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PROPOSAL NUMBER	A062-223-1018
TITLE	Development of Federated Enterprise Architecture Models for Lifecycle Knowledge Management
PROJECT MANAGER	Thomas R. Gullede (703) 236-0800 Thomas.Gullede@Eiisolutions.net
COMPANY	Enterprise Integration, Inc. 5971 Kingstowne Village Parkway Suite 110 Alexandria VA 22315 Minority Owned: No Veteran Owned: No Number of Employees: 34
KEYWORDS	product lifecycle, service-oriented architecture, metamodels, federated architecture
ABSTRACT	The objective of this project is to research, design, develop, and implement an open architecture that is based on meta models and standards for the federated management of knowledge generated over the lifecycle of weapon systems in the Product Lifecycle Management (PLM) process. We begin with five assertions that constrain the PLM process in the Department of Defense. Given these constraints, our research hypothesis is the following: A set of web services can be architected to build on existing web services representations of the PLCS international standard to enable federated access to weapon system technical data across Army sustainment organizations and meet business requirements as delineated in the Army National Architecture. The technical objectives for this Phase I research are: 1. Fully develop the problem space, including a refinement of the constraints. 2. Research the technical literature related to PLM, PLM standards, Web Services (as applied to PLM), multi-platform application server integration, BPM (management & technical), Federated Architecture Alignment, and other areas that may be important in designing a prototype solution, 3. Refine the hypothesis, 4. Develop a requirements definition level model in a modern requirements modeling tool, and 5. Develop the appropriate documentation to support the transition to Phases II and III.
BENEFITS	The ultimate goal of the proposed research is to create an enterprise software system that provides the capability to search, retrieve and exchange knowledge in a federated environment, accessing data generated throughout the product lifecycle (concept, technology development, system development, production &

	<p>deployment and operations and support). This type of system would be a valuable asset to any organization that undertakes long-term product development projects. It could also enhance the performance of any organization that is responsible for overseeing product development undertaken by a third party. The intended initial market for this system is the Department of Defense, specifically the Army Material Command (AMC) as it relates to AMC's activities in weapons systems development. However, it can be used for any long lifecycle item, whether in-house or third-party. As such, we believe a mature version of this system would also be marketable to several Federal agencies charged with the responsibility of monitoring product development in the private sector. In addition, the solution will apply to commercial endeavors, and would be most appropriate for organizations that manage data across a portfolio of long lifecycle items. Still, we think the military is our most important customer, the customer with the greatest need for such a solution. It is our belief that the size of the potential market for this system will be extensive.</p>
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