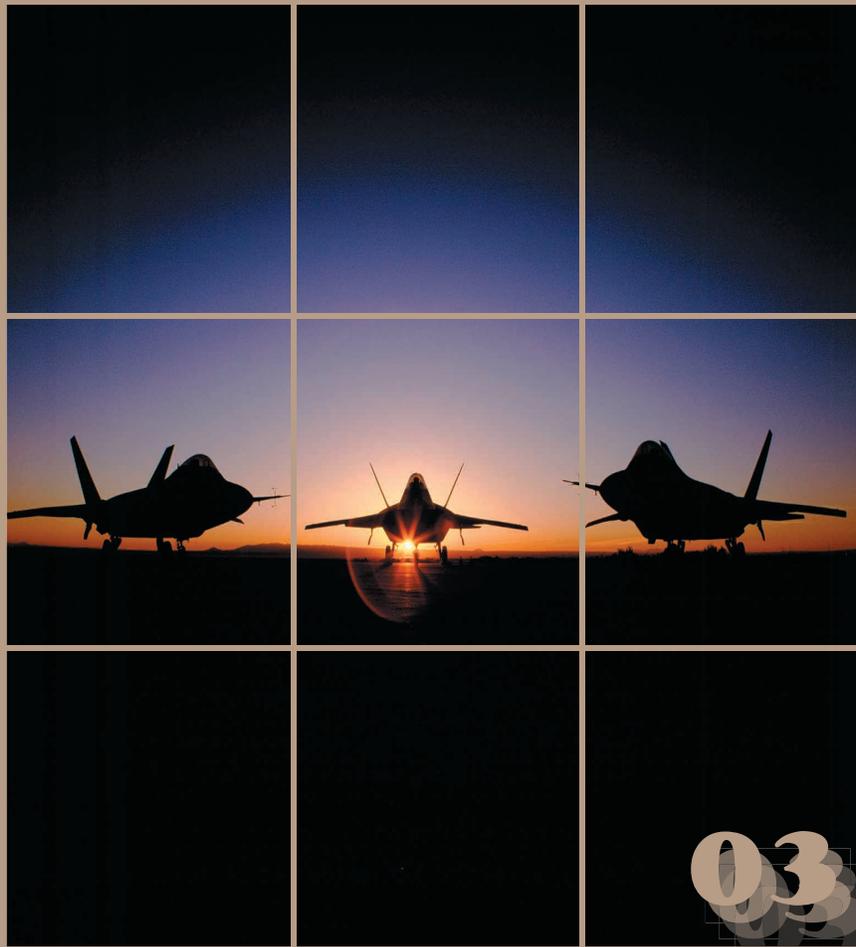


# Material Systems Group



*Transforming for the Future*

fy2003  
annual report



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**AIR FORCE** Materiel Command's Electronic Systems Center (ESC) is headquarters for the Materiel Systems Group (MSG) . Under the leadership of Lieutenant General William R. Looney III, ESC serves as the Center of Excellence for command and control and information systems to support the warfighter in war and peace. ESC provides full spectrum architectures, weapon systems management and technical cognizance throughout the life cycle of communications, intelligence, surveillance, reconnaissance, and information systems for the AF and DoD components.

The nature of the environment in which the AF operates has radically changed. Our Air and Space Expeditionary Force, lessons learned from recent wars, and the increasing need for Joint operations set the stage for the transformation of the MSG's mission.

Over four years ago, MSG recognized the changing nature of the environment, and began transforming to address the organizational and process changes required. MSG is using a spiral evolutionary approach for its transformation to stand up relevant, inherently governmental capabilities. MSG has developed and is maturing foundational capabilities essential to supporting worldwide AF missions and leading transformational changes through the use of information technology.



## ***OUR MISSION***



***We support the United States AF goals for information dominance through acquiring, developing, maintaining, reengineering and providing technical services for information systems. The MSG is committed to delivering our customers high quality services at a realistic cost.***



***The MSG is a center of excellence with three locations - Wright-Patterson AFB, Ohio; Tinker AFB, Oklahoma; and Hill AFB, Utah.***

## *A Message from the Executive Director*



Application of information technology in support of AF missions is a complex challenge. Industry now drives the market place in terms of emerging technologies and commercial best practices. Effectively leveraging the commercial sector to enhance AF capabilities requires special skills and processes, and continual reinvestment in the workforce to meet these demanding requirements.

