

## MULTIRAIL® WheelScan



- **Wheel diagnosis for safety check**
- **Acquisition of dynamic forces during travel**
- **Check of all track loads**
- **Weight acquisition at line speed**
- **Installation without foundation/ no rail gaps required**
- **Installation in main and secondary lines**
- **Option: Acoustic and vibration measurement**

### Application

MULTIRAIL WheelScan is designed as an innovative diagnostic system for rail vehicles.

The early recognition of excessive track loads and adequate vehicle maintenance offers enormous saving potentials in track utilization and servicing.

The high-precision MULTIRAIL measuring technology enables the forces between wheel and rail to be acquired quickly and accurately. The results are used to determine location and size of imperfections by single wheels, or complete wagons.

In addition, the wheel, wheelset and wagon weights can be acquired at high speeds for checking purposes.

The diagnostic system safely identifies vehicles which have the potential to damage the track through dynamic forces or overload.

### Equipment

Specially developed for MULTIRAIL, the concrete measuring sleeper is equipped with high-precision strain-gauge measuring sensors. Designed to transmit all forces and moments (caused by track guidance), these measuring sensors measure the vertical force component with a high degree of accuracy.

For the application in question, the MULTIRAIL system is integrated into the rail without any gaps and is thus able to operate in a speed range of 10 km/h ... 250 km/h.

Diagnostic values and associated data are acquired and processed on a PC.

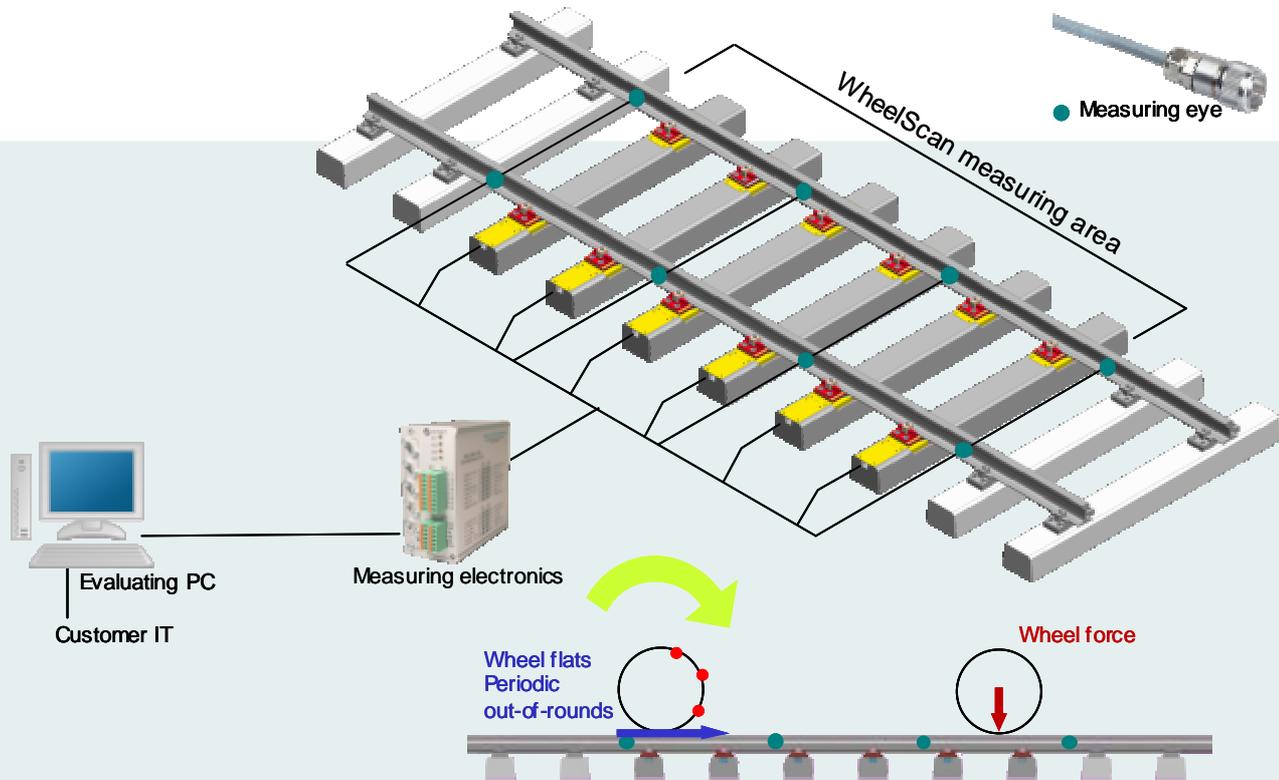
### Function

MULTIRAIL comprises the following basic functions:

- Recognition and localization of peak forces
- Recognition of wagon type
- Storage and printout of diagnostic data
- Display

Optionally, further functions are available:

- Monitoring of wheel, wheelset, and wagon loads
- Side to side check and front/rear check
- Integration into customer IT or ERP system
- Integration of external systems for wagon identification
- Extension module acoustic and vibration measurement (see BVD2411)



### Technical Data

Diagnostic rail profile, track width and sleeper spacing	As used in the existing track section
Diagnostic system length	Typ. approx. 5 m measuring span <sup>*)</sup>
Diagnostics	Peak forces between 5 kN ... 300 kN Operating speed >30 km/h (typ. wheel flats of depth >0.2mm)
Weighing accuracy	Wagon weight: 2 % at 10 km/h ... 60 km/h Train weight: 1 % at 10 km/h ... 60 km/h
Diagnostic speed range	10 km/h ... 250 km/h <sup>*)</sup>
Temperature range	Mechanics: -40 °C ... +70 °C Electronics +5 °C ... +30 °C
Approvals	EBA, DB-AG, Trafikverket, RENFE, TTCI

<sup>\*)</sup> depending on individual application

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