

SAP Customer Success Story

“Because of SAP’s projects with many militaries around the world, we are able to work with other nations, such as Germany and the United States, to influence SAP design and development.”

Mr. Stephen Challinor, Deputy Project Manager, MASIS



AT A GLANCE

Company Name

Department of National Defence and the Canadian Forces
www.dnd.ca/

Industry

Defense

Key Challenges

- Increasing operations demands; budget/personnel cuts
- Lack of visibility into ship status, costs, and fleet readiness
- Nonintegrated engineering and maintenance processes

Implementation Partner

IBM Global Services

Solution and Service

mySAP™ Business Suite

Existing Environment

Stovepipe legacy systems

Implementation Highlight

24 months to roll out functionality
- on time and within budget

Key Benefits

- Effective management/100% visibility of entire asset life cycle
- Ability to determine ship status quickly
- Integration of critical processes
- Streamlined engineering and maintenance operations

Hardware

IBM S/390 and RS/6000

Operating System

IBM OS/390



THE CANADIAN NAVY

THE CANADIAN DEPARTMENT OF NATIONAL DEFENCE COMPLETES FIRST MAJOR IMPLEMENTATION OF THE SAP®-BASED MATERIEL ACQUISITION AND SUPPORT INFORMATION SYSTEM (MASIS)

The Canadian Navy, which is part of the Department of National Defence and the Canadian Forces (DND/CF), is comprised of 34 ships, destroyers, patrol frigates, submarines, coastal defense vessels, and replenishment ships, which are divided between bases on the east and west coasts: Maritime Forces Atlantic (MARLANT), based in Halifax, Nova Scotia, and Maritime Forces Pacific (MARPAC), based in Esquimalt, British Columbia.

More than 2,000 engineers, technicians, and other support personnel ashore and aboard ships are responsible for the engineering and maintenance of all the systems that are part of each vessel. These men and women provide the testing, preventive maintenance, and repair services required to ensure that the navy is ready to deploy its ships where and when needed. DND's materiel acquisition and support information system (MASIS) has recently been implemented for the navy (based on the mySAP™ Business Suite family of business solutions) to support the navy's ability to track its equipment availability and ensure readiness. In addition, this implementation has laid the groundwork for future rollouts to the army and air force.

LONG-TERM PROJECT TO INTEGRATE SYSTEMS AND PROCESSES

The implementation of MASIS represents a significant step in the realization of DND's long-term vision of integrating business processes and legacy systems throughout the department. MASIS is a strategic corporate project born as a result of budget cuts made in the mid-1990s. At that time CF commanders

decided that the ratio of “tooth to tail,” or combat to support, had to be adjusted in favor of combat operations. Therefore, engineering and maintenance activities, which accounted for a good portion of the defense budget and personnel, bore the brunt of the cutbacks, and the support workforce was reduced, in some instances by half.

Exacerbating the challenge posed by this reduction in resources was the fact that those remaining were constrained to continue working with hundreds of nonintegrated stovepipe legacy systems.

Mr. Stephen Challinor, deputy project manager for MASIS, explains: “When DND unified the forces in the 1960s, it integrated the business processes for supply, finance, and human resources – all the major defense resource management functions – but did not do the same for engineering and maintenance.”

DND decided that the most effective solution, from both an operational and a fiscal perspective would be a single, integrated materiel management system for the Canadian Forces, spanning all organizations from field units, bases, and workshops up to central engineering and maintenance at DND headquarters.

STARTING SMALL – GOING BIG

The MASIS project team’s experience with process redesign and mySAP Business Suite during its first implementations helped to establish some of the best practices and SAP requirements to be rolled out on a larger scale to the navy, and in the future to the army and air force. The first implementation of MASIS was completed in 1999 at the 202 Workshop Depot (202 WD), an army repair center for more than 1,100 items – from electronic components to weapon systems. This was followed by the introduction of functionality to address asset accounting and complex contracting as the entire corporate MASIS solution continued to be built.

