



Asset Tracking in Hazardous Areas

AN9028

Asset Tracking of equipment and personnel is becoming an important component of a facility's HSE compliance. The MTL range of Intrinsically Safe (I.S.) Ethernet products make it possible to have a suitable wireless infrastructure to access the associated chip readers anywhere in a facility, regardless of area classification.



INTRODUCTION

With the increased demand for security of assets and safety of employees, many companies are beginning to use RFID and 'smart tags' to continually monitor the location of mobile equipment and workers in a facility. The challenge is being able to ensure complete plant coverage in the most critical locations in the plant such as those designated as Class 1, Division 1 or Zone 1.

SYSTEM DESCRIPTION

A number of manufacturers offer RFID tagging systems that communicate via the IEEE 802.11 wireless Ethernet protocol to a central database system that continually monitors the location of these tags within the plant site. The MTL 9468-ET is unique in that it is not only an IEEE 802.11 wireless base station but can also be used as a wireless repeater. More importantly, it can be powered over standard Cat 5E Ethernet cable in a full Intrinsically Safe manner. Consequently the 9468-ET can be mounted anywhere in a facility thus ensuring complete coverage of a facility with minimal infrastructure investment.

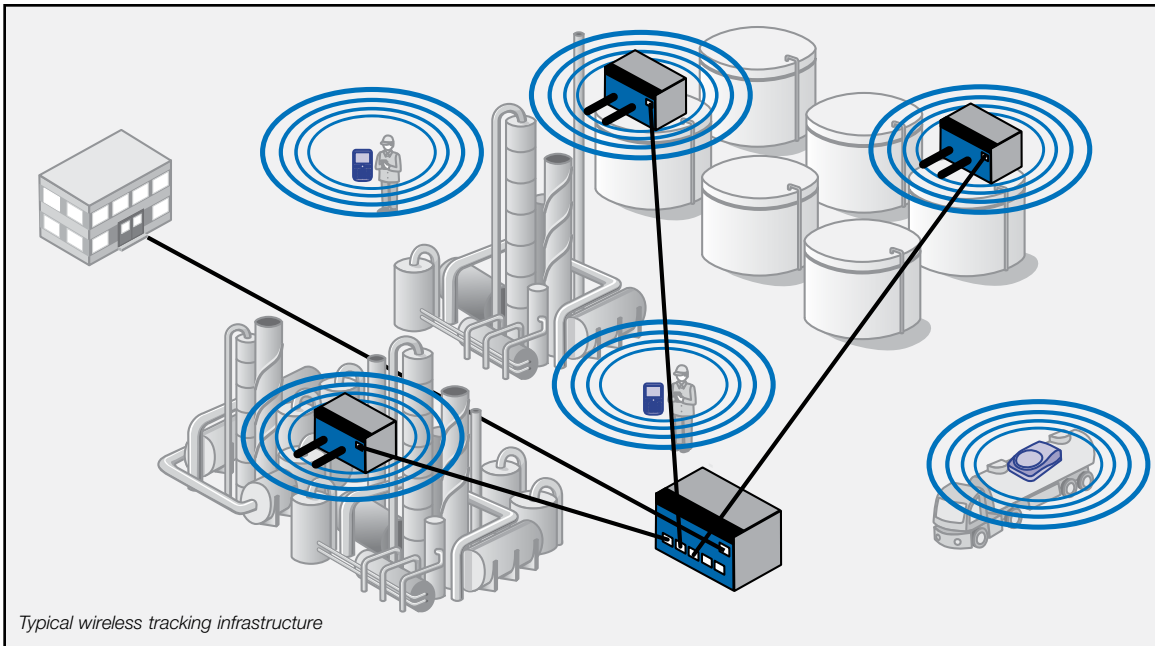
The 9466-ET I.S. Ethernet Switch serves the dual purpose of distributing the Power over Ethernet (PoEX™) and consolidating a number of 9468-ET wireless access points. The 9469-ET Galvanic Isolator connects the Intrinsically Safe network to other networks in the facility.

SYSTEM DIAGRAM

A combination of Intrinsically Safe PoEX™ and conventional (depending on Area Classification) products are selected to provide complete wireless 802.11 coverage of the plant operating areas.



MTL 946X series of Intrinsically Safe Ethernet modules



This makes it possible to monitor in real time, the location of any tagged person or object regardless of their location within the network. For optimum coverage, network overlaps exist to ensure that there are no 'dead zones' within the network. The MTL I.S. Ethernet range can be installed anywhere in the plant, thus providing seamless coverage throughout a typical process facility.

A number of 9468-ET WAP stations can be connected to the 9466-ET. The combined signals from one or more units are then transmitted to a central database server and its associated software provides the information to the plant operations and security staff.

For those areas of the facility that do not require an I.S. solution, MTL is able to supply alternative access points which are more suited to non-hazardous environments.

OVERALL BENEFITS

Implementing an asset tracking system as part of a complete asset management solution has the following benefits:

- Improved visibility of assets in the supply chain
- Meets compliance mandates of customers
- Improves asset tracking and inventory control across multiple facilities
- Reduction in loss or damage of goods while in transit
- Reduced labour cost and human error with automatic asset tracking technology

ECONOMIC BENEFITS

- Reductions in theft and improvements in rental utilization
- Reduced loss of physical assets through theft
- Increased efficiency in utilisation of assets - '*know where your assets are*'
- Efficiency in rental expenditure due to increased knowledge of rental assets utilisation
- Knowledge of personnel/asset location in the event of an abnormal situation or incident
- Increase in process uptime and improvements in regulatory compliance
- Increased efficiency in business processes

