

A futuristic space-themed banner for the Space Safety Institute. The background is a deep blue space with stars, a large full moon in the upper right, and a view of Earth's horizon on the left. A satellite with solar panels is in the upper left, and a rocket is launching on the right. In the lower left, there's a ground station with a large parabolic dish and several antennas. The text is centered and framed by blue and orange lines.

SPACE SAFETY INSTITUTE

ADVANCING SAFER, MORE SUSTAINABLE SPACE OPERATIONS

INDEPENDENT TECHNICAL SUPPORT, RESEARCH AND COLLABORATION

SITUATIONAL
AWARENESS

OPERATIONS
ASSURANCE

LAUNCH AND
REENTRY

CYBERSECURITY
AND SPECTRUM

HUMAN
SPACEFLIGHT

CISLUNAR
SPACE

WHAT IS THE SPACE SAFETY INSTITUTE?

AN INDEPENDENT FRAMEWORK FOR SAFER SPACE ACTIVITIES



THE AEROSPACE CORPORATION ESTABLISHED THE SPACE SAFETY INSTITUTE IN 2021 TO PROVIDE **INDEPENDENT TECHNICAL SUPPORT AND ASSESSMENTS** FOR GOVERNMENT, COMMERCIAL, AND INTERNATIONAL CUSTOMERS.



INDEPENDENT TECHNICAL SUPPORT

OBJECTIVE ANALYSIS AND TRUSTED EXPERTISE



SAFETY RESEARCH

ADVANCING KNOWLEDGE TO REDUCE RISKS



SPACE SAFETY INSTITUTE



INFORMATION SHARING

FACILITATING COLLABORATION ACROSS THE SPACE COMMUNITY



EDUCATION AND TRAINING

BUILDING CAPACITY FOR SAFER SPACE OPERATIONS



MISSION: ADVANCING SPACE SAFETY THROUGH INNOVATION AND COLLABORATION.



