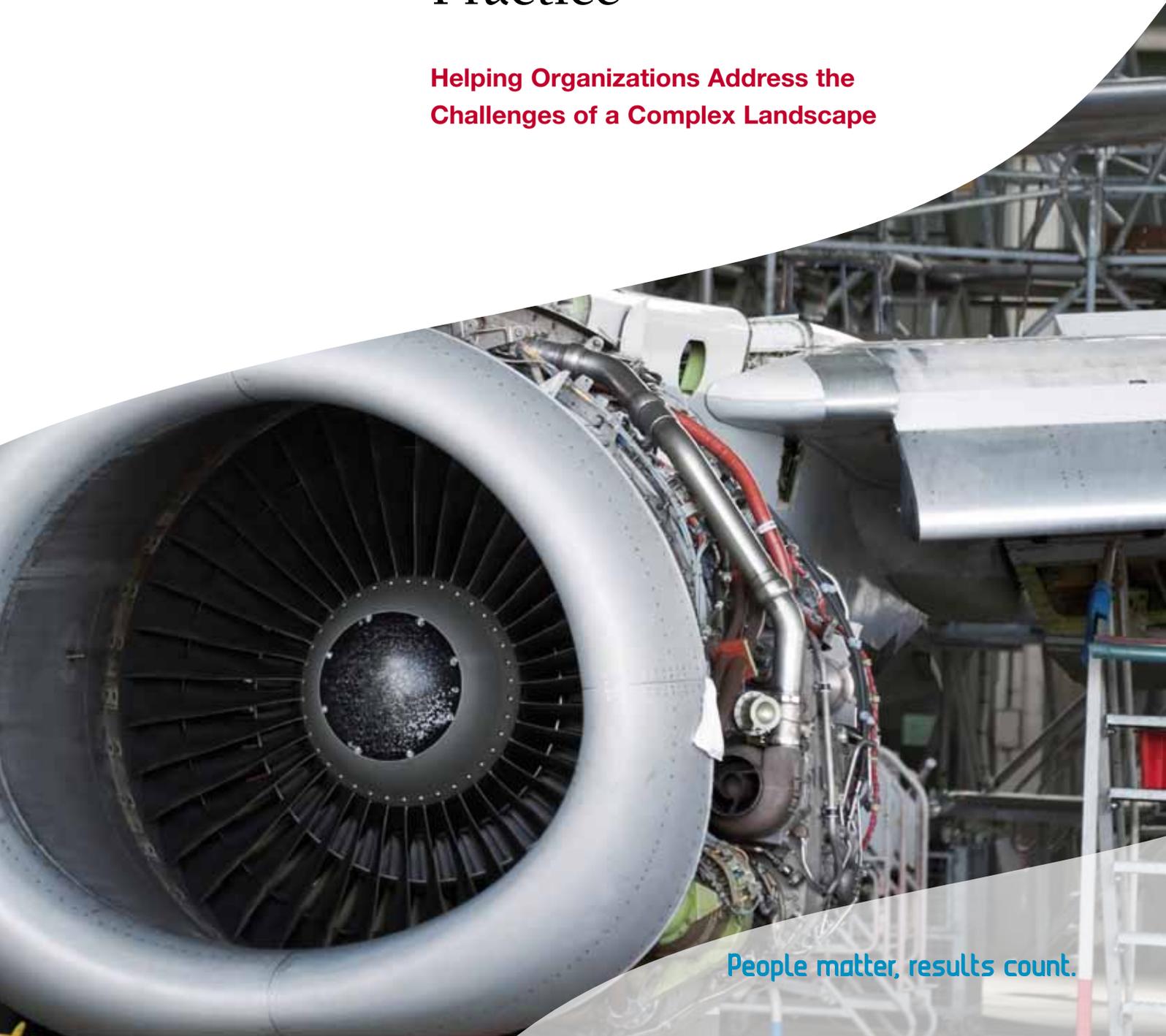


# Capgemini's Aerospace & Defense Practice

**Helping Organizations Address the  
Challenges of a Complex Landscape**



People matter, results count.

