Case Study: All aboard the *vanwalt*CONNECT Express

Train delays can be caused by a variety of reasons, from livestock and leaves on the tracks, to flooding. That means the organisations that manage the rail networks have to contend with all the possible factors that could create a disruption to the smooth flow of rail traffic. More often than not it is external circumstances like extreme weather, landslides, blocked drains, overflowing rivers, pollutant spills, overgrown or flooded waterways that cause delays to the rail timetable.

Like every other business that offers a service or product to the general public the rail network has a duty of care to deliver theirs safely, securely and to agreed service levels. That's why an on-going programme of investment and research into better ways of managing potential risks to the assets and infrastructure is in place and why Van Walt was invited to suggest a solution to monitoring a potential flood risk situation.

On HS1 infrastructure there was a risk of assets being flooded due to internal and external factors. Richard Dance, Systems Engineer, Network Rail (High Speed) Ltd contacted us in the last quarter of 2014 to discuss the deployment of a couple of systems to measure water level and to report by means of alarms when levels were getting to a critical point. The introduction of an early warning alarm would give the business time to take remedial action before any serious damage or delay occurred. Two *vanwalt*CONNECT telemetry systems were installed and have been running continuously now for well over a year.

At the Stratford International Station end, the problem was of a different nature. An early warning system was needed to report both water level and the presence of hydrocarbons on a small lake not far from the station. Here also we installed a *vanwalt*CONNECT system but this time added a hydrocarbon sensor. As soon as hydrocarbons are detected an alarm is raised and emailed to the duty officer.

Network Rail (High Speed) Ltd as the manager of HS1 infrastructure takes delays very seriously. Their well-trained staff identify the problem and look at solutions and we are delighted that we have been a small part of that process. One of the "hidden" extra benefits of a telemetrised system is that it throws up information which had hitherto been unknown such as, for example, the extent of tidal influences relatively deep inland. By having data points every 15 minutes with an hourly upload not only gives a very thorough picture of what is going on but also gives ample warning time. No-one likes to be woken up at unsociable hours, and having a system which can be interrogated remotely and that a graphic presentation is given of the events in the last few hours or days of course gives reassurance but more importantly it enables the person on duty to make sensible decisions ahead of donning foul weather and safety gear to go to site.

And so on to cost: Technology and digital advances have made this type of system available at a cost which is now, by far, overshadowed by the benefits. Installation is simple, the sensors are accurate, resilient and reliable. These systems can now be configured to measure many different parameters in addition to level, temperature and hydro-carbons, so are suitable for multiple applications and requirements.

Confidence, Technology and Choice are now perhaps clichéd buzzwords but at Van Walt we strive to put a good dose of each in the melting pot and *vanwalt*CONNECT is a good example of what can be achieved to make a system reliable, robust and above all simple to operate.

We are very proud to have been chosen by Network Rail (High Speed) on some of their projects and my thanks go to Richard Dance and Freddie Savill who have been the best of customers. Now with a proven track record of delivering valuable data when and where it is needed we look forward to offering *vanwalt*CONNECT for other projects.