

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

Author: Dr. Gerald Hagemann  
ArianeGroup, Germany

KEYNOTE: THE EUROPEAN WAY FOR LIQUID PROPULSION – HYDROGEN / METHANE  
FAMILY CONCEPT**Abstract**

European Competence in Liquid Propulsion builds upon Hydrogen propellant, since approx. 40 years with the Ariane launcher family.

Ariane 6 builds upon this heritage

With this core competence, the Hydrogen knowledge can be easily expanded towards Methane. Prometheus is a prominent engine demonstrator programme that builds upon this.

ArianeGroup expands this commonality further towards an engine family in the 1 – 10 – 100 tons thrust classes, by strictly focusing on “design to manufacturing” or “design to produce”. Following this, same design and manufacturing processes are considered as standard for all engine thrust classes. As result, “economy of scales” effect on recurring costs can be realized without strictly following “the one single” engine concept.

DLR ArianeGroup have demonstrated through LOX / Methane tests at 40 tons thrust level the scaling from Hydrogen to Methane. Elements on this will be shortly presented as well as the 100 tons Prometheus test bench.