

Technical article, published in: konstruktionspraxis (3/2026)

The automated material requisition system (AMS) sWave.NET® controls the replenishment of non-inventory-managed materials or components.



Sensors in wireless networks

Making material flow transparent

Combining sensors and a wireless network to create an automated material requisition system (AMS) makes in-house material flow transparent, even for non-inventory-managed articles.

When restocking manual or automated assembly points, the same problem regularly occurs: over time, imprecisely or impromptly captured stock levels lead either to shortfalls or to excess. This is particularly problematic for non-inventory-managed goods, such as connecting elements and other C parts necessary in the assembly process – even in conjunction with computer-controlled production planning and optimisation.

What is the solution? A wireless automated material requisition system (AMS), such as the sWave.NET® system developed by steute business division Leantec. At the field level, this system

comprises sensors which capture material stock levels and movements. The sensors transmit this information via a (usually integrated) radio module and a wireless protocol suitable for industrial use first to Access Points, which in turn pass on the data to a Sensor Bridge. The Sensor Bridge is connected to the IT platform, e.g. a warehouse management or production planning system. This enables a real-time flow of information which extends at the field level to pallet parking areas, eKanban racks or individual containers.

Using the sWave.NET® system, inventory management becomes more precise. It can also include ceiling-

mounted wireless laser sensors which capture objects such as pallets and other load carriers within a predefined area, at a distance of up to 5 metres. This type of real-time monitoring is not only used for replenishment supply, but also to call AGV or other conveyor vehicles to collect empty containers and packaging material from the assembly area.

I A complete overview from up on high

Other sWave.NET® laser sensors feature puncti-form detection of objects and can monitor, for example, the stacking height of different load carriers or the fill level of one large load carrier. If the result falls below an individually predefined threshold value, the system sends a remote notification and requests replenishment.

Optimisation of intralogistics using the sWave.NET® system has many benefits.

FACT

The sWave.NET® sensor range also includes tilting sensors which detect the occupancy of shelves in eKanban racks and pass this information on to the ERP, MES or WMS. In some sWave.NET® applications, for example the manufacturing of electrical or medical devices, several hundred of these wireless sensors are deployed.

For dolly-based intralogistics, steute has developed a dolly sensor which detects movements along a typical rail system. Other sensor and electromechanical switchgear designs can also be integrated

in sWave.NET® wireless networks – for example to call AGV or other conveyor vehicles to collect empty containers from assembly areas. The sensor data are parametrised and evaluated via the central Sensor Bridge software. A dashboard visualises the operating status of the complete system with all sensors and actors.

steute Leantec has developed pre-configured applications for typical intra-logistics situations. These applications make initial operation of sWave.NET® fast, and integration in the IT infrastructure of the material flow management and fleet management seamless. This could be for the real-time detection of load carriers, the supply of replenishments via stationary or mobile eKanban racks, dolly management, or the transfer of load carriers and parcels between stationary conveyors and automated guided vehicles (AGV).

In addition to improved connectivity, the latest sWave.NET® platform provides a higher safety standard thanks to the high requirements of sWave.NET® users in medical device production and the pharmaceuticals industry. These include the logging of all material requisitions sent via sWave.NET® from the shop floor to SAP. This new function additionally enables users to feed manual orders into the system. Moreover, the new sWave.NET® software includes additional cybersecurity measures which make the wireless network fit for future demands, in particular the Cyber Resilience Act.

A major advantage of the wireless system: multiple applications can be operated in parallel – within a joint wireless infrastructure which is easy to adapt to individual requirements. Optimisation of intralogistics using this system has many benefits.

STEUTE AT THE LOGIMAT 2026

At the LogiMAT 2026, steute will be showing the latest version of its sWave.NET® wireless network featuring further improvements in connectivity. New interfaces are now available for the integration of sWave.NET® in heterogeneous AGV/AMR fleets on the basis of VDA 5050. This enables connection to the Synaos platform. Interfaces to other platforms such as Agilox, Hartwall and MHP likewise permit direct communication between AGV and sWave.NET®, so that the information generated by sWave.NET® can be displayed, for example, on the dashboard of the corresponding fleet manager. This facilitates seamless integration of the AMS in existing processes.

Logimat 2026: Hall 1, Booth 1L25

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