noax® Technologies

Case Study

Schenker Deutschland AG

noax forklift terminals provide
a global logistics leader
with a reliable flow of information

noax industrial PC's at work in logistics tasks for just-in-sequence production in Schenker Deutschland AG's Hildesheim logistics center

Seamless data transfer ensures fulfillment right up to the production line

Bernd Hjort, IT manager at Schenker Deutschland AG's Hildesheim branch, looks over at one of the gates to the site's incoming goods area where a few men are unloading a truck. A forklift drives past the group and starts to speed up before heading through a wide passageway. Hjort points at the vehicle, "That staff member has a special transportation order to deal with. He has a noax industrial PC on his forklift, which shows him exactly where he needs to take the goods. This is the method we use to transport goods that have awkward shapes but in most cases we use our track system." He goes on to explain more, "All the communication between the forklift PC and the central server takes place via WLAN. Ever since we've had these robust computers on our forklifts, the system has run like a dream." The Hildesheim site is home to a high-tech DB Schenker logistics system which the company uses for contract logistics tasks that serve automotive and commercial vehicle manufacturers in particular. One of the challenges presented by this field is getting the logistics processes required for just-in-sequence production to run smoothly. For DB Schenker, this is a question of ensuring that the necessary components are delivered at the right time, in the right quantity, and in the right order; otherwise, there is no way for them to be assembled on production lines into vehicles that customers have ordered. Manufacturers benefit from this system in two key ways: First, it reduces the amount of goods they have to keep in stock – and the amount of capital they have to tie up in this – to virtually nothing. Second, just-in-sequence production means lean production. DB Schenker's work is behind the scenes, implementing all the complex processes that go into creating just-in-sequence production.

> " The noax IPCs can get reception wherever they are and even conceal the duct junction points without a problem. With the help of noax, we've made a giant leap in our WLAN connection technology."

Throughput volume of around 140,000 pallets a year

Giant halls are where the action happens. Here, this logistics specialist stores the ordered parts temporarily and packages them before shipping them off to automotive manufacturers' assembly lines. This process handles around 140,000 pallets every single year. When it comes to providing this level of service, creating an unimpeded flow of information is just as vital as actually getting the goods on the move. "Flawless WLAN communication is an absolutely vital ingredient in this process. What we really liked about the forklift terminals were their integrated antenna and the great performance these offered. That was another reason why we chose to work with noax. The IPCs can get reception wherever they go within the pear-shaped coverage area in the halls. What's more, the integrated uninterruptible power supply gives us even better reliability," explains Hjort, before quickly moving on to stress just how significant the addition of the forklift PCs has been at the logistics company's Hildesheim site. "We just couldn't be without them. If we didn't have them, there would simply be no way for us to carry out the logistics processes that go into just-in-sequence production. Reliability is one of the top priorities in our work, and the noax industrial PC's haven't let us down." To give a real insight into the key role that the industrial PC's play in handling goods, particularly where just-in-sequence production is concerned, Hjort explains the processes taking place in the logistics center. Within a five hours, the material that is stored in the center has to be released from stock, cut, repackaged, reloaded – and delivered to the customer.

Scan, save, and carry on

At the incoming goods area, a sticker with a machine-readable barcode is applied to the goods that arrive. This barcode houses precise information about the individual parts in the transport units. An automated, track-based transportation system conveys the pallets from the incoming goods area to a high-bay warehouse where they are put into storage. Various light barriers record the paths that the pallets move along and where their ultimate storage destinations are.

Essential – scanners and IPCs are the backbone of logistics processes in just-in-sequence production

Schenker Deutschland AG is one of Germany's leading logistics service providers with a portfolio that not only offers goods transportation services over land, water, and air, but also demonstrates the company's particular commitment to supplying industrial production components with the utmost precision. Automotive industry firms are especially keen to take advantage of its services as these customers gain particular benefits from DB Schenker's many years of experience and outstanding expertise. To ensure that the wide variety of logistics processes required before production can be carried out smoothly, staff members at the company's logistics center in Hildesheim rely on sophisticated and robust industrial PC's supplied by noax.

DB Schenker provides high-quality logistics services at its storage area measuring more than 22,500 qm – the same as three football fields

Should any parts be too large for the transportation system, a staff member uses a forklift to take them to block storage areas, which are marked so that the correct ones can be identified. Using a hand-held scanner, the forklift driver creates a record of the goods themselves and their storage location; this data is then immediately transferred to the online applications running on the logistics PC (such as SAP or WMS). The logistics center is operated on the basis of a dynamic model that requires the movements of any given goods item to be documented accurately. Transporting the items from their storage location to the outgoing goods area is where the forklift PCs really perform efficiently. Mounted on the vehicles, they show the order pickers exactly where to find the goods for the transportation orders in question and which ramp they have to be taken to. In this case, barcodes have a role to play beyond the goods themselves, as they are also used to identify storage areas and ramps. For this reason, order pickers also have to use scanners to register loading and unloading locations. The laser beams in these scanners are able to identify barcodes from up to seven meters away, making life easier for the drivers because they do not have to leave their vehicles very often and can work quickly – a particular benefit during the afternoon as this is when the out-going goods area sees the most activity.

