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Press release

## ArianeGroup to deliver key propulsion system components for the Orion spacecraft for the Artemis III Moon mission

Lampoldshausen, Bremen, 28 September 2020

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- **Airbus Defence and Space has placed several propulsion contracts with ArianeGroup for the third European Service Module (ESM) for NASA's Artemis Moon mission**
  - **ArianeGroup will be delivering several key components, including the attitude control system, as well as providing propulsion system integration and testing services**
  - **These contracts follow on from the decisions taken at ESA's Space 19+ Conference**
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ArianeGroup has just signed several agreements with Airbus Defence and Space for the adaptation and construction of the third European Service Module (ESM) flight model for the Orion spacecraft. ArianeGroup will therefore:

- provide integration and testing services for the propulsion sub-system, as well as for certain parts of the thermal sub-system and the corresponding electronic sub-systems
- deliver several major components of the propulsion sub-system: notably 24 attitude control engines, two high-pressure regulators, various fuel valves, four fuel tanks, and two high-pressure helium tanks for pressurizing the fuel tanks in zero-gravity conditions
- provide technical support during system integration and acceptance of the Orion spacecraft's ESM in the United States

Airbus DS is prime contractor on behalf of the European Space Agency (ESA) for the ESM service module, Europe's contribution to NASA's Orion MPCV (Multi-Purpose Crew Vehicle) spacecraft.

*"When the first astronauts of the Artemis mission walk on the surface of the Moon in 2024, it will be in part thanks to the expertise of ArianeGroup in Germany and in France. Our know-how and our propulsion systems have flown on numerous exploration missions. By collaborating in the construction of the third service module together with Airbus Defence and Space, we demonstrate our know-how in the field of crewed flight," said Stefan Haessler, Head of Orbital Propulsion at ArianeGroup. "We are delighted to place our unique skills at the disposal of this transatlantic Moon mission. All the ArianeGroup employees are extremely proud to be able to contribute to the success of this exceptional human adventure".*

The contracts were signed in August 2020. They follow on from the decision taken by the ESA Council at ministerial level in November 2019 to continue European participation in the NASA project.

## Communiqué de presse

ArianeGroup has been involved in the Orion program since its beginning and has already supplied propulsion sub-system components for the first two flight models. The first service module has been delivered to NASA and the second is currently being assembled and tested at the ArianeGroup site in Bremen, Germany. Integration of the third service module will be starting shortly in Bremen.

The European Service Module that will propel the astronauts to the Moon has a propulsion sub-system comprising 33 engines. In addition to the main engines built in the U.S., it includes 24 attitude control motors with a thrust of 200N, built by ArianeGroup in Lampoldshausen, Germany. The fuel tanks are supplied by ArianeGroup in Bremen and the helium tanks by ArianeGroup in Issac, in the Nouvelle-Aquitaine region of France. This is supplemented by a considerable amount of final assembly work, to be carried out at the Bremen site. This work includes integration of the various components; installation of harnesses, thermal equipment, and fuel circuits; welding work; testing, including high-pressure tests; and support during integration in the U.S. At the same time, ArianeGroup has submitted a number of bids for production of ESM flight models 4, 5, and 6. The authorization to proceed has already been signed, so that critical lead-time activities can be started rapidly.

For NASA's Artemis program, the third ESM will be powering the astronauts into lunar orbit on board the Orion crew module, which will land on the Moon and return to Earth in 2024, carrying the first woman to set foot on the Moon. Before this, two flights will take place, with the first scheduled for 2021. This is the first time that NASA has used a European-built critical component to provide propulsion and electrical power for one of its spacecraft.

### 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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