Integrated Information Environments

With more than 20 years of experience with the Canadian Department of National Defence as a provider of modelling, simulation, training, and complex systems engineering support solutions, CAE has built an international reputation for engineering excellence with leading-edge airborne and land-based systems and technologies.

At the heart of every modern system is mission-critical software. CAE is a world leader in developing fully integrated performance-based logistics solutions for the evaluation of weapon system requirements using comprehensive and immersive modelling and simulation technologies. CAE works with clients to determine capability requirements, identify the systems necessary to achieve those capabilities, and guides clients through the complex acquisition process to support the operational requirements.

Once in place, CAE has the experience and the technology required to monitor the health and performance of fleets deployed around the world and identify emerging performance degraders and applicable solutions. Services provided include proactive in-service trend monitoring, failure investigations, multi-configuration, multi-site, multi-scenario, and lifetime sparing solutions.

Using CAE’s performance-based logistics solutions, fleet managers are empowered with the up-to-date and relevant information required to make confident, informed decisions on long-term, cost-effective support programs for weapon systems.

Integrated Information Environment

An integrated information environment (IIE) provides the critical data required in any operational situation, from domestic to foreign theatres of operation. CAE’s IIE solutions provide commanders with the required flexibility to adapt their operation and maintenance processes to the ever-changing requirements imposed by real world situations.

System survivability is ensured through built-in redundancy. The system can operate in networked or stand-alone modes, providing the critical functions required to maintain the airworthiness program. The resulting real-time data-rich environments are accessible by other peer and corporate systems, providing total asset visibility 24/7.

System features include:

- Total asset visibility in real-time providing an integrated information environment to commanders, operators, maintainers, fleet managers, logisticians, and contractors
- Airworthiness process continuity
- Integration of first to third line maintenance processes
- “Deploy anywhere” capability
- Scalability and adaptability
- Redundancy feature offering high availability rates
- Process and fault tolerance
- Secure system through role-based access control
Optimized benefits

Optimized weapon system support / performance-based logistics

- Measure, quantify, and increase fleet and system availability
- Identify root causes for system/equipment degradation
- Effectively manage multiple system configurations
- Quantify overall logistics performance
- Improved asset distribution (right spare, right place, right time)
- Perform/improve reliability-centred maintenance
- Optimized preventive maintenance program
- Support obsolescence management
- Identify and recommend process improvement opportunities
- Rapid access to logistics information (total asset visibility)
- Lower total cost of ownership while maintaining operational capability
- Enforce fleet airworthiness process
- Contribute to strategic planning
- Optimize performance using best commercial practices

Integrated logistics support services

Traditional logistic support analysis includes:

- Reliability centered maintenance (RCM) / MSG-3 analysis
- Failure mode effects (criticality) analysis - FME(C)A
- Reliability and maintainability (R&M) studies
- Safety analysis
- Life cycle cost (LCC) analysis
- Level of repair analysis (LORA)
- Sparing analysis (fleet, system, multi-configuration, single-item, lifetime)
- Maintenance task analysis (MTA)
- Impact analysis
- Risk assessment evaluations
- LSAR data loads and reviews/comments
- Independent subject matter expertise

Certifications

CAE’s IIE is certified and accredited to work over defence wide area networks (DWAN). The IIE complies with the Department of National Defence Airworthiness Policy to meet the stringent constraints of military operations, embedding the critical maintenance policies and procedures set out by the Technical Airworthiness Authority.

Technicians and fleet managers can easily adapt to the familiar processes embodied in the tool, reducing training requirements and minimizing operating risks. CAE’s IIE is modular and features an open architecture that allows easy interface (data exchange) with peer systems through the production system (operations critical) or through a dedicated data warehouse (business critical) system. The system can support airborne and ground-based platforms and is scalable and adaptable to any fleet in all operational scenarios.

CAE’s IIE solution ensures the integration of airworthiness and fleet management rules across all operational fleets, providing fleet managers with the performance-based logistics support necessary to meet operational requirements.