

## Remote-control wake-up for AGV

*Vision E AGV were developed for the flexible production of electric cars. They can be "woken up" extremely quickly from their energy-saving "deep sleep" mode using the sWave.NET® wireless technology.*



Mobile conveyor technology requires new communication structures between production plants and superordinate IT systems. Car manufacturers have opted here for wireless technology.

Several automotive companies are currently trying out a new production system: they have eliminated fixed conveyors and instead build their cars on automated guided vehicles (AGV). The parts required for assembly are collected by additional, smaller AGV and then brought to the mobile assembly point. The companies hope that this production concept will

provide them with greater flexibility because each AGV can drive to many different assembly points, depending on the extras required by the cars in question. The concept is well suited to niche variants, luxury vehicles and electric cars.

Daum & Partner Maschinenbau GmbH (dpm) is an AGV supplier specialised in the automotive industry. It has developed a new

AGV concept especially for the assembly of electric cars called Vision E. The special features of Vision E include "on board" safety technology which, according to dpm, facilitates work around a vehicle and along the production line for the first time. The flow of the production line is not interrupted.

Another special feature: its energy-efficient battery management system. During operational downtimes of up to three weeks, the entire AGV system can be put into "sleep mode", switching off the energy supply completely. This has the benefit that AGV do not have to return to a central charging station, but can remain wherever they are. During this downtime, the only supply of power is to a wireless receiver via a buffer battery. At the push of a button, this receiver can restart the system in next to no time. The individual AGV are restarted via the steute wireless technology sWave.NET®, connecting up to approx. one hundred network-compatible terminal devices via Access Points installed in the production or assembly halls.

### Robust wireless technology

The sWave.NET® wireless technology is a Low-Power Wide Area Network (LPWAN). The low-power functionality guarantees long battery lives of up to ten years. At the same time, transmission reliability is high even in adverse conditions (multiple wireless networks, reflection, etc.). This is

### Info!

At the Logimat 2019 (Hall 5, Booth D 45), steute will be demonstrating different sWave.NET® applications for material flow using a 3D model, including mobile AGV. In addition, the new software functions will be shown within a demonstration environment. dpm (Hall 7, Booth F 05/ A 02) will be showing a Vision E AGV.

made possible by repeat transmission: if transmission to the first Access Point should fail, the second Access Point is addressed, and so on.

In the latest generation of this wireless network, a "Sensor Bridge" assumes the function of a service manager, connecting the data generated on the production side to the customer IT, in this case the dpm fleet manager software. Amongst other things, the Sensor Bridge facilitates adaptation of various wireless network functions to individual dpm requirements. In a next step, the wireless network can also assume additional functions – e.g. management of replenishments for vehicle production. In this case,

stationary or mobile eKanban racks, possibly also installed on AGV, would detect the presence or removal of containers and convey this information to the material flow control unit.

### FACT

The sWave.NET® wireless technology is a Low-Power Wide Area Network. It provides **battery lifetimes** of up to 10 years and **high transmission reliability**, even in adverse conditions.

For such applications, steute is currently developing preconfigurations which can be installed quickly and easy without any extra programming. Different functions have already been included for each of the eKanban systems available to date, for example eKanban for fast-moving

and slow-moving items, rack space query or manual recall. This enables material flow in production, assembly and warehouse to be organised even more flexibly.

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Images: Daum & Partner Maschinenbau GmbH