The navy implementation, which began in 2001, was the first to address the end-to-end business process requirements for engineering and maintenance. Specifically, DND was now in a

better position to address the government’s requirement for the Canadian Forces to have more complete and timely information for enabling more effective management of the ships, vehicles, and aircraft critical to military operations.

The navy’s operational commitments around the world were steadily increasing. Without an integrated real-time source of information related to their equipment, support personnel were hampered in their efforts to quickly determine ship status and report on the level of effort and resources required to achieve readiness. Furthermore, they could not track, analyze, and reconcile the costs of support with any degree of precision.

Under the best of conditions, maintaining ship readiness is a monumental effort. Geographically, the Canadian Navy’s fleet is divided between Maritime Forces Pacific and Maritime Forces Atlantic. Each ship class has its engineering and maintenance specialists and inventories of parts, equipment, and documentation split between the coasts and headquarters in Ottawa.

When a ship deploys to the Arabian Sea, for example (as in Operation Apollo, Canada’s contribution to the war on terrorism in 2003), it remains far from home for months at a time, with relatively limited assets to keep all its systems operating – including radar, sonar, and weapon systems, plus the equipment necessary for generating electricity, heat, cool air, and fresh water.

The status of every configuration and every component must be tracked, fully tested, and, if deficient, repaired on board or ashore. This involves hundreds of thousands of components for just one frigate, and many different configuration combinations. Accurate and timely configuration management and maintenance status information is crucial for effective and economical delivery of in-service equipment support, particularly for mission-critical systems that are maintained when ships are deployed far from their home ports.

Previously, support personnel dealt with this complexity using nonintegrated processes and systems. For instance, each coast had its own information systems and technical designations for parts and equipment configurations.

Lieutenant Commander (LCdr.) Wade Knorr, the senior functional analyst and project lead for the navy implementation, notes, “There are three elements involved: the structure, which is the conceptual functional breakdown of a ship; the equipment that goes into that structure; and the parts of the equipment. We had a host of different systems keeping track of all three elements individually. Beyond the equipment we obtained through the CF common supply system, there was no one master record.”

In addition, there was no integrated workflow among all entities involved in major processes – naval headquarters, the fleet maintenance facilities, coastal formations, and the ships. Says LCdr. Knorr, “It was all paper, fax, and phone.” It could take up to an entire month to determine ship status. With the limited view of equipment readiness, precise planning and consideration of operations alternatives was difficult. In general, support staff could not manage the asset life cycle as effectively as needed – from inspection, preventive maintenance, and repair to disposal. Because cost planning and tracking of actual expenditures were separate manual exercises typically done within spreadsheets, reports on expenditure against plan were difficult to align and not carried out regularly. Cost planning and business planning were also difficult to reconcile.

HIGH EXPECTATIONS

Through MASIS, the navy was expecting solutions to its challenges and a great deal more, based on the benefits already being realized from earlier implementations. For example, the implementation of MASIS at 202 WD had resulted in an increase of 25% to 50% in production output and reductions in inventory of 50% and holding costs of 20%.

The rollout to 202 WD had established many of the common CF requirements for repair facilities because of its wide span of responsibilities, from individual components to complete weapons systems, meaning that the navy solution did not have to be “built from scratch.” The 202 WD rollout also proved that these requirements could be met by the SAP® software, using an approach

based on best business practices. The addition of complex contracting and asset accounting functionality, all using an integrated interface to DND’s financial system, (also running on an SAP platform), continued to build on the MASIS solution – all benefits that the navy was eager to enjoy.

To assist in establishing MASIS requirements, the navy used Fujitsu’s Benefits Realization methodology (which was part of the overall implementation methodology for the project). At a high level, two requirements were of paramount importance: first, a crystal-clear visibility into all the processes and information that determine ship status, readiness to deploy, and the schedules involved. This included a requirement that technical designations and nomenclature be standardized across the navy, along with the ability to quickly consolidate, segment, forecast, plan, analyze, compare, and reconcile information gathered by MASIS.

