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PROMETHEUS[®] ENGINE

TOWARDS THE ENGINES FOR EUROPE'S LAUNCHERS FROM 2030

- › A PROJECT MANAGED UNDER ESA'S FUTURE LAUNCHERS PREPARATORY PROGRAM (FLPP)
- › AN ENGINE USING LIQUID OXYGEN (LOX) AND METHANE
- › A LOW-COST REUSABLE ENGINE DEMONSTRATOR
- › MAINLY BUILT USING 3D PRINTING TECHNOLOGIES
- › DEVELOPED FOR FUTURE ARIANE 6 UPGRADES
- › FIRST MODEL READY FOR TESTING AT THE END OF 2020

PROMETHEUS® ENGINE

SPACE PROPULSION

PROMETHEUS® overview

Prometheus® is a European Space Agency (ESA) program in collaboration with the French national space agency (CNES) with the support from the German aerospace agency (DLR). It is a European demonstrator for a very low cost, potentially reusable engine, designed to run on liquid oxygen (LOx) and methane.

Prometheus® is the precursor of the future engines of Europe's launchers for the post-2030 time-frame, but could be used on an upgraded version of Ariane 6 as of 2025.

Main objectives

With Prometheus®, ArianeGroup aims to build liquid propellant engines at one tenth the cost of a current Vulcain®2 type engine.

The work done on Prometheus® aims to boost the competitiveness of future European launchers by bringing on-stream mature, ready-to-use technical solutions for fast development at less cost, effort, and risk.

The Prometheus® engine could be used to power the Thémis reusable stage demonstrator.

INNOVATION IS KEY

To be successful, this technological challenge calls for a completely new approach and the use of highly integrated, "connected" innovative design and production resources, particularly the extensive use of additive manufacturing (3D printing).

KEY DATES

Nov. 2015	Program launch
Dec. 2017	Contract with ESA for design, production and testing of two engine modules
Feb. 2019	Design Review finalization
Nov. 2019	Space19+ funding for the 2 nd phase of the Prometheus® program
2020	1 st engine ready for testing at the DLR (German Aerospace Centre) test bench in Lampoldshausen



CONTACT
ArianeGroup
Forêt de Vernon BP806
27207 Vernon Cédex, France

ArianeGroup Holding
7-11 Quai André Citroën
75015 Paris, France