

Systems Engineering Management Using Transdisciplinary Quality System Development Lifecycle Model

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Abstract : The successful realization of complex systems is dependent not only on the technology issues and the process for implementing them, but on the management issues as well. Managing the systems development lifecycle requires technical management. Systems engineering management is the technical management. Systems engineering management is accomplished by incorporating many activities. The three major activities are development phasing, systems engineering process and lifecycle integration. Systems engineering management activities are performed across the system development lifecycle. Due to the ever-increasing complexity of systems as well the difficulty of managing and tracking the development activities, new ways to achieve systems engineering management activities are required. This paper presents a systematic approach used as a design management tool applied across systems engineering management roles. In this approach, Transdisciplinary System Development Lifecycle (TSDL) Model has been modified and integrated with Quality Function Deployment. Hereinafter, the name of the systematic approach is the Transdisciplinary Quality System Development Lifecycle (TQSDL) Model. The QFD translates the voice of customers (VOC) into measurable technical characteristics. The modified TSDL model is based on Axiomatic Design developed by Suh which is applicable to all designs: products, processes, systems and organizations. The TQSDL model aims to provide a robust structure and systematic thinking to support the implementation of systems engineering management roles. This approach ensures that the customer requirements are fulfilled as well as satisfies all the systems engineering manager roles and activities.

Keywords : axiomatic design, quality function deployment, systems engineering management, system development lifecycle

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