NASA Project M GENIE Integration and Lander Free Flight

This video gives an overview of the GENIE integration activities on the Project M RR-1 prototype lander. GENIE (Guidance Embedded Navigator Integration Environment) was developed to demonstrate fully functional, real-time, GNC code in a terrestrial rocket vehicle applicable to landing on the surface of the Moon.

It also shows the NASA Project M Lander free flight test at Armadillo Aerospace outside of Dallas. The lander launched on June 23rd 2010. This is the prototype of the lander that may launch a version of Robonaut on future exploratory missions.

Project M was conceived last fall in the Engineering Directorate at the Johnson Space Center. There were several things swirling in the environment at the time. One was a simple management desire to coordinate the technology efforts going on across the Directorate. NASA was already doing significant work advancing LOX/LCH4 propulsion systems -work funded at multiple centers by the Exploration Technology Development Program (ETDP). NASA was also leading the development of the Autonomous Landing and Hazard Avoidance Technology Project (ALHAT), also funded by ETDP. The project also had this magnificent machine built with General Motors, Robonaut 2 (R2), funded primarily by GM. Coordinating those and other disparate efforts and focusing them toward a project with tangible milestones seemed sensible in order to leverage the greatest return from those investments.

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