A System Design Framework for the Transnet Engineering (TE) Product Development Coaches (PDC) Business as an Original Equipment Manufacturer (OEM) of Railway Coaches

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ABSTRACT

A study was carried out to investigate the different design failure factors within the Transnet Engineering (TE): Product Development Coaches (PDC) environment. TE: PDC is responsible for the design and development of new passenger railway coaches. System failure, whether it be the failure to meet the completion criterion (e.g. time, cost, quality and stakeholder requirements validation) and/or the stakeholder satisfaction, may lead to the compromise of organisational reputation and inefficient use of organisation capital.

The purpose of the research was to develop a *System Design Framework*, and from it derive the *System Design Process* which could potentially be used by TE: PDC to mitigate system failures, by applying different Systems Engineering principles and concepts. The different design failure factors were identified through literature review, archived company data and semi-structured interviews. The *System Design Framework* and *Process* were further evaluated by a panel of experts through a focus group.