

Good Enough Architecture Empowers Warfighter Decision Support Systems Today

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Over the past 5 years, the U.S. Army has been challenged with the fast pace of transformation as well as the immense responsibility of a nation at war in the midst of Army Transformation. To simultaneously support transformation and *Operations Enduring Freedom* and *Iraqi Freedom (OEF/OIF)* force improvements, the Army is now using alternative architecture products to inform decision support, investment and fielding strategies and other institutional processes that enable rapid acquisition and engineering solutions.

Good enough architectures are providing decision support tools that empower battlefield operational courses of action in Iraq and Afghanistan today. (U.S. Air Force photo by TSGT Mike Buytas, 1st Combat Camera Squadron.)

Architecture Defined

Architecture is a widely used term that is commonly misunderstood because it means different things for different people and processes. The military generally defines architecture as the documented understanding of various relationships among defined entities that enable analysis and situational awareness. The entities can be systems, services, functions, organizations, personnel, units, developmental activities, institutions, processes or concepts. Each entity has both internal and external relationships and can be configured dynamically to form capabilities.

The very nature of architecture is generally in data form. In other words, the architectural construct is depicted by ratified data and information sets gathered from engineering, analyses,

decisions and developmental activities.

This data is then used to develop coherent pictures, charts, drawings, maps, presentations, layouts, spreadsheets and documents that provide an understanding of meaningful and logical information sets of relationships, attributes and knowledge of assets. These, in turn, feed institutional processes, including decisions, analyses, modeling, experimentation, compliance, integration activities, assessments, investment strategies, community developmental efforts and recursive or other architecture developmental

efforts. The bottom line: the architecture itself is based on the derived or reusable data at hand.

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Architecture types are determined by the specific functional relationships observed by customers, engineers or developers. There are several possible layers (perspectives) consisting of similar information derived from the artifacts that make up a particular architecture. The important thing here is that the user sets the rules in determining the type of architecture required and produced.

This is the single most important aspect in developing and using

architectures. Architectures can, by nature, be very complex. To reduce this complexity, the Army Architecture Integration Cell, with help from MITRE Corp., devised an architecture shortcut that is “good enough” for decision support at the leadership level and for developers at the staff level.

Good Enough

“Good enough” is a term coined by senior Army leaders in 2002 to describe the best practical, viable and affordable solution that adequately fulfills warfighter requirements. Army leaders challenged the engineering, acquisition and architecture communities to conduct smart business practices resulting in rapid turnaround of required architectural products to expediently service warfighters to keep pace with Army transformation efforts as well as *OEF/OIF* resolutions. Hence, good enough architecture methodology was born. Although not doctrinal or scientific in nature, the term



A 3rd Infantry Division Joint Network Node operator monitors Secret Internet Protocol Router traffic on the network. (U.S. Army photo by Robert Wilson, Project Manager Tactical Radio Communications Systems.)

good enough has gained momentum in the engineering, architecture and decision community.

Good Enough Architecture Versus DoD Architecture Framework (DoDAF)

Traditional architecture products were developed

within the DoDAF document's methodology, where architecture products consist of operational views (OVs), system views (SVs) and technical views (TVs). Each product provides a unique perspective of the overall architectural picture and is generally viewed separately because of its complex build.

The DoDAF approach is comprehensive, resource intensive and has a complex development cycle where the information exchange requirement is DoDAF's focus. It is very difficult to put all OVs, SVs and TVs in one viewing; and it is not capabilities and enterprise based. The need to rapidly derive easily understood products that negotiate these issues forced a derivation of the DoDAF process and products that depict OVs, SVs and TVs in one snapshot. This product is affectionately called a Graphical All View (GAV). The GAV is not as comprehensive as DoDAF products, but is good enough to support and inform decisions made by leaders, operators and engineers alike. It also provides insight and a high level of understanding on capabilities and the enterprise perspective.



Good enough architectures have become the Army's “tool of choice” for providing rapidly and efficiently designed warfighter solutions. Here, Soldiers from Co. A, 2nd Battalion, 130th Regiment, Illinois National Guard, secure a residence during a Military Operations on Urban Terrain training exercise at the Novo Selo training area in Bulgaria during *Exercise Bulwark 2004*. (U.S. Air Force photo by SSGT Derrick C. Goode.)



BFT uses good enough architecture that has resulted in exceptional operational success since its fielding in 2003 to directly support OEF/OIF. (U.S. Army photo by Timothy L. Rider.)

Successes

With good enough architecture's advent, the Army rapidly resolved several critical problem spaces while saving resources and providing a quick turnaround of an architectural understanding. Some examples include:

- The fast fielding of Army-Joint Network Nodes (JNNs) within months of problem space identification.
- OEF/OIF Blue Force Tracking (BFT) and the 2003 Battle Command good enough architecture used to springboard current Army Battle Command System (ABCS) programmatic good enough decisions.
- OEF/OIF and future network technology solutions.

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Today, the Army community can get quick and informative analytical insight of current problem spaces, associated resolutions and decisions required

because of the good enough approach. Good enough architectures are decision support tools that empower decisions now and in the future. It is the key to achieving and engineering near- and mid-term network-centric solutions and is the tool of choice to rapidly and efficiently design warfighter

solutions for leadership decisions that, in turn, empower warfighters with desired capabilities sooner rather than later.

Good enough architecture, generally found in the form of GAVs, is quickly taking on an evolutionary characteristic regarding architecture development and decision support utility. While traditional architecture still has a place in current institutional processes, on the horizon are better,

more efficient and innovative architecture methodologies and processes, such as good enough architectures that will keep pace with transformation

activities, capabilities-based acquisition and technology insertion strategies. Remember, architecture is the perspective of how you desire to view data of ratified engineering and analyses. If there is a faster, more effective way to get the architecture to service decision support, then we must capitalize accordingly.

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