

# Astrium Spaceplane project brings Dassault Systèmes and EADS Innovation Works together in partnership



Astrium, together with EADS Innovation Works and Dassault Systèmes, are working on a joint project that will enable them to evaluate, by the end of 2011, the use of Dassault Systèmes Version 6 solutions during the exploration design phase of a space vehicle. The objective for EADS and Astrium is to optimize their engineering processes by increasing multi-disciplinary collaboration at various stages of development using CATIA, ENOVIA and SIMULIA.

**T**he development of an aerospace vehicle is a combined effort of many disciplines contributing their know-how and expertise throughout the engineering process. Multiple teams including propulsion, aerodynamics and systems, explore different variants of the future vehicle to come up with a solution that best balances the set of multi-disciplinary requirements. The purpose of this exploration design phase is to review and agree on the most optimized component or vehicle configuration as early as possible.

## FUNCTIONAL DIGITAL MOCKUP FOR EXPLORATION DESIGN

Astrium, which designs and manufactures launch vehicles, manned space and satellite systems for civil as well as military purposes and EADS Innovation Works, the corporate research and technology network of EADS, have recently entered into a partnership with Dassault Systèmes to develop solutions and the associated methodology that will enable it to improve EADS' and Astrium's internal engineering methods through the use of an innovative and revolutionary concept – the functional digital mockup (FDMU).

The FDMU, unlike a digital mockup, which is associated more to the 3D geometry of a vehicle, will play an essential role during the exploration design phase. Based on Dassault Systèmes' RFLP (Requirements, Functional, Logical and Physical) concept, it will add a whole new dimension to multi-disciplinary collaboration.

According to Christophe Chavagnac, Suborbital Space plane Project Manager and Chief Engineer, Astrium: "We believe that increased collaboration at different steps of the development process by the different disciplines could improve our engineering processes. During a given design step, if a new variant is found that we feel is better than the current baseline, implementing it at a later stage can have a negative impact on costs and planning."

The goal of the project is to prove that increased teamwork between the different disciplines will ensure that vehicle solutions that may have otherwise been overlooked will be brought to the forefront and discussed early. "We decided to partner with Dassault Systèmes because we believe the functional digital mockup is one innovative approach for streamlining design iterations," Chavagnac said.

The project is expected to produce its first conclusions by the end of 2011. "Using the V6 platform, our objective is to show that the FDMU can bring considerable added value to the overall development process at EADS, thanks to the Astrium showcase," said Olivier Malet, EADS Technical Sales, Dassault Systèmes. "The following step would then be to test this on an operational project for a future aircraft or space vehicle." 

For more information:  
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