STIWA Advanced Products GmbH

Alarming via Smartwatch-App

Abstract

STIWA has developed an Own-Smartwatch-App to improve the interaction between man and machine. Alerting by means of Smartwatch leads to a faster reaction of the machine operator and thus to an increase in system availability.

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Introduction

In order to improve the interaction between man and machine (HMI), the STIWA Group business unit "Manufacturing Software" has developed its own Smartwatch-App in close cooperation with the production site in Gampern, which actively notifies the machine operator in case of malfunctions. The Smartwatch is connected to the company network via WLAN. The app can be used on various mobile devices (e.g. Huawei-, Casio-Smartwatch etc.).

Challenges

At the Gampern site, the subcontracting production division manufactures assemblies from individual parts using joining or laser welding processes on fully automated assembly lines, which are used in the automotive industry. These assembly lines, built by the in-house Automation business unit, contain a large number of production modules. The cycle times of the systems are in the low single-digit second range. In some cases, several lines are operated in a network. The so-called machine operators, who are supported by up to three operators, are responsible for supervising the assembly lines. The system availability or the output of the system is largely dependent on the reaction speed of the machine operator - for example, to ensure material replenishment or to quickly correct any malfunctions that occur. For this purpose, the machine operator has several terminals on the system at his disposal via which he can take the necessary steps. In compound plants with a floor space of up to 240 m², it is not easy task to keep a constant eye on the terminals and thus operate the plants optimally.

> *The use of a Smartwatch app enables rapid response to machine and system malfunctions, thus increasing efficiency.*

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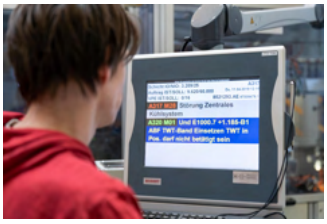
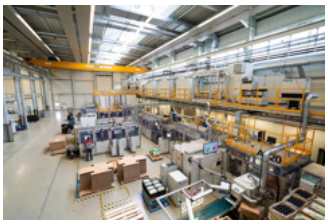
How will solve the problem?

Alarms, messages or advance warnings (e.g. test piece removal) from one or more systems are displayed directly to the employee on the Smartwatch. The data for this comes from the in-house machine control station (AMS ZPoint-CI), processed accordingly by a separate filter. The user is thus able to hide alarms or messages so that only the really relevant information reaches the Smartwatch.

The respective plant thus becomes a bring-it-yourself system and gives the machine operator a quick overview of the pending messages. If a new message is pending, the machine operator is actively notified by means of vibration. If necessary, detailed information about a message can be called up by clicking on the touch display. Once the malfunctions have been rectified, the message is automatically deleted without the need for a separate entry.





Practice shows that alerting by means of Smartwatch leads to a faster reaction of the machine operator and thus to an increase in system availability. The time and travel savings for the respective employee are considerable, as the "machine control station on the wrist" means that he or she can always be in the right place at the right time. At the Gampern production site, 11 Smartwatch devices are currently in use and facilitate the work of colleagues every day.
A particular advantage is the fact that the use of a Smartwatch always leaves both hands free to work. Tests with other end devices could not keep up in this case and did not find acceptance in production. The app can be configured accordingly for the operation of several machines. This reduces the workload of the machine operator, as he does not have to keep an eye on several control stations at the same time. In the future, the alarm solution will be available via the App Store "Google Play".

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About STIWA Group

The STIWA Group is a worldwide leading specialist in the field of high-performance automation. The three strategic business segments comprise automation, production and software. The family-owned company with headquarters in Attnang-Puchheim employs more than 2,000 people in four countries and achieved sales of 267 million euros in the 2018/2019 fiscal year.

With comprehensive know-how in innovative manufacturing technologies (including laser applications), all basic production and assembly as well as the mastered interaction of development, process technology and production, STIWA's supplier production division creates the basis for cost-optimized and high-quality series products and assembly modules.

References

- Reference 1 www.stiwa.com

This showcase has been collected in the framework of the Erasmus+ project Key competences for an European model of Industry 4.0 (pr. n° 2019-1-FR01-KA202-062965), funded by European Commission.