**Amid indications of economic improvement, organizations must turn to sales-focused activities.**

Aerospace & Defense (A&D) companies must continually evaluate the way they operate to meet today's challenges, including globalization, financial constraints and complex information management. Capgemini's global Aerospace & Defense practice helps companies respond rapidly to these changing market demands.

**Six Levers to Manage Key Challenges**

To address this complex landscape, A&D organizations need to manage six key levers.



- 1. Product Lifecycle Excellence:** This includes leveraging technology partner relationships, maximizing digital product lifecycle, and developing close collaboration with customers and suppliers earlier in the product lifecycle and across the value chain.
- 2. Cost Reduction:** Recessionary pressures are easing, however uncertainty still exists. A&D companies must continue to focus on reducing their cost base by outsourcing non-core activities, optimizing the extended enterprise model with their risk-sharing partners, leveraging civil technologies for defense organizations and harmonizing their information systems.
- 3. Sales Growth:** Amid indications of economic improvement, organizations must turn to sales-focused activities, including bundling their product offerings with value-added services, especially in the aftersales market and customer services.
- 4. Operational Excellence:** Companies must find operational improvements through supply chain management and logistics optimization, operational efficiency optimization, demand and inventory planning, and integrated business planning.
- 5. Customer Centricity:** Customer-centric activities need to focus on providing efficient, innovative services, close collaboration with customers and suppliers, as well as new approaches such as pay-per-use services for customers.
- 6. Green Initiatives:** As legislation is introduced requiring companies to be more accountable in their use of resources, organizations need to develop and deploy sustainable products and services, provide green maintenance services and implement a green IT strategy.

Figure 1: Capgemini Serves the Entire Aerospace & Defense Ecosystem



Source: Capgemini

### Capgemini Offers a Comprehensive Set of A&D Solutions

Capgemini works collaboratively with seven of the top 10 aviation, aerospace and defense companies, helping them use these levers to address the challenges they face. Our global Aerospace & Defense practice covers the entire ecosystem, including system conception, design authorities and system integration; tier 1 and 2 suppliers; operating companies and regulators; and maintenance.

With 30 years of industry experience and 4,000 Aerospace & Defense

specialists worldwide, Capgemini offers a comprehensive set of solutions to help companies succeed in this rapidly evolving sector. Our solutions help boost growth, accelerate research and development, reduce costs, and improve security and services.

### Innovation & Lifecycle Management (ILM)

Aerospace & Defense manufacturers are under pressure to reduce development cycles and secure the industrial ramp-up of new programs. Our Innovation & Lifecycle Management solutions enable secure, efficient collaboration with

suppliers. A recognized leader in the deployment of major ILM programs, Capgemini is able to cover all aspects of transformation, including:

- A&D business and functional knowledge
- Technical expertise and architecture
- Solution integration expertise
- Requirements convergence and business deployment, taking full benefits from a “collaborative plateau”

## Case Study: Engine Manufacturer Integrates PLM Solutions

Capgemini helped a large commercial and military engine manufacturer build a new PLM solution that supports the design process, development process and manufacturing of new jet engine programs.

**The Situation:** The company wanted to improve collaboration with its industrial partners to accelerate the development of new engines.

**The Solution:** A Business Process Re-engineering program helped the manufacturer rethink the way it was working internally and externally with its clients and partners. Capgemini helped build a new PLM application and integrate it within the existing Technical Information System. The application is based on Siemens Teamcenter. A change management plan was also implemented to support the deployment of the new solution.

**The Result:** The solution has reduced time-to-market for new engine generations and optimized development costs. It has also helped the company better communicate and interact with external partners. Data management for engine programs is now integrated and secured. A COTS approach reduced specific development to a minimum allowing easy and cost-efficient future Teamcenter evolutions.

