

# LRAIL TURNOUT INSPECTION MODULE

*Automated turnout and tie inspection at track speed — proven accuracy, zero disruptions.*

The Turnout Inspection Module is designed to automatically inspect critical turnout components condition at track speed without disrupting rail operations. It delivers accurate, repeatable, and geo-referenced results.

## Key Benefits

- High speed inspection at up to 75 mph (120 km/hr)
- Simultaneous multi-component inspection including turnouts (switches and crossings)
- Reduced human risk and lower total inspection costs
- Proven accuracy and repeatability

## Module Capabilities

- Automated inspection of critical turnout components at track speed
- Geo-referenced output for precise location tagging
- Reliable day and night operation
- AI-driven defect detection and automated inspection of components

### Typical measured parameters include:

- Switch throw (flangeway clearance)
- Switch rail lateral attachment
- Blade check gauge
- Vertical clearance
- Guard check gauge
- Guard face gauge
- Flangeway depth

## Output Formats

- **GeoDatabase** (ESRI Shapefiles): GIS-ready files for each inspected component
- **JPEG**: 2D and 3D images (with or without overlays) for visual review
- **CSV**: Customizable reports aligned with business rules to highlight priority areas
- **XML**: Full inspection records including inventory, measurements, and geolocation

## Inspection Coverage

- Switch points
- Frogs (Crossings)
- Guard rails
- Wing rails

Inspection is performed at track speed using the same sensors, delivering repeatable and geo-referenced results.

## Validated Measurement Performance

Accuracy, repeatability & reproducibility for key turnout measurements

- ~2 mm observed accuracy on key turnout measurements
- Repeatability as low as  $\leq 1$  mm
- Reproducibility as low as  $\leq 1$  mm

\*Performance values are based on published validation and customer field demonstrations. Performance is based on field verification of typical track components under normal field conditions. Actual results may vary based on track conditions.

## Contact and Support

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Automated Vision Systems

