



CASE STUDY

FMECA Training and Facilitation to Improve Transport Infrastructure Asset Reliability

Holistic Asset Management (HolisticAM) partnered with DoT Victoria to provide FMECA training and facilitation services. The objective of this project was to upskill and mentor a group of contract service providers to deliver a comprehensive failure modes, effects and criticality analysis of ITS-managed assets in use across the Victorian road network.

HolisticAM mobilised a Senior Reliability Engineering Specialist, who delivered result-oriented reliability training and ongoing guidance to a group of seven service provider representatives. As a result, the project enabled the representatives to successfully complete FMECA for the assets they were responsible for maintaining on behalf of DoT Victoria. Service flexibility and continuous client engagement ensured the project was delivered on time and within budget.



**Road &
Infrastructure**

The Challenge

The client engages several service providers who have responsibility for maintaining electrical and IT infrastructure across the Victorian road network. Being accountable for overall infrastructure performance, the client required a clearer understanding of those high impact failure modes that were driving customer dissatisfaction.

Their key challenges were:

- Minimal internal understanding of the dominant failure modes.
- Misaligned understanding of reliability engineering principles across their contractor base.
- Inconsistent use of the fault coding system by contractors.



The Solution

HolisticAM held a consultation with the client and devised an innovative approach for developing the FMECA database. In addition to the documented FMECA outcomes, the project provided a vehicle to the contract service providers for introducing them Asset Management and Reliability Engineering principles.

During the project, HolisticAM provided:

- Training in reliability engineering fundamentals, and FMECA principles and practices.
- Focused support & mentoring in the application of FMECA for seven individuals.
- Collation and analysis of four discrete FMECA analyses into a single and cohesive record.

Our Senior Reliability Engineering Specialist facilitated three online FMECA training sessions to convey the required fundamental and practical knowledge. Additional one-on-one support and mentoring was provided for the following four weeks thereby enabling a group of inexperienced practitioners to successfully complete a detailed FMECA for more than 100 maintainable units. Following completion of the execution phase HolisticAM had the responsibility to collate the FMECA worksheet data and then conduct subsequent analysis and rationalisation processes.

More details about FMECA:

<https://www.holisticam.com.au/services/fmea-fmecca/>

The Results

HolisticAM successfully engaged with these contract service providers and provided FMECA training and facilitation services.

Overall, the project achieved the following primary goals:

- Identified high risk assets to allow the client to prioritise the development of failure mitigation strategies.
- Derived a set of common failure modes applicable across the entire asset base.
- Rationalised the cause descriptions within the discrete FMECA worksheets.
- Produced a set of recommended fault codes for subsequent use by all contractors.
- Developed a high-level roadmap for future progression toward asset management maturity.

After the FMECA training, HolisticAM was also asked to advise on a methodology to maximise the value derived from the existing FMECA data set. We recommended the following as key target areas:

- Development of an asset management data standard.
- Refinement of the asset taxonomy.
- Improvements in the asset information systems master data.



ADDED VALUE

As a result of this project, the client now possesses a comprehensive knowledge base detailing the numerous ways in which their assets can fail to perform their intended function. Our innovative approach and the flexibility of our services translated into significant cost savings for DoT in comparison with a traditional consulting delivery model.

Drawing directly on the accumulated knowledge and experience of the contract maintainers to develop the FMECA's provided additional value in terms of information accuracy, relevance, and currency.