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Press release

The Ariane 6 engines are now ready

Paris, October 15, 2020

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- **The three engines for Europe's new Ariane 6 launcher have now completed their qualification tests, following the successful qualification testing of the P120C solid propulsion engine on October 7 at Europe's Spaceport in French Guiana**
 - **The qualification test campaigns for the Vinci and Vulcain 2.1 liquid propulsion engines were held in 2018 and 2019, respectively**
 - **The Vulcain 2.1 and Vinci engines, which will be powering the first Ariane 6, are ready to be mounted on the core stage in Les Mureaux and on the upper stage in Bremen**
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The future European launcher's three types of engines use two different propulsion technologies:

- liquid hydrogen-oxygen propulsion for the Vulcain 2.1 core stage engine and the re-ignitable Vinci engine on the upper stage;
- solid propulsion for the P120C engine fitted to the boosters which help propel Ariane 6 beyond the gravitational pull of earth's atmosphere.

With the successful final qualification of the P120C at the European Spaceport (CSG) in Kourou on October 7, the qualification models of three engines for Ariane 6 have now all been tested successfully.

"This is a major step in the development of the new European launcher. The engines are traditionally among the most complex and most strategic components of any space project. The success of the P120C in the Ariane 6 configuration is also the first 'system' test of our European launcher, which has thus passed one of the most critical stages in its development" said André-Hubert Roussel, CEO of ArianeGroup. *"The Vulcain 2.1 and Vinci engines for the Ariane 6 maiden flight have already been delivered to the relevant sites in Bremen, Germany, and Les Mureaux France, for integration with their respective stage, having first undergone production completion firing tests, to ascertain proper functioning. I would like to express my warmest thanks to everyone at ArianeGroup and our industrial partners for this major success by the European space team, in a context that is difficult for everyone.*

The solid-propellant P120C rocket will equip Ariane 62 (Ariane 6 in its configuration with two strap-on boosters) and Ariane 64 (four strap-on boosters) as well as the first stage of the Vega-C launcher. This third and last successful test of the solid propellant P120C rocket, in the Ariane 6 configuration, paves the way for final qualification of the P120C by the European Space Agency (ESA). Additionally, this last engine test was also the first "system" test of the booster for the new European launcher, which features a nozzle controlled by electric jacks powered by thermal cells (a world first in ignition by laser and optical fiber). The same test also validated the interactions between "ground" infrastructures and "on-board" equipment thanks to a new technology communication bus.

The Vulcain 2.1 core stage liquid propulsion engine, which produces a thrust of 140 metric tons (1,370 kN) have completed qualification tests in July 2019. The Vinci upper stage re-ignitable engine, with its 18 metric tons of thrust (180 kN), completed its qualification tests in October 2018.

Ariane 6 is a program managed and funded by the European Space Agency for which ArianeGroup is design authority and industrial prime contractor. ArianeGroup is responsible for development,



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production with its industrial partners and operations via its subsidiary Arianespace. The French space agency CNES is responsible for construction of the launch pad in Kourou, French Guiana.

ArianeGroup coordinates an industrial network of more than 600 companies in 13 European countries, including 350 small and medium enterprises (SMEs).

About ArianeGroup

ArianeGroup develops and supplies innovative and competitive solutions for civil and military space launchers, with expertise in all aspects of state-of-the-art propulsion technologies. ArianeGroup is lead contractor for Europe's Ariane 5 and Ariane 6 launcher families, responsible for both design and the entire production chain, up to and including marketing by its Arianespace subsidiary, as well as for the missiles of the French oceanic deterrent force. ArianeGroup and its subsidiaries enjoy a global reputation as specialists in the field of equipment and propulsion for space applications, while their expertise also benefits other industrial sectors. The group is a joint venture equally owned by Airbus and Safran, and employs approximately 9,000 highly qualified staff in France and Germany. Its 2019 revenues amounted to 3.1 billion euros.

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