CPRC　CCRP

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C.L.E.I.M.S. Canadian Law Enforcement Information Management System – A Major Case Management System

RCMP Calgary Commercial Crime Unit
Calgary Police Service Commercial Crime Unit

TECHNICAL REPORT
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Submitted by:
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EXECUTIVE SUMMARY

Commercial crime investigations as well as other major crimes, require review and analysis of large   volumes of paper documentation. C.L.E.I.M.S. allows this information to be scanned quickly in order to sort and search the evidence in a timely manner. C.L.E.I.M.S. allows police the ability to provide disclosure of case evidence on a compact disk for court use. This NRC-IRAP supported project was submitted to the CPRC by the RCMP, Calgary and the Calgary Police Service Commercial Crime Units.

The C.L.E.I.M.S. system was demonstrated at the 1996 annual Canadian Association of Chiefs of Police Conference in Ottawa where it generated considerable interest.

As of April 1997, C.L.E.I.M.S. has been installed in RCMP Calgary Commercial Crime, Calgary Police Service, the Halifax Department of Justice, Halifax and RCMP "F" Division, Saskatoon.

For further information on C.L.E.I.M.S. contact:

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SOMMAIRE

Les enquêteurs qui traitent les dossiers sur les infractions commerciales et les autres crimes graves doivent examiner et analyser une importante quantité de documents. Le systbme CLEIMS (Canadian Law Enforcement Information Management System) balaie avec une grande vitesse le contenu de ces documents afin de trier et de trouver rapidement des elements de preuve. Il permet à la police de transférer ces derniers sur un disque compact présenté au tribunal. Les groupes des infractions commerciales de la GRC à Calgary et du Service de police de Calgary ont présenté ce projet, appuyé par le Conseil national de recherches du Canada (CNR) et le Programme d'aide à la recherche industrielle (PARI), au Centre canadien de recherches policières (CCRP).

On a fait une demonstration du systeme CLEIMS lors de la Conference annuelle de l'Association canadienne des chefs de police, qui a eu lieu en 1996 à Ottawa. Il a suscité beaucoup d'intérêt parmi les participants.

Les groupes des infractions commerciales de la GRC à Calgary et du Service de police de Calgary, le ministère de la Justice de Halifax, ainsi que les détachements de Halifax (Division H) et de Saskatoon (Division F) de la GRC se sont dotes de ce systeme depuis le mois d'avril 1997.

Pour obtenir des renseignements supplementaires sur le systeme CLEIMS, veuillez écrire à l'adresse suivante :

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Background

The Canadian Law Enforcement Information Management System, known as CLEIMS, was designed by and for police officers. It successfully allows investigators within the same agency or across different jurisdictions to locate and share information. The program was designed to provide investigators with a data/information management tool that would enhance overall case management.

Due to the very large number of documents associated with investigations, two innovative members of the RCMP, Commercial Crime Unit, Corporals David Mackay and Bert Broster, found they required a technical solution to their case management requirements. They needed a system with which they could manage, share and search the enormous number of case file reports, seized documentary exhibits and lengthy witness statements they were accumulating in their investigations. The need for court disclosure requirements made their search for a technical solution even more urgent.

The project was enlarged to include two members of the Calgary Police Service, Detective Gus Gallucci and Sergeant Blaine Knapik. The project would thus more accurately reflect a universal approach in its policing application to both municipal and federal police agencies.

The Canadian Police Research Centre (CIRC.) was contacted to assist. The project team identified the Calgary company, DKW Systems Corporation as a potential developer.

With funding assistance from the National Research Council's Industrial Research Assistance Program (NRC/IRAP), a project was formulated to develop the system to meet the requirements of the police investigator.

A steering committee was set up primarily to help the project=s development. Representatives from the executive of the two participating police agencies, NRC, CPRC., Alberta Justice both Criminal and Civil Divisions and a CACP representative from private industry all volunteered for the steering committee.

