

## **ARES UPPER STAGE ENGINE (USE)**

**First J-2X Engine Control Unit Delivered:** Honeywell International has delivered the first J-2X engine control unit (ECU) to Pratt and Whitney-Rocketdyne (PWR). The ECU, shown in Figure 1, will monitor the health and status of the J-2X engine and also initiate the start and shutdown of the engine by controlling valves and the igniters.



***Figure 1 – This is the first completed J-2X ECU, ready for testing and subsequent shipment to Stennis by January 3, 2011.***

PWR engineers will be working over the Christmas break to test this first ECU to have it ready to be shipped to Stennis Space Center by January 3, 2011. Stennis needs the unit so that the facility and test stands personnel can perform their checkouts and write the necessary procedures in order to control the J-2X engine during chill tests and hot fires.



## **ARES UPPER STAGE (US)**

**Stage Operations – Manufacturing and Assembly Subsystem:** The Upper Stage team is continuing to make progress on the common bulkhead manufacturing demonstration article (CBMDA). The honeycomb core was recently machined and verifilm-checked for disbond areas. The verifilm (orange/red in Figure 2) was placed on the honeycomb, the second dome was installed on the first dome/verifilm assembly, and the entire assembly was baked in the Marshall Space Flight Center (MSFC) Building 4707 curing oven. Verifilm indicates where the honeycomb cells have good contact with the dome. The results from the verifilm indicated sufficient contact to proceed with actual bonding. The team will proceed with applying adhesive for the second bond in the next few weeks.



**Figure 2 – The CBMDA honeycomb verifilm process.**

The CBMDA will demonstrate that the US Manufacturing and Assembly (M&A) team has assessed the hardware manufacturability and processing to a high enough level for design confidence to proceed at the Critical Design Review level.



## **ARES VEHICLE INTEGRATION (VI)**

***Ares I-X Flight Evaluation Report Released:*** The “Final Flight Evaluation Report For Ares I Use of Ares I-X Data”(document number APO-1041) has been completed and is available from the Ares Documentation Portal on Windchill as a Category 2 document. The report was sanctioned by the Ares Projects Office as a single source of the engineering analysis that was performed in support of the design and development of Ares I to exercise the tools, models, and processes by using the Ares I-X data. Of the 33 tasks specifically defined prior to the Ares I-X flight, 29 tasks were actually performed. The report includes an executive summary, flight overview, brief summaries of the tasks, and a summary of data quality and archival.



***Figure 3 – The flight evaluation report for the use of the Ares I-X test flight data is now available.***

The report, which is Sensitive But Unclassified (SBU)/International Traffic in Arms Regulations (ITAR) controlled, is almost 1,700 pages long and consists of five volumes incorporated into one file in .pdf format. To request a copy of the report, please contact [Elizabeth.J.Bolte@nasa.gov](mailto:Elizabeth.J.Bolte@nasa.gov).

***The Ares Projects look forward to  
Test Stand A-2 being ready for J-2X engine installation and testing in  
late January.***

**Seasons  
Greetings**