System Engineering Workbench for Multi-views Systems Methodology with 3DEXPERIENCE Platform. The Aircraft RADAR Use Case

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Abstract The PLM process is developing methodologies to support sustainable production during the whole product lifecycle. The present research makes a focus on the capability to adapt a RFLP framework, integrated in the 3DExperience platform and linked to the Mechatronics disciplines, to the Multi-Views Systems Methodology. This work demonstrates the adaptability of a RFLP framework to a Systems Engineering Methodologies, while taking profit of PLM values for industrial systems production, like an aircraft Radar System. This combination of architecture design and PLM integration increase drastically collaboration increasing the likelihood of detecting product failures early on during its lifecycle validating a virtual product with the customer before detailed design and manufacturing, yielding significant cuts in time-to-market and rework and allowing architects to take the best decision based on global system definition and performance, taking in consideration the disciplines feedbacks Engineering design may be viewed as a decision making process that supports design tradeoffs. The designer makes decisions based on information available and engineering judgment and determines the direction in which the design must proceed. The procedures that need to be adopted, and develops a strategy to perform successive decisions. This interaction shall take in consideration customer feedback. Current Radar Use Case demonstrates the implementation of a Multi-Views methodology, allowing Concurrent Engineering and Integrated Product and Process Development (IPPD)

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to be performed in parallel and collaboratively. The implementation based on the RFLP framework is extremely helpful to manage complex system design information providing a native traceability and impact analysis capability from the requirements to the operational, functional and component layers of the system, reducing the gap in information. Digital continuity and realistic modeling and interaction between disciplines allow the creation of a digital twin that will be highly valuable during all the lifecycle of the system.