The manner in which information technology (IT) applications have evolved in vertical functional areas adds to the complexity. Interoperability issues abound, network vulnerability can affect operational readiness, poor resource planning and duplication can exist across the enterprise, decision makers have difficulty obtaining relevant information across functional domains, and inefficient use of bandwidth remains a concern during increased operations tempo.

Technology has matured to the point where it is no longer the driving factor in responding to a mission need. Instead, business processes and organizational culture have become the key elements in achieving transformational changes that result in significantly enhanced business and combat support capabilities.

Organizations throughout the AF and the DoD are responding to the changing environment with limited success. Structural and systemic issues such as funding and requirements flow have resulted in impediments to realizing the full potential benefits of information technology solutions.

As I assume the leadership of the MSG, I am committed to transforming the organization for the future. With more than 140 current operational systems, MSG must move forward with a focused vision towards knowing our customers and making sure our customers know us. Substantial investments have been made in our workforce, process development, and facility improvements. While much work remains to be done, MSG has gained experience and success operating in the new and evolving IT environment. As a highly agile learning organization, MSG is postured for the future to help lead AF and DoD transformation.

The implications of the changing environment for Agile Combat Support and Information Superiority are significant. To achieve the desired operational capabilities and effects for the Air and Space Expeditionary Force requires transformational change throughout the AF. MSG understands the changes required and has postured itself to support future AF needs.

*Debra L. Haley, SES  
Materiel Systems Group*



Current AF initiatives envision an AF, enterprise-wide, eBusiness environment. This targeted environment incorporates information technology (IT) investments that support “best business” practices and features Commercial Off-The-Shelf (COTS) software applications as IT solutions of choice. The target AF environment will web-enable business applications and make them accessible via the AF Portal. In addition, this AF eBusiness environment will promote shorter IT solution development cycles and press for quick Return On Investment timeframes. In response to this changing AF business environment, which is migrating to a “solution-provider” orientation, the MSG established a corporate mission of providing market-leading information solutions. This mission necessitates MSG’s transition from primarily providing software development services to becoming the AF trusted agent for comprehensive and integrated IT solutions—a mission designed to serve the growing AF IT solutions market.

***MSG: Providing information solutions to the AEF!***

## Solutions & Services

### Enterprise Solutions Services

MSG is the trusted provider of integrated information solutions that help its AF customers achieve unsurpassed combat capability, manage transformational change, and improve combat effectiveness. MSG's Enterprise Solutions Services enable customers to define their requirements and needed capabilities as an enterprise, leverage emerging information technologies, and participate in this activity using state-of-the-art processes...and achieve all of this in a rapid, responsive manner. The result is leading edge capability...quickly!



business processes, and customers to achieve transformational improvements to AF mission operations. The Information Technology Applications Center (ITAC) blends all aspects of an IT solution. From developing the

requirement and understanding the business process, to making technology tradeoffs and evaluations, the ITAC enables rapid delivery of new capability to AF customers.

### Mission Continuity Services

As the AF transforms itself using emerging technologies, legacy information systems still perform as the workhorse of today's AF.

MSG maintains expertise with these systems and works with mission area customers to

ensure continuity of mission operations as legacy systems are migrated to new solutions. Maintenance and support, as well as modification of legacy systems ensure AF combat capability, wherever and whenever needed.

### IT Acquisition and Integration Services

MSG leverages its insight into mission areas and information systems it integrates, develops and sustains to ensure its customers invest only in new and improved capability, rather than duplicating solutions already in place. These new capabilities are integrated into an enterprise architecture as they are developed to ensure interoperability and low operating costs. Trained and certified acquisition professionals assist customers throughout the acquisition process to ensure legislative and technical requirements are met, and the implemented solution meets customer expectations.

### Information Assurance and Security Services

Safeguard and security of the AF and DoD information networks are paramount. Rapidly changing and evolving technologies, as well as thirty-year-old technologies, must be integrated to exacting standards to achieve information assurance. MSG has skilled people capable of evaluating proposed or existing solutions to determine the security risk those solutions may pose to the network. Through innovative techniques, MSG has significantly reduced the cost of this activity to its customers while maintaining high security standards.