COVERS LAUNCH



OPERATIONS



REENTRY



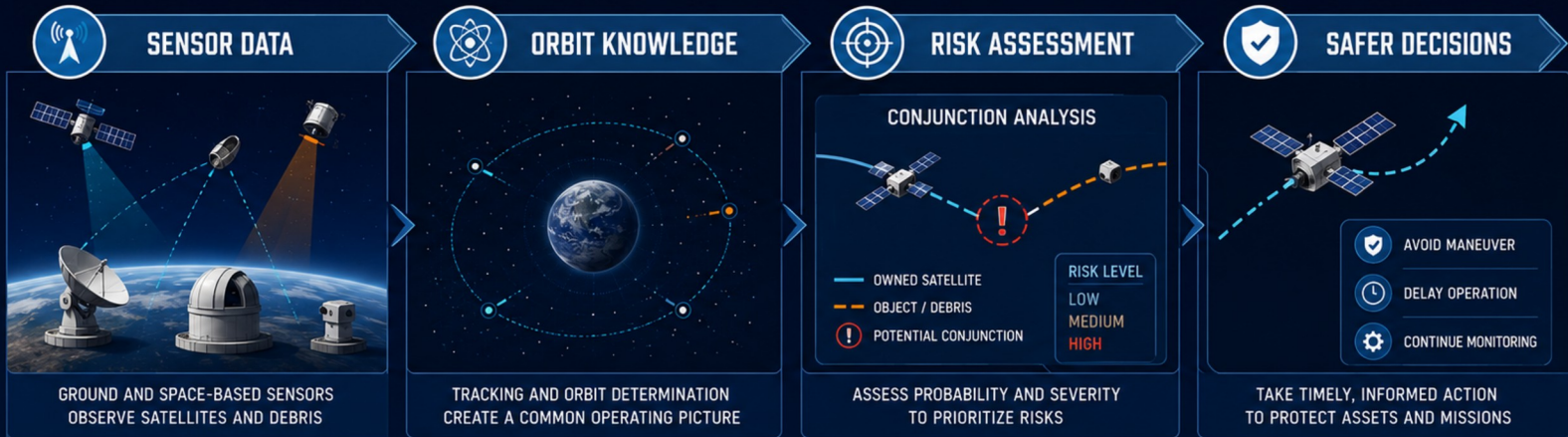
CYBERSECURITY



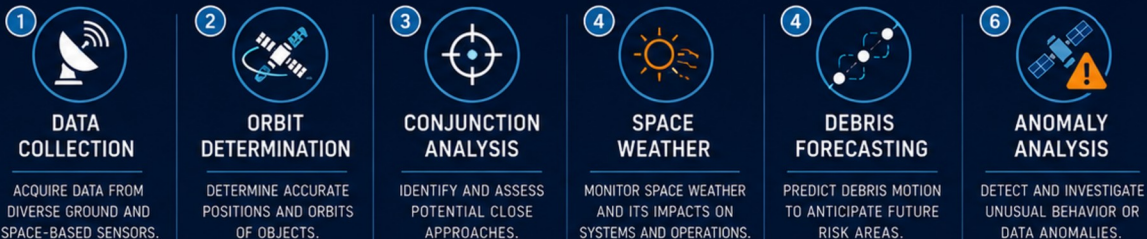
SPECTRUM

HOW DOES SPACE SITUATIONAL AWARENESS PROTECT OPERATIONS?

TURNING OBSERVATIONS INTO SAFER ORBITAL DECISIONS



CORE SSA CAPABILITIES



BETTER KNOWLEDGE OF THE SPACE ENVIRONMENT SUPPORTS TIMELY, INFORMED ACTION.

HOW ARE SPACE OPERATIONS MADE SAFER?

ASSURANCE PRACTICES FOR SUSTAINABLE ORBITAL ACTIVITY



TECHNICAL FEASIBILITY
AND COST-BENEFIT
ANALYSIS INFORM
SAFETY DECISIONS.



HOW DOES SPACEFLIGHT SAFETY COVER LAUNCH AND REENTRY?

RISK MANAGEMENT FROM LIFTOFF THROUGH ATMOSPHERIC RETURN.



KEY SAFETY TOPICS



HOW ARE SPACE SYSTEMS PROTECTED FROM CYBER AND SPECTRUM RISKS?

SECURING THE LINKS THAT CONNECT GROUND, SPACE AND MISSIONS.