Again, these requirements were to be fulfilled not just for the navy, but with an eye toward further rollouts to the army and the air force, and indeed across the department.

To assist in fulfilling the MASIS requirement, it was necessary that DND select an implementation partner that could assemble the right people and the right systems. “We selected IBM Global Services as the implementation partner and, along with another of the three in contention, IBM proposed SAP software for the ERP system,” says Mr. Challinor. “The success of DND’s SAP implementation for the navy was highly dependent on the integrated project team that included users, the project management office, and the team from IBM.”

Mr. Challinor goes on to say that, in working with SAP Consulting, DND had reach and depth into SAP through several areas of expertise. “Because of SAP’s projects with many militaries around the world, we are able to work with other nations, such as Germany and the United States, to influence SAP design and development,” he says.

MANY BENEFITS/MAJOR BREAKTHROUGHS

After two years of effort by an 80-member project team, MASIS was rolled out to the navy in November 2003. While still in the early days, DND has already begun to see benefits – the most significant of which include an increased visibility into operational plans, fleet schedules, technical readiness, engineering and maintenance demands, local and national inventories, configuration changes, work orders, requirements for and usage of personnel, materiel, equipment, and tools.

DND is also reaping the benefits of more streamlined production forecasting and dynamic planning; more rapid financial reconciliation; automated production and distribution of documentation; and the ability to match personnel to maintenance tasks.

A major breakthrough, says LCdr. Knorr, is that the navy can now determine “all aspects of the maintenance status of a ship within one day, versus a month pre-MASIS. All organizations can see the same current information. Plus, you can now track by equipment class across the entire organization, and by the serial number of a unique physical item.”

MASIS will allow the navy to better manage its equipment maintenance and provide visibility into all aspects of life-cycle management. The data captured by the system will be used to help the navy determine, for example, the current availability of its equipment; which equipment is ready to deploy on operations; and how much will it cost to get ready to deploy. It will also help it determine maintenance costs, and whether they are increasing, decreasing, or staying constant.

The navy now has realistic trend analysis and automated workflow, says LCdr. Knorr. It has one system to track and process supply and usage of materiel, which it once managed as separate

entities using different systems. The navy also uses MASIS for complex maintenance planning and execution tasks, taking advantage of comprehensive analyses and reporting functionality. And, it uses the system to determine actual maintenance and procurement expenditures, which can now be automatically rolled up against cost planning. This information is then forwarded automatically to the department's financial accounting system.

NEXT STEPS

The current phase of the MASIS project (phase four) began at the end of 2003 and will see the implementation of modifications and

enhancements to the existing production system, ensuring a stable environment for the current user base. Longer term, phase four will involve planning for the next rollouts of MASIS, specifically to the army, air force, and the group headed up by the associate deputy minister – the ADM(IM) group – in as efficient and economical a manner as possible. This will give these organizations ample time to better prepare for the rollout of MASIS, by ensuring their data is prepared and business processes are adequately defined. Analysis and design activities will kick off phase five in 2006, followed by rollout to the army and air force.

As Mr. Challinor emphasizes, “This is one system, with 2,600 users to date. When the army and air force are rolled out, they will be part of the MASIS user group. We are using phase four to consolidate the in-service support component and enhance the entire MASIS system based on our experiences with the navy, 202 WD, and other implementations. We will also review further the planning and scoping we have done for the army and air force rollouts, looking for better and more expedient ways to do them. As we move forward, we are not just ‘delivery and drop.’ For the foreseeable future, we will have both a production and a development system.”

“The navy is now able to determine all aspects of the maintenance status of a ship within one day, versus a month pre-MASIS.”

**LCdr. Wade Knorr, Senior Functional Analyst and Project Lead,
Navy MASIS**