
**REVIEW
DIRECTORATE**

**DIRECTION GÉNÉRALE
DE L'EXAMEN**

**AUDIT OF THE MAINTENANCE
INFORMATION MANAGEMENT SYSTEM
(MIMS)
COST OVERRUN
FINAL REPORT
APRIL 2003**



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canada

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

In 1995, the Canadian Coast Guard (CCG) proposed the installation of a maintenance information management system (MIMS) to replace some 50 existing antiquated and inefficient stand-alone systems located throughout CCG.

The MIMS project was approved in May 1997 at a cost of \$7.9M. As the project progressed, MIMS encountered problems in a number of areas, such as amendments to the primary contract, incorrect technical requirements, lack of regional commitment and incorrect training assumptions. It became evident that the project could not be completed as planned or within the cost that had been approved in May 1997. In June 2001, the Investment Management Board (IMB) approved a cost overrun of \$5.37M. As a condition of approving the cost overrun, the Review Directorate was asked to conduct an audit of the MIMS project to assess the reasons for the cost overrun.

The MIMS project is now more than 30 months beyond the scheduled date for completion and significant funds have been expended. As yet, a fully implemented national system is not in place.

The audit team has identified a number of areas that have contributed to the cost overrun situation. These include insufficient project planning, weaknesses in establishing accountabilities, less than ideal contract and fiscal management practices and poor quality of documentation for decision making.

Recommendations have been offered to strengthen the overall project management process, including, planning, contract management and the generation and maintenance of documentation to support decision making. These recommendations should be viewed as lessons learned from the MIMS project that can be applied to future projects.

The CCG has provided an action plan responding, in a positive manner, to the recommendations outlined in this report. This action plan addresses all of the report recommendations.

1.2 QUALITY OF PROJECT PLANNING CONTRIBUTED TO COST OVERRUN

Numerous issues have contributed to the cost overruns, including the quality of the initial planning, which was insufficient given the size and complexity of the project and the number of business and expenditure decisions involved in a project like MIMS. As a result, the level-of-effort and funding estimates for data conversion and configuration, MIMS hardware and regional commitments, and the strategy for training were all based on inaccurate assumptions and requirements.

Anecdotal information indicates that the original cost estimate for the project was \$12M, approximately \$4.1M more than the Effective Project Approval Document (EPAD) approved amount. Likewise, the study conducted by the Tiger Team — the group directed by the

Technical Advisory Board (TAB) in 2000 to determine affordable implementation solutions — identified a minimum three-year deployment plan at a cost of approximately \$14M over and above the already-committed \$7.9M. As this amount was considered to be too high and likely not to receive approval, the Tiger Team was instructed to explore implementation options of a more acceptable cost.

The exclusion of regional contributions from the EPAD estimates, as well as no documented commitment by the regions to fulfill their MIMS responsibilities, put a considerable strain on the Department of Fisheries and Oceans (DFO)/CCG resources. The resulting funding requirements constituted the second largest portion of the approved additional funding, while training constituted the greatest. As with the other elements of the cost overrun, the EPAD contained inaccurate training assumptions, as well as inappropriate training models and strategies. As a result, over the past three to four years, a significant investment has been made in training — the inherent value of which is questionable.

A more detailed initial and periodic analysis of the strategic, operational and project risks would have helped to minimize the project overruns. As it stands, the protracted duration of the project has increased the risk of changes in both business needs and technology.

1.3 PROJECT MANAGEMENT AND ACCOUNTABILITIES

The adequacy and effectiveness of the internal controls did not meet the needs of the project. While a well-defined Project Charter was established, outlining sound management controls and accountabilities, the project was not managed as intended.

1.3.1 Roles and Responsibilities

Roles and responsibilities were not adequately fulfilled on the part of all key players. A Project Implementation Committee (PIC) was to oversee the project, yet it did not play as crucial a role as intended. Had the committee been in operation, valuable input, such as identifying that infrastructure requirements and enhancements had not been factored into the funding as raised by the Director General of Information Management and Technology Services in 1998 — would have assisted in guiding the project. In turn, while the various Project Managers — four in seven years — undoubtedly intended to fulfill their responsibilities, the documentation provided indicated that there was not a good working relationship with the primary contractor. This was not beneficial to smooth operations. As well, core responsibilities and functions — that of Deputy Project Manager and Quality Assurance Service Provider — were contracted out. Yet, there is no evidence that either the contractor or MIMS internal project management were structured to ensure that full departmental accountability was preserved and that the contracted roles would, in good time, be fulfilled by departmental personnel.

1.3.2 Performance Planning and Reporting

Regarding ongoing project management practices, there was little evidence of detailed project plans, including contingency plans, or of any periodic performance reports that accounted for accomplishments against set milestones, etc.

1.3.3 Contract Management Practices

Overall, contract management needed to be strengthened. According to the limited documentation and anecdotal evidence provided, the contract negotiations and subsequent contract amendments for the primary contractor and other contracted resources were not accounted for appropriately. The primary contractor was awarded a fixed-price contract for \$5.2M to develop and deliver a national maintenance information management system. However, the scope of their activities were gradually reduced, with CCG eventually assuming a number of responsibilities, including deploying MIMS nationally. Despite amendments to the contract, (both increases and decreases), the primary contractor was paid approximately the same amount as was in the original contract. Although the lack of documentation makes it difficult to accurately assess the full value of the amendments, the documents that do exist suggest that some reduction in payments would have been warranted.

In addition to the primary contractor, there has also been an extensive use of supply contracts. These contracts were originally valued at \$425 K but, because of multiple contract amendments, they now total \$1.6M. This has resulted in considerable reliance for the implementation and maintenance of MIMS on contract personnel. Moreover, there is even evidence, albeit inconclusive, which suggests questionable contracting practices may have been deployed in engaging particular contractors.

1.3.4 Fiscal Management

Regarding fiscal management, some regions preceded with end of year hardware purchases in order to use up the funds assigned to that fiscal year, even though the hardware was not then required and may not have met the future needs of the project. It is understood that some necessity to make late year purchases is attributable to the funding approval process, particularly if any funds had to be reprofiled from a previous year. This necessitates having the project requirements tabled at DFO's Informatics Steering Committee (ISC) and providing an impact assessment seeking funding approval. This process results in funding coming to the project after the beginning of the fiscal year, impacting the spending pattern for the project. Earlier commitment and release of funds would assist managers in spending appropriately.

1.3.5 Quality of Documentation

While the Overrun Project Approval Document (OPAD) presents some justification for requesting additional funding to complete the project, the audit team determined that the information was both inaccurate and incomplete. For instance, the OPAD suggests the implementation of MIMS was further along than was the actual case when the OPAD was approved, and it also made no mention that the responsibilities of the contractor had been considerably amended. These amendments were not adequately documented. However, the documentation that does exist suggests that the contract price should have been reduced. As a

result, the OPAD did not present a complete picture for the IMB to support effective decision making.

1.4 CCG MANAGEMENT RESPONSE

CCG management generally supports the findings of the audit team and acknowledges that difficulties had been experienced during the project definition and implementation phases of the MIMS project. Subsequent to establishing the Integrated Technical Support (ITS) Directorate, improved project management practices are being implemented to minimize the risk of such occurrences on future projects. These improvements not only have served as the catalyst to mature the project management practices in CCG, but have been applied to positive effect during the cost overrun phase of the MIMS project.

