



**SIEMENS**

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## IWLAN in logistics

Efficiency, mobility, and personal safety

### Special requirements in the logistics sector

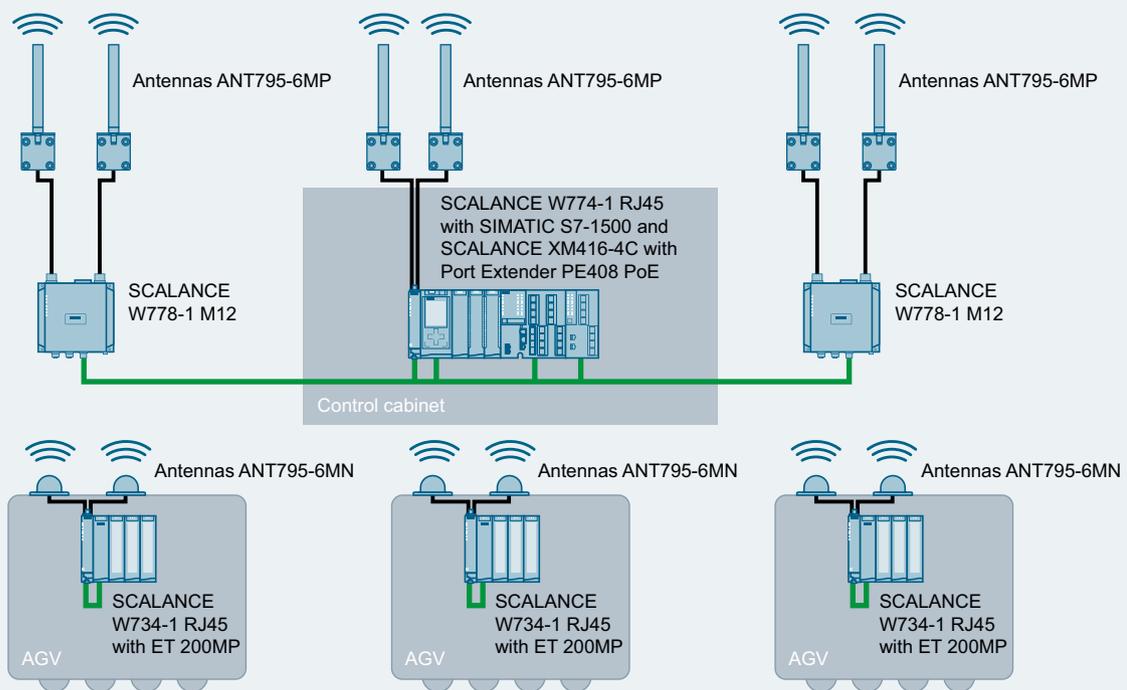
Logistics need low-maintenance, safe Industrial Wireless LAN (IWLAN) solutions that can be used both indoors and out – for example, to run storage and retrieval systems, shuttle systems or Automated Guided Vehicles (AGV). All systems first and foremost have to be safe for people, and efficient to use. But as diverse as applications in the logistics and intralogistics sector can be, the potential uses of IWLAN devices from Siemens are every bit as diverse.

### IWLAN for warehousing and procurement systems

An IWLAN solution pairing a SCALANCE W Access Point and a Client Module makes it easy and safe to control storage and retrieval systems. And AGVs play an important role in plant logistics anywhere transport tasks arise in production, such as in delivering materials containers to workstations, or in warehousing finished products. The Industrial Point Coordination Function with Management Channel (iPCF-MC) iFeature is especially useful in high-bay warehouses that work with shuttles. Here directional or omnidirectional antennas can serve warehouse aisles at either the beginning or the end. The shuttles have the corresponding automation components.

### IWLAN's advantages in logistics

- Real-time communication specifically for mobile Clients moving freely within a field
- Fail-safe industrial control in Automated Guided Vehicles
- Flexibility thanks to freely moving participants (proactive roaming)
- Very fast roaming times, well below 50 ms, for uninterrupted communication
- Based on standards: connection to existing production networks
- Life cycle: more than ten years
- A solution usable across sectors for a vast range of applications (automotive, traffic and transportation infrastructure, amusement parks, etc.)



■ Industrial Ethernet/PROFINET

### iPCF-MC for wireless communication in logistics applications

Controllers and I/O systems in the PROFINET environment and EtherNet/IP applications cannot communicate reliably with one another via the IEEE 802.11 WLAN standard, because there are no deterministics. What's more, roaming has to happen as fast as possible when there's a change from one cell to the next. Here the iPCF (Industrial Point Coordination Function) iFeature offers a solution for guided applications. For freely moving network participants, iPCF-MC comes into play. Both solutions offer the necessary deterministics and fast roaming at well below 50 ms.

### Maximum freedom of movement and reliable connections

iPCF-MC is especially suitable for applications with mobile Clients moving freely within the field, and communicating with the controllers via PROFINET, PROFIsafe, or EtherNet/IP. Applications with RCoax and directional antennas are also possible. Just as with iPCF, the Clients are polled cyclically (deterministics). With the iPCF-MC iFeature, the Client continuously scans the environment for alternative Access Points. If transmis-

sion quality lags, a change to another Access Point can be planned and takes place very quickly. This is done by using two radio interfaces of the Access Point in different ways simultaneously: one radio interface transmits a cyclic signal (beacon), while the other serves for data transfer. Even with a large number of employed Access Points and WLAN channels, iPCF-MC can thus ensure consistently low roaming times, and thus permits real-time responses, for example in Automated Guided Vehicles.

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