Audit of the Spectrum Informatics Review and Redesign (SIRR) Governance

Final Audit Report

Audit and Evaluation Branch

June 2007

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1.0 Executive Summary

1.1 Audit Objectives
The objective of the audit of the Spectrum Informatics Review and Redesign (SIRR) project was to assess the adequacy of, and provide an opinion on the project governance.

1.2 Audit Scope
This engagement covered the SIRR project and included four risk domains: Governance Risk, Business Risk, Project Risk and Infrastructure Risk. Project governance risk includes the project governance structure and the control framework; the business risk includes the business involvement and the requirements definition; the project risk area includes the project structure and control, as well as the testing. The infrastructure risk includes the technical infrastructure and the readiness of the organization to deal with the new technology.

The audit was limited to the examination of the SIRR project governance at Industry Canada, and did not cover the project governance on the contractor side. This work does not give an opinion on the technical feasibility of the SIRR project nor does it provide an assurance on the timeliness of the SIRR project deliverables, or related payments in accordance with Section 34 of the Financial Administration Act.

The audit was conducted from February to June 2007, and considered the project’s governance structure that existed during that period.

1.3 Key Findings and Recommendations
A management framework was put in place at the outset, but recent concerns regarding project status and delivery have indicated issues with the management framework. Added oversight is now in place and should help to control the overall project. However, the changes are sufficiently recent that the functioning of the new project management structure could not be assessed at the time this report was compiled.

The following are the key findings and related recommendations. Detailed findings and additional recommendations can be found in section 3 of this report.

- Change request management - initially there was a formal process used to define user requirements. Later, however, as a result of limited development time, specification changes were documented in specific logs outside the functional specification documents to be applied as a consolidated batch at a later date. This gave rise to a perceived difference between the functional specification documents and what was actually developed. This precipitated the need to realign existing test cases. The project management has since acted, seeking to ensure that the functional specification documents reflected all the requested changes.
• Management of change – there is no formal plan for the organizational changes that will be required with the implementation of SIRR. Without such a plan, the successful transition to the new system is at risk.

• Project control process - status reporting had been difficult to validate independently. The result was that the delay in meeting the initial delivery timelines was unexpected by some. The contractor’s new Project Manager has implemented a revised working strategy to improve control processes, involving new directives and reallocation of resources within the project team. It is expected that revised status reports will be linked to the integrated plan which should facilitate validation of the status by Industry Canada.

Key Recommendations:

• **Change request management** – The SIRR project Director should continue to ensure that updating the requirements is part of the formal change request management process and that the updated requirements are documented in accordance with the contractor’s system development methodology.

• **The Director General, Radiocommunications and Broadcasting should be planning for organizational change to ensure success and acceptance of the new system prior to implementation.**

• **Project control process** - IC should review, on a monthly basis, a sample of the deliverables and compare them with the expected results described on the project schedule.

1.4 Audit Conclusion

The management control framework of the project implemented at the start of the project did not work as well as expected and required modifications. As a result of the limited development time, specification changes were documented in specific logs outside the functional specification documents to be applied as a consolidated batch at a later date. This gave rise to a perceived difference between the functional specification documents and what was actually developed; however this did precipitate the need to realign existing test cases. The contractor has since made the decision to re-align the project and change the project manager. The new project manager implemented additional development process controls as well as project process controls.

Performance reporting did not permit IC project management the capability of validating data provided or assuring senior management with regard to project status. It is expected that new processes, including an integrated project plan and automated status reporting, will provide IC project management with the capability to monitor project status.

The re-alignment of the project will affect the implementation of the release 1.1, which will be postponed to November 2008. Costs due to delays for deliverables as per the Statement of Work for the project will be assumed by the contractor. The re-alignment of the project should allow the completion of the testing to ensure the application meets the requirements, and facilitate the planning of the transition.
The introduction of tighter controls by the contractor’s new Project Manager, and the added oversight of the renewed steering committee are expected to improve the project’s governance. The increased level of reporting will help Industry Canada in the future detect problems and react in a more effective manner.