2. INTRODUCTION

DFO exists to conserve and protect Canada's Fishery resource and, in partnering with stakeholders, to assure its sustainable utilization. As such, the Department develops and delivers policies and programs in support of Canada's economic, ecological, and scientific interests in oceans and inland waters. In addition, DFO oversees the safe, efficient and environmentally sound movement of commercial and other traffic over Canada's oceans and inland waterways. The implementation of top quality information technology platforms is an integral part in DFO's ability to achieve its goals. MIMS is one such platform whose intended purpose is to allow CCG to better manage its assets and carry out its mandate within the Department.

The Review Directorate also plays an important role within the Department by supporting the achievement of departmental objectives by providing Senior Management with assurance, risk assessment and the identification of areas of concerns. Therefore, at the request of DFO's IMB, the Review Directorate has undertaken an audit of the cost overrun of the Maintenance Information Management System (MIMS) implementation.

2.1 OBJECTIVES AND SCOPE

The objectives of the audit were:

- to assess the reasons for the cost overrun of the MIMS project,
- to assess the adequacy of the project management controls and accountabilities, and
- to identify lessons learned in support of management decision making for the approval and management of future capital projects.

The scope included an examination of the project from the time it was approved in 1997 (as well as the events leading up to that approval) to the present cost overrun situation and current schedule for completion. The audit was conducted at Headquarters (HQ) and in selected regions [Maritimes, Central & Arctic (Prescott)]. In addition, telephone interviews were conducted with key staff in the Quebec Region.

2.2 METHODOLOGY

The methodology consisted of:

- interviews with key HQ and regional staff — both past and present,
- interviews with procurement personnel at Public Works and Government Services Canada (PWGSC), and
- research and analysis of documentation and project files.

2.3 LEVEL OF ASSURANCE

Sufficient and appropriate audit work has been performed and evidence gathered to support the accuracy of the conclusions contained in this audit report.

2.4 REPORT STRUCTURE

The remainder of this section provides some background regarding the MIMS project framework. Section 3.0 contains the observations and recommendations regarding the reasons for the MIMS cost overrun, while Section 4.0 contains a management action plan. In addition, Annex A includes a chart illustrating the MIMS project timelines as well as details about the four MIMS project phases.

2.5 BACKGROUND

In 1995, with the merger of the CCG and DFO, Marine Technical and Support Services (MTSS) — now Integrated Technical Support (ITS) — was assigned the responsibility for the maintenance of organizational marine and onshore assets. To that end, MTSS proposed the installation of a maintenance information management system to replace the numerous antiquated and inefficient stand-alone systems located throughout CCG. Originally, the system was to be small-scale to serve the needs of individual regions. However, as the impetus for a maintenance information management system grew, the scope changed to become that of a national system designed to replace some 50 existing maintenance information management systems.

In July 1995, Consulting and Audit Canada (CAC) was engaged to estimate the benefits that would result in CCG using a maintenance information management system. The CAC study was based on five companies that had implemented a MIMS-like system. CAC concluded that initial implementation costs would be \$7.20M — resulting in a net annual benefit estimated at \$2.65M. They also concluded that there would be a positive return on investment of 37%.

With the positive results of the benefits study to support the project, CCG proceeded to identify its requirements as well as the cost estimates for a MIMS. In November 1995, a Preliminary Project Approval Document (PPAD) in the amount of \$7.30M was prepared by the CCG.

In May 1997, the proposal for CCG's MIMS was reviewed by the Departmental Executive Committee (now the Departmental Management Committee), and it was subsequently approved by the Minister at a cost of \$7.949M. The MIMS initiative proposed the implementation of a single, comprehensive computerized maintenance information management system, developed from commercial off-the-shelf (COTS) software, to be installed over a 24-30 month period. It was proposed that the new system be integrated onto desktop workstations across CCG — ship to shore — as well as key corporate systems, including the Integrated Departmental Finance System (IDFS, Oracle Financials — a.k.a ABACUS) and the human resource system, Peoplesoft. Ultimately, MIMS would provide management information on maintenance activities, including estimated and actual costs, inventories, maintenance history, maintenance schedules, and forecasting. It would also give users easy access to electronic documentation,

easy-to-use interfaces for capturing and disseminating maintenance information and history, and tools to assist the users in the field.

In April 1998, a contract was awarded to the primary contractor at a fixed price of \$5.2M for the implementation of a maintenance information management system. The primary contractor was responsible for providing:

- system configuration,
- business process design,
- data conversion,
- training, and
- a number of electronic interfaces with other DFO/CCG systems.

As the project progressed, MIMS encountered problems in a number of areas, such as amendments to the primary contract, incorrect technical requirements, lack of regional commitment and incorrect training assumptions. It became evident that the project could not be completed as planned or within the cost that had been approved in May 1997. This situation started to become increasingly serious in late 1999 and resulted in major revisions to the contract and reduced scope of the contract deliverables on the part of the contractor and a shift of workload to DFO.

The Technical Executive Board (TEB), comprised of Integrated Technical Support Directors and Regional Directors, Technical Services, directed the creation of a HQ/Regional "Tiger Team" to examine and recommend affordable implementation solutions. In September 2000, the Tiger Team identified a minimum cost deployment plan resulting in a three-year deployment at a cost of approximately \$14M (over and above the \$7.9M originally approved). As the amount determined by the Tiger Team was considered to be too expensive and would not likely receive approval, they were instructed to explore options on how to implement MIMS at a more acceptable cost and to report back to the TEB in November 2000.

The Tiger Team reported back to TEB on November 14, 2000 and presented five options, the preferred one being to complete implementation of MIMS to all land maintenance centres, and related inventory management centres, including ships. This project extension would cost \$5.37M and would be implemented over a 25-month period, once approved. This amount included:

- data conversion — estimated at \$326K,
- hardware upgrades and infrastructure — estimated at \$708K
- regional resources — estimated at \$1.39M, and
- training — estimated at \$2.94M.

This additional funding brought the MIMS project to a total of \$13.319M. In June 2001, the IMB approved the MIMS OPAD on the condition that DFO's Review Directorate undertake an audit of the overrun.

MIMS was deployed to land sites on November 28, 2001. Training in the regions is continuing and work is ongoing to populate the system. At the time of the audit, August 2002, there had been no deployment of MIMS to CCG ships. Please refer to Annex A for a chart providing an overview of the MIMS project timelines.

3. OBSERVATIONS

3.1 INSUFFICIENT PROJECT PLANNING CONTRIBUTED TO COST OVERRUN

The size, complexity and number of business and expenditure decisions involved in a project of this nature called for a more thorough planning and analysis phase than was conducted. The risks involved in implementing MIMS were not adequately analyzed or addressed, nor were the software requirements adequately assessed.

The following subsections address the inaccurate assumptions and contributing factors related to the MIMS project cost overrun, including a lack of rigorous risk assessment and risk management, inadequate cost estimates, and incorrect assumptions for hardware and infrastructure, data conversion, regional resources, and training.

