



SAFETY MANAGEMENT AND CYBERSECURITY FOR RAIL AND TRANSIT

The increased adoption of advanced systems in rail and transit is enabling unprecedented advancements in real-time data collection, monitoring, and analytics. This, in turn, is driving improvements in efficiency, safety and security. Yet these systems also introduce new risks.

MITRE's safety management and cybersecurity capabilities help organizations reach the next level of safety while managing the risks of new technologies.

Safety Management

MITRE's safety experts, working alongside both government and industry, have been integral to the development of [safety management practices](#) and systems for decades - including today's current Safety Management System. We are constantly researching and tracking leading practices to ensure the industry has access to the latest ideas and innovations. We offer an understanding that comes from long experience in industries with strong safety missions including: aviation, rail, automotive, and healthcare.

MITRE has enhanced ground transportation safety in the following ways:

- Introduced a [safety culture](#) maturity metric among rail and transit operators to inform improvement actions and track culture change
- Developed an [SMS implementation](#) roadmap to support safe operations and inform investment priorities
- Created a [data taxonomy](#) to standardize interpretation of hazards
- Defined effective governance for [employee safety reporting programs](#)

We work with organizations on:

- Setting up an effective SMS program
- Enhancing safety performance organization-wide
- Engaging employees to advance safety through voluntary safety reporting
- Transforming safety culture
- Improving SMS effectiveness
- Collaborating to achieve system safety

"With our world of transportation becoming more complex and dynamic, safety needs to evolve to proactively identify hazards before they manifest into accidents."

Traditional safety practices, such as spot checking and ad-hoc coordination, must be augmented by new approaches to ensure public safety in this rapidly changing environment."

Greg Tennille
Managing Director of Transportation Safety
MITRE

MITRE

**SOLVING PROBLEMS
FOR A SAFER WORLD®**



Cybersecurity: Identify, Protect, Detect, Respond, and Recover.

For over 50 years, government agencies and operators have relied on MITRE's expertise and tools to support their full life-cycle cybersecurity needs. We give cyber defenders vital information to thwart network intruders, build resiliency against future attacks, and develop assurance to overcome possible vulnerabilities.

Our expertise includes:

- Cyber strategy, planning, and design
- Enterprise security and Cloud
- Cyber assessment and automation
- Cyber threat intelligence
- Insider threat risks
- Cyber deception and Adversary engagement
- Privacy operationalization
- Resiliency of cyber resources
- Cyber Physical Systems and Operational Technologies at scale
- Defensive cyber operations

Today, MITRE operates the nation's first and only [federally-funded research and development center](#) (FFRDC) dedicated to cybersecurity and the advancement of secure technologies. Our standards and innovative tools have become internationally recognized among the cybersecurity community - among them: [ATT&CK®](#), [Engage™](#), [D3FEND™](#), and [CALDERA™](#). Our work with the transportation industry has included:

- Cyber Physical Systems and Operational Technologies (CPS/OT) vulnerability, risk assessment, and mitigation strategies for the maritime (ports), rail, and pipeline industries.
- Analyzing the vulnerability of targeted railroad industrial control systems. We introduced "Intelligent Transportation Systems control sets" to record protection needs for cybersecurity standards and guidance gaps.
- Providing a national-level, risk-based approach for managing cybersecurity activities for "[Electric Vehicle Extreme Fast Charging Infrastructure](#)."

Learn more

To learn more about how MITRE can help you strengthen your safety management and cybersecurity systems, contact transportation@mitre.org

ABOUT MITRE

MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through public-private industry partnerships and six federally funded research and development centers (FFRDCs) that we operate, we work across government to tackle challenges to the safety, stability, and well-being of our nation.

[Learn more about who we are](#)

ABOUT TRANSPORTATION

At MITRE, we're supporting advances in aviation and ground transportation domains, while providing innovative solutions and expertise to address the challenges that accompany them. For over 60 years, MITRE has been a critical mission partner for the U.S. Federal Aviation Administration (FAA) and today operates the Center for Advanced Aviation System Development (CAASD) on behalf of its FAA sponsor.

[Visit the Center for Integrated Transportation](#)

ABOUT CYBERSECURITY

Since 2014, MITRE has operated the National Cybersecurity FFRDC sponsored by the National Institute of Standards and Technology (NIST). We are at the forefront of cyber defense and serve as a trusted adviser across government and with other partners, as we have for decades.

MITRE draws from a wealth of deep technical expertise to create innovative solutions that address the ever-evolving challenges in cybersecurity. We advocate a multi-faceted, interactive approach—which, in turn, broadens our impact through the power of collaboration.

[Visit the National Cybersecurity FFRDC](#)

