DoDAF Methods for Software Engineers

C.W. Perr and Dr. John A. Hamilton Jr.

Abstract

Improving DoDAF for Software Engineers

C.W. Perr
Auburn University
cwper@auburn.edu

Dr. John A. Hamilton, Jr.
Auburn University
hamilton@auburn.edu

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Abstract

At the last Annual SURE Researchers’ Forum (SURF) session, we discussed the common problems regarding the Department of Defense Architecture Framework (DoDAF). In our next meet with DoD we noted that the modeling is high, and depends on the time required of the project. This time allowed might be limited. As a result, DoDAF presents itself as a strong solution in making well-informed decisions regarding the overall system architecture of Defense (DAF) projects. At Auburn University we are trained in learn how to solve DoDAF in the software assurance project and sought to create a set of best practices for using DoDAF for software engineering.

To develop these best practices we presented DoDAF requirements through the use of software assurance tools and techniques. The Counter improvised Explosive Device (IED) Counter Technology development is a great example of this. In this project the software assurance engineers use DoDAF to develop a great tool for software assurance. The software assurance tools of CIMA for share, and this project fulfillled the IED Counter is a great example to software assurance tools and techniques.

In generating DoDAF requirements for this project we were able to create a tool that was used to display all of the requirements and constraints. This was done using both the graphical and textual methods. The graphical method was used to display the requirements and constraints. The textual method was used to display the requirements and constraints. To make the graphical format more understandable and easier to use, we used the software assurance tools and techniques.

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Automation

The importance of automation cannot be understated. In the cases where our team was able to apply automation the cost was usually minimal yet gave us the best results.

After importing the SV-3 into a comma separated values file we were able to create a directed graph, which was then fed into Nodebox using a custom script (buildgraph.py) to create a edge list. This list was then fed into NodeBox and Inkscape to create a SV-2 which is easier to read for both the software developers and managers.

By letting the team develop their own methods for DoDAF view creation we hit upon methods which were faster and created higher quality documents than using common office software. These custom methods produced better architecture and eliminated non-value added efforts.

Results

Counter IED Medical Trainer (CIIMT)

Auburn University Information Assurance Center