3.1.1 Risk Assessment and Management

Although the risks involved in implementing a maintenance information management system were considered during the planning stage of the project, these considerations lacked the rigour or detailed analysis required for a project as complex as MIMS. Essentially, the project did attribute some technical risk to purchasing off-the-shelf software, but this technical risk was assessed as low. There was also mention of a lack of resources for data entry and populating the database but it was not expected to affect the project milestone. The breath of operational requirements was also recognized as a potential risk which could cause a longer deployment period.

Ongoing risk assessment and risk management, throughout the lifecycle of the project, would have given the team a better indication of the (then) current situation, allowing the project team to develop and implement contingency plans, if required, to address scope and timeframe issues.

CAC Reviews of MIMS Planning

In July 1995, CAC was retained to provide an estimate of the benefits that may result in implementing a maintenance information management system. However, due to time and data availability constraints, a traditional cost/benefit analysis was not conducted. While a benefits analysis was crucial to the justification and implementation of MIMS, a more detailed analysis of the strategic, operational and project risks within this assessment would have helped to better ensure that the probability of project overruns was minimized from the start.

In addition to the benefits assessment, CAC was again requested in March 1996 to review the CCG cost estimate document for the MIMS implementation. The assignment was designed as a validation exercise within a risk analysis context. CAC's task was to review of the process and assumptions used by the MIMS project team in developing their MIMS estimates rather than to redevelop comprehensive estimates. The review concentrated on key areas such as cost components, CAC's own practical knowledge and experience, industry standards, and the major cost and/or risk areas. In turn, CAC recommended a small increase in funding and made

a number of recommendations to ensure the successful completion of MIMS. For example, CAC recommended that:

- the full extent of regional commitment be acquired, documented and formally supported by each region to ensure the successful development, implementation and operation of MIMS, and
- consideration be given to awarding the acquisition contract with a firm commitment only to the completion of the initial site and with further installations subject to fixed-price contracts. Under this approach, development would be completed by the contractor and the Department would have the option of different approaches (and costs) for roll-out.

While these recommendations were intended to minimize some of the risks involved in the MIMS project, they were not implemented. For example, formal commitments were not sought from the regions as they did not sign off on the Project Charter.

In addition, the costs included in the 1995 review were the baseline for the CCG cost estimate document under analysis in the 1996 CAC review. Industry experience has shown that preliminary estimates based on opportunity/benefits assessments can represent less than half of the costs required for completion. Using these preliminary estimates to develop a Class B estimate, which is plus or minus 10%, is risky in and of itself, given the difficulty to accurately estimate in an information technology environment. Nevertheless, CAC was of the opinion that, subject to the constraints inherent to MIMS and the implementation of their recommendations, the project could be completed within the projected level of funding.

Information Management and Technology Services Group Review of PPAD

The Information Management and Technology Services (IM&TS) Group reviewed the PPAD and raised concerns regarding the successful implementation of MIMS. The group recommended a number of actions to help minimize risks, including:

- a Management Committee, with membership from IM&TS as well as from other major projects or program areas that would be affected by MIMS, be established for the system implementation to ensure that departmental issues are being addressed and that any support required from their respective organizations be made available,
- the MIMS project team coordinate with regional informatic organizations the implementation of the system into the existing infrastructure. It was felt that the MIMS project had taken the conservative approach of costing separate servers for each region; therefore, support to consolidate these servers with other regional servers should be pursued,
- the MIMS project team develop a plan for the system support structure based on experience with PeopleSoft and Oracle,

- requirements for interfacing Oracle Financials be addressed immediately, with the two financial teams and the MIMS project team reaching a consensus on the feasibility of interfacing the two systems, and
- proof-of-performance testing include an assessment of the network impact (wide-and local-area), with IM&TS being included in the testing process and being provided with the test results, and that upgrades to existing infrastructure should be funded by the project.

While some of these concerns were addressed to varying degrees, it does not appear that all of the recommendations were fully addressed before the EPAD was approved in 1997.

Assessment of the Commercial Off the Shelf Software (COTS)

Regarding the complexity of the selected software system, the preferred and accepted option was to purchase a COTS package. The risks of using a COTS package were known, and the COTS advantages (e.g., fewer technical “bugs”, previously tested) and disadvantages (e.g., customization requirements) were weighed and outlined in the EPAD. Had the selected software system been adequately studied and the risks appropriately identified in the planning phase of the project, or if there were any additional concerns about the software package, potential problems could have been identified early in the project and contingencies established.

Contingency Planning

Contingency plans would have been beneficial to assist in dealing with time delays, contract issues and technology changes. For example, the intended duration of the MIMS project was forecasted as 24-30 months. As of the audit date, the project lifespan was over 60 months, and it remains to be determined how many more months may actually be required to complete the project. If contingency plans had been in place, they may have helped address these pitfalls.

3.1.2 Initial Cost Estimates

Anecdotal information indicated that the original cost estimate for the project was \$12M. However, the MIMS project team felt that this amount was considered to be too expensive and would not be approved. Further costing options were considered and a revised cost estimate was subsequently set at \$7.9 million. This is the amount that was approved for the project in 1997.

It was the view of some people interviewed that cost estimates were not always prepared with the rigor that they should have been and that all costs were not always included in the proposed project costs. There could be a number of reasons for this including that the individuals preparing the estimate may not have had the necessary skill or experience required for the task at hand.

One factor that contributed significantly to the cost-overrun for this project was the assumption that the regions would contribute resources from existing funds to assist in the implementation of MIMS. There had been neither a need nor an amount identified in the project approval amount to cover regional resources. (See Section 3.1.5 on Regional Contributions.)

3.1.3 Data Conversion and Configuration Costs

The amount of the cost overrun attributable to converting data from previously used maintenance systems into MIMS was \$326,000. Notwithstanding that the Commercial Computerized Maintenance Management Software had not even been selected yet, the OPAD stated that the efforts associated with data conversion and data entry were underestimated. Data conversion was included in the main contract as one of the primary contractor's deliverables. However, it was not achieved.

The technical requirements for the conversion and configuration of MIMS were not adequately identified and assessed, nor were the related business standards and practices in place. The primary contractor was required to convert a number of "common" data systems. While they did provide a data conversion tool, the conversion process resulted in little data being available as the original data was poor in quality. As a result, the approved cost estimates for data conversion and configuration did not fully reflect the actual amounts required.

CCG did act upon the 1996 CAC recommendation that the \$132.5K estimated for data conversion be supplemented with a \$50K contingency amount. However, the ongoing need for business rules and processes regarding all technical elements of MIMS — particularly those for effective data conversion — has affected, and will continue to affect, the actual funding necessary for this element of the MIMS project.

Furthermore, although the MIMS Project Charter outlines the roles and responsibilities for various team members relating to data conversion (i.e., the MIMS team members are to provide support and develop any utilities and procedures needed to make data from the "common systems" available to the MIMS contractor for conversion to MIMS), the lack of business practices and processes within CCG may have contributed to the contractor not fulfilling its obligations in this regard. As a result, the scope of the contract was amended, leaving the Department responsible for the data conversion process.

The conversion of data remains an issue with MIMS. The MIMS has not yet been fully populated with the data from the previous systems. Work on data conversion is currently being done by contracted staff. This is a concern as there is a strong reliance on an external contractor. In-house expertise is not being developed and this creates a dependence on the contractor.

