

Reducing costs with 'plug and play'

Unipart Rail, along with key industry partners, is at the forefront of integrating 'plug and play' into a number of key signalling projects helping to reduce the cost of testing, installing and commissioning of lineside equipment. The fitting of plug couplers to lineside equipment is the main thinking behind plug and play with most equipment becoming nothing more than a pre-tested off-the-shelf item.

The plug and play concept reduces the amount of work required out at trackside by moving activities to factories which can undertake tasks in a more cost-effective manner. In addition to cost savings, the possession times needed to install inside

equipment are also greatly reduced thus improving the service levels.

Key features and benefits of plug and play include:

- Factory testing enabled for lineside equipment and pre-cut cable lengths.
- No duplicate cable testing required.
- Trackside equipment and tail cables installed with plug couplers.
- Improved efficiency for commissioning.
- All testing documentation provided.
- No requirement of a test train to commission signalling.

Exact types of plugs and couplers have already been determined by Network Rail and Unipart Rail and are well advanced in development and production for their signalling ranges. A number of UK site trials are intended for late 2010 and early 2011 with Unipart Rail's key commissioning partners.



Unipart Rail level crossing installed in Australia

Unipart Rail, in partnership with JD Rail Solutions based in Perth, Australia, has delivered the first 'turn key' active level crossing system for BHP Billiton in Western Australia. The system is currently undergoing trials and will be installed at a site on the Newman to Port Hedland freight only line, this year.

The system comprises an Advan-Bridge modular level crossing surface, electro-mechanical barrier boom mechanisms and complete kits of Dorman LED signalling products (including wig wags, miniature stop lights, drivers' crossing indicators and barrier boom lights). The control of the level crossing is accomplished by the combined technologies of a Unipart Rail developed controller and an Altpro wheel detection system. The components are housed in a Unipart Rail bespoke location cabinet manufactured utilising a double-skinned stainless steel design capable of withstanding the demanding climatic conditions of the region. The Unipart Rail/JD Rail Solution system is designed to be completely self-contained and self-monitoring, reducing the need for maintenance visits.

The end user

BHP Billiton operates 12 loaded and 12 unloaded iron ore trains running on two separate single track rail lines every day of the year. One track runs from Port Hedland to the Newman area and the other runs between Port Hedland and the Yarrie mine. The 426km railway line from Newman to Nelson Point is one of Australia's longest privately-owned railways and takes the longest and heaviest trains in the world. A typical train will have six, 6,000 horsepower locomotives pulling more

than 26,000 tonnes of ore. Each train is up to 3.75km long and the journey from Newman to Port Hedland takes approximately eight hours.

BHP Billiton's iron ore rail system is one of the most technologically advanced and efficient in the world. The track also forms a key part of the iron ore production process, delivering to port in specific volumes and sequences for blending into final products. All train movements are managed from a traffic control centre at Port Hedland with specialised computer software and digital communications powered by solar technology to control train movements, warn about unsafe conditions and weigh the ore cars as they pass by.

Matthew Hayward, Senior Engineer, JD Rail

Solutions, commented: 'We are confident partnering with Unipart Rail and its experience in the UK railway environment, supporting products and services are a vital component in delivering customer service to BHP Billiton.' The main reasons for upgrading WA level crossings to active control are:

- Increase in population in the catchments, resulting in an increase in usage.
- Improve safety and facilitate higher train speeds.
- Availability of federal funding under the stimulus package.
- Mining companies experiencing strong growth and commitment to modern compliant infrastructure expansion.

