Stationary diagnostic systems

ESAH Mobil

As trains travel across points with rigid crossings, loads are generated which are characteristic for the system state. The ESAH-Mobil (electronic system analysis crossing – mobile) measurement system from DB Systemtechnik uses a multi-axle sensor to determine the condition of railway points. This sensor is easy to fit and supports condition-based maintenance of points.

Your benefits

- Increase of lifetime up to 50%
- Support of:
  - **Inspection:** crossings, weld joints, insulated joints, rail defects
  - **Maintenance and investment:** material and capacity planning
  - **Quality assurance:** acceptance of new crossings, assessment of maintenance work on crossings
- Increased safety during operation thanks to:
  - Timely identification of wear on crossings
  - Avoidance of selective overload of the rail material
  - Determination of changes in axle-guidance in the points
- Prevention of derailments

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Technical Details

- Installation:
  - Rapid installation (< 1 min) and immediate operational readiness
  - Installation site is dependent on running direction
  - Sensor is positioned horizontally and attached at the side of the crossing

- Measurement results, once a train has passed, ESAH-M provides the following results:

  Vertical score: Maximum acceleration pulses of the spatial vector in the vertical plane for all wheelsets.
  Generation of scores based on normalized speeds (1 - very good, 6 - inadequate), freely adaptable depending on maintenance management

  Horizontal score:
  Maximum acceleration pulses of the spatial vector in the horizontal plane for all wheelsets, conclusions can be drawn regarding axle-guidance in the points.

  Point of contact profile:
  Bar chart to illustrate the cumulated points of contact of all wheelsets, when passing in a spatial arrangement.
  Conclusions can be drawn regarding selective overload of the rail material.

  Deflection:
  The system detects, for each wheelset, whether a normal overrun, a striking of the flange against the rail head on the crossing (positive) or on the wing rail (negative) has occured, allowingthe wheel guidance in the track channel to be assessed.

  Direct display of measurement results on the screen and storage of the data in the device for archiving

  Measurement results sent via SMS (integrated GSM module)

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