3.1.4 Hardware and Infrastructure Assumptions

As a result of inaccurate and unsubstantiated assumptions with respect to hardware needs, the project needed additional funds to purchase more hardware and establish the infrastructure necessary to complete MIMS deployment. These funds were sought as part of the OPAD.

Dependence on Other Departmental Initiatives

As the OPAD states: "The costs of hardware upgrades were expected to be covered by other Departmental projects and initiatives." More specifically, early project management assumed that the Ships' Information Technology and Computer Systems (SINTACS), a major initiative to modernize hardware systems on DFO vessels — which was pending approval during the MIMS planning stage — would incur all costs related to hardware, Local Area Network acquisitions and installation costs for all DFO vessels. The latter was estimated to be \$130K under the Fleet Information Management System (FIMS). Although the SINTACS assumption seemed appropriate, this was contrary to the IM&TS recommendation that upgrades to existing infrastructure be funded by MIMS. It was also assumed that hardware and LAN configurations purchased through SINTACS would conform to existing CCG standards and thus would meet the needs of MIMS. As a result, the cost of the required overall hardware upgrades (\$708K) and ships' hardware infrastructure were not included in the original project estimates. Contributions from SINTACS never did transpire. Better communications between initiatives would have assisted in appropriately identifying the initiative responsible for hardware upgrades.

3.1.5 Regional Contributions

The exclusion of regional contributions from the EPAD estimates, as well as no documented commitment by the regions to fulfill MIMS responsibilities, put a strain on DFO/CCG resources. The resulting funding shortfalls to cover regional resource requirements amounted to \$1.394M and constituted the second largest portion of the approved additional funding in the OPAD.

Despite the fact that the initial project managers did not secure a formal commitment from the regions or that the appropriate regional authorities had not actually committed any resources to the project, the MIMS project continued based on the assumption that the CCG regions would absorb the implementation burden of MIMS. These burdens were primarily the significant cost of training, and the regional MIMS project team costs. This assumption, however, was not documented in any of the approval documents. In fact, in the project documentation, MIMS training and related costs were designated as the primary contractor's responsibility. As well there had been no amount included in project costs for on-going support for MIMS.

Project management was aware that resources would be required, however "... it was a deliberate management decision to assume that CCG regions would be able to absorb the implementation burden of MIMS, primarily the significant cost of training, and the regional MIMS project team costs" (source: OPAD). This assumption was not included in any document nor is there any indication from the regions that they had committed resources. As well, training requirements had been included as a deliverable in the contract.

Initially, it appears that the regions did provide some support to the project from their A-Base funding. (Although we note that this is not the proper accounting process for a capital project). However, these amounts were not charged to the capital costs of the MIMS project and cannot

be quantified as they are meshed together with other A-Base expenditures. As the project continued past its originally anticipated completion time, the regions realized that they were not in a financial position to continue supporting the MIMS project and threatened to cease work on MIMS.

3.1.6 Training

Training constituted the greatest part of the additional funding requested in the OPAD. The cost overrun for training personnel who will be using MIMS was estimated at \$2.942 million as opposed to \$483,000 that had been included in the 1997 EPAD. The original premise for training was that the contractor was to provide training to the users in accordance with the contract. However, as the project progressed, the Department assumed responsibility for training and its associated costs.

Training Assumptions

The training requirements and duration as well as the facilities requirements for training were very difficult to predict in the Initiation Phase because, as stated in the OPAD, “the training evaluation was based on the extrapolated architecture and deployment methods, at the time of functional and technical specification preparation” as well as on undetermined software.

More accurate assumptions could have been developed, resulting in more accurate training estimations being presented in the EPAD, if:

- the complexities, such as addressing the intricacies of the specified software and arranging training for ships’ personnel, had been foreseen and contingency plans had been put in place to meet the changing training requirements for MIMS,
- the specified software had been more adequately studied, with risks identified during the planning phase of the project, and
- the recommendations resulting from those studies conducted had been more adequately considered and implemented.

CAC was engaged in 1995 to conduct a project benefits study, which included a benchmarking of five organizations that had fully implemented MIMS-like systems. The study supported the implementation of a MIMS system. However, the CAC report illustrated only the benefits (i.e., money saved) that would be achieved if a centralized maintenance information management system was implemented in a Department such as DFO — and omitted mention of some of the potential problems (e.g., training) that could occur while implementing a MIMS. It should be noted that, as stated in the OPAD, “most industries that had MIMS-like model systems were only in the early stage of implementation.” Therefore, there was not a lot of best practices/lessons learned data available on which CAC could rely. Nevertheless, a detailed assessment of the training complexities might have provided the project team with a better estimation of the training costs.

The MIMS training strategy posed a number of logistical difficulties, including the assumption that ships' personnel training could be conducted on DFO vessels. As the MIMS project progressed and more was learned about the complexity of the selected software system, it became evident that training for the ships' crews was only practical in shore-based facilities. This change contributed to the increased training costs due to the need for training facilities and ships' crews overtime while on shore.

Current Training Usefulness

Potential users of MIMS are currently being trained in all regions. However, the audit team questioned the effectiveness and the value of the training then being given. Some users were receiving training even though there was no intent to implement MIMS in their section at the time of their training. For example, in May and June 2002, a number of employees in one Region received their training on MIMS. However, shortly after returning to their workplace, they were informed by their supervisor that they were not intending to use MIMS at that location at that time, as there were no business rules in place to facilitate using the system.

There are associated costs involved in training users and to expend these funds at a time when the system could not be implemented was not an effective or efficient use of resources. The MIMS training is designed such that, to optimize effectiveness, users must begin using the system within a week of receiving the training or the knowledge gained will be lost. The probability exists that those already trained will require some degree of retraining to be able to use MIMS. The Department was making a substantial investment in putting a single maintenance information management system in place but was not advising staff that MIMS is the system that will replace all other maintenance systems. Furthermore, staff were not being told that MIMS is mandatory. Thus, staff continued to rely on other systems.

3.1.7 Recommendations

- **Senior Management should develop a completion schedule for the full implementation of MIMS. This schedule should include consideration of all aspects of MIMS, including elements such as, deployment to vessels, training, reporting, required interfaces, data conversion and provisions for on-going support.**
- **Senior Management should issue a statement to all staff advising that the usage of MIMS as the maintenance management system is mandatory.**
- **For all future projects, a more rigorous risk assessment should be carried out with consideration given to all strategic, operational and project risks.**
- **For all future projects, the inclusion of a contingency plan should be an element in the project approval process.**

- **Better documentation and communication between areas and/or regions should be established to ascertain committed actions or resources to ensure smooth implementation of projects.**
- **All costs associated with individual projects should be included in the project approval process regardless of whether incremental funding is required.**

3.2 PROJECT MANAGEMENT CONTROLS AND ACCOUNTABILITIES

The audit team observed opportunities for improvement regarding the adequacy and effectiveness of the internal controls for the MIMS project. While a well-defined Project Charter was established, one that outlined sound management controls and accountabilities, the MIMS project was not managed entirely as intended. Roles and responsibilities were not adequately fulfilled on the part of all key players. There were some instances of questionable (albeit inconclusive) business practices regarding the fiscal and contract management processes used in this initiative. Also, the audit team did not find any evidence of detailed project plans or ongoing formal performance reporting against set milestones.