1.5 Statement of Assurance/Reliance

In my opinion as Chief Audit Executive, sufficient and appropriate audit procedures have been conducted and evidence gathered to support the accuracy of the opinion provided and contained in this report. The opinion is based on a comparison of the conditions, as they existed at the time, against pre-established audit criteria that were agreed with management. The opinion is only applicable to the entity examined.

1.6 Subsequent Event

Work on SIRR was terminated after this report was completed. While management accepted the recommendations contained in this report, no action could be taken. This is reflected in the management response presented in Section 5 of this report.

Richard Willan  
Acting Chief Audit Executive, Industry Canada
2.0 Introduction

2.1 Background

The objective of Industry Canada (IC) is to foster a growing, competitive, knowledge-based Canadian economy and to promote sustainable development. Industry Canada works with Canadians in all sectors of the economy and in all parts of the country to improve conditions for investment, enhance Canada’s innovation performance, increase Canada’s share of global trade, connect Canadians, and build a fair and efficient marketplace. Technology is a key resource and enabler for IC to meet departmental objectives and facilitate these strategic outcomes.

The telecommunications infrastructure and radio spectrum are resources that require sound management from a domestic and global perspective. Their use is crucial to the social and economic well being of Canadians. Management of these resources is a federal obligation that is undertaken by Industry Canada through its Spectrum/Telecom Program.

The Spectrum Management System (SMS) is the tool currently used by program staff to manage the radio spectrum and to deliver licensing services to its clients across Canada. As indicated in SIRR project documentation, 70,000 Canadians and businesses have radio licenses and 70,000 invoices are issued to clients for use of the radio. SMS is used to administer 250,000 client licenses.

Management asserts that SMS uses an old operational process/framework that can no longer be maintained or enhanced. Over the past 25 years, many computer applications were added to the system involving numerous patches using old programming languages such as COBOL. IC initiated the development of a new system “Spectrum Informatics Review and Redesign” (SIRR) to replace the old SMS system.

The SIRR Project is a priority for the department in terms of size and scope and the fit with the IC strategic outcome of maintaining and promoting a fair, competitive and efficient communications marketplace. Project cost projections for the project shows a total cost estimate of $51,925,197 including GST, over eight years 2004/05 to 2011/12. At the end of the fiscal year 2007, $16,998,375 had been spent. Details of costs are provided in the Appendix to this report.

It has become apparent that the SIRR Project will not be delivered on time. In an effort to bring the project back on track, project management was changed. In addition, the project was subject to increased senior management oversight.

2.2 Audit Objective

The objective of the audit of the Spectrum Informatics Review and Redesign (SIRR) project was to assess the adequacy of, and provide an opinion on the project governance.

2.3 Scope

This engagement covered the SIRR project and included four risk domains: Governance Risk, Business Risk, Project Risk and Infrastructure Risk. Project governance risk includes the project...
governance structure and the control framework; the business risk includes the business involvement and the requirements definition; the project risk area includes the project structure and control, as well as the testing. Finally, the infrastructure risk includes the technical infrastructure and the readiness of the organization to deal with the new technology.

The audit was limited to the examination of the SIRR project governance at Industry Canada, and did not cover the project governance on the contractor side. This work does not give an opinion on the technical feasibility of the SIRR project nor does it provide an assurance on the timeliness of the SIRR project deliverables, or related payments in accordance with Section 34 of the Financial Administration Act.

The audit was conducted from February to June 2007, and considered the project’s governance structure that existed during that period.

2.4 Methodology

The project assessment addresses the Control Objectives for Information and Related Technology (COBIT) processes, which are practices for IT governance recommended by the Institute for IT Governance. The assessment allows for the unique nature of each project. This risk methodology is modeled after a set of accountabilities involved in developing software and managing systems projects. As stated above, the following four domains are involved: Governance Risk, Business Risk, Project Risk, and Infrastructure Risk.

