Success Story

Queensland Rail National deploys Axle Counter System Az LM as 1:1 replacement for existing track circuits

EAK30K

Thales was approached by its customer Queensland Rail National, Australia, to develop a solution for several axle counter detection points to be connected over an available pair of an existing signalling cable in brown-field environment, to directly replace old track circuits becoming obsolete.
Thales proposed a "Multi-Drop" solution to Queensland Rail National, with the Az LM detection points connected to its centralised evaluator as it can be multiplexed over a digital transmission system.
For this configuration, the ISDN links of detection points are connected via Thales ISDN/Ethernet converter to Ethernet extenders which are linked together with SHDSL (Symmetric High-bit rate Digital Subscriber Loop) transmission.
The SHDSL transmission will provide benefits for customers in cost savings and installation time by reusing existing cable infrastructure, from track circuits.

Even unshielded cables for the connection of outdoor equipment to the indoor equipment of the Az LM can be used.

So no new cable trenching and cable installation is required, hence saving further costs.
Caused by the low need of data traffic in Thales axle counter applications, the distance between SHDSL modems achieves up to 10km and more.
In addition, the Multi-Drop solution offers the availability to create a secured and protected solution with redundant ring networks. The use of Ethernet-extenders allows also the possibility to access and control the network components remotely for diagnostic purposes.
After installing the equipment at a trial site in Queensland, the performance was closely monitored by Queensland Rail National and Thales.

The Axle Counter system Az LM with Multi-Drop application has been working reliable over a period of more than 12 months now.

The new rail contacts, Sk30K, were installed over the sleepers and did not require removal during frequent tamping and grinding operations, demonstrating another cost saving of the technology to the maintainer.
The fault free performance of the axle counter system, which included the tolerance to electrical noise within multicore multi service cables and environmental influences (e.g. lightning strikes, rolling stock) together with reliable detection of high rail vehicles with small wheels was sufficient to gain a type approval for the application for Thales Axle Counters in June 2012 and underlines the versatility of the Az LM Axle Counters.