### Experimentation Services

MSG operates a state-of-the-art facility bringing together technologies,

# \\msg leadership



**Ms Debra Haley**  
Director

**Ms Lynn Moad**  
Vice Director



**Top row (left to right): Mr Timothy Nixon; Ms Marcella Caldwell; LtCol Charles Brackenhoff; Mr Richard Honneywell; Middle Row (left to right): LtCol Pam Belford; Col William Cox; Mr Kennon Cooksey; Mr Willam Quigley; Bottom Row (left to right): LtCol Brad Bisson; Ms Cheri Wilson; Mr Doug Fleaser; Ms Joanne Duda**

*MSG Systems Program Offices (SPOs) implementing spiral approaches to acquire and field premier logistics, contracting, depot maintenance, financial, business and supply management information solutions.*

**MSG/IL** – The Logistics Information Program Office provides the worldwide life-cycle management of 84 information systems, directing multiple organic and contractor teams who develop, deploy, and sustain seamless logistics systems used in times of peace and conflict. To execute the responsibilities of this overarching logistics management effort this organization is divided into two major SPOs:

**MSG/MA** - The Maintenance SPO performs program management, customer technical refresh and integration support for depot maintenance systems, such as the Reliability and Maintainability Information System (REMIS), the Programmed Depot Maintenance Scheduling System (PDMSS), the Inventory Tracking System (ITS), Data Depot (Q302) and support to Depot Maintenance Accounting & Production System (DMAPS).

**MSG/SL** - The Supply Logistics SPO plans, manages, coordinates and executes the processes for the acquisition, research, development and support of supply information systems such as Requirements Management System (RMS), AF Equipment Management System (AFEMS), Weapons System Management Information System (WSMIS) and Stock Control System (SCS).

**MSG/FN** - The Financial Information SPO develops, acquires, modifies, and maintains financial solutions, including the Automated Business Services System (ABSS) and the Financial Information Resource System (FIRST) for the AF and the Defense Finance and Accounting Service.

**MSG/MM** - The Business Information SPO plans, manages, coordinates and executes the DoD Information Technology processes for the acquisition, research, development, and support of new and existing AF Business Information Systems to support an integrated combat support environment. As the Technical Data SPO, MM responds to the AF technical data requirements. MM also provides assisted technology via the Computer Accommodations Program (CAP) to meet the work-related needs of employees with hearing/speech impairment, visual impairment, dexterity/mobility impairment and ergonomic/injury issues.

**MSG/PI** - The Contracting Information Systems SPO manages a portfolio of automated contracting systems in order to provide more efficient and effective contracting operations to meet AFMC, AF and DoD near- and long-term requirements.

*MSG directorate support staff architecting, designing, testing, and tracking performance of value-added, comprehensive IT solutions to enhance AF combat support.*



**MSG/EN (MITRE)** – The Engineering and Technical Management Directorate shapes and implements MSG processes for the research and development, delivery, and renewal of integrated combat support capabilities. EN assists in the development and definition of an overarching technical strategy and roadmap, consistent with higher-level strategies and roadmaps, for all MSG-owned and managed systems.

**MSG/ES** – The Enterprise Solutions Directorate provides strategic future information solution planning and technology innovation options for the MSG. ES identifies IT opportunities with a focus on integration of the activities across the MSG SPOs, AF and the DoD, as well as provides corporate acquisition services, and MSG acquisition center of excellence.

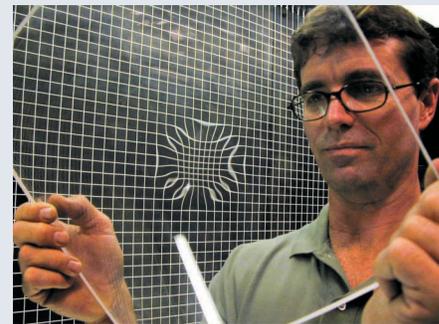
**MSG/FM** – The Financial Management Directorate provides corporate visibility and status of MSG information systems, manages all aspects of the AF Working Capital Fund (AFWCF) operations and provides corporate support in the areas of planning, workload, management, cost analysis, and performance measurement.

**MSG/PK** – The Contracting Directorate delivers business solutions that enable the MSG to enhance USAF warfighting by providing

contracting support to formulate and analyze business cases, administer the acquisition process, and to support the development, maintenance, reengineering and delivery of technical services for information systems.

**MSG/RM** – The Resources Management Directorate provides corporate mission support and assistance in training, facility management, audits and inspections, quality management, appraisals, awards, career programs certification, safety and personnel support and administration.

