

IRON GALAXY SPACE CYBER RANGE

A realistic satellite and ground-segment
cyber range for red teams, blue teams, purple teams,
and mission operators



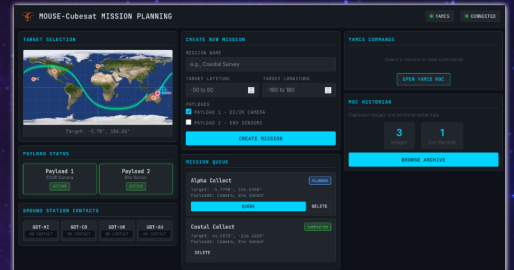
Realistic Satellite Operations Environment

- Dual-satellite mission architecture (LEO+MEO) with authentic mission workflows
- Ground stations, spacecraft, and operations modeled end-to-end



Mission Control & Planning Network

- Mission planning app driving automated command execution
- Parallel mission control stacks, YAMCS and COSMOS, ground segment routing



Red + Blue Team Operations and Observable Mission Impact

- Red teams emulate adversaries targeting mission execution paths
- Blue teams detect, analyze, and respond across the ground segment

Engagement Options

- Range License: Standalone cyber range for internal training
- Customization: Mission profiles, attack scenarios, training modules



IRON GALAXY SPACE CYBER RANGE

Technical Specifications - Proxmox Hosted Environment

Built for your missions and your threats

Ground Segment Architecture

- Core services: Yamcs + COSMOS, mission planning, historian/archive, payload backup services (MOC ↔ 4 geographically dispersed ground sites)
- 4X Ground Data Terminals (GDT): Open Source SE Linux
- Realistic CCSDS Space Packet Protocol for telemetry and telecommand
- Blue Team: Security Onion monitoring for detection and response
- Red Team: Kali Linux adversary platform to conduct recon and impact satops
- Customization: integrate your tools and workflows, expand the range environment

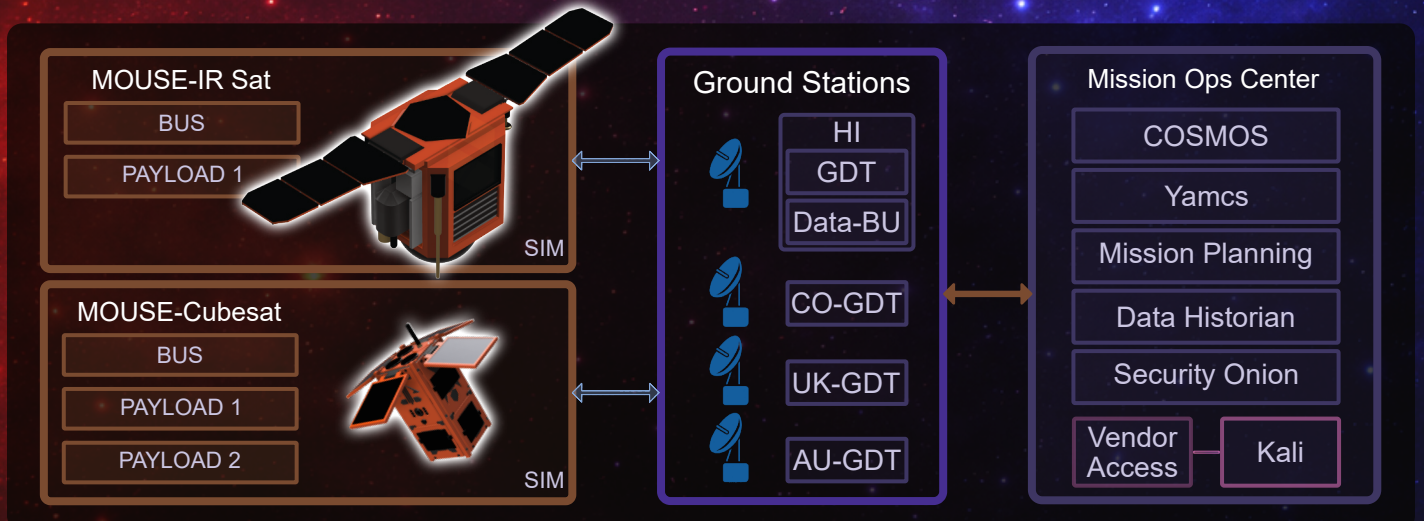


Mission Data Flows: Command, Telemetry, and Routing

- End-to-end flows: planning → command uplink → ground terminal routing/queuing contact logic → spacecraft state → telemetry/UI → downlink → payload archive
- Shows how TC/TM paths can be targeted (spoofing, disruption, integrity attacks)
- Highlights realistic behaviors: contact-based routing, parallel mission control paths, and operator-visible effects

Red + Blue Team Scenarios

- Red: attack mission apps, ground station links, routing logic, and services
- Blue: secure the network to protect commands, links, and mission outputs



Licenses: AGPLv3 - Proxmox VE, YAMCS, COSMOS / ELV2 - Security Onion