In Ontario, Justice Archie Campbell's review of the Paul Bernardo investigation made the following comments which support the need for a better way to manage, share and search case file information - "What is needed is a system of case management for major and inter-jurisdictional serial predator investigations, a system that corrects the defects demonstrated by this and so many cases. A case management system is needed that is based on cooperation, rather than rivalry, among law enforcement agencies."

What is CLEIMS?

Instead of sifting through hard copies of reports, witness statements search warrants as in current hard copy systems, investigators need only to click their mouse and various pieces of evidence from many different case files, can be viewed on their computer screen. When designing this system the officers recognized that the full text of case reports or other investigative information both electronic and general documentary data had to be made available for searching, sharing and viewing by police personnel involved in an investigation. Documents need to be easily viewed, quickly retrievable, printed or transferred for use by other software programs.

CLEIMS provides police personnel with the ability to:

> **"scan"** any document(hard copy or electronic) related to an investigation into a library with the use of high speed scanners which can scan double sided documents at the rates of 60 pages per minute or more(scanned documents are automatically assigned a code which allows them to be easily classified as an exhibit) ;

> **"search"** for or "query" the scanned documents to find information quickly; (eg. Search for "weapon" and all references to weapon will be highlighted in the documents located in the library, even if badly misspelled.) CLEIMS. uses both word pattern recognition (Fuzzy Logic) and Semantic Searching (finds words of similar meaning). These unique and powerful searching features make CLEIMS leading edge software. Since every word in every document can be searched using CLEIMS you can search a much greater percentage of your case file information compared to conventional data base searches or hard copy searching;

> **"sort and save"** the information resulting from these queries into electronic folders to establish an ongoing investigative file for tasking and court brief preparation;

> **"disclose"** evidence and briefs to Crown or defense counsel on CD instead of hard copy at a fraction of the cost of photocopying.

In essence, CLEIMS provides police personnel with a case management tool, that allows them to compile effective, easily searched document information necessary to complete a thorough investigation. In short, **CLEIMS converts all available investigative information into usable police intelligence!**

Identifying Problems and their SOLUTIONS

The goal of CLEIMS is to establish the most efficient, secure and cost effective system of computer-automated processing of data and information available to the police community. The following information provides a summary of the identified problems associated with manual file management methods as well as their solutions provided by the development of CLEIMS.

The policing community requires:	CLEIMS functionality provides:
An increased ability to respond to the concerns of the public by decreasing the turnaround time on investigations	A significant reduction in the manual processing required to deal with large amounts of case evidence combined with easy-to-use and powerful case analysis functions, providing dramatically shorter investigation turn-a-round times.
A system to manage complex data obtained from multiple information sources.	Advanced search and retrieval features, allowing large amounts of complex data to be searched and retrieved quickly and accurately.
Cost efficient and timely sharing of information with other police agencies	A secure means of accessing distributed case information repositories with a single interface.
Provision of "read-only" access for defense disclosure situations and a reduction in the number of exhibit photocopies provided to the defense by replacing them with electronic images.	All or a selected portion of evidentiary files may be written to CD ROM for defense counsel at a fraction of the cost photocopying material. Up to 12,000 scanned document images per CD. The CLEIMS disclosure tool facilitates the retrieval, viewing and sorting of these images.
Enhanced retrieval of information from existing paper file systems	High-speed archiving, capable of converting paper-based files into electronic ones, which may then be quickly and easily searched and from which the appropriate information may be retrieved.
Centralized storage of information for ease of retrieval.	Information storage in either the centralized or de-centralized manner, depending upon the needs of the organization.
Recall of all documents for immediate on-screen examination.	Retrieval and display of all scanned document images or imported electronic text.
Simultaneous indexing, sorting and cross-referencing of records	A means of scanning that incorporates automatic indexing of the paper records using endorsements printed to each page. Sorting and cross-referencing occur automatically as a process of the system (Figure 1)
Reduction of manual reporting and auditing	A hierarchical folder system that can track and save all types of documentary evidence.
Reduced financial costs associated with processing information i.e. manual data entry	A model that does not depend on human intervention to correct errors or add searchable keywords, significantly lowering data entry and other related costs.
Standardization of the type of hardware required for information management	An operating platform that is based on the most popular hardware and software architecture in the world, now and for the foreseeable future.