**MSG/SI** – The Software Information Solutions Directorate designs, tests, integrates, maintains and sustains software in support of the MSG IT solutions. SI supports development and implementation of the Organization’s Standard Software Process (OSSP) and other processes aligned with obtaining Software Engineering



Institute certification. The directorate also provides comprehensive information assurance for all MSG-owned and managed systems.

## *The Key to Your IT Success - Our People*

Information technology has become the leading conduit for change in our world. It is changing the way we learn, the way we communicate, and the way we work. It is contributing to a critical transformation of our economic life. It is creating the need for knowledge workers who can meet high performance standards in technology relevant subjects.



Based on the need to provide technologically advanced capabilities such as rapid prototype development, information assurance, portal design, integrated digital environment, and logistics transformation efforts, new skills and training are required. The technical knowledge, understanding, and insight necessary to take advantage of the changing languages and tools requires a significant investment both in time by our workforce and in training by the MSG. Our employees must understand the legacy systems, as well as the design methodology and tools for the new applications that are being developed. This requires a broader spectrum of knowledge and understanding than did traditional

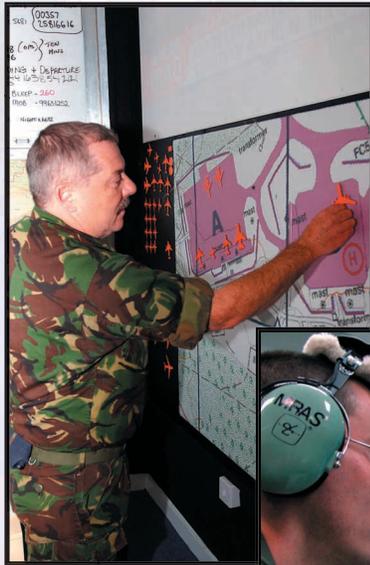
programming, where knowledge of one language and one operating system was sufficient for a single, long career. Now, new languages, tools, development environments and operating systems must be studied, evaluated, and employed for the delivery of modern applications in the multi-tier environment of today's AF.

It is imperative that MSG remains current on state-of-the-art changes and infuses new talent into the organization that possesses current IT skills. Our people continually seek to increase their technical, acquisition, and business competencies through formal education, as well as a variety of specific training events and resources through the MSG Learning Resource Center (LRC). The LRC provides MSG personnel with increased application, availability and accessibility of training opportunities in a cost-effective manner using technology that speeds up and improves the training process.

MSG has identified the need to reskill its workforce in order to posture the organization for a shift in technology and for the changing DoD environment. As a high performing, agile, learning organization, we are committed to providing a highly skilled workforce consisting primarily of technical and programmatic professionals. Our IT expertise coupled with our business process reengineering management abilities, provides our customers with the optimum solution to meet their business operations needs.