A well defined Project Charter, dated August 17, 1997, was developed to define the objectives, implementation approach and project team organization for the MIMS project. In addition, an Addendum to the Charter was drafted and became effective July 28, 2000. The Addendum outlined the expansion of the project team to better ensure that there were more controls in place. The Project Charter defined the formal commitments of all organizations involved in the project and described how the project would be managed. The Charter also documented the agreement among the key stakeholders on the scope of the project, key assumptions and constraints, and the roles and responsibilities of project participants and stakeholders, including the Project Implementation Committee, Project Leader, Project Manager and Deputy Project Manager (Business Manager). It further outlined business process implementation, system implementation, and regional roles and responsibilities, and it contained a management responsibilities matrix.

3.2.1 Roles and Responsibilities

Project Implementation Committee

As outlined in the Project Charter, a Project Implementation Committee (PIC) was to be established to meet and discuss project issues. This Committee, with participation from DFO Informatics, Financial Systems and Materiel Management, was to focus on fundamental and strategic issues that might affect the progress of the project. While the intended committee participants did confer prior to formal approval of the MIMS project, there is no evidence to indicate that they formed part of the MIMS Implementation Team.

The Deputy Minister also instructed (in a memorandum dated May 26, 1997) that IM&TS, Assets Management Branch and Financial Systems Branch be full members of the MIMS

Implementation Team to ensure that there would be effective coordination of the Department's informatics and materiel management strategies. IM&TS was represented on PIC. However, as PIC did not fulfill its intended role, the potential benefit of involving IM&TS was lost. Had the PIC been established and maintained there would have been a focal point of control to address many of the issues and related risks surrounding the project. For instance, the following 1996 recommendation and subsequent 1998 observation from IM&TS serve as a good example as to how the committee could have assisted in identifying and resolving implementation issues.

- A 1996 Memorandum from the Director General (DG), IM&TS to the DG, Finance and Administration recommended that the proof of performance testing include an assessment of the network impact. It also recommended that IM&TS should be consulted on the testing and provided with the results. Furthermore, the memo advised that upgrades to the existing infrastructure to address MIMS performance or connectivity requirements should be funded by the project.
- A 1998 Memorandum from the new DG, IM&TS to the Assistant Deputy Minister, Corporate Services raised the issue that infrastructure requirements and enhancements had not been factored into the funding requirements.

Moreover, had these issues been addressed, the funding for the infrastructure may have been more accurately estimated at the start, or closer to the implementation of MIMS. Similarly, the risks in relying on the possible implementation of other projects such as SINTACS could have been assessed by the committee.

Role of the Project Manager

As outlined in the Project Charter, the Project Manager was responsible for:

- being the primary contact and liaison for CCG/DFO with the Contractor's Project Manager responsible for implementing MIMS; and
- carrying out the administration of contracts and documents of understanding, as well as the general administration of the project.

While there is no doubt that the Project Managers (four in seven years) aimed to fulfill their designated roles and responsibilities with good faith and diligence, the documentation provided indicated that there were instances when the working relationship between the Project Manager and the primary contractor was strained. This strained relationship hindered the project's advancement. Moreover, the contract management practices throughout the project's evolution warranted strengthening, as outlined under the Contract Management Section of this report (page 14).

According to the interviews that were conducted and the documentation reviewed, disagreements (and often animosity) existed between MIMS staff and the primary contractor's personnel. This situation contributed to the difficulties in bringing the project to fruition. If

there had been disagreement between the two parties, it was the Project Manager's responsibility to provide opportunities for both sides to work out any issues, as outlined in the Project Charter. In addition, there were mechanisms (e.g., regular project meetings) built into the process that, had they been used to their full potential, may have helped to resolve some of the problems. There was also a dispute resolution procedure that could have been used to rectify any differences and the MIMS Project Manager and staff had a period of 10 days to certify any deliverable claim submitted by the contractors prior to issuing payments.

The fact that there were at least four Project Managers over the project's seven year span resulted in a lack of continuity in corporate knowledge, weakened the planning process and may have also contributed to the problems between the primary contractor and MIMS staff.

Other Roles and Responsibilities

The roles of Deputy Project Manager and Quality Assurance Service Provider, as outlined in the Project Charter, were assigned to a contractor. This resulted in two key concerns. First, the quality of their work could not be held to the same rigour as members of the public service as public servants, because the employer/employee relationship did not exist. Second, as the supply arrangement contractors completed some of the primary contractor's work requirements, the possibility of a conflict of interest arose as the same contractor who completed the work could possibly have provided quality assurance services to themselves.

3.2.2 Recommendation

- **Roles and responsibilities of all key players should be fulfilled according to the Project Charter. Key players must have the requisite skills to perform their duties and careful consideration should be given as to whether they should be DFO staff members.**

3.3 FISCAL MANAGEMENT

Some regions have proceeded with hardware purchases in order to use up the funds allocated to certain fiscal years. As there are numerous risks involved in buying hardware before software particulars have been identified or before there is a clear consensus as to what the Department will require in terms of hardware, this represented an ineffective and inefficient use of project funds.

Although the Project Manager advised the appropriate individuals of the risks involved in prematurely purchasing hardware, this did not prevent regions from purchasing. In fact, in one instance, hardware purchased in February 2002 had not been unpacked several months later.

3.4 Contract Management

While Requests for Proposals (RFPs) were let and contracts were appropriately established by DFO Contracting and Procurement Officers to both implement the MIMS project and provide

management services and supply arrangements, the audit team's review of the documentation and anecdotal evidence provided, noted deficiencies and potentially questionable practices in the contract negotiations, contract amendments and management practices.

3.4.1 Primary Contract

In April 1998, the primary contractor was awarded a fixed price contract of \$5.2M to implement the MIMS package using a Commercial Off-The-Shelf Software (COTS) package as its backbone. The primary contractor was to be responsible for system configuration, business process design, data conversion, training, the provision of a number of electronic interfaces with other systems, and the national deployment of MIMS.

The contract for implementing MIMS called for a four phased approach, with milestone payments within each phase as well as established limits and maximum cumulative amounts per phase. By November 1999, the primary contractor was in the second phase of the contract, Customization and Configuration. This phase was to be followed by a Beta test phase in the Maritimes Region and a National Deployment Phase. In each of these phases, the primary contractor was committed to perform certain work and prepare certain deliverables.

The primary contractor did not fulfill all of its commitments under phase 2 (MIMS Customization and Configuration) of the contract. However, it did submit progress claims as if it had completed the phase 2 deliverables. As the primary contractor was operating with a fixed price contract and they would have been fully paid for phase 2, no further payments were required until phase 3 was started.

To address this payment concern, in November 1999, the primary contractor advised PWGSC that they could not complete the MIMS contract as it had been defined. The primary contractor proposed a number of actions to limit the scope of their work and to change the contract payment structure. However, CCG did not adjust any of the contract amounts to reflect changes in effort, reduced deliverables and transfer of work effort to CCG.

The primary contractor proposed to change the agreed method of payment into a set of milestones based on a "build and fix" approach. Under this approach, the phase cap would disappear and outstanding claims (from phase 2) would be paid and new milestones defined. The immediate result moved approximately \$1M in payments forward into phase 2 of the project. The payment structure recognized the primary contractor's proposed limited phase 3 and phase 4 activities and, as such, moved the payments forward.

