

ARIANE 6
ULPM Cryogenic arms and LLPM MANG BOXES
Qualification Tests

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ABSTRACT

One of the characteristics of the ARIANE 6 launcher is a disconnection in positive time of the existing interfaces between the launcher and the ground. In addition to conventional connections, such as electrical or pneumatic umbilical plugs, two launcher/ground interfaces are preponderant, the cryogenic arms that supply the ULPM reservoir (Upper Liquid Propellant Module) and the MANG box that supply the LLPM (Lower Liquid Propellant Module) tank. The development of these elements took place between February 2017 and May 2022.

The qualification plan is defined according to a pyramidal structure guaranteeing the validation of the product starting from the elementary components and going up on the subsets and sets and lead to the complete system. The qualification of the components and the various elements was carried out in the factory. qualification of the complete cryogenic arm and MANG box system was initially carried out largely on the Fos sur Mer site and on the ELA4 site after reassembly of the arms on the mast and the boxes on the table

This paper presents a summary of the tests carried out as well as the main results with regard to the main constraints imposed by the lift-off of the Ariane 6 launcher