**Prepare  
the  
Force**



**IT Acquisition &  
Integration**



**Ready  
the  
Force**



**Information  
Assurance  
& Security**



**Employ  
the  
Force**



**Sustain  
the  
Force**

*Matériel Systems Group - Acquiring and*

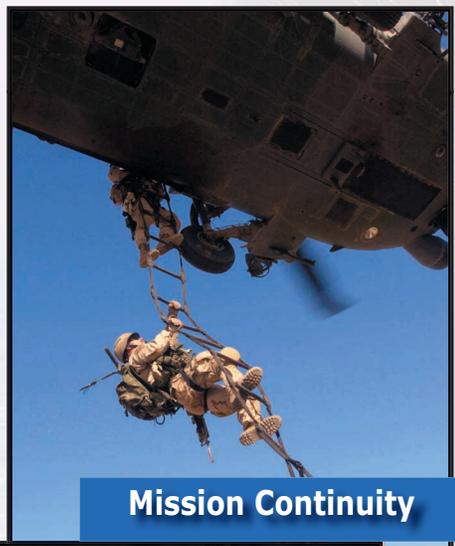
# Transformation



**Experimentation**



**Protect  
the  
Force**



**Mission Continuity**



**Enterprise Solutions**

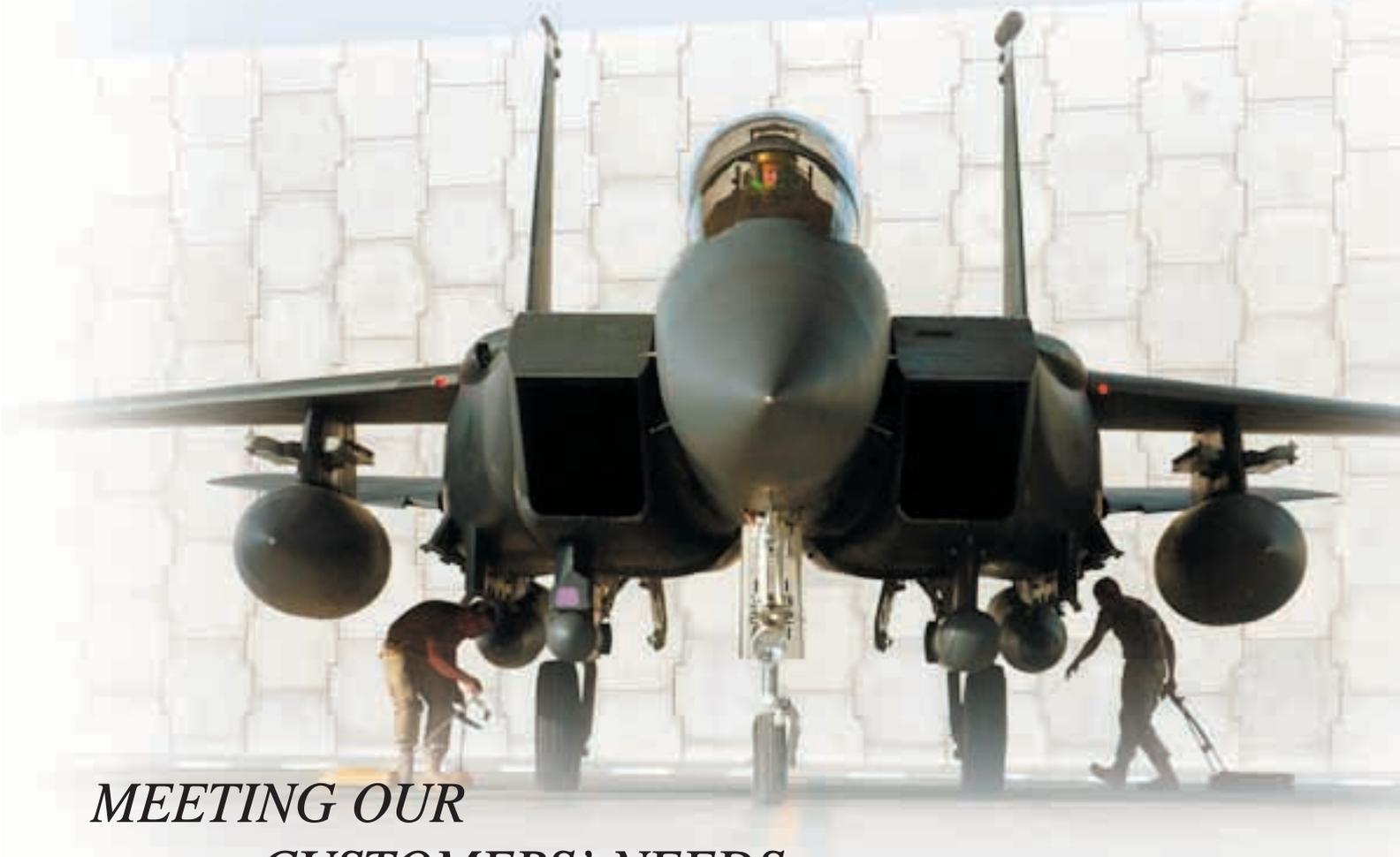
**Position  
the  
Force**



**Recover  
the  
Force**

*Delivering Agile Combat Support Solutions*





## *MEETING OUR CUSTOMERS' NEEDS*

The MSG is a fee-for-service organization within the AF Working Capital Fund. One hundred percent of our funding comes from our many AF and DoD customers. We specialize in integrated weapon system support solutions for both depot level and field operations requirements. We provide multi-functional information management systems, systems integration, IT consulting/project management, or the latest in IT technology support solutions such as enterprise data warehousing and e-commerce. We work with our customers to plan, acquire, manage, deploy, sustain, and upgrade over 140 IT systems with a combined revenue of approximately \$300 Million. Our IT solutions are effective, efficient, affordable, and flexible. We approach IT solution acquisition and program management from a life-cycle perspective - we support our customers from system conception to system delivery to system retirement.



