



OFFICE OF THE DEPUTY ASSISTANT SECRETARY OF DEFENSE SYSTEMS ENGINEERING

System of Systems Engineering Collaborators Information Exchange (SoSECIE)

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Using Data Integration and Data Governance to Extend the Life of USMC Logistics Applications During Migration to GCSS-MC

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Abstract

The United States Marine Corps (USMC) has a high number of legacy applications, each devoted to a specific area of the “business” such as the Deployed Unit Equipment Tracking System, In Stores Equipment Tracking System, Equipment Maintenance System, Financial Planning System, Financial Execution System, Disposition System, and Total Force Organization and Requirement System. The USMC is beginning to combine some of these systems into a single, integrated system based on Global Command Support System – Marine Corp (GCSS-MC).

This presentation will show how a Common Operating Picture-type tool, Total Lifecycle Management Operation Support Tool (TLCM-OST) built on top of a highly integrated Data Warehouse – the Master Data Repository (MDR), has assisted in the transition and provided a seamless blend of the legacy information from existing systems alongside the new information from GCSS-MC as it was rolled out across select organizations. The brief will show how the extensive data integration within the data warehouse laid the groundwork for data discrepancy reporting, reporting data quality metrics and trends to provide measures of effectiveness (MOE) of any policies put forth in order to cleanse the legacy system data prior to the migration to the new system as well as the effectiveness of any new business rules employed in the emerging systems to offer measurable points of reference for past trends and current adherence levels.

The brief will review specific tools developed to assist in this effort like Data Pedigree which tracks and exposes the full data lineage back to the original source system from any end user application screen or report within the system. This helps to build credibility through transparency of data sources, definitions and rules. The brief will also touch on challenges in working in this blended environment. For example, as the new system emerged the data warehouse system had to implement 2 sets of business rules – one for the legacy systems and one for the emerging systems. The management of these business rules within the data warehouse and data marts shielded the end user applications from having to be modified to keep up with migration changes.

The brief will discuss lessons learned and future development areas as well as show how this laid the groundwork for Data Governance. Data Governance involves people and processes needed to improve data quality, enable Master Data Management and establish data standardization and credibility. The Governance begins with implementing data quality improvement efforts and the establishment of the Master Data Model. Establishing standard terms, business rules and calculations and extending this to the data verification and validation in the Extract / Transfer / Load (ETL) process enables data discrepancy reporting and the communication of metrics on effectiveness of data cleansing activities back to the user base.



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Biography

Ms. Hiles is the Director for Data Management at Concurrent Technologies (CTC) in Johnstown, PA. She has over 25 years of software design and development experience in the commercial as well as government arenas serving roles of systems analyst, software developer, Project Manager and Professional Services Consultant for companies like Kennametal Inc, Siemens Energy and Automation and Strategic Technologies Incorporated prior to her taking the role at CTC. Ms. Hiles has been with CTC for 10 years and has worked on various projects such as Knowledge Management systems for DARPA, Training scenario management systems for the Army National Training Center (RIPPLE) and Total Life Cycle Management – Common Operating Picture (TLCM-COP) system for the United States Marine Corp. On this project she served as data lead, technical lead, then project manager. Ms. Hiles has previously published and presented papers on similar topics to the Defense Manufacturing Conference (DMC) and presented a paper to the Product Data Management software global user community dealing with Part Family Management software and usage. Ms. Hiles has been an adjunct professor teaching introductory Computing, Programming and Database Management classes. Ms. Hiles has a Bachelor's degree in Mechanical Engineering from Lehigh University and both a Computer Programming Certificate and a Master of Science in Management from North Carolina State University.