

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

Author: Mr. Matteo Rendina
beyondgravity, Switzerland, matteo.rendina@ruag.com

MANUFACTURING OF NEXT GENERATION LAUNCHER 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 100% To 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 follows the one presented in 2015 and aims at presenting the conclusion of the facility validation and status on the qualification of the products that are manufactured with this new technology. The paper will focus on the activities linked with the risk burn-down associated with the introduction of a new manufacturing platform and the switch of the complete product portfolio into this new technology. Finally, the paper will present a return of experience from the first flight units manufactured. 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 VEGA Fairing, the new Ariane 5 and ATLAS V Fairings will follow in a short term, clearing the path to all other OoA composite structures among which those for newest ULA Launch Vehicle VULCAN.