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ORION EUROPEAN SERVICE MODULE READY FOR DELIVERY

**Abstract**

By end of 2017 the first flight model (FM) of the ORION European Service Module (ESM) will be shipped to Kennedy Space Center (KSC) in Florida closing out a year with a lot of highlights:

- Shipment of the Propulsion Qualification Model (PQM) from Sweden
- Arrival of the PQM in White Sands
- Signature of the ESM FM-2 contract
- Hot firing testing of the PQM
- Integration of ESM FM-1
- Acceptance testing of ESM FM-1
- Qualification testing of ESM Subassemblies and Equipment
- Start of ESM FM-2 hardware H/W manufacturing
- Finalization of ESM electrical testing

The ORION spacecraft is a multi-purpose crew vehicle designed to support missions beyond low earth orbit. ORION will be launched by the Space Launch System (SLS). The ORION vehicle includes the crew module (CM), the Crew Module Adapter (CMA) and the ESM.

NASA, ESA, European and US Industry have teamed to develop the ORION spacecraft. ESA is responsible for the European Service Module and awarded a contract to Airbus Defence Space for its development and production of the first flight unit. The European Service Module provides translational thrust and 3 axis attitude control for the ORION spacecraft, stores life support consumables for the crew module (oxygen, nitrogen and water), and provides thermal control and power.

This paper presents the actual status of the Orion ESM program close to the Pre-shipment Review (PSR) of FM-1 by end of 2017 including verification activities on PQM and ESM-QF. Also the complementary activities in KSC up to the first mission with the SLS are described. At the end the actual status of FM2 activities are summarized.