

Presentation Abstract

Presentation Title	Architecture Analysis Research Project Status
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Presentation Abstract	<p>The objective of the Architecture Analysis research project is to enhance IV&V impact in the architecture phase of large mission-critical software systems. The task is aimed at driving architecture IV&V to higher capability maturity, contribute to improved inputs (developer artifacts) to the IV&V process, and generate a better understanding of system developmental, operational, and maintenance risk. The project was developed using the Constellation Computing System Architecture Description Document (CSADD) and the CSADD PDR IV&V experience as a case study. The CSADD was tailored from Department of Defense (DoD) Architecture Framework (DoDAF) version 1.0. We used DoDAF 1.0 and the more recent DoDAF 2.0 as primary references because they represent DoD best practices and have been under continuous incremental development for over 15 years. We also used the 4+1 architecture model and the Software Engineering Institute Architecture Tradeoff Analysis Method as exemplary processes. This presentation will describe the results of mapping CSADD to DoDAF 1.0 and DoDAF 2.0, resulting in identification of feasible CSADD enhancements and benefits of replacing DoDAF systems viewpoints with services viewpoints and adoption of DoDAF all viewpoints. We will also describe the IV&V task analysis including mapping analysis tasks to issues of completeness, verifiability, and appropriate levels of specification. Finally, will describe additional project elements including assessment of the degree to which current and potential IV&V analysis tasks cover architecture elements, relevant IV&V techniques, identification of tool support opportunities, and architecture IV&V task tailoring.</p>