

## **Track Preference:** Systems Engineering

### **Presentation Title:** Multi-Center Implementation of NPR 7123.1A: A Collaborative Effort

#### **Synopsis:**

This presentation will discuss a collaborative effort undertaken by MSFC and GRC to share their research and work to more effectively develop and deploy SE process instructions to support consistent implementation of NPR 7123.1A requirements.

#### **Abstract:**

Collaboration efforts between MSFC and GRC Engineering Directorates to implement the NASA Systems Engineering (SE) Engine have expanded over the past year to include other NASA Centers. Sharing information on designing, developing, and deploying SE processes has sparked further interest based on the realization that there is relative consistency in implementing SE processes at the institutional level. This presentation will provide a status on the ongoing multi-center collaboration and provide insight into how these NPR 7123.1A SE-aligned directives are being implemented and managed to better support the needs of NASA programs and projects.

NPR 7123.1A, NASA Systems Engineering Processes and Requirements, was released on March 26, 2007 to clearly articulate and establish the requirements on the implementing organization for performing, supporting, and evaluating SE activities.

In early 2009, MSFC and GRC Engineering Directorates undertook a collaborative opportunity to share their research and work associated with developing, updating and revising their SE process policy to comply and align with NPR 7123.1A. The goal is to develop instructions, checklists, templates, and procedures for each of the 17 SE process requirements so that systems engineers will be a position to define work that is process-driven.

Greater efficiency and more effective technical management will be achieved due to consistency and repeatability of SE process implementation across and throughout each of the NASA centers. An added benefit will be to encourage NASA centers to pursue and collaborate on joint projects as a result of using common or similar processes, methods, tools, and techniques.

## Contact Information

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## Biography:

Mr. Hall has over 20 years of experience at NASA, and in his current role, he leads the systems engineering policy effort for MSFC. Mr. Hall serves as the MSFC representative to the Agency Systems Engineering Working Group (SEWG) and leads the Agency's Systems Engineering Training Subgroup, ensuring that MSFC complies with NASA Systems Engineering requirements and implements them through documentation, training, and SE tools.

Prior to this, Mr. Hall worked with the NASA Engineering and Safety Center as the Deputy Discipline Expert on Mechanical Systems and led anomaly assessments.

Mr. Hall joined NASA/MSFC in 1989 in the Tribology Branch, where he researched new lubricants for space applications and worked lubrication issues on many projects such as Shuttle, ISS, and Chandra. Mr. Hall holds a bachelor's degree in Materials Engineering from Auburn University and has received numerous awards including the MSFC Engineering Director's Award and the NESC Engineering Excellence Award.

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**Biography:**

Ms. McNelis has over 26 years of experience at NASA including numerous roles in Engineering and Project Management. Currently Ms. McNelis leads the Engineering Process Group with the responsibility for developing and implementing standard engineering processes at the GRC.

Prior to this, Ms. McNelis has extensive engineering and project management experience including work with the Spacecraft Propulsion Test Facility (B-2) and Cryogenic Propellant Tank Facility (K-Site).

Ms. McNelis holds a bachelor's degree in Mechanical Engineering from the University of Akron has received numerous awards including the NASA Exceptional Service Medal in 2006 for sustained excellence in engineering and project management.