

SPACE PROPULSION SYMPOSIUM (C4)
Propulsion System (2) (2)

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ARIANE 6 AND VEGA C PROGRAMS, THE P120C NOZZLE

Abstract

The P120C Solid Rocket Motor project was kicked-off during the last Ministerial Council in November 2014. It aims to provide the next generation of European Expandable Launchers, namely Ariane 6 and Vega-C, with a new low cost generation of SRM. Very ambitious recurring cost objectives are targeted for Ariane 6 and Vega C to properly answer to the market needs. Thanks to the previous P80 demonstration program which allowed maturing and qualifying cost efficient technologies, processes and materials, the P120C nozzle design features another step of design and manufacturing simplifications associated to more efficient ways of production.

The paper will present an overview of the design finally selected for the P120C nozzle, the material, processes and new lean production line project mandatory to cope with the ambitious cost objectives required. The second challenge to meet will be to produce a maximum rate of 35 nozzles per year, which has never been done in Europe before in this field of space activity. A few examples of technology maturation, to mitigate development risks with sub-scale prototype parts and a progress status of the development will also be presented. These activities will pave the way to the manufacturing of the first nozzle development model, to be fire tested beginning of 2018 in BEAP test bench in CSG (French Guiana).