## Recent Initiatives Establish Core Capabilities . . .

In 1999, MSG began to migrate towards becoming an Acquisition Information Technology Solutions Center of Excellence instead of a software development central design activity. This migration requires the leveraging of the commercial sector through the use of commercial-off-the-shelf (COTS) products and best practices which initiates the development and use of new processes and supporting facilities. As a result, various initiatives have been launched to affect this migration.



The **Information Technology Applications Center (ITAC)** is a premier experimentation facility where Government and industry partners can experiment with new technologies to support transformed business processes throughout the business and combat support environment. The ITAC provides an isolated experimentation area, which does not impact current operations, as well as a secured environment where MSG IT experts work with industry to experiment with and evaluate emerging technologies and potential IT solutions for AF mission needs.

The ITAC provides a first-class environment enabling a **rapid-prototyping capability**. This capability provides quick turnaround of customer requirements and concepts through proof-of-concept demonstrations. The prototypes are built on an infrastructure that represents existing and planned AF IT environments. The process helps add structure to a customer's vision, aids them in defining their needs and substantially reduces requirements determination time. Additionally, this capability demonstrates to customers how leading edge technology can help meet their mission needs and the risks associated with these technologies that must be planned for and managed.

Management of IT solution development that is COTS intensive presents new challenges that need to be met with new management processes. MSG initiated and sponsored the development of the **Integrating Technology by a Structured Evolutionary Process (ITSEP)**. ITSEP is a disciplined spiral approach to acquiring and fielding COTS intensive and other reuse solutions. ITSEP incorporates strategies that take advantage of the benefits of the commercial market place while managing associated risks.

. . . . . *To Respond To Air Force Needs*

*Radio Frequency IDentification (RFID).*

A recent GAO report cited that the paper-based, “just in case” system of supplying troops during the Persian Gulf War resulted in thousands of containers holding mystery items. During Desert Storm, more than half of the 40,000 cargo containers shipped to the desert, including \$2.7 billion worth of spare parts, went unused. Determined to change this practice for Operation Enduring Freedom (OEF), a high priority requirement originated from US Central Command (USCENTCOM) to enhance asset and in-transit visibility for all OEF air pallets, containers, and commercial sustainment. USCENTCOM wanted all shipments tagged with RFID at origin for asset and in-transit visibility (ITV). In response to this requirement, the AF Materiel Command Logistics Support Office and MSG teamed to develop and test a solution using TRACKER (D087T) as the data source for the content (NSN/Nomenclature) level data. Working together, a prototype capability was designed and demonstrated within four months. As a result, MSG provided the capability to the Defense Automated Addressing System (DAAS) to implement. DAAS now provides the content detail for RFID ships from Air Mobility Command ports and also reports that content and transportation detail to the RFID ITV server. Access to the ITV server enables USCENTCOM the ability to track shipments into and intra-theater.

*As part of the OSD Rapid Improvement Team (RIT) process,* a mini-assessment team, conducted a review of the FIRST program. The Class C assessment was based on selected criteria from the Federal Aviation Administration integrated Capability Maturity Model (FAA-iCMM). Although an overall rating for the FIRST program was not provided,

the assessment team identified a “significant number of strengths (including potential RIT Best Practices) that can serve as the basis for further process improvement”. Strengths included implementation of a Pricing IPT, use of an automated Award Fee tool, establishment of a Combined Test Force to include use of an AF Best Practice for selection of the Responsible Test Organization, and the use of quality metric analysis to improve early elevation of problems in spiral development.

*The Deployment Qualification System (DQS),* also known as “MyReadiness”,

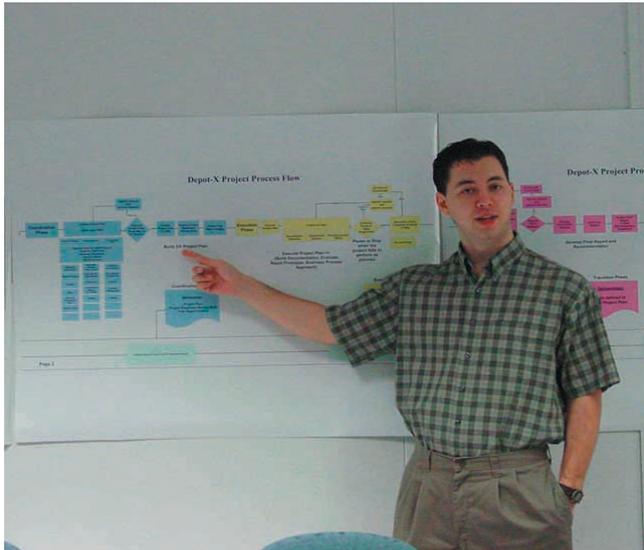
provides an integrated tool to help units proactively manage deployment readiness with built-in roles for individuals, unit deployment managers, training providers and commanders. MSG partnered with commercial vendors and AFMC subject-matter experts to quickly deliver an initial capability. The innovative approach and quick adaptation by AFMC units allows timely and accurate individual readiness indicators for warfighting operators.

