

Focus on IFA's work

Edition 2/2017

617.0-IFA:638.81

Use of smartglasses for safety checks on industrial trucks

Problem

Industrial trucks are used in considerable numbers in a range of sectors. In the warehouse logistics sector in particular, a range of vehicle types are used in a variety of work scenarios. An industrial truck must of course first be subjected to a safety check each time it is used. The safety check is a visual and functional inspection encompassing numerous parts of the vehicle including the electrical system, drive, steering, hydraulics and the driver's cab.

The checks are documented by the vehicle operator and the results forwarded. Should a defect be detected, it is not unusual for the report in analogue form to reach superiors or safety professionals only with a delay.

Activities

In conjunction with the German Social Accident Insurance Institution for the trade and logistics industry, the IFA has developed an app that provides digital support for the safety checks and forwards the documentation to the responsible individuals at the touch of a button. Each documented check bears a time and identity stamp: particular attention is therefore paid to observance of the documentation duties.

One particular feature of the app is its suitability for use on smartglasses (and if need be also on



Example of an industrial truck
(Source: ©Maksym Yemelyanov/Fotolia)

tablets and smartphones). Smartglasses are being adopted particularly rapidly in the area of warehousing. One of their advantages is that they can be used hands-free. Smartglasses (also referred to as data goggles and head-mounted displays, HMDs) interact with users who control them by speech and gestures. Objects and other environmental parameters can be detected by a variety of sensors.

In order for the app to be developed for practical application, its use in the field was observed in selected typical companies. The content and working steps of the analogue safety checks were analysed and digitized.

Results and Application

An Android app was developed that can be adapted to specific circumstances in companies. The sensor capabilities of the smartglasses enable the vehicle concerned to be identified, ideally by means of a smart code that is detected reliably even under unfavourable lighting conditions. A predefined hierarchy of conditions to be tested is called up for each vehicle and displayed in the viewing field of the smartglasses.

If a fault is detected, it can be documented by means of the camera function of the smartglasses and/or by a text message in the app. The information is then forwarded in digital form to a defined group of persons.

The results have been made available to the partners to the project and are intended to serve as a blueprint for improving the safe use of industrial trucks in companies. A new DGUV informative publication will take up and extend the findings.

Area of Application

Safety professionals in the area of warehousing, logistics, etc.; drivers of industrial trucks

Additional Information

- DGUV Vorschrift 68: Unfallverhütungsvorschrift "Flurförderzeuge" (formerly: BGV D27)
- Unternehmer-Handbuch Gabelstapler (HB 50). Published by: Berufsgenossenschaft für Handel und Warenlogistik, 2012

- Unternehmer-Handbuch Mitgänger-Flurförderzeuge (HB 52). Published by: Berufsgenossenschaft für Handel und Warenlogistik, 2011
- BGHW-Kompakt: Umgang mit Flurförderzeugen (M4), 2011
http://bghw.vur.jedermann.de/bghw/docs/bghw_kom/bghw_kom-Documents/b12m004/b12m004_0_.html
- Bretschneider-Hagemes, M.; Ellegast, R. P.; Nickel, P.; Friemert, D.; Hartmann, U.: Forschungsprojekte Arbeiten 4.0: Einsatz von Datenbrillen in der Arbeitswelt. DGUV Forum (2016) No 11, pp. 23-25

Expert Assistance

IFA, Division 1: Information Technology, Risk Management

Literature Requests

IFA, Central Division