of knowledge can save the lives and protect properties. The discussed approaches are researched in the scope of REDIRNET project, which focuses on enhancing the first responder agencies interoperability through the cost-effective solution. Interoperability methods, proposed in REDIRNET, try to overcome closed (non-interoperable) information systems by creating the plug-ins for various types of devices and providing the guidelines for legacy data integration. Developed plug-ins may be reused later by different agencies that use compatible technologies.

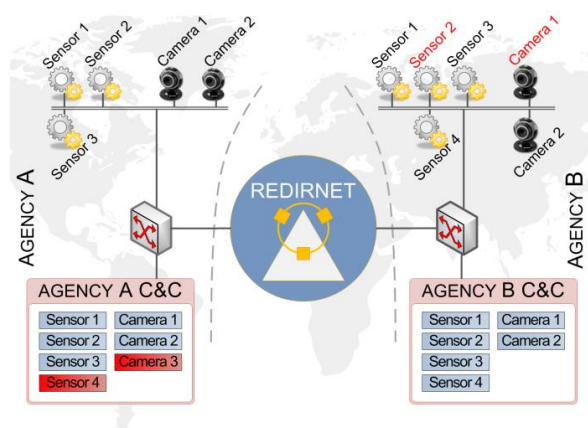


Figure 1. REDIRNET system overview. Sensor 2 and Camera 1 of the agency B is displayed in the agency A command and control centre as own sensor 4 and own camera 3.

According to the example in Figure 1, an agency B is offering data stream from a Sensor 2 and a Camera 1 to an agency A. The seamless interoperability means that upon the right configuration, the Sensor 2 and the Camera 1 of the agency B is displayed in the agency A control centre as own Sensor 4 and own Camera 3. For the sake of searching and accessing data of the partner agencies, a REDIRNET Gateway component was designed and developed. Briefly, the gateway acts as middle layer between the third-party plug-ins and REDIRNET Core. REDIRNET project implements Poll Management and Aggregation Services capable of information collection from heterogeneous data sources (i.e. sensors, databases) or from human actors using smart phone application.

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