Our approach was to rely on the review of existing documentation and the understanding of the systems through interviews with key IC staff and the contractor’s consultants. We conducted 13 individual interviews and reviewed all relevant documentation. Assessment was done against a pre-established set of criteria which are outlined at the beginning of each section.
3.0 Detailed Observations and Recommendations

The details of each observation, conclusion and recommendation resulting from our audit procedures are outlined below.

3.1 Project Governance Risk

This class of risk relates to the presence of a well-defined structure of roles, responsibilities and authorities within which the project operates, and within which all major decisions concerning the scope and objectives of the project, including changes to the same, are made.

3.1.1 Senior Management Control Framework

*Audit Criterion - senior departmental management should define the relationship of the project to strategic plans, the assignment of responsibility, including project oversight, and the roles of key organizations and people.*

The SIRR Project is a priority for the department in terms of size and scope and the fit with the IC strategic outcome of maintaining and promoting a fair, competitive and efficient communications market place.

A management framework has been implemented to manage the SIRR project. A Project Steering Committee, a Project Management Committee and a Project Review Committee were implemented to manage the project. In addition, a Change Control Committee and a Change Control Board were set up to control changes to functionality.

<table>
<thead>
<tr>
<th>Governance Body</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Steering Committee</td>
<td>The role of this committee is to provide overall direction to the members of the SIRR Project Team.</td>
</tr>
<tr>
<td>Project Management Committee</td>
<td>Provides for business and policy input to project activity.</td>
</tr>
<tr>
<td>Project Review Committee</td>
<td>Provides a focus for team discussion of issues.</td>
</tr>
<tr>
<td>Change Control Board</td>
<td>Makes decisions on changes to functionality.</td>
</tr>
<tr>
<td>Change Control Committee</td>
<td>Discuss and assess change requests and recommend changes to the Change Control Board.</td>
</tr>
</tbody>
</table>

The Project Management Committee meets on a monthly basis, and the Project Review Committee meets on a weekly basis; issues are brought to higher levels for resolution when required. Decisions were recorded in minutes reviewed for both committees. The Project Director participates in all committee meetings. Minutes of the Project Management Committee were reviewed and adequate representation was found in attendance. Items such as resources,
funding, status, and follow-up on previous items were discussed and issues were escalated when required. The renewed Project Steering Committee (replacing an earlier version of the committee) is composed of people at a more senior level, meets every two weeks and had their first meeting on April 23, 2007.

Despite the implementation of an overall management framework for the SIRR, concerns arose regarding project status and delivery that are discussed more fully under Project Risk (Section 3.3). This indicated that the management framework was not working as well as it should. To address these issues with the framework, management has implemented the following changes:

- Recent changes in the Project Manager position (January and March 2007) have created the opportunity on the project to assess the governance structure and to implement improvements.
- The IC Project Steering Committee has been reconstituted to have representation from the Assistant Deputy Minister level within the department.
- More frequent committee meetings.

The changes which were recently implemented are intended to address the concerns that were raised earlier. For example, the steering committee was renewed to provide a higher level of oversight of the project. Decisions are recorded in minutes which show improved action tracking. However, the changes are very recent and that the functioning of the new project management structure could not be assessed at the time of the compilation of this report.

3.1.2 Change Request Management

_Audit criterion - senior and project management should establish processes to allow the project to adapt to changing internal and external conditions._

A Coordinator within the Project Management Office is responsible for managing the changes – the change log of June 27, 2007 showed 283 changes were reported; about 49 were still outstanding and still needed to be resolved. Changes were prioritized by the Change Control Committee, impact analysis was performed by the development team, and the decision to integrate or postpone the changes is expected to be made by the Change Control Board, which is chaired by the Director General, Radiocommunications and Broadcasting Regulatory Branch. The project uses a project tracking management system to manage change requests as well as to manage version controls of software and project documents.

