CRITICAL Software provides integrated solutions for tactical command systems, helping its customers to achieve military superiority.

Its net-centric warfare framework supports access, management and the sharing of critical information wherever and whenever required. It also provides an effective solution for the integration and control of distributed assets.

As a technical partner for a range of international defence and security organisations, CRITICAL Software aims to develop interoperable information systems for Command and Control. The goal is to streamline the military decision process to support combined and multi-national operations.

CRITICAL Software is also involved in the development of next-generation Mission Support Systems, including pre-flight mission planning/briefing, during-flight tactical communications and post-flight debriefing capabilities.

One approach to facing these challenges focuses on Integrated Logistics Support (ILS) services and systems. CRITICAL Software is a natural partner for some of the world’s leading OEMs and most demanding MoDs, due to its recognised expertise in the development of state-of-the-art systems for:
- Health & Usage Monitoring
- Structural Health & Monitoring
- Maintenance Management
- Fleet Management

Since 2004, CRITICAL Software has been providing turnkey logistics support information tools, integrated either in existing logistic chains or end-to-end ILS solutions.

INTEGRATED LOGISTICS SUPPORT

The recent economic crisis has increased the pressure on agencies and organisations to reduce defence and security-related expenditure. At the same time, threats are increasing and operational and serviceability requirements must be maximised. A significant part of defence and security expenditure is related to operations and maintenance costs.

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INTEGRATED LOGISTICS AND OPERATIONS SOLUTIONS DESIGNED TO EFFICIENTLY AND EFFECTIVELY HELP DEFENCE AND SECURITY FORCES TO MEET FUTURE CHALLENGES.

COMMAND AND CONTROL

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BATTLEFIELD MANAGEMENT SYSTEM

- Cognitive Routable Ad-hoc Network
- Cognitive Data Exchange Mechanism
- Standard NATO Friendly Forces Information (NFFI) gateway
- Designed for low-level echelons
- Compliant with the Multilateral Interoperability Programme (MIP) specification
- Supports dynamic network assembly
CRITICAL Software’s simulation products and services create more efficient land-based training solutions, aimed at maximising the professional proficiency of military personnel and their operational readiness.

CRITICAL Software uses COTS-based open systems, easy to maintain and develop, to design complete systems that make training quicker and more efficient, maximising professional proficiency and operational readiness.

Replacing obsolete legacy systems with CRITICAL Software’s COTS-based solutions reduces dependency on proprietary suppliers, lowering operational and maintenance costs.

CRITICAL Software’s expertise lies in the provision of Instructor Operating Stations, Combat Team Trainers and Complex Tactical Trainers.

CRITICAL Software provides solutions to support business processes in the maritime sector. CRITICAL Software co-operates closely with maritime professionals to enable private and governmental organisations to effectively and efficiently meet their safety, security and environmental protection responsibilities. CRITICAL Software offers:

- Improved situational awareness
- Risk anticipation
- Improved response levels
- Cost optimisation
- Better co-ordination
- Improved inter-agency co-operation
- Efficiency and effectiveness monitoring

CRITICAL Software’s aim is to deliver fully-integrated mission-specific applications and the integration of standalone services into existing legacy systems.

**TRAINING SYSTEMS**

**MARITIME SOLUTIONS**

**WES WARSHIP ENVIRONMENT SIMULATION**

- COTS-based solution to replace current inoperable systems
- Enables joint training simulation in real-time, through the link 11 network
- Allows the simulator to be fed with logged data from the real system

**OVERSEE**

**SEARCH & RESCUE:**
- Maritime Situational Awareness
- Incident Response Decision Support
- Secure and Reliable Inter-Agency Data Exchange
- Mission Effectiveness

**SEA LAW ENFORCEMENT:**
- Inspection Planning
- Operations Management

**ENVIRONMENTAL MONITORING:**
- Marine Environment Parameters
- Pollution Prevention
- Response and Decision Support
CRITICAL SOFTWARE’S COMPETENCES

SAFETY-CRITICAL DEVELOPMENT
CRITICAL Software’s Embedded and Real-Time Engineering team offers vast experience in real-time operational systems providing maintenance and support for third-party open-source RTOS, such as for RTEMS and CRITICAL Software’s own XLuna Operating System, currently running on the Mars Rover.

CRITICAL Software’s engineering team has an impressive body of knowledge in business-specific standards such as DO-178C, ECSS, IEC 61508, MISRA and EN 50128.

VERIFICATION & VALIDATION
CRITICAL Software has provided professional engineering dependability, safety and independent verification and validation (IVV) services in the field of high-integrity systems for over ten years.

CRITICAL Software’s services are based on international standards, such as IEC 61508 for functional safety in industry, RTCA/DO-178C/DO-25A/DO-200A for airborne systems, CENELEC EN 50126/50128/50129 for railway systems, ECSS standards for space systems, ISO 26262 for automotive systems and IEC 62304 for medical devices. CRITICAL Software’s experience in methodologies, techniques and tools used during system and software lifecycles includes V&V, RAMS Analysis and Certification and Qualification Support.

EARTH OBSERVATION
CRITICAL Software provides end-user services using data from Earth Observation (EO), Navigation and Telecom satellites. These services include information management and GIS software application development, combining space-based products with in situ ground and airborne information.

CRITICAL Software has been an EO value-added provider since 2001, delivering EO data extraction and integration services. The Space Services and EO sectors include emergencies (risk prevention, occurrence detection and damage assessment) and land management (land use/land cover, forestry, mining and water-mapping).

SYSTEMS INTEGRATION
CRITICAL Software’s Systems Integration Services can successfully address industry-specific problems and challenges, with scalable and robust solutions tailored to each organisation’s unique needs. From strategic IT planning to implementing the most advanced cost-effective technologies, CRITICAL Software’s professionals have worked closely with clients worldwide, understanding their goals and delivering high-quality solutions to best achieve their business transformation processes.

ABOUT CRITICAL SOFTWARE
Since 1998, CRITICAL Software has developed the capabilities to deliver high-integrity systems for safety and mission-critical solutions. These capabilities were built to meet demanding international standards and provide services for customers in areas related to the Aerospace, Space, Defence and, most recently, Railway sectors. The opportunity to work on applications in different domains, all with high levels of dependability, allows CRITICAL Software to leverage its knowledge and experience across different markets, something its customers recognise as a strong competitive advantage. CRITICAL Software’s capabilities originated from both safety-critical development and safety-critical validation projects. In recent years, CRITICAL Software has worked on system analysis, design, validation and certification support, acting as an independent safety, RAM and validation group.