Capgemini's ILM solutions for Aerospace & Defense span the full product lifecycle, from idea to design, production, support and removal. We partner with PLM technology leaders, including Dassault Systems, Siemens and PTC.

### Engineering Services

Aerospace & Defense programs are becoming increasingly complex. Capgemini helps companies take advantage of the latest and most innovative engineering technologies to advance in a constantly evolving industry.

We bring 30 years of experience in A&D engineering services. We undertake major technical and engineering innovation projects for the R&D departments of global industrial firms. Through our subsidiary, Sogeti High Tech, we are among the top five market leaders in engineering and technology consulting services.

Our expertise includes Research & Development, requirements, design, development, testing, integration and operational maintenance of complex systems. We have developed five lines of business:

- Consulting
- Systems Engineering
- Physical Engineering
- Software Engineering
- Testing

### Manufacturing & Supply Chain

Aerospace & Defense companies face specific assembly and integration issues. Capgemini helps them make the most of their budgets by offering innovative manufacturing and supply chain technologies to reduce costs, optimize the production cycle and secure the industrial ramp-up.

We offer clients deep global manufacturing and supply chain

experience. This includes over 20 years of implementing manufacturing execution systems, supply chain management solutions and consulting services, such as production planning optimization and global lean initiatives.

The experts at our CHROME Manufacturing Center of Excellence work to accelerate the execution of manufacturing and supply chain solutions at optimum costs. CHROME is a global virtual community with a dedicated solution lab in Mumbai, India. The center develops best-practice solutions and accelerators that help systems go live quickly at lower costs and with less risk.

### Maintenance, Repair & Overhaul (MRO)

As global air fleets age, the importance of Maintenance, Repair & Overhaul will be a key focus for Aerospace & Defense manufacturers in the coming years. Capgemini helps MRO organizations capture revenues from this growing service market.

Capgemini's extensive MRO experience comes from years of working with leading A&D original equipment manufacturers (OEMs) and major airlines. We deliver MRO business improvement and systems implementation efficiently and effectively. With more than 200 MRO specialists, we have a successful track record in the implementation of SAP MRO for several leading European Aerospace & Defense companies.

Our MRO solutions can help companies achieve the transformation from a product- to service-centric organization. Capgemini offers solutions in:

- Business Process Improvements
- Spare Parts Forecasting
- Inventory Management

## Technical Publications

Development and production of technical publications is a critical function for Aerospace & Defense companies. Capgemini provides a flexible and efficient Business Process Outsourcing (BPO) option to produce high-quality technical publications. From maintenance manuals to parts catalogs, we offer a consistently strong service level while ensuring strict compliance with international specifications.

With more than 300 A&D engineers and technicians at our center in Bangalore, India, we deliver technical content management services that provide operational cost savings and help you improve customer service. Our solutions enhance return-on-investment of technical content management outsourcing and strengthen your competitive advantage.

### Case Study: Capgemini Delivers World-Class Technical Content Expertise for Bombardier

Bombardier, the world's third largest civil aviation manufacturer, turned to Capgemini's technology, consulting and outsourcing expertise to implement world-class technical content management through a BPO solution.

To achieve this goal, Capgemini assembled a highly skilled team of technical content management professionals with a wealth of technical experience in engineering, manufacturing and design. These professionals drew on their subject matter expertise and ability to present complex information clearly and concisely to help Bombardier achieve excellence in customer satisfaction.

## Space Systems Integration

Space infrastructure provides critical information sources to intelligence services and offers numerous mass-market applications. Capgemini's solutions cover all aspects of space infrastructure from critical systems integration to data management.

