

THE ARIANE 6 ENCAPSULATION DOCK

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Abstract:

The Ariane 6 Encapsulation Dock is used to integrate the satellites inside the payload fairing to form the Upper Composite (UC).

The Dock is made of two parts. A fixed part is used to store material, to be able to work at each stage and to access the mobile platforms at every level. The second part allows to work all along the fairing using two mobile platforms with a 28 m stroke.

All the elements that will be in the vicinity of the UC are ATEX and propellant compatible.

The Dock comprises 7 fully secured stages for human operations with a simple communication system. Air and nitrogen are available at every stage and on the mobile platforms. A hoisting device is allowing to carry up to one ton of material at any working level.

The two mobile platforms are mounted on electric screw jacks and are surrounding the UC during the entire integration and encapsulation sequence. These platforms function with retractable drawers to adjust the working distance.

The project had to accept severe geo-return constraints and the planning did not allow for integration and tests in Aigle in Switzerland. Therefore, the first assembly and tests of the Dock were performed for the combined tests at the Centre Spatial Guyanais (CSG). This development approach was a real challenge in terms of design and verification.

The Encapsulation Dock is now fully qualified, and the first satellites are ready for their encapsulation inside the first Ariane 6 fairing.