The Company
Formed in 1998 as a wholly-owned, subsidiary of the Association of American Railroads (AAR). Headquartered at the U.S. Federal Railroad Administration’s (FRA) Transportation Technology Center (TTC) in Pueblo, Colorado, USA.

Our Mission
To provide our customers highly effective and efficient railway research, consulting, testing, system engineering, inspections, training, and technical support for standards in a safe manner, ensuring the highest level of integrity while providing our employees a challenging and sustainable work environment.

Our Vision
To be the provider of choice for advancing railway safety and technology.

Professional Engineering Services
- Full-scale on-track testing
- Specialized laboratory testing
- Communications and train control consulting
- Vehicle/track interaction and train operation modeling
- Railroad operations consulting
- Engineering economics consulting
- Track and infrastructure consulting

TTCI Computer Models (Licensed)
- NUCARS®
- Wheel/Rail Tolerance (WRTOL™)
- Simulation of Train Action to Reduce Cost of Operations (STARCO™)
- Railway Track Life Model (RTLM™)
- GEOTRACK™

Tools
- Developed as outgrowths of cooperative industry research programs
- Designed to provide valuable information to help customers make decisions regarding safety and efficiency

Includes
- Instrumented Wheelsets
- Trackside Acoustic Detection System (TADS®)
- InteRRIS®

Technical Training
- Freight and passenger vehicle dynamics
- Derailment analysis
- Wheel/rail interaction theory
- Communications and train control
- Nondestructive testing
- Heavy axle loads
- Vehicle/train modeling
Security and Emergency Response Training Center (SERTC)

- Full-scale, hands-on training for emergency responders to incidents involving hazardous materials
  - Rail (freight/passenger)
  - Highway (freight/passenger)
  - Intermodal
  - Weapons of mass destruction
  - Tactical HazMat Operations for Surface Transportation Training
- Live exercises at simulated derailment/highway (freight and passenger) incidents
  - OSHA and NFPA Compliant

Specialized Laboratory Testing

- Vibration Test Unit - Full-Scale Suspension
- Simuloader - Full-Scale Fatigue and Loading Dynamics
- Dynamometer
  - Wheel
  - Brake Shoe/Pad
- Side Frame/Bolster Fatigue Test Machine
- Train Air Brake Research Laboratory
- Roller Bearing Test Facility
- Center Plate Test Machine
- Metallurgical Laboratory
- Crosstie Wear Machine
- Rolling Load Machine
  - Rails
  - Welds
  - Insulated Joints

AAR Strategic Research

- Cooperative research for the AAR through the Strategic Research Initiatives (SRI) Program
- Publications on research findings

Full-Scale On-Track Testing

- Over 50 miles of specialized test track
- Track facilities for electric and dual mode high-speed passenger, transit, commuter, and freight testing
- Up to 165 mph (267km/h) on TTCI’s Railroad Test Track
- Accumulates over 1.8 million gross ton-miles per day on its High Tonnage Loop (HTL)
- Type of testing includes
  - Track structure
  - Vehicle performance
  - Specification compliance
  - Track and service worthiness
  - Endurance
  - Component reliability
  - Ride comfort

AAR Technical Services

Develop and maintain industry standards for freight cars and locomotives under direction of AAR

TTCI Technical Standards

- Mechanical Inspection Department (MID)
- Bureau of Explosives (BOE)
- Damage Prevention & Loading Services (DP&LS)
- Coordination for the development of new standards
- Management of the industry’s certification and quality assurance programs
- AAR Publications including Interchange Rules and Manual of Standards and Recommended Practices