Changes were accepted without always ensuring supporting documentation was suitably altered in the Unit Task Functional Specification Templates. The end result was that a perceived gap appeared between what the documentation showed and the true status of the new system modules. In addition, test cases were being developed to meet documented requirements on the Unit Task Functional Specification Templates, but the code differed resulting in test errors. This has created schedule delays. A letter sent by the contractor to IC, on March 29, 2007, recognized delivery quality issues with scope, schedule and resources.
The project management has taken steps to deal with the issue. All the Unit Task Functional Specification Templates are being reviewed to ensure that they are up-to-date. The project manager now requires that the system documentation be updated before the code can be changed. The new procedures should ensure that system documentation is kept up-to-date, and reflects approved changes.

**Recommendation**

*The SIRR project Director should continue to ensure that updating the requirements is part of the formal change request management process and that the updated requirements are documented in accordance with the contractor’s system development methodology.*

### 3.1.3 Investment Management / Benefits Achievement

*Audit criterion* - senior and project management should define expected costs and benefits through a business case, and measure project benefits realized by the organization as they are achieved through the project.

The SIRR Project was initiated mainly to replace the obsolete technology and multiple legacy systems within the program. An assessment of the current situation as well as the future needs was carried out, and a Business Case was developed. Some of the technology costs were detailed in the Business Case, but no formal financial analysis was done to assess potential benefits; the analysis was more at the qualitative level.

IC decided that it had to redefine processes and scope for the whole system. A request for proposal was produced to find contractors to do an assessment, and then, the work. The project definition phase and architecture prototype were completed in December 2005 at a cost of $3.5M.

Although a formal process was followed to define some of the costs and benefits of the new system, the related benefits, beyond that of replacing the old system, could not be measured yet.

**Recommendation**

*The Director General, Radiocommunications and Broadcasting should set up a program to monitor benefits as accrued as part of the SIRR project implementation.*

### 3.2 Business Risk

This class of risk pertains to the clarity and stability of the business rules and processes from which system's requirements will be derived, to the integrity and robustness of the design that will be prepared to address those requirements, and to the capacity of the organization to organize itself for and to manage the changes that the introduction of a new system implies.

#### 3.2.1 Business Requirements

*Audit criterion* - Project and functional management should ensure the specification of business requirements adequately meet the functional requirements and achieve the stated benefits.
The Spectrum Management System (SMS) is the tool currently used by program staff to manage the radio spectrum and to deliver licensing services to its clients across Canada. As indicated in the Treasury Board Submission for SIRR, 70,000 Canadians and businesses have radio licenses and 70,000 invoices are issued to clients for use of the radio. SMS is used to administer 250,000 client licenses. Business requirements were well known as this is a replacement project for a number of legacy systems which have been in place for a number of years.

A formal process was used to define user requirements. The methodology proceeds from the general to specific, including a formal approval process involving several iterations and validation with users. Information sessions were presented to clients to refine the analysis product.

IC users from the business side have been involved in the development process. An SMS Coordinator exists in each region to operate the current system and provide feedback. According to the management team, a prototype version was presented throughout the country and was seen as being simple to use. In addition, clients are involved when a piece of functionality is developed. These individuals will be critical resources for the system roll-out to articulate requirements, manage change, manage user testing and manage deployment. The project needs to ensure the product is well understood within the user community. In this regard, a training plan has been developed.

3.2.2 Solution Design

Audit criterion - project and functional management should ensure there is a process in place to translate the business requirements into the business solution.

The structured contractor approach was used to convert user requirements into business solutions. “As is” work processes were documented and “to be” models were developed. A user interface prototype, business rules and finally the functional design were produced. Functional specifications were developed, revised by the clients, updated and signed-off. Functionality was coded and functional testing is still being carried out.

Because of the scientific nature of the system, business rules present a high level of complexity. Fifteen interfaces will be developed for Release 1.1. Other interfaces will be addressed in next versions of the project. Applications, such as GDOC (tracking system for document management) and Spectrum en Direct, will not substantially change and will be integrated later to the system, if they are required by the client.

3.2.3 Management of Change

Audit criterion - Project and functional management should address the impact of the project on the major business processes of the sponsoring organization and the ability of the organization to deal with the overall change.