No reception black spots

Thanks to this precision method of recording information, the system can document the truck onto which a particular goods item has been loaded. At the heart of the communication between the storage areas and central IT facilities is a secured WLAN connection. "We did use industrial PC's and WLAN in our storage areas before, but the old system had some issues that made it really difficult to do our work properly. We only had two access points, and while the coverage was generally okay, the connection kept cutting out. Now we have full coverage in all our halls. The noax industrial PC's can get reception wherever they are and even conceal the duct junction points without a problem. With the help of noax, we've made a giant leap in our WLAN connection technology." Even if the industrial PC's should encounter areas with poorer coverage, they will always be able to receive outstanding-quality signals because there is no need for them to access external WLAN antenna – instead, the antenna are part of the housing frame itself. However, the benefits of the noax PCs go beyond their superior WLAN reception, and this is something Hjort is keen to stress. He is also a fan of their robust structure and operational stability features which are thanks in no small part to the integrated uninterruptible power supply (UPS) that provides the forklift PCs with a dependable source of power. In a scenario where a computer without a UPS is suddenly disconnected from the power supply and shuts down in a way that the operator cannot control, the result is the loss of important information. Given that a permanent flow of data is the lifeline of just-in-sequence production, an incident like this would have disastrous consequences in this context. The UPS systems integrated into the forklift PCs combat this problem by providing a consistent source of power. Vibrations and shocks are also transmitted directly from the vehicle to the computer when the forklifts drive over uneven surfaces or small objects. "Vibrations can cause damage, and if this happens, you know about it immediately. Just imagine positioning yourself on a ramp, trying to scan something, and having no success because the circuit boards or contacts have come loose. That was something we experienced all too often before we started using the robust noax PCs. Now that we have them, this is a problem we've been able to put to bed."

Convenient touchscreen operation makes the drivers' work easier and processes faster

> " My co-workers have expressed how intuitive and self-explanatory they find operating the terminals. Basically, you can get up and running with them instantly."

Intuitive and self-explanatory

As Bernd Hjort reports, the order pickers have given great feedback about the new forklift terminals too, "My co-workers have expressed how intuitive and self-explanatory they find operating the terminals. Basically, you can get up and running with them instantly." The Hildesheim logistics center has been running noax C12 industrial PC's flawlessly on its electric forklifts since 2012. Hjort sums up his experiences: "Quality is so important to us. When we spend our money, we spend it wisely."

Schenker Deutschland AG

Company Profile:

Schenker Deutschland AG is part of DB Schenker, the transportation and logistics division of Deutsche Bahn. In addition to overland transportation as well as air and sea freight, the company delivers contract logistics services plus logistics for trade fairs and specialist transportation. At its Hildesheim site, the company operates a logistics center that is responsible for tasks such as storage and order picking for the just-in-sequence production carried out by a range of automotive companies. The Hildesheim site has a storage area of more than 22,500 qm, plus 14,000 pallet storage spaces in a fully automated high-bay facility that features 14 aisles and around 10,000 qm of block storage space.

For more information, please visit:
www.dbschenker.com

Specifications and Application

Objectives:

- ✓ Fully automated recording of goods movements in a logistics center
- ✓ Communication between forklifts and company network via WLAN
- ✓ Full WLAN coverage throughout the storage area
- ✓ Secure data exchange via WLAN
- ✓ Management of just-in-sequence production for the automotive industry
- ✓ Flawless communication in accordance with ENX Association standards

IPC Requirements:

- ✓ To be used in the logistics center of a global contract logistics specialist
- ✓ Resistance to shocks and vibrations
- ✓ Completely sealed construction in accordance with protection class IP65
- ✓ Simple, intuitive operation by staff members using touchscreens
- ✓ Clear, crisp display
- ✓ Uninterruptible power supply
- ✓ Robust, resistant construction
- ✓ Maximum availability and operational stability under extremely demanding conditions

Overview of Components

Hardware:

- Industrial PC Compact C12
- In-house developed noax All-in-one motherboard
- Input: particularly robust touch panels
- Bright, high-contrast TFT display
- Protection class IP65 (NEMA 4)
- Completely sealed, without external fan
- WLAN with integrated antennea
- integrated uninterruptible power supply (USP)

Software:

- Operating system: Windows 7
- Application programs: SAP, SAP application from ALPE Consulting, Aberle Software GmbH + WLAN, ENX connection

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