SPACE-TO-SPACE
ENCRYPTED INTER-SATELLITE LINKS
MULTI-ORBIT COMMUNICATIONS

GROUND-TO-SPACE
SECURE UPLINKS & DOWNLINKS
AUTHENTICATED COMMANDS

SPECTRUM MANAGEMENT
COORDINATED FREQUENCIES
INTERFERENCE MONITORING

GROUND NETWORKS
MISSION CONTROL & OPERATIONS
REDUNDANT INFRASTRUCTURE

SPACE-TO-SPACE LINK

SPECTRUM LAYERS

MISSION CONTROL CENTER

SECURITY STANDARDS



ENCRYPTION



AUTHENTICATION



INTEGRITY



THREAT DETECTION

QUANTUM KEY DISTRIBUTION



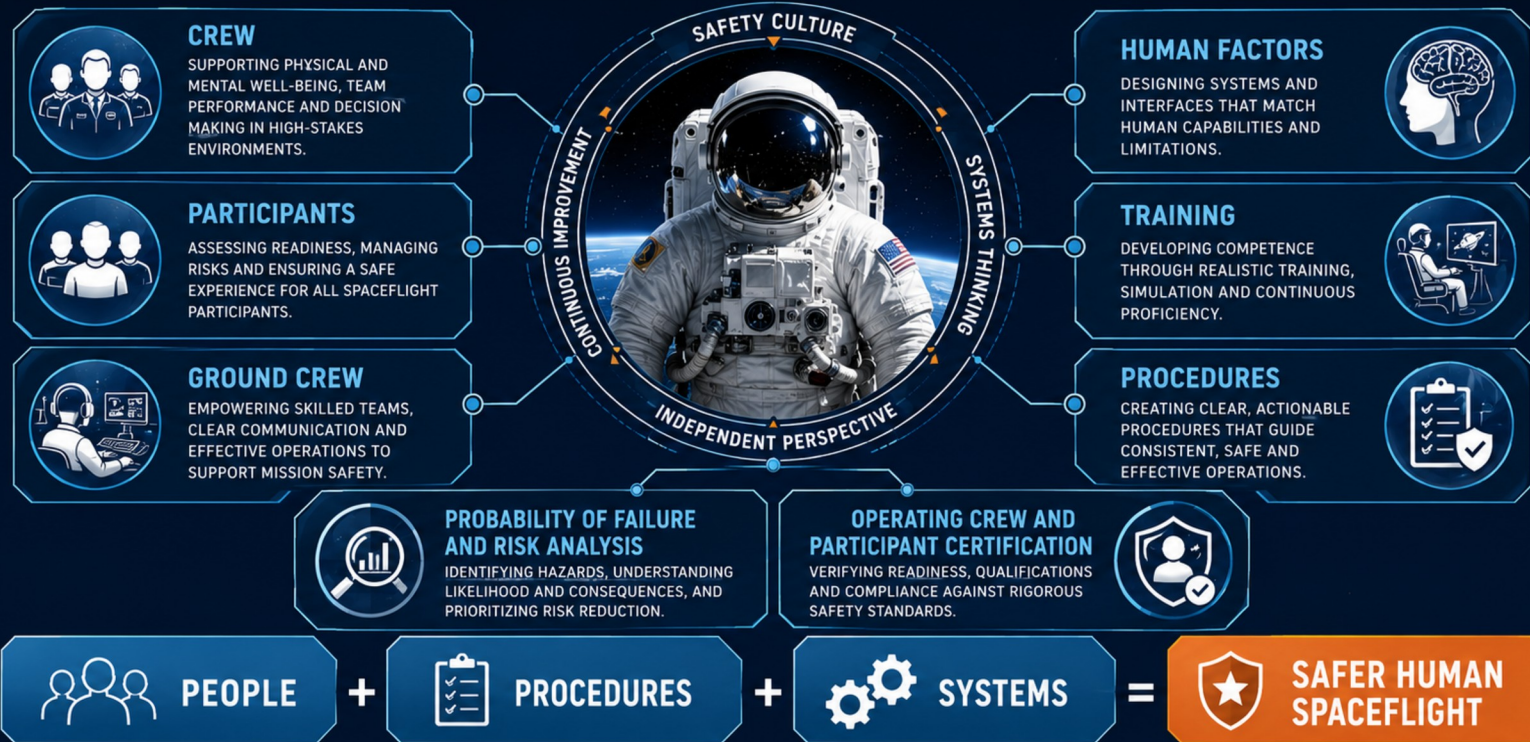
SPECTRUM MANAGEMENT



SPACE SAFETY DEPENDS ON BOTH PHYSICAL SYSTEMS
AND TRUSTWORTHY COMMUNICATIONS.

