

### ABSTRACT AND BIOGRAPHY

#### **The CMMI® Models in Oversight of Space Flight Software Development**

NASA is entering a new phase of space flight development for Constellation with highly complex systems and new engineering methods for software development. In general, software is perceived to be a high-risk item in the Constellation Projects.

The Spacecraft Software Engineering Branch is using the CMMI framework to leverage software engineering best practices into our oversight and insight of Orion software to reduce project risk. We recently earned a CMMI Maturity Level 2 rating and are working towards a CMMI Maturity Level 3 rating.

Capability Maturity Model® Integration (CMMI) is a registered trademark of the Software Engineering Institute at Carnegie Mellon University.

#### **Liz Strassner**

*Lead, Software Process and Process Management Group  
NASA Johnson Space Flight Center*

Ms. Strassner is the Group Lead of the Software Process and Process Management Group at NASA's Johnson Space Center. In this capacity, she is responsible for integration and development of processes and process management that improves software development and management. In addition, Ms. Strassner is the current Chair of the Engineering Directorate's Software Engineering Process Group, and the NASA representative to the Lockheed Martin-led Orion Software Engineering & Process Group.

Prior to accepting this position, Ms. Strassner was the JSC Lead Software Engineering and was Chair of the JSC Software Engineering Process Group, and the JSC representative to the NASA Software Working Group. In this position, she also served as co-chair of the JSC Software of the Year awards.

Ms. Strassner has a Bachelors Degree in Electrical Engineering and twenty-five years of experience at JSC in simulation hardware and software, project management, and contract management. She was awarded the NASA Exceptional Achievement Medal and the NASA Silver Snoopy Award for her work in simulation for the first Hubble Space Telescope Serving Mission.

#### **David Retherford**

*Sr. Software/Systems Engineer  
ESCG/ERC Inc.*

Mr. Retherford is part of the Software Process & Process Management Group at NASA's Johnson Space Center. He currently provides insight and oversight support for monitoring Lockheed-Martin's software development activities and processes for the Orion project. He also

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provides software engineering development process support for the Spacecraft Software Engineering branch, ER6 and supported the branches CMMI Maturity Level 2 efforts. He is a member of the Orion and Engineering Directorate SEPGs and supports the JSC SEPG.

Prior to this position Mr. Retherford worked at the ISS Software Development & Integration Laboratory developing and supporting software for the operation of the SDIL test rigs and as a software task and process lead. Previous positions included software simulation and model development for the ISS Part Task Trainers, software/hardware integration and computer systems integration for the Shuttle Mission Simulator.

Mr. Retherford holds a BS in Computer Science and an MS in Software Engineering from the University of Houston Clear Lake. He has over twenty-five years of experience with computer hardware systems and software development in simulation, systems engineering, and project and software project management.