The primary contract was amended four times during its duration:

1. November 6, 1998, \$391,644.61 increase
2. August 1999, \$101,126.53 increase
3. March 10, 2000, (\$481,500.00) decrease
4. July 12, 2001, \$186,979.08 increase

The most significant amendment was the third. This amendment significantly changed the deliverable requirements for the contractor. The amendment was the result of revised Statement of Work and Functional Specifications which redefined the deliverables for the primary contractor. The original requirement for the primary contractor was to be responsible for Phase 4 of the project. Phase 4 was the National Deployment of MIMS to land and ship sites.

From the outset it was clearly evident that the primary contractor was responsible for delivering the National Deployment of MIMS. This was a key component of the contract tender and subsequent awarding of the contract to the primary contractor. The value attributed to this Deployment Phase of the contract was \$1.8 million.

A revised Statement of Work document and Functional Specifications document were developed and formed the major components of amendment "3" above. The main changes in these documents related to a reduction in the level of effort required of the primary contractor and a reduction to their responsibilities for certain deliverables. The contract amounts, however, were not adjusted to reflect these reduced deliverables and the transfer of work effort to CCG. For example, while the resulting amendment "3" decreased the overall contract amount by \$481K, it also relieved the primary contractor of delivering the national deployment which was originally contracted at an approximate cost of \$1.8M.

The revised Statement of Work, dated February 21, 2000, for phase 4 now reads, "CCG will deploy MIMS nationally during Phase 4 — National Deployment — of the MIMS project. The MIMS contractor will provide support under the warranty provision of the contract." This is a significant reduction in the level of effort originally required of the primary contractor for their contracted amount of \$1.8M.

Where the primary contractor sought to reduce its responsibilities in other areas under contract, such as the ABACUS interface and data population, the contractor simply rolled the amounts into other areas. Rather than reducing their contract fee, as an offset, the primary contractor claimed they were contributing an additional \$1.5M in work effort to the project, primarily through additional person days of work. The documentation surrounding these adjustments was sufficiently poor that the audit team could not reconcile whether the work effort expended was any greater than originally proposed. Furthermore, the audit team could find no documentation to outline renegotiated contract requirements by either party.

Other negotiations took place prior to final payments being made to the primary contractor in August 2001. However, documentation outlining these negotiations was limited and the audit team was unable to determine exactly what the bottom line of the contract was (i.e., what the primary contractor delivered and what DFO paid for). The audit team was not able to find any reconciliation as to what exactly the primary contractor had delivered as compared to the amount it was paid. No minutes of meetings or other documentation was available to support amendments to the contract. The audit team was told that it would be frustrated if they tried to reconcile, dollar for dollar, what took place in negotiations. While we understand that negotiations seldom work out dollar per dollar, one would expect that due diligence on the part

of those conducting negotiations would leave some evidence of what had been agreed to and the rationale for what had been done.

Amendment "3" changed the contract close date to December 15, 2000. This new date could not be met and further discussions continued between the primary contractor and the Department in an effort to declare the work completed and the contract closed. There is some documentation available, although limited, showing some level of negotiation between the primary contractor and the current MIMS Project Manager. It was evident that both sides were anxious to have the contract closed out. There were a number of comments made in some of the documents that were examined that raise concern and indicate that all discussions between departmental representatives and the primary contractor were not transparent and not subjected to proper scrutiny by management. An example of this is apparent in the following e-mail excerpt from the MIMS Project Manager to a PWGSC official regarding renegotiating the contract between the Project manager and the primary contractor:

"... We agreed to do this in private and in confidence in order to speed up the process and allow a certain degree of freedom in negotiating style."

The audit team found other references to "win-win" deals and hand shake agreements which were not appropriately documented.

The audit team wants to strongly point out that there is no evidence or suggestion of any mal-intent on the part of any of the managers involved in the MIMS project. It is the audit team's view that the instances noted represent lapses in judgment by the managers who were attempting to expedite the advancement of the project. However, transparency and the documentation process were compromised.

During the spring and summer of 2001, negotiations took place which resulted in the contract being declared closed and the primary contractor was paid the final holdback on the contract. From the documentation examined it was not evident what exactly DFO was to receive in return for the concessions given to the primary contractor.

In the negotiated settlement to end the contract, the primary contractor agreed to shift the entire warranty period ahead by three months (1 November 2000 through to November 2001) in exchange for CCG dropping all demands that the primary contractor complete the translation and development of the French Scheduler application component of MIMS. The value of this concession was questionable as moving the warranty period to begin upon deployment of the system (November 2001) would be expected, as a warranty is a pledge that a product or service will function appropriately to their intended purpose and indicates that the manufacturer will take responsibility for repairing or replacing it if it proves to be defective after it is in use. Dropping portions of the French Scheduler deliverable for a concession on a manufacturing standard did not appear to provide good value for the Department.

Another key deliverable that did not materialize was the electronic interfaces with other departmental systems. The primary contractor was to provide interfaces between MIMS and ABACUS and Peoplesoft but this was not achieved. We understand that there was a one time

download of information from ABACUS and Peoplesoft to MIMS but the information was of limited use. The primary contractor was also required to provide an interface with PUMP, a maintenance system on the ships, however this also is not yet in place. The primary contractor did produce technical documents on these systems but not the actual interfaces.

Changes to the primary contract did impact on the cost-overflow and timing of the completion of MIMS. However, because of the limited information and documentation available, the audit team could not accurately estimate the cost attributable to the primary contractor's contract amendments.

3.4.2 Other Contracts

In addition to the primary contractor, CCG made use of the services of a number of other contracted resources. For the period 1998 to the present day, approximately \$1.6M plus GST has been spent on these other contracted resources. These other contracted resources were acquired through a specific MIMS Request for Proposals and through a Technical Investigation and Engineering Support (TIES) Request for Proposals issued by the CCG Marine Technical and Support Services Electronic and Engineering Branch.

Contracts were awarded from the MIMS specific RFP to two companies on May 8, 1998 for an intended two-year period (8 May 1998 – 8 May 2000) with a total dollar value of \$425K and an estimated 850 person days of work. The contracted companies were to provide professional services for MIMS Deployment and System Configuration Management Informatics in the following specialty technical fields:

- technical implementation,
- data preparation,
- system analysis,
- database administration, and
- quality assurance.

The services were to be used to assist CCG during the MIMS transition and implementation period, on an as-required basis, throughout the period of the supply arrangements.

Both of these contracts were amended numerous times to increase both the duration of the contract and the amount.

- A contract with one company was amended seven times to a current value of \$570K plus GST, and
- A contract with a second company was amended nine times to a current value of \$780K.

As a result of contract amendments, the original amount of both contracts increased from \$425K to \$1.35M and ran for a period of 52 months, adding to the cost overrun.

According to the Treasury Board Contracting Policy, every effort should be made to avoid inadequate initial funding, inadequate planning and improper administration procedures that would result in continual amendments. Therefore, while amendments are possible, and at times probable, due to changes in contract scope and deliverables, a thorough initial assessment and continued assessment throughout the project might have established a better grasp of the requirements sooner, and thus might have limited the number of amendments.