There is no formal planning for the management of organizational change. Management of change is not part of the contractor’s mandate and should be addressed by IC to ensure success of the system.
The SMS regional coordinators have been involved and are aware of the impact the new system will have on their users. They are responsible to ensure the change is managed within their own organization. However, regional co-ordinators are not experts in managing this level of change. Their work is technical and their background may not be suitable for the management of change. Without a plan for organizational change, the successful transition to the new system is at risk.

**Recommendation**

_The Director General, Radiocommunications and Broadcasting should be planning for organizational change to ensure success and acceptance of the new system once implemented._

### 3.3 Project Risk

This class of risk deals with the internal organization and management of the project, to its monitoring, reporting, control and communications functions. It considers the tools, techniques, methods and procedures needed to do the actual work of the project: to understand the requirements that have to be addressed, and from that understanding to design, develop, implement and make operational a relevant, reliable, usable system.

#### 3.3.1 Project Organization and Management

_Audit criterion - project and technical management should define the roles and responsibilities of each major organizational component of the project structure, and provide for adequate staffing._

The following project documentation has been produced for the SIRR: SIRR Business Case, SIRR Project Charter, SIRR Project Plan, Chronology of Events for SIRR Procurement, Comparison of Options, and Communication Plan. A repository of project documentation exists on the IC Intranet site, including many documents and reports.

The composition and expertise of the project team is adequate. The Integrated Project Team is composed of experienced IC employees and the contractor’s consultants - most work teams include IC employees to ensure transfer of knowledge, e.g. construction team, testing team, training team. The construction team is comprised of approximately 14 people including 4 IC employees. The size of the construction team might differ depending on the workload. Developers can be added to the project by the contractor as needed. According to the interviewees, the communication at meetings and the working climate within the team are good. The contractor team meets once a week and produces weekly status report, which is presented at the Project Review Committee meetings which cover all issues, track/log design issues, status reviews. Outstanding items are put on the risk log. Activities/actions are tracked, delegated to individuals and issues are escalated when required.

Roles and responsibilities of the project team members are documented. The Integrated Project Team is responsible for the development and production of all the Release 1.1 deliverables as defined in the agreed scope and constrained by the stated assumptions. The SIRR Project Charter states that the contractor will retain overall responsibility for the successful implementation of each Project Release. The IC SWAT Team and User Representatives are led by the Industry
Canada SIRR Project Manager. The SWAT Team and User Representatives provide specialist Spectrum Management knowledge and expertise in response to the IPT requests for information. They participate in work sessions and deliverable walkthroughs, and review and approve those Release 1.1 deliverables that relate to definition and interpretation of the SMS business requirements.

Project management was an issue and has been addressed recently (see also Project Control). Two project managers are assigned to the project: one from the contractor and one from IC. Both project managers were replaced recently, to bring the project back on track.

The same Industry Canada resources work on both the old and new systems. This is now recognized as an issue in the risk register, which is directly related to the project risk. All IC employees, having the required knowledge to be part of the team, are already on the team. Human resources are important for the completion of the project, especially to keep the momentum in the user community. Maintaining resources is a challenge; the staffing process is very long – it is difficult to hire new employees rapidly. Without sufficient time to go through the staffing process, there is no backup for employees working with the new system. This causes uncertainties regarding the transfer of knowledge.

**Recommendation**

*The project Director should evaluate the IC resource requirements to ensure that the SIRR project stays on track.*

### 3.3.2 Development Process

*Audit criterion - project and technical management should adopt a formal development process with milestone deliverables.*

A specific methodology is used for the development process and controlled entirely by the contractor. A configuration management system is used to manage the development documentation, to control the development, such as the source code, the deliverables, the change requests, the signatures, the approvals and can be used as an audit trail to retrace previous work.

Project schedule slippages have been recognized. These slippages have resulted in delays in user acceptance testing and production implementation. The timeframe of fall 2007 to implement Release 1.1 could not be met and will be postponed to November 2008. An integrated project plan has been developed, including contractor and IC tasks and includes approximately 1,600 tasks.

