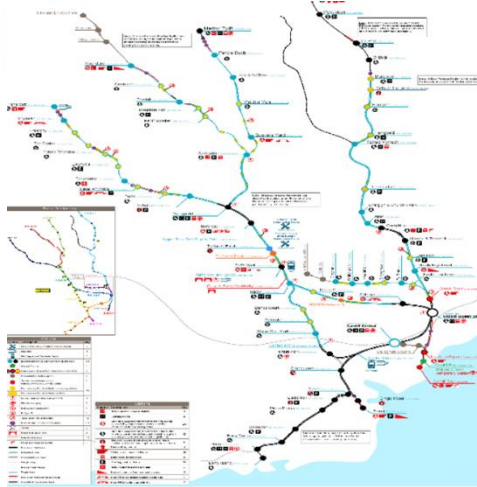


Project title	SMART Electrification – Safety Performance Reliability Availability and Maintainability (SPRAM)
Client name	Wales Core Valley Lines (CVL) – Systems Engineering
Date	2020 to date

SCOPE/OBJECTIVE



The CVL Transformation Programme significantly upgrades the Network around Cardiff, with service frequency enhanced to 4 trains per hour. In addition to Infrastructure works, new Rolling Stock, which can be fed from new OLE or an on-board battery source, will be introduced to provide a metro type service with substantial capacity improvement. Infrastructure works include a SMART electrification scheme using Permanently Earthed Section (PES) to avoid major interventions for electrical clearances.

The Project required a technical review of the design and operation of the SMART electrification system and the interactions between the fixed infrastructure and the rolling stock, thus providing the Railway Operator and Infrastructure Manager with the confidence that the design of the electrification scheme supports the planned services. AEGIS were commissioned to undertake that review.

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TECHNOLOGY USED (IF APPLICABLE)

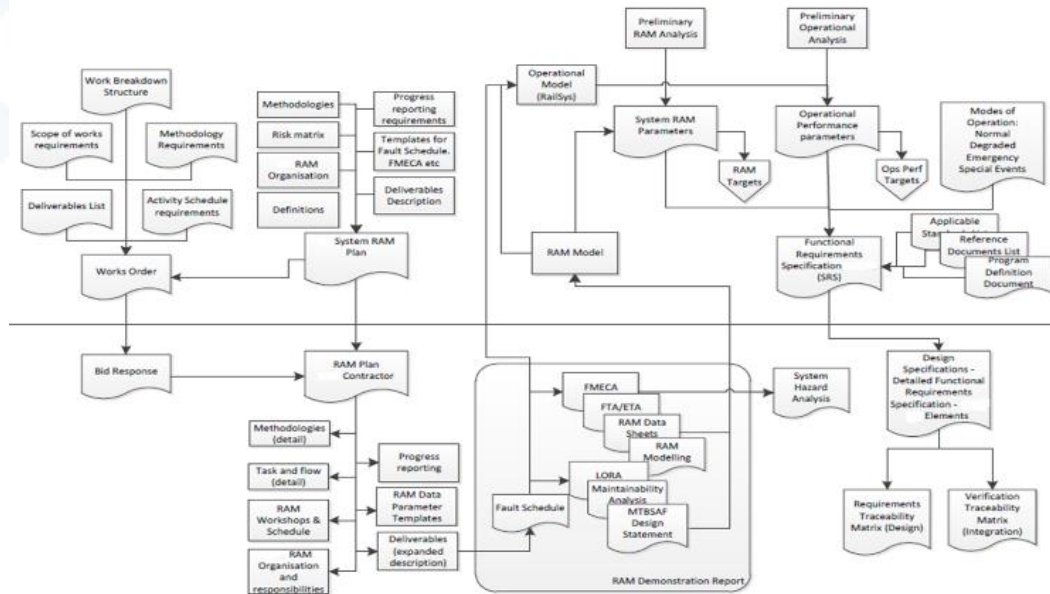
Common Safety Methods (CSM):

- Developing Safety Plans.
- Integrating safety tasks.
- Safety Cases, Justifications & Measures.
- CDM hazards Integration.
- HAZID / HAZOP.
- Hazard analysis and risk assessment.
- Safety requirements, targets & performance.
- Safety standards and regulations.

HOW WE HELPED

AEGIS are undertaking a safety, performance, reliability, availability, and maintainability (SPRAM) analysis of the proposed arrangements. The analysis is being carried out for both types of new vehicle that will be operating on CVL routes: Tram Trains and new Stadler FLIRT trains. The RAM analysis being carried out has focused on the effects of the Permanently Earthed Sections on service reliability and availability, compared with the traditional OLE utilised on the UK rail network.

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OUTCOME

Our team continue to support Amey with the programme providing SPRAM analysis. We are a trusted partner providing our client with the peace of mind that the OLE design solution will be capable of delivering the planned service capacity for both types of new Rolling Stock.