



Executive Summary

The audit of the electronic Common Information Management System (eCIMS) development project is included in the Audit Plans for 2004-05 of both the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Social Sciences and Humanities Research Council of Canada (SSHRC). Accordingly, the audit has been conducted jointly by the two Councils.

The Councils' Corporate Risk Profiles identified outdated processes for recorded information, particularly in terms of electronic information life-cycle management, as a key risk to their capacity to manage and report accurate and complete Council information to various stakeholders. The Profiles also recognized the related risk of corporate memory loss. The eCIMS project was established to mitigate these risks.

The eCIMS is part of the Councils' initiative to improve the management controls over recorded information, both electronic and paper-based. It is intended to help by:

- automating many of the processes and procedures used in the life-cycle management of recorded information, and
- providing sufficient comprehensive control over the organizations' various record collections.

The eCIMS development has reached a critical phase. The project has scheduled a four month limited implementation pilot starting on December 1, 2004 and ending on March 31, 2005. The purpose of the pilot is to stress test the system and to create and revise training, maintenance, and support procedures before the system is rolled out to the two Councils. The Councils will use the results of the pilot to determine whether to proceed with the system.

Audit Objective, Scope, and Timing

The audit provides an independent and objective assessment of the management control framework established to ensure that the eCIMS development project will succeed. The control framework is composed of the guidance, procedures, and activities that management establishes to ensure that objectives are achieved.

The audit focused on the key risks inherent in the project. The auditor's assessment of these risks, the related criteria used to exercise the audit objective, and the audit methodology and approach are detailed at Appendices A, B, and C respectively.

The audit was conducted in November 2004 and examined the eCIMS development project's achievements to date and plans for the future.

Overall Audit Assessment

Auditor's Statement of Assurance: *The auditor has performed the work required to provide an independent and objective assessment of the management control framework established to ensure that the eCIMS development project will succeed.*

The eCIMS project has taken a number of very important steps in the development of an information management (IM) system for the Councils. It has spelled out a Business Case for raising the priority of the system development and garnered the Management Committees' support for additional resources to address the priority; started the process of acquiring the requisite expertise; established a Project Plan and a Limited Implementation Pilot Project Plan, setting out a preliminary threat and risk assessment, development activities, roles and responsibilities, deliverables, timelines, resourcing, and reporting schedules; commenced project reporting; obtained an Information Systems Division (ISD) resource for technical support; created a Steering Committee to guide the project; initiated a user group for the pilot; and drafted a Communications Plan. The project has also adopted two proven techniques to reduce the risks inherent in system development: It has acquired a commercial off-the-shelf (COTS) system and is phasing it in using a limited implementation pilot.

To ensure their effectiveness, these actions need to be supplemented with:



- **An appropriate governance structure and accountability process that place the Councils' senior management in charge of monitoring the project's progress and use of resources and leading the change management strategy that is critical to the new system's acceptance by users.**

Senior management has long recognized the importance of an effective information management system to the work of the Councils. The sense of urgency is demonstrated by the Councils' Management Committees' identification of IM as a priority in the corporate risk analyses and the conduct of this audit of the eCIMS development. Furthermore, the Councils are currently conducting a complementary audit of the information technology function. While senior management has participated in the project since the beginning, it has not played a governance role in approving and monitoring progress against the project plan. It has neither asked for nor received proper accountability reporting on the delivery of the commitments made for the IM system and the use of the resources allocated to it. Senior management has not led the development of the change management strategy and plan required to overcome resistance to the new system and to ensure its effective use throughout the Councils.

- **Improved estimation, reporting, and monitoring of the costs and timelines of the system development.**

While the project has undertaken adequate action to mitigate many of the risks inherent in the eCIMS development, the measures to manage the costs and the timeliness of the project need to be improved. The risks of cost and time overruns for the eCIMS project are heightened by the two-year history of the development and the relatively recent appointment of the current project manager in December 2003, creation of the eCIMS Project Plan in July and the Limited Implementation Pilot Project Plan in November 2004, and ongoing resourcing of the project. There has been no systematic estimation of the projected total costs and time for the development, and monitoring and reporting of the actual costs and time and any variance to date to the Management Committees as part of their decision-making process.

- **Increased user representation in all phases of the project, including the limited implementation pilot.**

The project has reduced the programming risks in system development by deciding to install the COTS system as is, without any modifications. COTS systems, however, need to be configured or customized for the organization and, therefore, carry their own risks, which must be managed as rigorously as those of an in-house development. One of these risks is that the system's implementation will be effected without appropriate user participation. If users are not involved in the project, the system that is implemented may not meet their needs; users may abandon the project and the system that it delivers; the system's controls may not ensure the confidentiality, integrity, and availability of the information it produces; and business processes may not be changed appropriately. The challenges are enhanced by the existence of the two sets of users that constitute NSERC and SSHRC.

We appreciate that the project has intentionally restricted the pilot to the Administration Division of the Common Administrative Services Directorate (CASD) in order to keep the test of the system manageable and efficient. On the other hand, the pilot's limited scope within a single site poses the risk that the user community's perspective, especially of those in the program areas, may not be completely and accurately represented. Furthermore, the criteria developed to assess the results of the pilot may not reflect the user community as a whole.

We understand that, to address these risks, the project is considering a phased approach that will ensure appropriate user representation through the course of the development.

- **Use of an appropriate system development methodology (SDM) for all phases of the project, including the limited implementation pilot.**

As noted, the eCIMS project is using two proven techniques to reduce the risk of the development: a commercial off-the-shelf (COTS) system and a limited implementation pilot. To ensure their effectiveness, however, these techniques need to be managed through an appropriate system development methodology



(SDM). COTS systems carry risks that must be managed as rigorously as those of an in-house development. Customization of COTS systems is a part of system configuration, integration, and installation and, as such, can become invisible if not adequately documented. COTS systems' configuration and integration activities can require as much attention to code and language as traditional development activities. In addition, the development of appropriate criteria for assessing the limited implementation pilot, the tests to be conducted, the expected results, and the methodology to collect and analyze the related data must be completed properly before the start of the pilot.