ABSTRACT AND BIOGRAPHY

Lessons Learned: AIX Upper Stage Simulator Design/Build

In May 2006, NASA Glenn Research Center was assigned responsibility to manage, design, manufacture, test, and deliver an Upper Stage Simulator (USS) element for the first development test flight of the new Ares I launch vehicle, named the Ares I-X mission. In order to meet the aggressive launch date of spring 2009, GRC established an Integrated Product Team (IPT) to implement a design/build approach which featured three highly concurrent design/manufacturing cycles utilizing GRC's in house engineering and manufacturing workforce and facilities. At the completion of the verification activities, the USS IPT implemented a formal lessons learned cap-ture process. This paper will present the lessons captured from that process in the key "themes" of project management, system engineering, safety/mission assurance, engi-neering/design/analysis, manufacturing, test & verification, and ground/launch processing. Spe-cial emphasis will be provided on the budget, schedule, configuration management, and design process management challenges that the team overcame in order to successfully deliver the USS to KSC in the fall of 2008.

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Mr. Bilardo currently serves as the manager for the NASA Glenn Research Center contribution to the Ares I-X test flight, the turnkey design/build/delivery of an Upper Stage Simulator flight test article. Prior to joining GRC in 2005, Mr. Bilardo spent three years at NASA Langley Research Center, where he managed the Next Generation Launch Technology program's Systems Analysis Project and led the Constellation System Analysis Integrated Discipline Team. Mr. Bilardo has 26 years of experience as a program/project manager, senior systems engineer and branch chief in the federal government, including assignments at NASA Ames Research Center, the Space Sta-tion Freedom Program Office at NASA Headquarters, the Space Shuttle program at NASA Ken-nedy Space Center and Vandenberg Air Force Base, and at the U.S. Army Corps of Engineers Kansas City District. He has worked in the disciplines of liquid propulsion, thermal control, envi-ronmental control / life support, non-destructive testing, and hazardous / toxic waste remediation. He holds bachelors and masters degrees in mechanical engineering from Case Western Reserve University, and has authored or co-authored 23 technical papers including 7 peer reviewed. His major awards include the NASA Exceptional Achievement Medal, a Congressional Record Cita-tion, a Mayoral Proclamation, and four NASA Group Achievement awards.