As part of a structured approach, a testing strategy and test plans were produced addressing three levels of tests: functional testing, system testing including integration testing and User Acceptance Testing. The functional testing and integration testing are carried out by the joint team. The User Acceptance Testing is the responsibility of Industry Canada. A large number of test cases were written from functional specification documents, and reviewed by Industry Canada. The sign-off procedure appears at different levels: to approve the written test cases, after the test execution and at user acceptance.
Several testing environments have been implemented: a sandbox for Quality Assurance (QA), and testing; a training environment; and, a User Acceptance Testing environment. According to the Testing Team Lead, management of the different environments is seen as difficult, but is not seen as a risk. Specifically, the testing was planned as described:

- To ensure quality in testing, the new project manager has updated the test cases for functional testing. The project manager has also created individual test data to improve productivity.

- User Acceptance Testing will be managed by the user community, which means it is the responsibility of IC to write their own scripts and test cases. The test team of the contractor will provide the required support.

- Performance testing was planned for June 2007, but not yet incorporated into the contractor’s statement of work. It is now expected for August 2007 and is expected to be completed in January 2008. To ensure progress, the Project Manager has asked the contractor to assign an expert in performance testing to move forward with the testing.

- The team has completed some integration testing with Windows XP and no major issues were found.

- As a result of the evolution of the database, the conversion process had to be reviewed. All data in the existing systems, some very old (circa 1970), were converted. Three modules were tested. Data integrity testing is on-going throughout the project.

Testing is behind schedule. At the beginning of March 2007, the project team was still at functional testing. So far, half of the ultimate functionality has been tested and defects were recorded. According to the Testing Team Lead, as of July 3, approximately 539 defects have been uncovered at different levels of severity (critical, high, medium, low and ready for testing). Those are also documented. To increase efficiency, tests cases were given first to developers, and then re-executed by the testing team.

To recap, although a formal process was adopted to control development efforts, milestone deliverables have not been met. Project schedule slippages have been recognized and have resulted in delays – specifically in testing.

**Recommendation**

*To ensure completion of the system development, the contractor deliverables should be reviewed by IC project manager on a regular basis.*

*Testing should be monitored very closely to ensure quality of deliverables. Some testing should also be conducted by IC employees to ensure requirements are met.*

3.3.3 Project Control Processes

**Audit criterion - project management should have a standard approach to project control.**

**Project Management methodology**

A specific project management methodology is in use. Different types of plans such as a release plan, a resource plan and a quality plan exist. The project manager uses MS-Project to manage
the project plan. A plan is produced by each team lead and all the plans are rolled-up in an integrated overall plan. A full time Planning Coordinator has been added to the project team to update the project plan on a regular basis. Weekly report and time sheets are produced for the contractor’s Project Manager. Weekly status reports are reviewed at the Project Review Committee and work is broken up into deliverables.

Project reporting

Project reporting in the recent past was based on manual capture of status by the contractor’s team leads and summarization by the contractor’s Project Manager. This summarization was then submitted to the IC Project Director and discussed at committee meetings. The lack of automation made it very difficult for team leads to provide this information easily and caused significant time to be wasted at the team level. Despite the information flow and the discussion of issues at various committees, actual status of the project remained difficult to determine – there was no way for the IC Project Management Office to validate status claims. The ultimate result was that the delay in meeting initial delivery timelines was unexpected by IC staff.

As per project management, payments for the project are deliverable-based. Deliverables are verified by PWGSC against the statement of work prior to payment. At the end of fiscal year 2006-2007, approximately $1.3 million were not invoiced because the contractor fell behind schedule on his deliverables. Verification of payments under Section 34 of the Financial Administration Act was not in the scope of the audit of the governance of SIRR.

