

Success Story

High-Tech für High-Safety

Machines and plants of huge dimensions are not unusual in heavy industry. Hundreds of workers move about such plants, and in case of emergency it is critical to know their exact number and location. In cooperation with the University of Applied Sciences in Hagenberg, SCCH developed a solution for voestalpine that conforms to data privacy regulations.

OVERVIEW

Blast furnaces and rolling mills containing plants and machines that can be hundreds of meters long and up to 80 meters high are not rare at the steel producer voestalpine. Often these plants are subdivided into areas and levels. Many of these areas are perilous during startup or operation. Especially maintenance involves one hundred persons, some outsourced. An orderly sequence of operations under the best possible safety conditions is the responsibility of several central control stations of the industrial facilities, which require up-to-date information about the status of maintenance and the location of persons in the plant.

In case of emergency (e.g., gas emission in a sector) it is extraordinarily important for rescue personnel to know exactly how many persons are where. This requires automatic detection of each individual – with strict upholding of data privacy. This means that the number of employees and their locations are known to the control station, but not their identities. Only in a life-threatening emergency can the control station request permission for an inclusive overview.

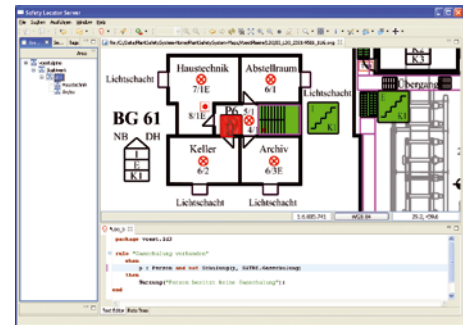
CHALLENGE

Based on these requirements, SCCH developed a Safety Locator in close cooperation with the management and the shop council. The modular system enables easy integration of new sensor technologies as modules. The detailed fire pro-

tection plans of VOEST serve as a solid basis for localization. Persons in the plant carry tags (similar to a pager); sensors locate these at certain intervals and provide this feedback to the system. The control station can precisely monitor how many persons are in a hazardous area. Like the folders on a PC, these areas are listed along with the number of persons. A click provides a floor plan and thus rapid orientation for rescue squads in case of emergency. The precision of the feedback is a question of costs: Each defined area requires one or more sensors; individual departments decide how much precision they require and how many sectors are rated as sensitive danger zones.

THE SOLUTION

Because different hazardous areas have different requirements (outside and inside areas with shielding, steel-concrete walls, etc.), the localization construction kit consists of multiple technologies including Bluetooth, RFID (radio frequency identification), ZigBee (an open wireless standard) and GPS (used in outside areas). A prototype of the system already exists. Plans call for connecting it to various training systems. Because only specially trained personnel have access to hazardous areas, violation by an unauthorized person should set off an alarm. This is of great importance for the safety of everyone.



CONTACT

Dr. Wolfgang Beer
Area Manager Software Engineering
and Technology

Tel.: +43 7236 3343 858

Fax: +43 7236 3343 888

E-Mail: wolfgang.beer@scch.at

Web: <http://www.scch.at>

Software Competence Center
Hagenberg GmbH
Softwarepark 21
4232 Hagenberg