The Indian Air Force’s (IAF) materials management systems and processes were manually intensive, and tracking the location of the 500,000 pieces of spares, equipment and other materials in real time was a near impossible task. Hence, project IMMOLS (Integrated Materials Management On Line System) was conceptualized by the IAF with a view to achieve focused logistics by e-enabling management processes, analyses and total asset visibility.

TCS developed this gigantic enterprise-wide Resource Planning Solution for the IAF, the first of its kind in the Armed Forces. The IMMOLS solution has not only obviated the concerns of the IAF on stock outs, delays, dependencies on individuals and inaccurate communications, but has also brought in a host of benefits like effective materials management, assets visibility for better utilisation of available resources, reduction in inventory levels and increased serviceability of weapons & equipment.
The Indian Air Force (IAF), established over 75 years ago, is the air arm of the Indian armed forces. Its primary responsibility is to secure the Indian airspace and to conduct aerial warfare during a conflict. The IAF also provides close air support to the Indian Army troops in the battlefield and also provides strategic and tactical airlift capabilities. Along with the other branches of the Indian Armed Forces, it also provide assistance in disaster relief, such as during natural calamities, by undertaking evacuation or search-and-rescue (SAR) operations and air dropping relief supplies in affected areas.

**Business Situation**

Information superiority assumes great importance in today's digitized battlefields. It is therefore important for the Armed Forces to use Information & Communication Technology (ICT) to utilise computerisation to re-define the efficiencies for various defence applications. This would make the Armed Forces better equipped, agile and robust to effectively handle any contingencies, as well as benefit from better cost management and increased efficiencies.

The Indian Air Force (IAF) had a materials management system that was plagued by the usual problems that beset a large organization's manual materials system – cumbersome paper-based processes, stock outs, delays, dependencies on individuals and inaccurate communications. The vast size and geographical spread of the IAF made it difficult to keep and maintain records for inventory management in real time. Tracking inventory and communicating transparently with an individual/unit running short of inventory were other problems for the organization. In the actual event of an operation, it would have been a nightmare scenario to not know, in real time, how many and what type of spares or ammunition were available, where they were needed the most, and how quickly they could be forwarded.

The IAF therefore wished to develop an online materials management system, which would lead to timely supply of materials, reduction of stock outs and minimize the cost of materials management. It was hoped that an automated system would also reduce paper work for inventory management, and provide easy availability of material information flow across the various departments. This would bring about an improvement in the serviceability of weapon systems operated by the IAF in the defence of the nation.

TCS' Government Practice had a proven track record of helping government organizations harness the power of the latest Information and Communication technologies to transform themselves and align their services with the changing needs of citizens and stakeholders. The IAF therefore turned to TCS for assistance in building the IMMOLS (Integrated Materials Management Online System), the first enterprise-wide resource planning solution implementation in the history of India's defence forces.

**TCS Solution**

TCS developed the IMMOLS - a nation-wide enterprise system integration project - that addressed the need for computerising the IAF's inventory control and logistics management. The IMMOLS application could be broadly divided into two components—a
custom-designed application that catered to all facets of materials management at various levels of hierarchy in the IAF, and an IT infrastructure covering a nationwide installation of computing platforms and campus LANs. In addition, IMMOLS also implemented some of the activities of maintenance management and finance management of the IAF, such as Aircraft on Ground (AOG) management, rotatable management, job card, FLCR (Floor level Consumption Records) at Base Repair Depots (BRDs) and various budgeting & accounting activities.

The solution was built on client server architecture with a distributed database and transactional replication in a Star Network.

The TCS team initially carried out a pilot implementation at selected IAF sites. After extensive testing of the application, which included software development, acceptance testing, training, analysis and several other initiatives, the application was successfully rolled out nationally across all, over 100, sites of the IAF. All the units operate as independent entities and have local servers (databases and application) set up, allowing them to exchange data as required, over the IAF network.

The IMMOLS solution developed by TCS is a good example of streamlining of Indian defence logistics activities and auditing thereof. It is complemented by the Equipment Accounting On-Line System (EQUOLS) and the Audit Online System (AUDOLS) which are embedded in the solution. The e-auditability and e-vouchers features of the solution make it a powerful and comprehensive logistics solution. This project is thus considered as a significant development in India’s road to e-Governance in a Defence organisation and a good example of public-private partnership. In this way, TCS’ solution has truly increased the IAF’s asset availability and war fighting potential without firing any weapon—only by the use of knowledge as a super force multiplier.

**Benefits**

The engagement with TCS provided the IAF with the following benefits:

- Efficient materials management
- Asset visibility for better utilisation of available resources
- Forward planning and procurement of materials
- Information triggers for mid-course corrections in various materials management processes
- Reduction in inventory levels, leading to significant cost savings
- Improved aircraft fleet serviceability
- Real-time availability of materials information flow
- Reduction in paper work
- Speedier processes of demand collection, procurement and repair cycles
- Efficient spares accounting

“Tata Consultancy Services have developed an Enterprise Material Management application for automation in IAF which is a milestone achievement. Integrated Materials Management Online System software has been developed with state of art technology. Its user friendly features and high standard of training imparted by TCS has ensured smooth implementation at selected Pilot sites of IAF.”

— Air Vice-Marshall **RK Mohan**, VSM
About TCS’ Government Industry Solutions Unit

TCS’ Government Industry Solutions Unit is primarily engaged in helping national and state governments to align their services with the changing needs of citizens and stakeholders. With the rapid pace of change in the IT industry, there has been a shift in focus from the traditional inputs of a production process to the processes involved in the creation, storage, dissemination and use of information. An IT driven system of Government works better, costs less, and is capable of servicing citizens’ needs as never before. Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), TCS’ Government practice aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and interagency relationships (G2G) more friendly, convenient, transparent and inexpensive. The resulting benefits are a higher revenue growth and reduced cost.

About Tata Consultancy Services

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India’s largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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