

Calian Space Operations Training Program

Training Excellence for Space Operations

Calian delivers immersive, scalable and interoperable training solutions for defence clients, including NATO and the Canadian Armed Forces. These capabilities are now adapted for space operations, addressing satellite constellation management, anomaly response, mission planning, launch and early operations (LEOP), space situational awareness (SSA), and cyber-resilience.

Training Architecture Overview

Space Operations Training:

- Mission control simulation (MCS) including operations of bus and payloads
- Orbital dynamics and conjunction analysis training
- Anomaly response exercises using Intelligent Telemetry Monitoring (ITM)
- Constellation planning and reconfiguration scenarios
- Cybersecurity threat simulation for ground and space assets

Defence Model Foundations:

- Virtual Command and Control Interface (VCCI)
- Synthetic training environments (STE)
- AR/VR/MR/XR immersive learning
- Scenario-based wargaming
- System interoperability (C4ISR, STANAG 4609)

Training Modalities

Modality	Space Training Scenarios
Individual training	Operator proficiency, front-line applications
Collective training	Multi-satellite coordination, end-to-end workflow
Leadership training	Mission management & critical decision-making
Mobile delivery	Remote ground station training, mobile ops centres
AR/VR/MR	4D situational awareness of mission designs, LEOP deployments, satellite anomalies

Scenario Development for Space

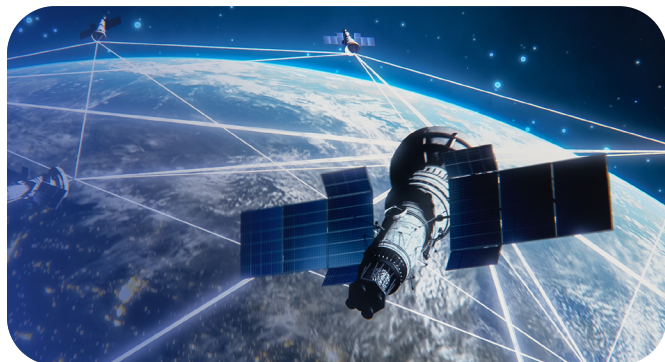
- **Synthetic orbital environment:** Simulate LEO/MEO/GEO constellations with real-time and historical telemetry feeds.
- **Mission-specific use cases:** Practice scenarios in satellite communications, Earth observation, space situational awareness and more.
- **Anomalous simulation:** Include cyberattacks, space weather events, ground or space anomalies and adversarial actions.
- **Decision support:** Integrate Calian tools for automated planning and orchestration.
- **After-action review (AAR):** Evaluate operator decisions, mission chain-of-command, system responses and mission outcomes.

Technology Integration

- **Simulation systems:** ABACUS, VR Forces, JTLS-GO adapted for orbital mechanics.
- **Image generators:** VBS for visualizing satellite behaviour and anomalies.
- **System interoperability:** Unified training platform leveraging Calian-built and customer-specific tools.
- **Learning analytics:** Measure performance, identify gaps and optimize training paths.

Multi-Level Training for Space

- **EXCON SME support:** For large multi-partner space exercises.
- **Scenario development:** For space operations involving multiple stakeholders.
- **Key leader training:** For flight directors, mission directors and satellite fleet managers.
- **Functional SME training:** For telemetry analysts, planners and devops engineers.



Scalable Delivery

- Recurring proficiency training
- Delivered across Canada and Europe via:
 - Simulation centres
 - Mobile platforms
 - Virtual classrooms
- Training available in multiple languages

Customer Consultations

- Mission design
- Infrastructure design and integration
- Operations applications
- Concept of operations

Why Calian for Space Training?

- **Immersive learning:** Realistic simulations improve retention and readiness.
- **Operational relevance:** Training aligned with operationally proven workflows.
- **Scalable delivery:** From domain-expertise onboarding to coordinated group rehearsals, and from single satellites to large constellations, we support missions of every scale.
- **Proven expertise:** Trusted by NATO, the Canadian Armed Forces (CAF) and commercial defence and space clients.

Explore Calian's Space Training Program

Calian is pioneering innovation and expansion in the space sector.

For more information, visit calian.com/advanced-technologies/space/space-operations
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For over 40 years, Calian has delivered mission-critical solutions when failure is not an option. Trusted worldwide, we empower organizations in critical industries to overcome obstacles, manage risks and drive progress. By combining the expertise of our people, proven industry insight, cutting-edge technology, bold innovation and global reach, we deliver tailored solutions that solve complex challenges. Headquartered in Ottawa, Canada, with over 5,000 people around the world, Calian's solutions protect lives, strengthen security, foster global connectivity and drive economic progress, making a lasting impact where and when it matters most.

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