At the time of the audit, a Request for Proposals had been issued for the tasks currently being performed by personnel from the two companies. Prior to the issuance of the RFP, the MIMS Project Manager wrote the following statement to the departmental contracting authorities in December 2001 regarding permanent staffing action and the competitive RFP: "I have been working under the assumption that we will be going out for a full competitive RFP and have been attempting to write the documentation as tightly as possible in order to ensure that we end up getting the exact people that we need, i.e. the contractors that we have been using." In the same correspondence, the MIMS Project Manager also discussed the possibility of justifying a sole source contract for the current contractor. This may have been an appropriate course of action instead of an RFP. As the e-mail in question referenced both sole source and RFP processes at various times, the audit team did not feel the comments were sufficient to conclude inappropriate intent. However, given the potential gravity of the remarks, the team felt compelled to note this finding for management's benefit. Such a practice or attitude towards the RFP process, if employed, would not ensure a fair and transparent contracting process, and would diminish the integrity of the contracting process.

TIES Standing Offer

In addition to the services provided through the MIMS-specific contracts, project management and administrative support, as well as other information technology support, were obtained from supply arrangements in the TIES Standing Offer. However, this standing offer should not have been used by MIMS as MIMS already had its own supply arrangement in place. As outlined in the original TIES RFP, "this standing offer [was to] be used for contracting smaller projects and tasks, which would be more expeditiously handled through the TIES". It also stated that "major assignments, [would] continue to be handled through separate individual contracts." Resources used from the TIES arrangement have totaled approximately \$250K plus GST since 2001.

3.4.3 Reliance on Contractors

Despite the fact that the project office had indicated on several occasions that positions (e.g., Deputy Project Manager, IT and help desk personnel, data conversion specialists) would be staffed by public servants, this did not prove to be the case. Sole reliance on contracted personnel could limit the Department's ability to be in full control of its own projects.

For example, the roles outlined in the MIMS-specific RFP called for the contractors to review the work of the primary contractor and perform a quality assurance function. Later, these same contractors took on responsibility for the completion of a number of major activities associated

with system deployment and integration that were originally assigned to the primary contractor. Hence, they may have lacked the objectivity essential to conduct the review.

In addition, as the majority of the project was outsourced, there was a lack of in-house system development expertise or ongoing support of the system, resulting in a potential knowledge gap should any of the MIMS contracts expire prior to work being fully completed. Moreover, if a new contractor has to be brought in to complete the project, the learning curve required of that contractor may be costly to the Department. While some contracting may be necessary to acquire certain expertise not available in-house, it would be prudent to have in-house staff work with the contractors so that information is shared and the knowledge and appropriate expertise is transferred before the contracts are terminated. To this end, the MIMS Staffing Plan, that had been requested by departmental contracting officials, indicated that 6.5 full-time employees would be required to maintain the system once it was fully deployed. This plan was not implemented.

3.4.4 Recommendations

- **Any agreements to change the scope of future contracts or deliverable requirements should be fully documented.**
- **All changes made to any contract should be fully quantified and documented.**
- **All contract negotiations should be conducted in an open and transparent way to ensure that the Crown's interests are protected.**
- **All personnel assigned to key positions in contract management should possess the necessary skills and competencies.**
- **Where contract personnel must be used, steps should be taken to ensure that in-house staff is fully trained, whenever practical, so as to reduce the dependency on contractors.**

3.5 QUALITY AND QUANTITY OF DOCUMENTATION

3.5.1 Project Plans and Performance Reporting

Throughout the audit, it was evident that the MIMS project required a more thorough approach to the initial and ongoing project planning, management and performance reporting. Although the Project Charter outlines high-level tasks and accountabilities, there was no subsequent detailed project plans or “statements of account” outlining the project’s progress against clearly stated, quantifiable and measurable implementation targets and milestones. As noted previously, not only was the documentation incomplete regarding contract amendments, but there was a lack of formal accounting for significant variances in the achieved versus projected

project results. There is also no evidence of any ongoing risk assessment or the implementation of sound contingency plans.

3.5.2 Accuracy of Cost Overrun Project Approval Document (OPAD)

An OPAD document should provide the approving authority with all pertinent information on the status of a project and give a rationale and justification for the overrun situation and the need for additional funding. Although the OPAD presented some justification for requesting additional funding, it suggested a more advanced status of the implementation of MIMS than was actually the case when the OPAD was approved in May 2001. As a result, the document did not present a complete picture for the IMB to support effective decision making.

The OPAD stated that, “to date, the system has been procured, the software integration with ABACUS, PeopleSoft and other reporting, viewing, planning and analysis tools has been achieved, and MIMS has been deployed in part to selected sites for the operational testing activities.” However, integration was only partially achieved. The software integration with ABACUS and Peoplesoft was a one-time only download of information to MIMS from the two programs (which is materially less than the intended integration) and, as of the date of this report, there was no established interface with these two systems.

The OPAD also referenced difficulties with the primary contract and indicated delays were caused by technical elements such as the PUMP interface, the ABACUS interface and the French scheduler. It also noted that it became difficult for the contractor to deliver as per the terms of the original contract and that the contract scope was decreased and the CCG level of effort in deployment and training increased. The OPAD makes no mention of any reduction in contract payments to the primary contractor to account for the apparent significant decrease in their responsibilities. (As noted earlier, the true magnitude of the changes to the primary contract could not be determined due to the significant lack of documentation).

The OPAD presented the cash requirements for the cost overrun. It also showed the funds that had been included in the original project approval document in May 1997 (Table below).

	Previous Years	2000/01	2001/02	2002/03	2003/04	Cost
Original project approved in May 1997	5.946M	2.003M				7.949M
Proposed cost overrun			3.908M	1.433M	0.029M	5.370M
Revised total estimated cost						13.319M

The OPAD, presented to the IMB in May 2001 (Fiscal Year 01/02), showed 2000/01 figures of \$2,003K from the original project approval. There was no mention in the OPAD that, of this money, \$864 K had lapsed/slipped in 2000/01. This amount was carried forward to 2001/02, the same year that an additional \$3,904K was forecasted in cost-overrun funds. As it turned out, there would be a lapse/slippage of funds in 2001/02 of \$1.6M from the approved OPAD funding on the project.

The exclusion of this lapse/slippage of funds information (or the potential to lapse funds if year-end figures had not yet been finalized) resulted in the IMB making a funding decision without the benefit of having all pertinent information.

It was explained by CCG management that lapsing of funds could be attributable to the funding approval process, particularly if any funds had to be reprofiled from a previous year. This necessitates having the project requirements tabled at DFO's Informatics Steering Committee and an impact assessment provided seeking funding approval. This process results in funding coming to the project after the beginning of the fiscal year, impacting the spending pattern for the project. Earlier commitment and release of funds would assist managers to spend appropriately and avoid potential lapsing of funds.

4. CCG MANAGEMENT RESPONSE

CCG management generally supports the findings of the audit team and acknowledges that difficulties had been experienced during the project definition and implementation phases of the MIMS project. Subsequent to establishing the ITS Directorate, improved project management practices are being implemented to minimize the risk of such occurrence on future projects.

CCG management has taken three principal actions to redress the shortcomings experienced during the project definition and implementation phases of the MIMS project. These corrective actions are explained in the following paragraphs.