*The MSG Operating Location (OL) at Tinker AF Base*

brought a new software application online that lets users apply labor standards to maintenance planning. The new system replaced the AFMC Labor Standards Data System, which was built nearly 30 years ago. The MSG-OL effectively implemented the technologically improved software application that allows users to apply labor standards to maintenance planning more effectively and efficiently. All three ALCs were completed on the same day. The old systems were turned off and the new one was successfully turned on.

*Depot-X is a means to assess business processes, explore Commercial Off-the-Shelf (COTS) or Government Off-the-Shelf (GOTS) products, and rapidly-prototype IT innovations within a nominal 90-120 day period. It will support development of concepts of operations, requirements definitions, guide the modification, acquisition, and upgrade of depot business processes and IT systems with the active participation of the appropriate stakeholders. In addition, it will increase the effectiveness, efficiency, and interoperability of a singular collaborative depot maintenance and supply management IT solution environment.*

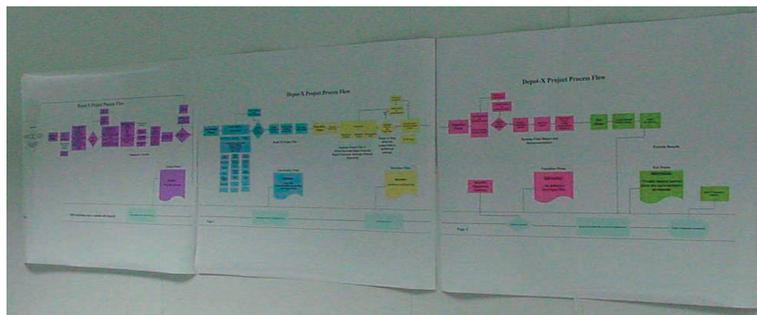
A small team of very dedicated resources was responsible for accomplishing the necessary tasks of setting up the Depot-X environment. The team consisted of representatives from MSG and the



communications groups at Wright-Patterson, Tinker, and Hill AF Bases. Since early 2003, the team has been in constant communication and coordination to effectively demonstrate this concept and capability. The hard work and dedication of the team contributed to the establishment of Depot-X.

MSG has been involved in the planning of Depot-X since early 2002. MSG involvement deepened with the development of the Depot-X CONOPS, Depot-X processes, and with the technical responsibility of setting up the Depot-X node infrastructure between Wright-Patterson AF Base, Oklahoma City Air

Logistics Center, Ogden Air Logistics Center, and Warner Robins Air Logistics Center (the ITAC, Virtual Private Network (VPN), facilities, etc). The linkage of the nodes via the VPN allows each node to participate and support the evaluations of potential depot IT solutions. Other tools (e.g., Collaborative Work Environment (CWE), modeling and simulation, eConferencing) are being used to effectively manage and operate the Depot-X environment.



The technical infrastructure complements the Depot-X process, which provides the methodology for bringing the stakeholders together and conducting the appropriate assessments. The possibility exists to emulate the Depot-X processes to many business areas (i.e., Finance, Procurement, Human Resources, Acquisition) in the future.

# Community Service



## *MSG community involvement continues to remain strong as we support the needs of others and share in a rich exchange of information to enhance our capabilities and knowledge.*

*MSG was the organizer and manager of the exhibits hangar, which was the pivotal part of the Air Power 2003 celebration. The exhibits hangar consisted of USAF exhibits highlighting what the AF has accomplished in this first 100 years of powered flight and where it is going in the future. Through this effort the public was provided with a deeper understanding and positive awareness of the United States AF. Our efforts of serving as high school science fair judges; “adopting families” during the holidays; generously contributing to the Combined Federal Campaign; and building homes with Habitat for Humanity are further proof of our desire to readily give to the community with a giving and caring spirit.*



# THE FUTURE . . . . .

In partnership with AF leaders and customers, MSG is advising its customers on information technology implementation strategies and providing enabling services. As MSG continues to mature its capabilities, it will provide knowledge management, capabilities management, and applied skills management in direct support of IT solution development for its customers.

