

System Architecture. Deterministic Validation. Protocol Design.

System Engineering SME with four decades in mission-critical environments where system behavior, safety, and verification must be controlled and auditable.

OPERATING SINCE

1986

CORE CONTEXT

Mission-critical systems, verification, safety, controlled operations

POSITIONING

Background shaped by systems where outputs cannot be assumed correct.

OPERATING ENVIRONMENTS

Where the work was formed.

Human-rated spaceflight systems, NASA program environments, hazard-controlled operations, verification-driven programs, and multi-organization technical integration.

CORE SYSTEM FUNCTIONS

What the work required.

- System safety, hazard analysis, and fault tree analysis
- Verification and validation
- Requirements traceability and compliance support
- Operational procedure development
- Mission control support and live operational communication
- Cross-organizational systems integration

Selected experience elevated for signal, not volume.

SPACEHAB - Astronaut Training, Procedure Validation, and Mission Operations

Developed and executed astronaut training, operational procedures, and real-time mission support for SPACEHAB payload operations aboard the Space Shuttle.

- Trained astronauts on individual experiment operations
- Conducted full mission-timeline walkthroughs, simulating each mission day end-to-end
- Iterated and refined Flight Data File procedures through training cycles prior to flight
- Supported final pre-flight updates and procedure integration at Kennedy Space Center
- Provided live mission support from Johnson Space Center Mission Control with direct crew communication during operational timelines

System Safety & Verification - NASA / HLS Programs

Served in System Safety SME roles supporting human-rated spaceflight efforts, including hazard analysis, fault tree evaluation, safety compliance assessment, and participation in review-board environments tied to high-consequence technical systems.

Verification & Integration - SLS and Shuttle Program Environments

Supported verification compliance, requirements validation, operational readiness, and technical integration across complex aerospace programs where traceability, correctness, and controlled execution matter.

System Operating Principle

Background shaped by systems where outputs cannot be assumed correct - they must be verified, constrained, and controlled. If a result cannot be validated, it is not allowed to pass.