A Whole-of-Organisation Approach for Reliability Analytics

Book Chapter

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Relevance to the Centre

Reliability analysis on in-service assets uses well-established methods to, for example, determine mean-time-between-failure (MTBF) estimates or identify failure modes. However, the data inputs to these calculations depend on how the raw data from maintenance repair records have been processed. Furthermore, processes to extract and clean raw maintenance data are often ad hoc and performed differently by each engineer. As a result, calculations for asset reliability measures and identification of historical events and failure modes are difficult to replicate. Currently, the process is manual, time-consuming and not scalable. As a solution we present RelOps, a process to achieve standardised, scalable, and efficient end-to-end data handling and processing for organisation-wide reliability analysis. The process is illustrated with a case study showing current practice in MTBF estimation and the opportunities for technical language processing (TLP) to infer MTBF from maintenance work orders raised against a slurry pump.RelOps draws on DevOps and MLOps practices widely used in the software engineering and machine learning communities. The aim of RelOps is to shorten the reliability analysis development lifecycle and provide continuous delivery of quality outputs using a standardised and repeatable process.

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