**Knowledge management** incorporates activities in the following areas:

**Enterprise data strategies** - horizontal fusion of information across an enterprise requires an effective data strategy. As the developer of many of the AF information systems, MSG has unique and in-depth knowledge of our customers' systems, business processes, and the data essential to functional mission success. MSG is developing capability and processes to enable functional domains to collaborate in the development and use of data. These processes ensure data collected has mission value and is available for improved decision making across corporate AF and DoD. MSG is leading the way to improved decision making capability through program management responsibility of the AF Enterprise Data Warehouse program.

**Business process reengineering (BPR)** - successfully leveraging technology and best practices from the commercial sector requires the AF to adapt its business processes and develop flexible requirements. This requires customers across all domains evaluate their business processes end-to-end focusing on the desired outcomes of the AEF. MSG has developed techniques and processes to help its AF customers transform its business processes rapidly, in a structured, disciplined manner. These processes, combined with MSG's knowledge of the AF enterprise, have proven very effective in managing change and organizational culture issues and in helping organizations take full advantage of commercial IT capabilities in the AF environment.

**Market research** - leveraging commercial technology requires extensive research to understand constantly evolving product capabilities, implications, and risks. MSG's knowledge of the AF enterprise environment, including legacy IT systems, provides considerable value added during commercial product research. It includes an understanding of the risks various commercial products may introduce to the AF network, so that those risks may be planned for and mitigated as necessary. Additionally, investment in this area produces synergy across all functional domains that are working with similar products. This synergy drives operational results being delivered to customers in a highly responsive manner.



## . . . . . IS NOW!

**Capabilities management** incorporates activities in the following areas:

**Customer relationship management (CRM)** - this capability integrates management of customer requirements and becomes the focal point for development of change management strategies. Synchronizing enterprise requirements before substantial investments are made reduces redundancy; more efficiently uses resources, and rapidly provides capability to operational and supporting forces. Overcoming cultural resistance is a significant impediment to the acceptance of transformational changes. Adequate planning and resourcing of change management activity with all stakeholders is essential to successful implementation of IT capabilities.



**Predictive support** - modeling and simulation as well as technological improvements in on-line analytical processing, provides the basis for tremendous improvements in the support of operational forces. MSG's knowledge of the legacy environment, functional data, and investments in enterprise data warehousing provides the backbone of predictive support. The result is the AF has enhanced decision-making capability enabling significantly shortened repair cycles, supply chain response times, and acquisition responses to worldwide AF commitments.

**Applied skills management** incorporates activities in the following areas:

**Enterprise engineering** – ensures the right technical and systems engineering skills are applied to MSG solutions and services.

**Test management** – ensures MSG solutions are appropriately tested to ensure operational effectiveness. Increasing use of commercial products requires different approaches to testing to ensure enterprise suitability.

**Enterprise support** – ensures the right acquisition, human resource, contracting, and financial considerations are given to MSG solutions.

The capabilities management activities leverage MSG's investments and expertise in its knowledge management capabilities by aggregating relevant customer and technology information enhancing customer planning. Employing collaborative processes for these applied skills streamlines the supporting infrastructure necessary to provide solutions and services to MSG customers significantly reducing the cycle time for delivery of new capability. The net result is more responsive and effective implementation of business and combat support capabilities in support of the AF mission.

# STRATEGIC PARTNERSHIPS

In today's rapidly evolving IT environment, strategic partnerships often play a critical role in responding effectively to the challenges this environment poses. MSG has built a portfolio of partners in academia, industry, and throughout the government. As MSG has incorporated transformational changes, our partners have contributed to our success by providing constructive recommendations and counsel.



## *OUR COMMITMENT*



MSG is committed to fielding improved IT capability through the utilization of experiments, prototypes, and modified and improved business processes. We are working to reduce costs, cycle times, and investment risks by partnering with the warfighting operators and the DoD components to understand their information business needs and deliver world class technologies, process improvements, and enterprise solutions. Through our alliances with industry and academia, we will leverage lessons learned, exploit emerging technologies, track technology and business trends, and collaborate on IT enhancements and improvements. Our goal is to ensure the Air and Space Expeditionary Forces have the information they need, when and where they need it!

### *Matériel Systems Group*

*Air Force professionals providing the world's most respected agile combat support information solutions, transforming data into knowledge for AF decision makers.*

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