We offer a combination of global reach, deep industry and business knowledge, and a strong understanding of the underlying technology. We have over 30 years of experience in the civil and military space industry with three main areas of expertise:

- **Ground Station Systems:** development and maintenance of several monitoring and control systems for major satellite programs in France, Italy and French Guiana.
- **Satellite Mission Programming:** development and maintenance of satellite programming systems for several major European Earth observation satellites, including the mission center for all the SPOT and Pléiades satellite series.
- **Overall Image Consolidation:** post-treatment, recalibration and correction of captor defects for both civil and defense systems.
- **Space Data Management:** Our team of Ph.D. experts is involved in the design of business information management systems for extensive space data coming from observation and scientific captors.

## Defense

Capgemini's solutions for defense address national organizations as well as defense manufacturers. These businesses face the challenge of information systems operability and exponential growth of electronic information exchange, in a context where strong pressure is put on defense budgets globally.

Our commitment to the government and defense sector has resulted in a track record of success, having assisted in the military transformations



### Case Study: Mission Control Center for Pléiades Earth Observation Satellites

CNES, the French space agency, has awarded a contract to Capgemini for the specification, design, development, integration and validation of the programming mission center for the Pléiades observation satellites, to be launched in 2012.

The system includes:

- **The Access Unit**, which gives the users innovative web access to the Pléiades satellite services, in terms of image programming.
- **The dual Programming Unit**, which elaborates the satellites' work plan from both daily on-board and ground operations constraints.

The overall IT system is based on Service-Oriented Architecture (SOA) and is designed to be operated for the next 15 years with high interoperability and availability requirements.

**Design, development and maintenance of mission-critical software and embedded software for defense requires partners you can fully trust.**

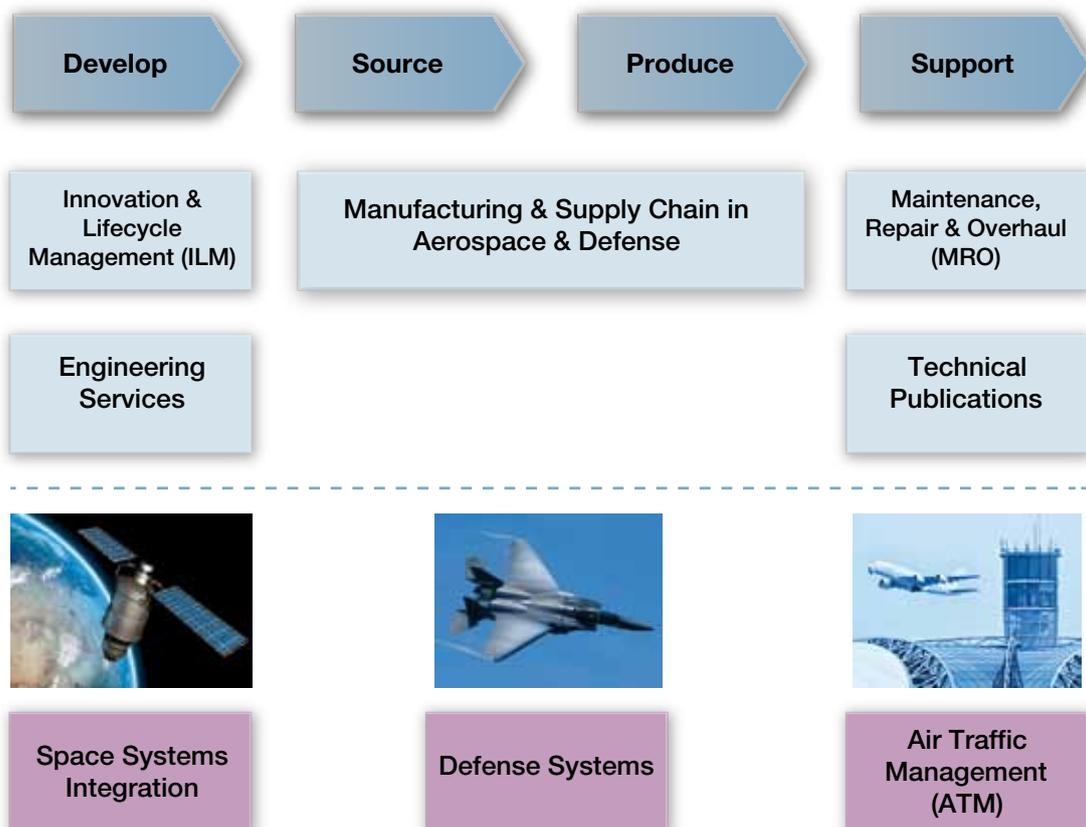
of defense manufacturers, national government ministries, defense forces and international agencies. Capgemini helps defense organizations in two main areas:

