AOS Technologies AG

Application Note No. 63

PRODUCT LEAFLET | TECHNICAL SPECS | APPLICATION NOTE

Application

Mass Rapid Transport Track Inspection

☐☐☐☐☐	Industry
☐☐☐☐☐	Research
■■■■■	Transport
☐☐☐☐☐	Defense

Situation

Mass Rapid Transport operators have to balance the costs for inspection and maintenance with the reliability and performance of their system.

Inspecting the extensive track systems for defects and imperfections to determin repair- and maintenance jobs is a must, but inspection costs have to be kept on a minimum. Archiving the inspection data for later reference is also a must.

An automatic inspections system, based on the latest vision technology, answers all requirements in a practical way.

Solution

Each rail or track is monitored with 2 cameras, mounted inside special enclosures for a mounting position in front of the train.
The camera system records with 80 frames per second to provide a complete coverage of the rails/tracks with a vehicle at standard speed. The image sequences are recorded to a non-volatile memory. Its capacity is designed for a 2 hour non stop inspection.
After recording, the image data are analyzed offline to detect defects such as surface cracks or chinks.
Each image is stamped with a GPS position, so the coordinates of the defect are clearly indicated.

Customer benefit

The operator of the Mass Rapid Transport system benefits from advantages like the following:

- Automatic rail/track inspection during normal operations times - anytime.
- No need for special trained personel for 'manual inspection' on dangerous inspection jobs - do the analyzis safely at any time.
- Inspection is done at normal train speed during normal operation times - no need to use special inspection vehicles at slow speed.
- Precise indication of damaged or critical locations - with state of the art GPS position.
- Critical image data can easily be archived for later referencing.
- Reliable operation of the inspection system, based on manufacturers vast experience in industrial- as well as challenging automotive crash test- and defense applications.

Automatic rail inspection for trains and subways

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Close-up image of rail with GPS data of precise position

Position of camera (2 per rail plus illumination)

Your local AOS partner:

Technical specs may change at any time – v0410

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Scope of supply

AOS track inspection system is turnkey-ready and includes the following components:

- AOS PROMON HD control unit
- RAID-hard disk system with a recording capacity of 2 hours
- 2 Camera modules (for each rail - 4 in total)
- Protection housing for camera modules
- AOS PROMON Studio software - easy to operate
- all cables, data interfaces, power supplies etc.

Competitive Advantage

- Automatic rail monitoring system - replace the 'human factor' with state of the art vision technology
- Review and analyse the vision data (image sequences) conveniently and replay them as often as you like
- Archive critical sequences securely on an image data server for later analysis or A/B-comparisons
- Review and compare critical parts of your track system periodically
- Little investment with short payback

Customers

- Train operation authorities
- Train manufacturers
- 3rd party inspection companies for railroad tracks