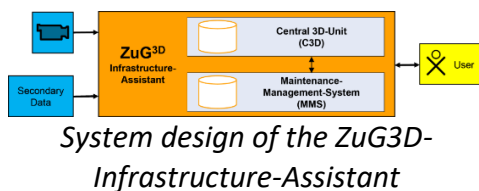


Condition monitoring of track surroundings



Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages

Motivation

Due to the upward tendency towards rail transport automation, there are numerous sensors installed on rail vehicles including video cameras. These may not only be used for obstacle detection on the track but also for monitoring of the track surroundings. Within the research project Condition Monitoring of Track Surroundings, a technology is developed to gain additional information about the condition of the rail infrastructure from video data along the railway route, which is recorded during regular operation. It enables to identify deviations of objects in the track surrounding, which are analysed and classified. Based on this, necessary maintenance actions are automatically generated. This allows for an easier, more objective, more independent and digital process for track surrounding maintenance planning.

Background

Traffic obstruction events

- by environmental causes
- by gradual movement of objects

Maintenance of rail infrastructure

- Predefined inspection periods
- Surroundings monitoring by driver

Research projects on ATO ⇒ GoA 4 in preparation

- on-board Sensors available
- sensors approved for Rail application
- surroundings monitoring needed

Seeked research results

Support to GoA 4 implementation

Support to Condition-Based Maintenance for Infrastructure

Support to internal communication (e. g. work orders, change requests and documentation)

Approach

The project seeks to develop a software-based assistance tool for infrastructure inspection and maintenance, named ZuG^{3D}. This tool covers the entire process chain of a rail infrastructure undertaking from the detection of hazardous objects to the initiation and documentation of maintenance measures. Automation of rail transport allows sensor data, e.g. video information, to be readily available, which can be used not only for obstacle detection, but also for investigation of the track surroundings. Through automatic data processing, any required analysis can be performed objectively and independent from driver's manual feedback.

This project is financed by Innovationsinitiative
mFUND (Modernitätsfonds).