

Title (en)
AUTOMATIC DETECTION OF TRAIN DERAILMENT

Title (de)
AUTOMATISCHE ERKENNUNG EINES ZUGES ENTGLEISUNG

Title (fr)
DÉTECTION AUTOMATIQUE DE DÉRAILLEMENT DE TRAIN

Publication
EP 3395641 A1 20181031 (EN)

Application
EP 18167324 A 20180413

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Abstract (en)
The invention has for object an automatic radio-electro-mechanical system for the detection of the derailment of one or more railway wagons towed by a locomotive, with an alarm signal in the cabin. The system involves the use of 2 electromechanical sensors (load cells) for detecting the tensile stress to the hook (one for each direction of travel of the locomotive), an accelerometer, a GPS module and a module that uses common GSM-R mobile telephone technology specific for railways (Global System for Mobile Communications - Railways). The electro-mechanical sensors are constituted by load cells of the type to bending, tension, or cut, equipped with strain gauges installed preferably according to the electrical diagram of a double full Wheatstone bridge in order to detect the stress at the locomotive traction hook. In the preferred embodiment, the accelerometer detects at least the acceleration on three axes. In the preferred embodiment, the GPS module detects the data according to the NMEA 0183 standard. In the preferred embodiment, the mobile phone module sends and receives data to and from remote via GSM-R commonly used by railways for air transmission and reception. The audio and visual alarm in the cabin is automatically launched by the software following the processing of the data related to the abnormal driving or when a derailment occurs. The system involves the use of an HMI (human machine interface) for the installation and operation of the software.

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Citation (search report)
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