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SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems Technologies (5)

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MANUFACTURING OF NEXT GENERATION LAUNCHERS' PAYLOAD FAIRING BY MEANS OF COST EFFICIENT OUT-OF-AUTOCLAVE PROCESS

Abstract

RUAG Space Switzerland is active in the development and production of payload fairings since 1975, namely Ariane 1. While the first payload fairing (PLF) generations were based on classical aircraft technology, RUAG Space introduced in 1986 the world's first payload fairing in composite technology, featuring low mass, higher performance and this in a variety of sizes and configurations. This technology demonstrates an outstanding reliability with an unrivalled 100To maintain competitiveness towards increasing number of competitors and market shares, RUAG initiate a new programme aimed at developing a new production technology based on Out-of-Autoclave process supported by new manufacturing capabilities and production means with the obvious final objective to reduce significantly the production costs. This paper aims at presenting the approach followed by RUAG to introduce this new technology, the required production means and finally to qualify the associated products' platform of Payload Fairing. The paper will details the management aspects linked with the large investments required and considerable risks associated with the change of production technology on the core product of RUAG Space, the Payload Fairing. The interdependencies between the process validation, the products' qualification and the facility setup and construction are also detailed in the paper. The first application of this new process in industrial production of launchers' payload fairing at RUAG Space will be on the Payload Fairing for the VEGA launch vehicle, leading to a qualification flight in the near future. After the successful flight of the pathfinder, all other Payload Fairings will be migrated to the new technology starting with the much larger and more complex payload fairings for the Ariane 5 and ATLAS V launchers, for which development activities are on-going.