



**Upper Stage (US) Preliminary Design Review (PDR) Completion:** The Ares I Upper Stage Element Office successfully completed its PDR on August 5. The PDR Board unanimously concurred that the US met the objectives of the review and is ready to proceed with critical design. Forward actions were discussed and approved to correct all issues found by the review team. The US PDR was conducted to determine the adequacy, correlation, completeness, and risks associated with the allocated technical requirements for the Ares I Upper Stage. The PDR demonstrates that the preliminary design meets all system requirements with acceptable risk; shows that the correct design option has been selected, interfaces identified, and verification methods satisfactorily described; and establishes the basis for proceeding with detailed design.

*Recent activities specific to the Elements include:*

- **Upper Stage (US)**

- **US Manufacturing and Assembly:** The Nonmetals Engineering Branch (EM40) has purchased three Panasonic Toughbooks, which will be beta tested in durability for use in Marshall Space Flight Center's (MSFC's) Manufacturing Execution System, which is a paperless system of model-based instructions for performing each task in the manufacturing process. The NASA Design Team and Boeing will jointly develop this system at MSFC for full-scale use during US production at Michoud Assembly Facility (MAF).



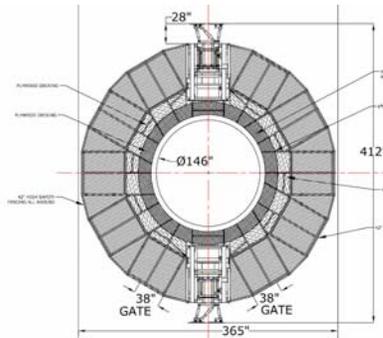
*Panasonic Toughbook*

- **Flight and Integrated Test Office (FITO) and Ares I-X**

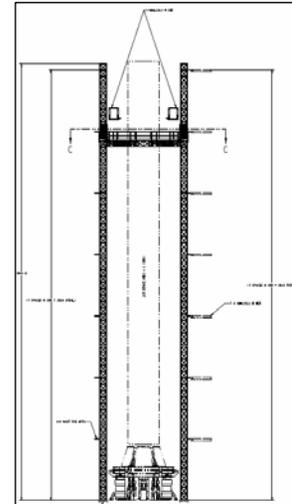
- **Avionics Integrated Product Team (IPT) Completes Second Test:** The Avionics IPT completed the second Systems Integration Laboratory (SIL) test. In total, there are 12 tests planned. Nine test cases were executed to verify Ground Command, Communication, and Control (GC3) core hardware and software performance; the Computer Controlled Launch Set (CCLS) Utility Software; and CCLS monitoring capabilities. The second SIL test provides verifications for a total of 85 requirements from the Avionics Design Requirements Document, the CCLS Software Requirements Specification (SRS), and the Hardware Extension Remote Requirements (HERR) SRS.



- **Integrated Vehicle Ground Vibration Test (IVGVT) – First Set of Mast Climbers to be Procured for Test Stand (TS) 4550:** The bids for the first set of Mast Climbers to be installed in TS 4550 have arrived and are under technical review. Mast Climbers are one of the latest advancements in construction technology that will allow an alternative means of access to the IVGVT First Stage test articles over the traditional scaffolding method and/or construction of permanent work platforms. The versatility of rigging the Mast Climbers allows for access to the entire length of the First Stage and is the key to stacking, applying instrumentation, and testing each First Stage test configuration in a safe, timely manner. Procurement of the Mast Climbers to access the US/Orion Test Articles will start in FY 2010.



*Top down view of the TS 4550 Bridged Mast Climbers*



*TS 4550 Mast Climbers side view*

- **Project Integration (PI)**

- **Ares Outreach:** The Ares Projects integration team gave/supported presentations on the Ares projects and NASA's exploration plans to 139 educators attending Space Camp, a Williams Middle School teacher in-service, and a workshop at the U.S. Space & Rocket Center's Educator Resource Center July 30-August 1. The team also explored opportunities for integrating Ares content into the Digital Learning Network's educational programming in a meeting with its director on July 29. The network serves the needs of educators by distributing lessons on VHS, DVD, and internet. For more information, refer to <http://www.digitallearningnetwork.com>.

The Ares Project looks forward to the Ares I PDR Pre-Board and Board in September.

***...and as of this Ares Projects Weekly Summary, there are only 250 days until the first Ares I test flight, Ares I-X!!!***