Reduction of paper burden and associated financial and environmental costs	A paper less system for the analysis, investigation and distribution of evidentiary documents, as well as the distribution and storage of administrative documents
Reduction of the learning curve encountered when analyzing new blocks of information	A simple easy-to-learn interface that underlies an extremely powerful analytical tool.
Development and retrieval of all information about a particular subject without the need to relv on mental recall.	Highly developed text search capabilities (Figure 2 and 3)
The establishment of a standard approach to information handling in all operational and administrative policing functions	A "backbone" structure that can facilitate a standard approach to information handling of all operational and administrative functions
Reduction of "live" storage space needed for operational and administrative hard copy files	A method that allows the documentary evidence to be stored off-site once scanned. Built in document endorsement and indexing allows fast and easy retrieval of the paper document should the need ever arise.
Increase the interaction and cooperation among police agencies/departments	A means to easily share and add investigative data, add investigators from other jurisdictions and provide a centralized storage facility, ensuring that only the most up-to-date investigative data is accessible to the multi-jurisdictional investigative team

Additional Benefits

Investigators can now analyze evidence as a whole, and not just the sum of its parts. **CLEIMS provides an unique but effective case management tool for investigators -** a method of linking documents enabling related evidence as a group to be analyzed.

Documents and their corresponding files, whether operational or administrative in nature, are often accessed and maintained manually by employees involved in the investigation. Countless hours are spent in filing and manually retrieving data from the respective files.

CLEIMS allows investigators to quickly input, analyze and organize data obtained from all sources in an expedient and cost effective manner providing them with additional time to:

- handle more cases
- complete investigations
- develop strategies
- conduct interviews
- exchange information inside the agency or with outside agencies
- prepare court briefings
- forward necessary documentation to the Department of Justice

CLEIMS is cost effective. Court enforced disclosure is a tremendous labour and resource expense. This program minimizes this expense by transferring previously scanned document images directly to Compact Disks (CDs). CLEIMS provides a simply point-and-click interface that enables investigators to produce CDs simply. CLEIMS can produce a CD-ROM holding 12000 scanned document images for a cost of about $15.00. This cost is much less than the same cost of photocopying the same documents by thousands of dollars.

One can add additional investigators to a case quickly. **CLEIMS** is fully network capable **which allows the sharing of information** from across the room or across the country, providing access to information for multi-jurisdictional investigations.

CLEIMS is an effective supervisory tool. Investigators have the ability to seek advice from their supervisors. Police supervisors, by using the **CLEIMS supervisor,** can access the investigator's CLEIMS case file providing advice and direction to the investigator.

CLEIMS boosts efficiency by reducing staffing overheads inherent in manual evidence analysis, CLEIMS enables investigators to spend more hours productively analyzing and solving cases.

CLEIMS Current Users

Calgary Police Service
The Calgary Police Service has used the CLEIMS system to scan in several months of police related news clippings in order to quickly recall and locate important media issues. As well, two homicide files involving the same accused person are being compared to locate additional evidence for pending trials.

The Department of Justice, Halifax, Nova Scotia
The Department of Justice is using CLEIMS on a large scale investigation involving 750,000 pages of investigative information.

RCMP "F" Division, Saskatoon, Saskatchewan
The Commercial Crime Unit in Saskatoon is using CLEIMS and will soon be networked to other RCMP locations in Saskatchewan.

RCMP "K" Division, Edmonton, Alberta
The Commercial Crime Unit in Edmonton is using CLEIMS.

RCMP "K" Division, Calgary, Alberta
The Commercial Crime Bre-X investigators are using CLEIMS.

Potential Users

The Calgary RCMP Major Crime Unit is planning to use CLEIMS for presenting evidence in an upcoming homicide trial.

Members of the non-policing and near-policing community are also expressing interest in CLEIMS ability to handle a variety of administrative documents such as:

- archival document storage; and
- administrative and procedural manual referencing

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