

Real-time Status Updates for Mass Rapid Transit Systems

Industry	Transportation
Products	AWK-3121 Series
In Brief	Security is an important issue in mass rapid transit systems due to the high volume of passenger traffic they handle. Learn about how wireless technology can provide operators with real-time information to handle emergency situations.

Background

Security is an important issue in mass rapid transit systems due to the high volume of passenger traffic they handle. In the past, the status for the trains, platform gates, various alarm systems, and environmental controls were all manually recorded at the stations. But drivers, operators, and security personnel need more real-time information to handle emergency situations. With wireless technology, all this information can be transferred while the trains are approaching the station thereby improving the security level. Also, station operators can transfer information to arriving and departing trains, including the status of other trains and track conditions.

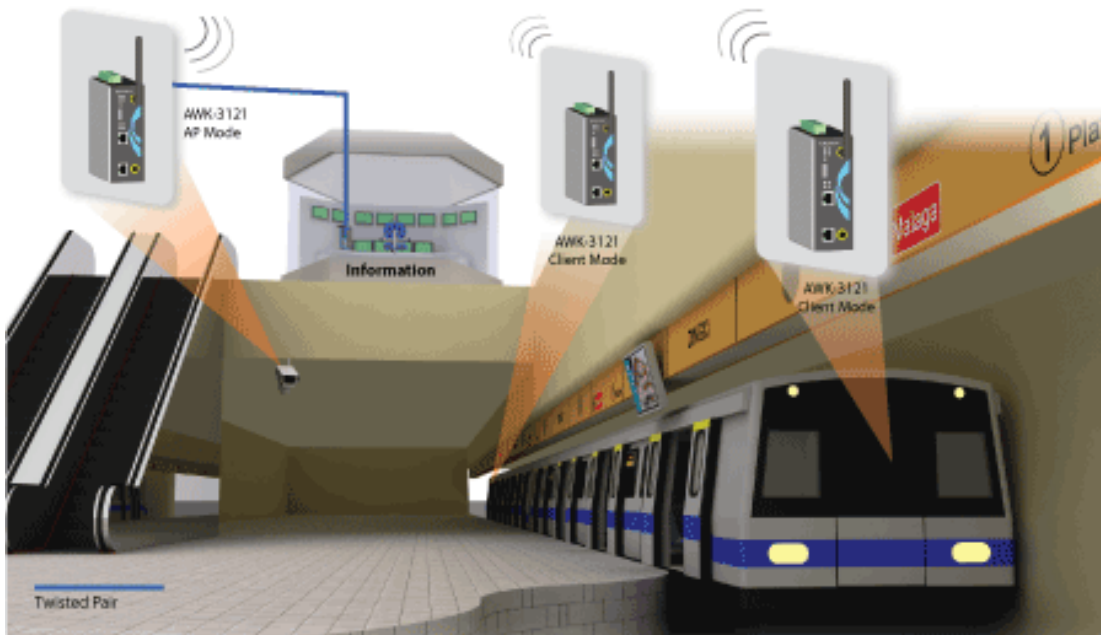
Application Requirements

- Real-time information updates and transmission between trains and stations
- Reliability and redundancy to ensure seamless network connectivity

Solution Description

An access point (AP) set to Client mode is installed in the first and last coach of the train. An AP set to AP mode is also installed at the station. When a train approaches the station, the AP in the first coach will establish a connection with the station and start to send the information. The length of the platform is around 100 meters so if the AP in the first coach cannot establish a good connection, the AP in the last coach will start up to ensure that a connection is indeed established between the train and the station. Establishing a connection as quickly as possible is important because the train only stays at the station for about 2 to 3 seconds. As a result, fast roaming under 1 second is better for this kind of application.

System Diagram



Benefits

- Turbo Roaming under 500 ms
- EN50155 certification for railway applications
- RSTP prevents looping and provides high reliability