

Cohesive

Bold Rail Scheme Brings Cutting-Edge Tech and Connected Data to South Wales' Historic Coal Valleys

By James Frampton, Global Director for ComplyPro Progressive Assurance Solutions at Cohesive

If one rail programme could perfectly illustrate the meeting of old and new, then the Core Valley Lines (CVL) is surely it.

The project, part of the South Wales Metro Scheme, is designed to upgrade the ageing lines serving the rural communities of the South Wales Valleys (the lines to Aberdare, Coryton, Merthyr Tydfil, Rhymney and Treherbert). It will enable more frequent and fast services and support decarbonisation goals through electrification.

On the 37.5km Treherbert Line, the signalling system looks much like a museum exhibit. Known as a Token Exchange Signalling System, the equipment, dating back to the 19th century, depends on the train driver collecting a key then inserting it into a token machine at different points along the line to alert the signaller.

In contrast, the CVL programme to upgrade the lines is so cutting-edge that it was recently shortlisted for a **Going Digital award** – the awards that celebrate those projects which are best demonstrating the power of ‘going digital’ across the infrastructure lifecycle to improve project delivery and performance.

Instead of approaching the programme in a traditional way, with siloed execution and stand-alone sets of documents and drawings, Transport for Wales and Amey, the lead managing contractor and operator, were determined to work in an efficient, fully digital and data-centric way.

Deploying a carefully selected portfolio of

infrastructure project delivery software and prioritising a collaborative, streamlined and co-ordinated approach, over 1,500 users who are working on the programme, spread across 40 organisations can readily and easily share project data – everything from surveys to designs and reports.

It has developed over 30 different ISO 1960-compliant automated workflows and, to support its engineering assurance, Amey has deployed Cohesive’s ComplyPro platform.

Successfully used on Crossrail, ComplyPro packages-up thousands of requirements and enables progressive verification and validation activity aligned to the project delivery structure and staging. *“The real power of ComplyPro is in linking all the registers and processes, allowing us to manage complex interfaces between different parts of the project efficiently,”* explains Nathan Sealey, Head of Systems Engineering at Amey.

The benefits are multiple: reduced risk, assured workflows, better decision making, reduced re-work and far enhanced governance and insight are among the key ones.

HS2: Getting Hands-On with Data

Another rail programme getting hands on with data is HS2. Back in 2021, its Chief Information Officer, Dr Sonia Zahiroddiny, **explained the challenges it faced:** terabytes of data, all coming in from contractors in various formats and stored and managed in a number of specialist systems.

We have been privileged to help the team there develop a so-called ‘visualisation hub’ that brings all of the data sets together making it readily accessible and actionable so that it can support sound decision making. Ultimately it will become a digital twin of the railway system.

Recently, HS2 **announced the formation of a new consortium**, led by Atos and including Cohesive, which will blend our digital twin for infrastructure expertise with the data, digital and AI expertise of partners Arup, Chimera Datalabs and Futuria. **Dr Zahiruddin explained that it would “support HS2 in delivering the right capabilities at the right time.”**

The Art of Adapting

Modern transport infrastructure delivery, operation and maintenance has at its disposal vast volumes of data.

The challenge for transport teams lies in their approach, ensuring that their digital foundations are solid; that the connection and aggregation of data from across multiple relevant sources underpins their work and that they have in place the systems and technology to enable that. Security is a consideration and so too are skillsets.

Key areas for transport owner operators to consider and questions to ask are these:

1. How do I make it easy for people in my business to find all the data they need to support their decision making?

2. What insights do I need to deliver a reliable, good quality service? What datasets do I need to integrate to get these insights?

3. Can I be confident my data can be trusted?

Owner operators and their teams must consider not only the technologies they need to implement, but also the changes in organisation, behaviour and processes required to derive the full value from investments in digitalising their business.

Building the case for a ‘big bang’ digital transformation programme is difficult and risky. Instead, think about initial projects you might want to introduce as ‘experiments’ to provide you with evidence of the impacts that you can achieve.

Grappling with these sorts of questions, probing the possibilities and understanding what your organisation stands to gain from a digital approach is key. Then we can usher in a new era of transport management – in a way that is achievable, affordable and has data at its heart.

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