New project reporting processes and integrated plan

As part of a new working strategy, a new project schedule called the “integrated project plan” has been developed and was received at the SIRR Steering Committee meeting on June 14, 2007. As part of this new approach, each team lead now holds daily meeting with his team, and the project manager holds daily meeting with the team leads. There are daily meetings with IC employees to solve business issues.

New processes and the integrated plan will lead to automated status reporting that will be easier to produce and validate. It should help the team leads to save time with reporting and should contribute to increase controls on the task to be done.

Contract Management

The project completion will be delayed by another year and costs for the deliverables in the current Statement of Work will be absorbed by the contractor. Weekly meetings for the management of the contract and budget are being held with the contractor’s senior executives and are chaired by the new project manager. The contract is a fixed price task authorization within a supply arrangement and each new task authorization needs to be approved by the Project Steering Committee, to ensure it meets requirements and funding is made available to it.

Risk Management

The risk profile of the SIRR Project was defined in a detailed risk management strategy included in the Project Charter. Risks were to be identified, documented and assigned to a responsible
person for resolution. Risk assessments are done on a weekly basis during the Project Review Committee meetings, which include the Project Director, IC and the contractor’s Project Managers and team leads (as required). Risk assessment is a standard item at each meeting. Project risks are monitored by the contractor’s project manager as well as the IC project manager. If not resolved, risks are escalated to the Project Management Committee, then to the Project Steering Committee.

**Recommendation**

_To ensure the new working strategy implemented by the contractor’s new Project Manager is effective, IC should review, on a monthly basis, a sample of the deliverables and compare them with the expected result described on the project schedule._

### 3.4 Infrastructure Risk

This class of risk pertains to the degree of inherent risk in the technology platforms chosen to support the system. Newer and less widely-proven platforms have substantially higher risk than mature and widely-used platforms. Not only is there a greater probability of a flaw in the platform, know-how to deal with flaws is rare. This class also pertains to the transition of the application into the infrastructure within which it will operate. Newly developed and implemented infrastructures pose more risk than a structured mature one.

#### 3.4.1 Infrastructure

_Audit criterion - project and technical management should ensure that the technical solution conforms to the organization’s technical standards and methods and technology environment._

_Project and technical management should measure impact the project will have on this infrastructure._

Architecture issues are expected, and must be resolved to ensure success with the User Acceptance Testing. Architecture documentation has been produced and is available on the IC Intranet site. The SIRR architecture review project has been initiated on the request of the SIRR Project Director with the objective of identifying areas of the application architecture that are overly complex and thus of high risk.

The architecture review initiative is nearly complete.

**Recommendation**

_The architecture initiative report should be completed as soon as possible._

#### 3.4.2 Technology Transition

_Audit criterion - project and technical management should address the readiness of the organization to deal with the new technology, overall technology configuration management, and the ability of the organization to offer support (short and long range)._  

There is still no plan produced for the transition. An implementation plan is expected to be developed later on. A high-level implementation strategy was produced in January 2005. At the
Project Steering Committee meeting of June 22, IC had presented options for maintenance of Release 1.1 and beyond. It is important to plan the transition to ensure solutions for support and maintenance and also to be ready for the implementation of the release.

A training strategy as well as training plan for Release 1.1were developed; the training strategy is to “train the trainers”. The training team is composed of 2 people working mainly on the development of the training material, such as users guide. Material is fully bilingual and requires six months of development. An initial training session was provided at the beginning of March 2007; 34 users attended and received 5 days of training.

**Recommendation**

*Transition should be planned. An implementation plan should be developed for Release 1.1.*
4.0 Conclusion

The management control framework of the project implemented at the start of the project did not work as well as expected and required modifications. As a result of the limited development time, specification changes were documented in specific logs outside the functional specification documents to be applied as a consolidated batch at a later date. This gave rise to a perceived difference between the functional specification documents and what was actually developed; however this did precipitate the need to realign existing test cases. The contractor has since made the decision to re-align the project and change the project manager. The new project manager implemented additional development process controls as well as project process controls.

Performance reporting did not permit IC project management the capability of validating data provided or assuring senior management with regard to project status. It is expected that new processes including an integrated project plan and automated status reporting will provide IC project management with the capability to monitor project status.

