

COBOL - STG, Inc. - Mission Capability

STG, Inc

U.S. Air Force

Weapon System Management Information System – Mission Capability (WSMIS-MICAP)

COBOL to C++

History: As part of the Logistics Management System, The Weapon System Management Information System (WSMIS) is responsible for tracking combat capability and impending parts problems. The system was well regarded during Desert Storm for its ability to expedite repair or procurement of critical items. However this legacy COBOL system requires modernization to continue to fulfill its mission. Towards that end, STG contracted with TSRI for a Firm Fixed Price (FFP) proposal to modernize the MICAP module of WSMIS.

Challenge: The MICAP application ran on an AMDAHL 5995 mainframe. The code was comprised of 34,577 lines of COBOL with 2,153 COBOL comments and 5,077 lines-of-JCL with 3,130 JCL comments. The 3-gigabyte database included 67 flat files (tables) and 423 fields (elements) of data. TSRI was contracted to incrementally provide seven separate deliverables, which included: (1) Set-up of the JANUSTM tool set, (2) “As-Is” Documentation, (3) Code Transformation, (4) Database Transformation, (5) Automatic Re-factoring, (6) System Testing (optionally) and (7) “To-Be” Documentation. TSRI was required to make adjustments to the JANUS™ tool set to ingest the MICAP dialect of COBOL into the Intermediate Object Model (IOM). The ability of the IOM to target modern languages independently allowed the transformation process to proceed, even though the decision regarding whether to target C++ or Java was initially postponed. When the decision was made, TSRI targeted C++, which would run in a Microsoft Windows-based environment interfacing to an Oracle 9i database.

Results: Both the “As Is” and “To Be” documentation deliverables included Control Flow Diagrams, Structure Charts, Data Element Tables and hyper-linked Source Code in HTML format. The legacy COBOL and JCL were transformed quickly and accurately as was the database. Re-factoring improved the code structure by removing dead code and eliminating redundancy. STG chose to begin the testing process, however TSRI assistance was engaged to complete this phase. Acceptance testing confirmed the accuracy and 100% equivalency of this WSMIS module. MICAP is a batch application and the Air Force is currently completing associated user-interface upgrades before putting the modernized module into service.

