

Carnegie Mellon University
Software Engineering Institute



SEI Bulletin — May 16, 2018

Analysis: System Architecture Virtual Integration Nets Significant Savings

The [System Architecture Virtual Integration \(SAVI\)](#) initiative is a multiyear, multimillion dollar program that is developing the capability to virtually integrate systems before designs are implemented and tested on hardware. The purpose for SAVI is to develop a means of countering the costs of exponentially increasing complexity in modern aerospace software systems. A key element of the virtual system integration approach of SAVI is an SAE International standard called the Architecture Analysis and Design Language (AADL). The SEI played a leading role in developing this standard and an open source tool set, which is proving its value in enabling early discovery of defects through analysis of AADL models of embedded software systems. Our analysis showed that the nominal cost reduction for a system that contains 27 MSLOC would be \$2.391 billion (out of an estimated \$9.176 billion), a 26.1 percent cost savings. The original study reported here had a follow-on study to validate and further refine the estimated cost savings.

In this blog post, which is excerpted from a recently published technical

report, *ROI Analysis of the SAVI Initiative*, the SEI's Peter Feiler presents the results of a return-on-investment (ROI) analysis to determine the net present value (NPV) of the investment in the SAVI approach.

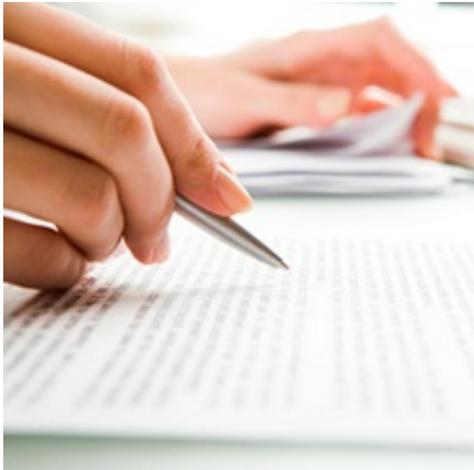
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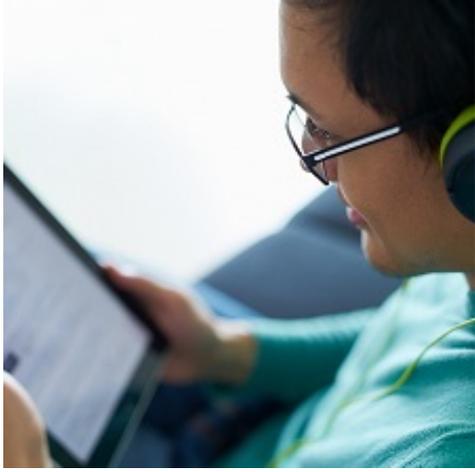
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