The re-alignment of the project will affect the implementation of the release 1.1, which will be postponed to November 2008. Costs due to delays for deliverables as per the Statement of Work for the project will be assumed by the contractor. The re-alignment of the project should allow the completion of the testing to ensure the application meets the requirements, and facilitate the planning of the transition.

The introduction of tighter controls by the contractor’s new Project Manager, and the added oversight of the renewed steering committee indicate that the project has taken a better direction. The increased level of reporting will help Industry Canada in the future detect problems and react in a more effective manner.
5.0 Management Response

Management acknowledges and generally accepts the observations and recommendations made in this SIRR Project Governance audit. The observations and recommendations will be given consideration during the current re-planning process and, to the extent that any new similar project is commenced, will also be considered for inclusion in that project's governance.
## Appendix: Summary of Project Costs by Fiscal Year

### Project Definition Costs

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</thead>
<tbody>
<tr>
<td>Salary</td>
<td>1 140 413</td>
<td>238 341</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 378 754</td>
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<tr>
<td>Non-personal Capital</td>
<td>1 331 829</td>
<td>404 700</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 736 529</td>
</tr>
<tr>
<td>GST (where applicable)</td>
<td>93 228</td>
<td>28 329</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>121 557</td>
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<tr>
<td>Total - Project Definition</td>
<td>2 793 552</td>
<td>719 038</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3 512 590</td>
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### Project Implementation Costs

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<tbody>
<tr>
<td>Salary</td>
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<td>1 191 704</td>
<td>1 432 636</td>
<td>1 432 636</td>
<td>1 432 637</td>
<td>1 432 637</td>
<td>1 432 637</td>
<td>1 432 637</td>
<td>9 787 528</td>
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<tr>
<td>Non-personal Capital</td>
<td>0</td>
<td>4 721 223</td>
<td>4 985 723</td>
<td>3 500 000</td>
<td>3 000 000</td>
<td>3 800 000</td>
<td>3 400 000</td>
<td>2 650 000</td>
<td>26 056 946</td>
</tr>
</tbody>
</table>
| Project Contingency Allowance  
1 | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 3 000 000 |
| Outsourcing / maintenance option 
2 | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 6 000 000 |
| GST (where applicable) | 0         | 330 486   | 299 143   | 210 000   | 180 000   | 228 000   | 204 000   | 159 000   | 1 610 629 |
| EBP/RPE     | 0         | 238 340   | 286 528   | 286 528   | 286 527   | 286 527   | 286 527   | 286 527   | 1 957 504 |
| Total - Project Implementation | 0         | 6 481 753 | 7 004 032 | 5 429 166 | 4 899 164 | 6 247 164 | 5 823 164 | 12 528 164 | 48 412 607 |

### Source of Funds

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</thead>
<tbody>
<tr>
<td>Industry Canada Reference Levels</td>
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<td>7 200 791</td>
<td>7 004 032</td>
<td>5 429 166</td>
<td>4 899 164</td>
<td>6 247 164</td>
<td>5 823 164</td>
<td>12 528 164</td>
<td>51 925 197</td>
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<tr>
<td>Fiscal Framework</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2 793 552</td>
<td>7 200 791</td>
<td>7 004 032</td>
<td>5 429 166</td>
<td>4 899 164</td>
<td>6 247 164</td>
<td>5 823 164</td>
<td>12 528 164</td>
<td>51 925 197</td>
</tr>
</tbody>
</table>

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1 Total project contingency allowance = $4,719,163 and is comprised of $3,000,000 in non personal capital and $1,719,163 in salary related costs.

2 This amount represents an outsourcing / maintenance option that Industry Canada may exercise in fiscal years 2012-2013, 2013-2014 and 2014-2015 at $2 million per fiscal year.

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Audit and Evaluation Branch
Audit of Spectrum Informatics Review And Redesign (SIRR) Governance) - Final Audit Report
June 2007