

Using Deeper Insights to Improve the Safety for the Railroad Industry

Challenge

To address and improve rail safety by reducing hazards and failures in emergency situations.

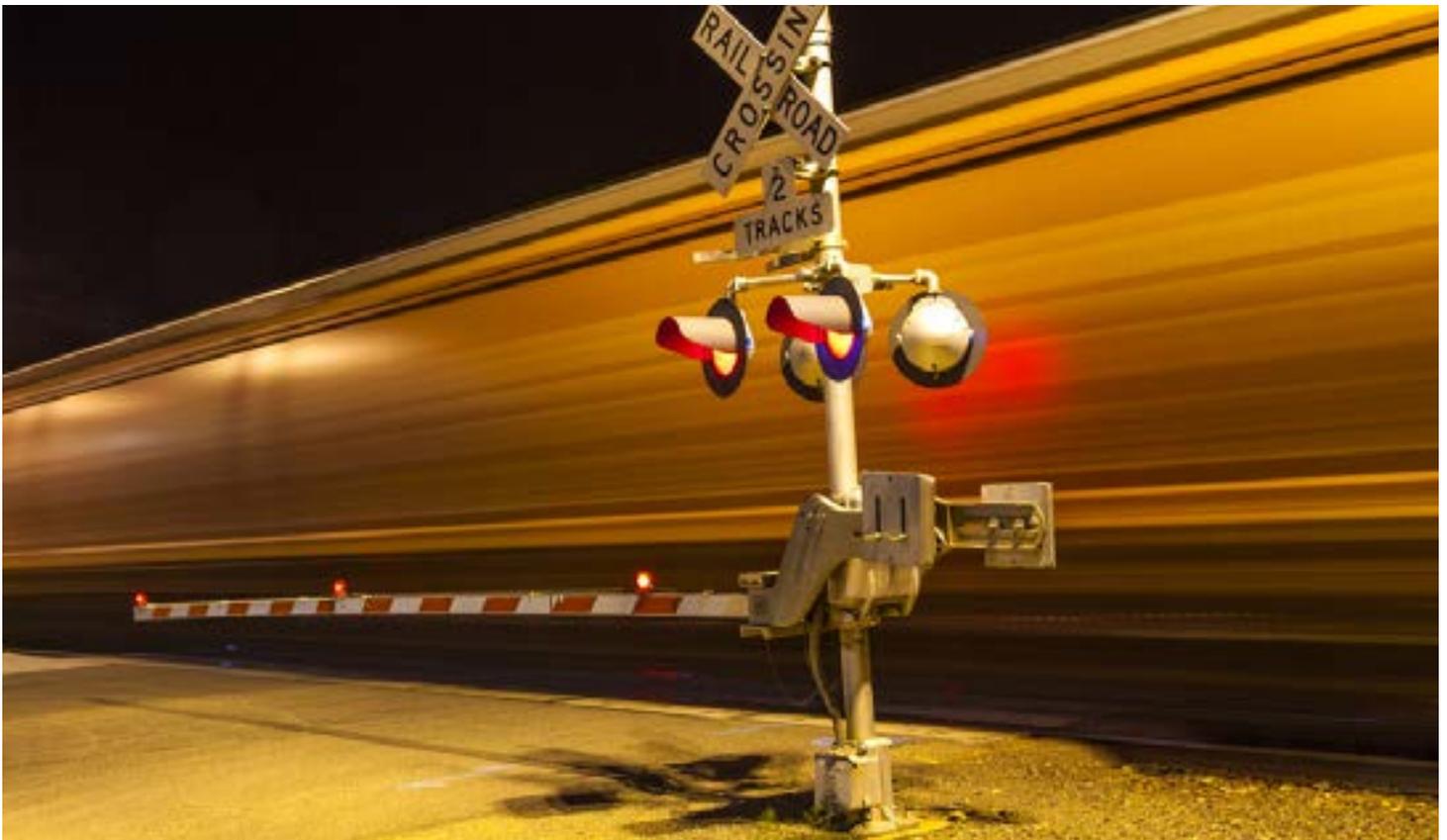
Solution

Engineering design reviews and rigorous reliability analyses to ensure effective integration and operation of Positive Train Control (PTC).

Results

Increased performance and minimized risks; decreased the probability of catastrophic hazards to make rail transportation safer and more reliable.

Prenscia Solutions partnered with a rail manufacturing client to perform rigorous analyses that identified potential component and system failure modes and severity for troubleshooting. The analyses additionally highlighted consequences and where fail-safe features are needed – providing invaluable answers to improve train safety issues.



nCode

ReliaSoft

Onnicon

The Challenge

Train engineers need their equipment to be responsive, reactive and aware of failures. Capacity challenges, as well as the need to maintain aging cars and infrastructure, are increasing the need to avoid potential hazards and increase safety.

Positive Train Control (PTC) system architecture design, integration, and implementation are large and costly tasks. All parts and systems must meet reliability and safety requirements mandated by manufacturers and districts.



The Solution

We partnered with our client to perform Failure Modes and Effects analyses combined with criticality analyses to identify potential component failure modes and consequence severity – highlighting where fail-safe features were required.

The Fault Tree Analysis identified ways individual and groups of components could fail with unacceptable consequences and provided troubleshooting information. Functional Hazard Analysis identified system functions and evaluated consequences and severity of possible failures.

The Results

Reliability analyses provided ways to continuously improve the design and implementation of future technology.

By performing comprehensive design reviews and applying our deeper knowledge of developing safety-critical systems, we help ensure PTC is implemented with the highest degree of reliability and that integration meets federally mandated initiatives for its implementation across more than 70,000 miles of track nationwide.



About HBM Prencsia Solutions

HBM Prencsia Solutions ensures customer success through value-driven solutions for product and process development, and operational monitoring. We are a multi-disciplinary team with expertise in failure analysis; predictive analytics and modeling for reliability, durability, and deterioration; asset health and usage monitoring; prognostics; development and testing of embedded software and electronics to deliver robust solutions to our global clients. Our team of engineers, analysts, software developers, data scientists, and program managers, many holding United States Government security clearance, are readily available to provide technical expertise and deliver value-driven solutions. For more information, please visit www.hbmprencsia.com/solutions