

SPACE PROPULSION SYMPOSIUM (C4)
Propulsion System (1) (1)

Author: Ms. Stephanie Dreyer
France

Mr. Julien Herp
Centre National d'Etudes Spatiales (CNES), France

Mr. Vincent Leudiere
CNES, France

Ms. Ariane Deneuve
Airbus Safran Launchers, France

Mr. Patrick Danous
Airbus Safran Launchers, France

BOREAS DEMONSTRATION FOR FUTURE LIQUID PROPULSION ENGINES

Abstract

CNES, the French Space Agency, and Airbus Safran Launchers are preparing the future for new liquid propulsion rocket engines.

The most promising technologies, with regards to cost and mass reduction, have been identified through Research and Technology activities and are now evaluated on a set of demonstrators. This maturation process will enable to decrease the development duration of the next liquid engine generation.

These demonstrators are engine components (turbopumps, combustion chamber, valves, igniter . . .), at a scale harmonized around requirements for a low thrust LO_x/LH₂ engine (thrust: 10 kN, Isp: 450 s).

Among these specifications technologies are the bleed cycle, the low pressure igniter, and the engine operation in throttling or the idle mode.

A focus will be made on the status of these demonstrators including the main chamber design as well as firing test results obtained @ DLR P8 test stand.