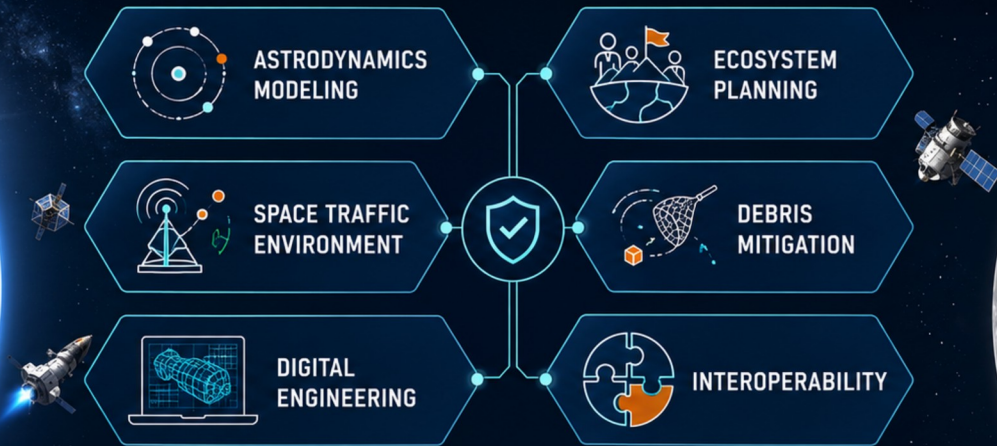
HOW DOES THE SPACE SAFETY INSTITUTE SUPPORT HUMAN SPACEFLIGHT?

INTEGRATING PEOPLE, PROCEDURES AND RISK ANALYSIS



HOW CAN CISLUNAR SPACE REMAIN SAFE AND SUSTAINABLE?

BUILDING THE SAFETY FRAMEWORK FOR EARTH-MOON ACTIVITY



**SAFE AND SUSTAINABLE ACTIVITY
AROUND THE MOON **REQUIRES SHARED PLANNING.****

WHEN DOES SPACE SAFETY BEGIN?

A LIFECYCLE APPROACH FROM DESIGN TO REENTRY.



SAFETY IS ADDRESSED ACROSS ALL MISSION PHASES.

WHY DO **COLLABORATION AND STANDARDS** MATTER IN SPACE?

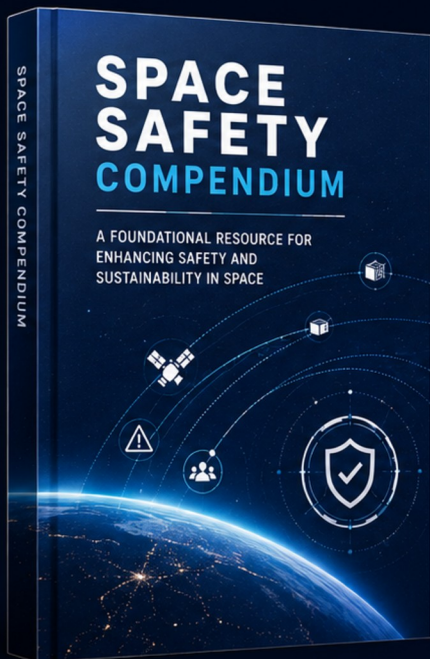
SHARED KNOWLEDGE SUPPORTS SAFER, MORE SUSTAINABLE OPERATIONS.



COORDINATION HELPS TURN TECHNICAL KNOWLEDGE INTO **CONSISTENT SAFETY PRACTICE**.

WHAT DOES THE SPACE SAFETY COMPENDIUM CONTRIBUTE?

RESEARCH, PRIORITIES AND RECOMMENDATIONS FOR SUSTAINABLE SPACE OPERATIONS



A FOCUS ON PRIORITY ISSUES



IDENTIFY
PRIORITY ISSUES



ASSESS
RISKS



DEVELOP
RECOMMENDATIONS



SUPPORT
FUTURE
SUSTAINABILITY



COMMERCIAL HUMAN SPACEFLIGHT SAFETY

A ROADMAP TO SAFER OPERATIONS



CURRENT PRACTICE

BUILDING ON EXISTING
STANDARDS, EXPERIENCE
AND LESSONS LEARNED



REFINE
APPROACHES



ADDRESS
GAPS



STRENGTHEN
COLLABORATION



FUTURE-READY SAFETY

ADVANCING TOWARD
RESILIENT, ADAPTIVE
AND SUSTAINABLE
OPERATIONS



THE SPACE SAFETY INSTITUTE USES RESEARCH AND
TECHNICAL EXPERTISE TO INFORM SAFETY RECOMMENDATIONS.

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