

Digital Engineering Framework as enabler for System-Software Co-Engineering

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The Digital Engineering Framework is aimed at providing a consistent MBSE implementation across the engineering disciplines and through the lifecycle of space systems (from early design to operations). It inherits its basic concepts from the Virtual Spacecraft Design study performed for ESA. It relies on the notions of System Data Repository, Conceptual Data Model (both introduced in ECSS-E-TM-10-23) for interdisciplinary data management and tool integration as well as on open source software environment (EMF). It has been applied in the Avionics area through the development of the RANGEDB database which manages the common reference data for system and avionics. This presentation will also include a specific focus on the system-software co-engineering process, with automatic code generation of AOCS / GNC and mission and vehicle management software, and its relationship with the Digital Engineering Framework.