

FRA's ATIP – Automated Track Inspection Program (December 2024)

Research to reality

FRA pioneered automated track inspection technology now used by every Class I railroad

ATIP fleet in operation

- 3 Staffed rail-bound geometry platforms
- 2 Autonomous geometry box cars
- 1 Autonomous geometry car in passenger service
- 1 Hi-rail geometry vehicle
- 1 Hi-rail ultrasonic rail test vehicle

FRA has three contractors for ATIP

- Tetra Tech operates one autonomous box car
- ENSCO operates the other vehicles in operation
- Strongbridge manages the data storage and portal

ATIP Operations	2022	2023	2024 (YTD 11/30)
Miles Surveyed	179,442	180,708	188,146
Geo. Exceptions	9,177	8,368	8,452
Safety Critical Exc.	2,108	1,642	2,203

Data collected by ATIP vehicles support:

- Track safety trend analyses
- State of good repair assessments
- Provide data to railroads for targeted repairs and improved maintenance
- GIS mapping
- Risk analyses
- Manual inspection resource allocation
- Foot-by-foot analyses
- Asset inventory
- Research by various departments, agencies, universities
- Machine learning
- Research and development