

Permanent Way Institution NSW

Technical Meeting & AGM



Thursday 1st September 2022 at 5:00pm

Register to attend the event in person at the Sydney Masonic Centre via the PWI website (pwinsw.org.au) or through Eventbrite by using the QR code on the right.
A Teams Meeting link will also be available on the PWI website.



Shoal is a recognised leader and provider of Systems Engineering and Safety Assurance with extensive and recent experience on complex rail and other transportation projects within Australia and New Zealand.

SHOAL

Shoal's mission is making sense of a complex and changing world to bring about positive change for our communities and has a vision of being an iconic company in Systems Thinking.

The company was established in 2001 and is now a niche provider of Systems Engineering and Safety Assurance services across the Transport and Infrastructure and Defence and Space industries.

The September PWI technical meeting & AGM is proudly sponsored by Shoal.

Shuan Wilson (Chief Executive Officer), Tim Carter (Principal Systems Engineer) and Thomas Jacquier (Systems Engineer) will be presenting a systems perspective of digital engineering in rail.

Digital Engineering in Rail: A Complex Systems Perspective

Rail transport projects have seen the rapid uptake of digital engineering tools (e.g. software applications or databases) over several years to capture, design, analyse and to manage information. Each tool generally serves its own purpose for specific disciplines, whether it is to manage requirements, analyse asset reliability, model the rail system, develop track designs, etc.

Typically, these tools hold representations of the same data. Generally, there is no streamlined, automatic method to ensure this common data is current across all tools. This creates a configuration management issue, with associated high risks to the project. Most projects typically manually transfer this data across excel spread sheets, emails etc.

This presentation outlines digital engineering in rail from a complex systems perspective, looking at how to bring this common data together holistically across the entire infrastructure lifecycle. The Team introduces model-based systems engineering (MBSE), and the concept of middleware, showing how rail infrastructure projects can have disciplines and their data better integrated, such as Safety Assurance, Requirements Engineering, and RAM.