- Integration of complex defense information systems:** Capgemini recognizes that the collaboration demanded in today's military environment is both a technology and a business challenge. It represents a major shift in the way defense information systems (IS) are designed and operated. Capgemini has significant experience in supporting complex defense IS programs for military operations. We provide strong expertise in the areas of enterprise architecture, system integration, IS security and

complex program management. We are involved in multi-year IS programs in several countries, for both C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) and logistics systems.

- Technology expertise in the area of critical systems:** Design, development and maintenance of mission-critical software and embedded software for defense requires partners you can fully trust. Capgemini works with the most demanding defense organizations and delivers excellence in the areas of command and control systems, military communication and simulation. In addition, Capgemini helps defense organizations reduce their costs by leveraging civil technologies in a military context.

**Figure 2: Capgemini Offers a Comprehensive Set of Aerospace & Defense Industry Solutions**



Source: Capgemini

## Air Traffic Management (ATM)

Air traffic is expected to double within the next 10 years, and most major airports are already saturated. Capgemini's air traffic management solutions are designed to help organizations address the increasing complexities of managing air travel.

We are responsible for the application management of several critical safety systems for a large European country, and boast a proven track record in ATM consulting, systems engineering and integration. Capgemini has also developed extensive expertise in managing the migration of obsolete but critical safety applications.

Capgemini offers a broad range of ATM solutions including:

- Flow & Capacity Management
- Controller Workstation
- Obsolete Critical Safety Applications Migration
- Industrialized Complex Application Maintenance of Critical Systems

## Our Approach to Solution Delivery

As a leading provider of technology and consulting services, Capgemini brings a number of proprietary tools and methodologies to our A&D solution delivery. These include:

**Accelerated Solutions Environment (ASE).** The ASE is an intense collaborative working environment that enables large groups of people to creatively solve complex problems much faster than with traditional methods. Capgemini's ASE has helped many Aerospace & Defense clients quickly reach their objectives.

**Wide Span, Fast Track: When Failure Is Not an Option.** Aerospace & Defense programs are complex, and so are the issues companies must deal with. Capgemini has a successful track record of managing complex programs under critical planning constraints. Combining Capgemini's business expertise and



the acceleration techniques of our Accelerated Solutions Environment or the Acceleration Zone, we help clients face their toughest business challenges.

**Rightshore® Global Delivery.** Capgemini's approach to global delivery brings together our best talent from the right balance of onshore, nearshore and offshore locations to work with you as a unified team. This balance enables us to deliver the optimum solution for your business needs.



## About Capgemini and the Collaborative Business Experience™

Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, enables its clients to transform and perform through technologies. Capgemini provides its clients with insights and capabilities that boost their freedom to achieve superior results through a unique way of working, the Collaborative Business Experience™. The Group relies on its global delivery model called Rightshore®, which aims to get the right

balance of the best talent from multiple locations, working as one team to create and deliver the optimum solution for clients. Present in 40 countries, Capgemini reported 2010 global revenues of EUR 8.7 billion and employs over 112,000 people worldwide.

More information about our services, offices and research is available at [www.capgemini.com](http://www.capgemini.com)

For more information about Capgemini's global Aerospace & Defense practice, please contact:

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