TECHNICAL FACTS
WIRELESS

HIMA

SMART SAFETY.

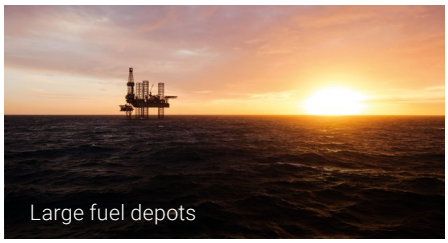
Ten Years of Helping Customers Profit from Wireless Technology

Based on standard Ethernet technology, HIMA's SafeEthernet protocol has a successful 10-year track record for use in transmitting data over conventional SIL 3-compliant wireless technology that conforms to the SIL 3 safety standard. While numerous customer references underscore the reliability of wireless in data transmission, is it right for your application? Can it be cost-effective and not compromise safety?

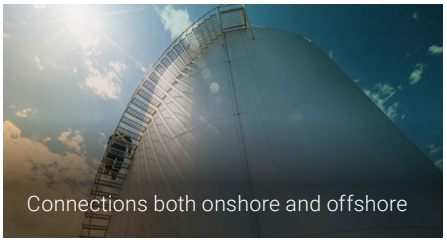
HIMA is ready with the technology and expertise to help you apply the advantages of wireless in appropriate applications – safely, cost-effectively, and securely.

In many cases, the HIMA safety system and wireless technology make significant cost savings possible:

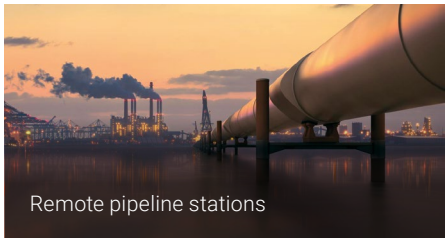
Mobile installations in sewage treatment plants



Large fuel depots



Connections both onshore and offshore



Remote pipeline stations

Potential

- Connections to additional measurement points
- Overcomes geographic hindrances such as rivers and railways
- Temporary installations are now feasible
- Mobile installations are now feasible
- Enables cost-effective linking of fill level, temperature, pressure, flow rate and other parameters in hard-to-reach applications such as fuel depots

Benefits

- Replaces trailing cables and other costly specialized cables
- Utilizes the diagnostic potential of field devices
- Cost-effective installations
- Fast start for operations
- Rapid availability of data

Processing Industry Moving toward Wireless

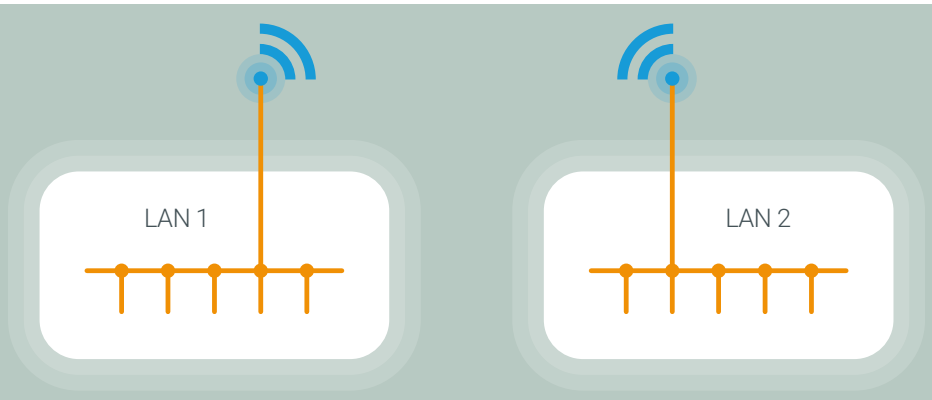
Widely accepted in factory automation, wireless solutions are predicted to become well established in the processing industry by the year 2020. Wireless will not replace classic field cables, but will be used in settings where traditional cables are difficult to place. Enabling this transition is the wide acceptance of wireless HART and ISA 100.11a specifications for non-safe applications.

Technical Requirements

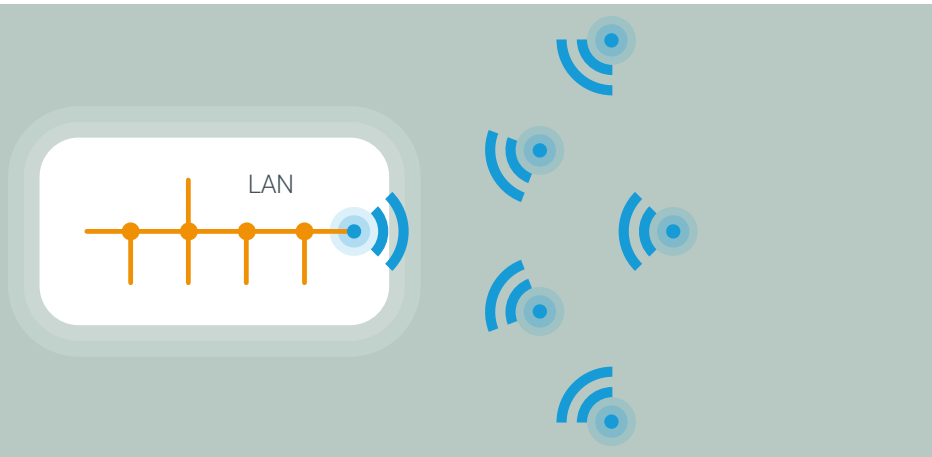
HIMA always finds a suitable solution for:

- Reliability
- Interoperability
- Simple operation
- Robustness
- Access protection
- Electro-magnetic tolerance
- Ex-protection
- Short, constant reaction times
- High subscriber density
- Uninterruptible roaming

Safety Integration Level (SIL 3) data transmission with HIMA SafeEthernet functions over all conventional wireless technologies



LAN data link with HIMA SafeEthernet over all conventional wireless technologies



LAN extension through sensor-actuator connections with HIMA SafeEthernet over all conventional wireless technologies

Wireless Technology

Safety-related (SIL 3) data transmission with HIMA SafeEthernet functions over all conventional wireless technologies:

- WLAN (Wireless Local Area Networks) – up to 300 MBit/s
- Bluetooth – speech and data up to 10 m
- Point-to-point technology – wireless transmission between buildings
- Satellite technology
- ZigBee – Wireless HART and ISA SP100 for sensor and control networks
- UWB (Ultra Wideband) – to connect peripheral units with high data transmission rates
- NFC (Near Field Communication) – to connect units over short distances
- Proprietary solutions
- Mobile telephone standards (cell phone)
- WiMAX (Worldwide Interoperability for Microwave Access) – to connect fixed lines and mobile units

Information Sources

- IEEE 802.11
- ISA 100a
- Wireless HART
- Namur NE124
- VDI/VDE 2185
- ZigBee – according to IEEE 802.15.4
- BSI – wireless communication systems and their safety aspects