Internal to MIMS Project

The MIMS project team has been working closely with the Information Management and Technology Services (IM&TS) portfolio manager during the cost overrun phase. A Project Steering Committee, co-chaired by the Director, Service Delivery and Director, Technical Services, was established to provide the guidance and direction necessary to ensure the MIMS project remains within the current Total Estimated Cost (TEC). Risks are continually being assessed and options developed to remain within project scope. As well, throughout the cost overrun phase, a quarterly report on the status of the project is prepared for the Investment Management Board. These reports have consistently noted that the overall project risk remains low while remaining on schedule and within TEC.

A new Project Steering Committee has since been reconstituted and is now chaired by the Director General, ITS, not only to provide advice and guidance through the remainder of the overrun phase, but to provide leadership during the transition into the in-service phase. This includes the need to address the significant change in organizational culture required to ensure the acceptance of this new enterprise-wide maintenance management tool. The new Steering Committee will also begin definition of the operational requirements for MIMS Version 2.0.

Integrated Technical Support Strategy Project

The ITS Strategy Project is a five year initiative to implement modern asset management practices across the CCG. When fully implemented, ITS will provide CCG decision-makers with the financial and non-financial information required to manage its assets, and its fiscal and human resources, effectively and efficiently. The ITS Strategy Project, for example, will introduce new technical business processes, including the introduction of a formal project management methodology based in the Project Management Institute's Project Management Book of Knowledge (PM BOK). These initiatives, together with improved training for project managers, will redress many of the deficiencies that occurred during the MIMS Project. Under the ITS Strategy Project, the following initiatives have or are currently being implemented:

- *PM BOK as the project management methodology to standardize project management processes, including planning, execution reporting requirements. To date, 60% of managers have received broad-based training in this methodology,*
- *a project risk management methodology to improve risk identification and analysis techniques so that effective mitigation strategies can be developed,*
- *class planning to improve long range project planning and to coordinate technical input to project approval documents and CCG Long Term Capital Plans, thus improving the quality of project estimates and the development of more realistic project schedules,*
- *Life Cycle Costing analysis,*
- *Integrated Logistic Support requirements planning for all new projects to ensure training, documentation, in-service maintenance and repair, etc. are considered and the appropriate costs are included in the project TEC and detailed in project approval documents,*
- *involvement of regional staff to ensure regional estimates for installation, testing, turnover and training are considered and the appropriate costs are included in the project TEC and detailed in project approval documents,*
- *quarterly updates to project sponsors on the current status of each of their respective projects,*
- *the internal review of recently completed projects and the sharing of lessons learned and best practices through (still conceptual) knowledge management methodology and knowledge competencies will be identified. Enhanced training in project management and contract administration will be provided, and*
- *Abacus Projects, an enterprise project costs tool, has been implemented. Training for project staff has commenced and a National Helpdesk established to assist Regional Project Managers to input and update their project in Abacus Project.*

CCG HQ and Regional Staff Participation

Improved communication between headquarters and regional staffs will lead to a better understanding of the respective project management roles and responsibilities.

Over the past few months, the Directors of Planning in CCG HQ have met weekly to review, inter alia, the Treasury Board and Departmental Capital Planning Processes. This group has assigned roles and responsibilities within the various processes and has linked the input and effort from various CCG headquarters and regional authorities. Project teams, together with headquarters and regional staff at the manager and superintendent level are now being briefed to ensure a common understanding of the capital planning process in CCG. This is vital for CCG to effectively identify future project requirements and to translate these requirements into successful projects that deliver cost-effective solutions.

The benefits of the new methodologies and processes introduced through the ITS Strategy Project are already being felt in any number of new and existing projects. The DG, ITS is committed to fully implementing a standardized project management methodology that will guide and assist CCG's project managers and that will contribute to CCG's ability to deliver successful projects.

ANNEX A: MIMS PHASES AND PROJECT TIMELINES

The Project Charter's implementation approach is defined in 0-4 phases. These phases as well as the deliverables defined by this Charter are outlined in the following chart

Project Charter	Deliverables	Completion	Redefined Deliverables
Phase 0 — Project Initiation			
Phase 1 — Product Acceptance	<ul style="list-style-type: none"> Contractor to demonstrate product and its suitability [who?] to measure the impact of implementing and maintaining MIMS in the [who?] to assess training material [who?] to assess contractor's ability to manage and deliver according to plan Management to approve this phase before moving to phase 2 	<ul style="list-style-type: none"> Audit team unable to verify completion (AUVC) AUVC AUVC AUVC No evidence of approval 	
Phase 2 — MIMS Configuration	<ul style="list-style-type: none"> Contractor to prepare application, architecture and the organization for deployment Contractor to develop training Contractor to develop interface between MIMS, ABACUS and PeopleSoft as well as PUMP Contractor to convert system Contractor to develop French Scheduler Contractor to apply table definitions Contractor to develop systems parameter configuration Contractor to develop security and access profile 	<ul style="list-style-type: none"> AUVC Not completed Not completed One-time conversion Not completed AUVC AUVC AUVC 	<ul style="list-style-type: none"> CCG to train users Other contractors to complete conversion
Phase 3 — Beta Deployment	<ul style="list-style-type: none"> Contractor, with the support of the Regional Work Team, to deploy beta version in the Maritimes 		
Phase 4 — National Deployment	<ul style="list-style-type: none"> Contractor to deploy MIMS nationally to land sites and ships 		<ul style="list-style-type: none"> CCG to deploy MIMS nationally Contractor to provide support under the contract warranty provision

Project Timelines

Year	Month	Activity	Dollar Amount
1991/1993		➤ Idea of MIMS conceived	
1995	July	<ul style="list-style-type: none"> ➤ Merger of DFO and CCG <ul style="list-style-type: none"> • MTSS proposes the installation of a MIMS ➤ CAC asked to provide an estimate of benefits of a MIMS to the Department <ul style="list-style-type: none"> • CAC study indicated an initial implementation cost 	\$7,200,657
	November	➤ CCG prepares MIMS PPAD	\$7,298,000
1996	March	➤ CAC conducts a review of CCG's cost estimates for MIMS implementation	
	November	➤ [CCG?] prepares MIMS EPAD	\$7,949,000
1997	May	<ul style="list-style-type: none"> ➤ Departmental Executive Committee (now Departmental Management Committee) reviews EPAD ➤ Minister approves EPAD 	
	August	➤ Project Charter developed	
			\$7,949,000
1998	April	➤ PWGSC awards MIMS implementation contract	\$5,200,000
1999	[Date?]	➤ Reduce the scope of the original contract and transfer some responsibilities to DFO	
2000	September	<ul style="list-style-type: none"> ➤ TAB, comprised of Integrated Technical Support Directors and Regional Directors, Technical Services, direct the development of a "Tiger Team" to examine and recommend affordable implementation solutions ➤ Tiger Team identifies minimum cost deployment at a three-year plan in addition to original \$7.9M ➤ Tiger Team instructed to explore more affordable options 	\$14,700,000
	November	➤ Tiger Team reports to TAB with five implementation options; one is chosen	\$5,300,000
2001	June	➤ IMB approves the OPAD	
	November	➤ MIMS is deployed to land sites	\$5,370,000