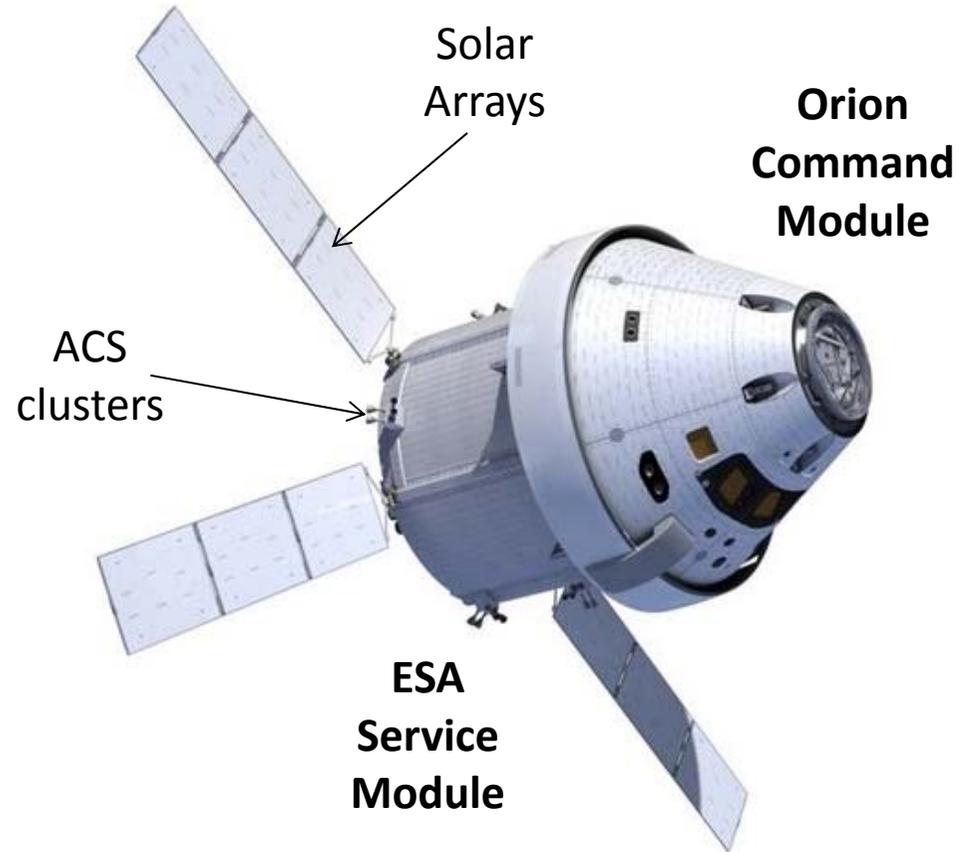
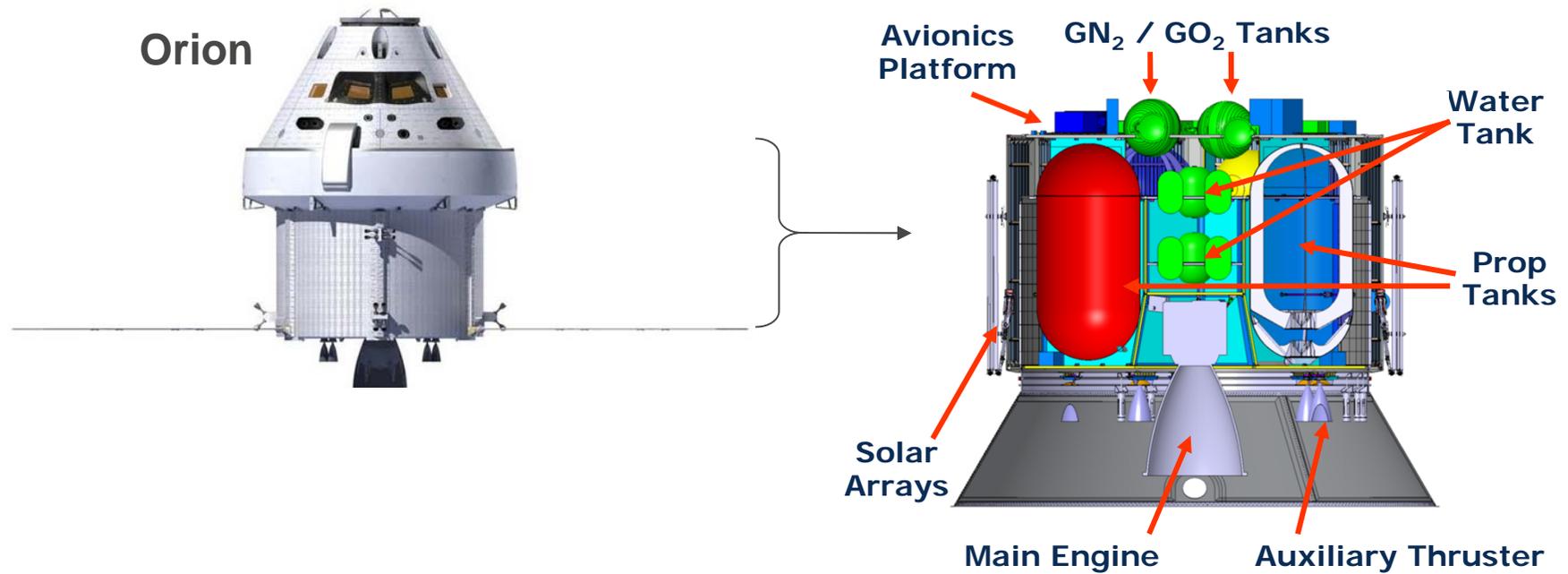


# Orion and the ESA Service Module



# Orion and the ESA Service Module



## ESA Service Module

Diameter x Height	3.83 m x 2.72 m
Total mass	13,000 kg in lunar orbit

# ESA Service Module: Main Subsystems

## Structure

- Upper cylinder
- Tank platform
- main cylinder
- Lower platform
- MDPS

## Propulsion

- Pressure control assembly
- pressurant tanks
- propellant tanks
- Propellant/isolation system
- Tubing
- Fill & drain valves
- Aucillary thrusters
- RCS thrusters
- Main engine
- Thrust vector control
- propulsion drive electronics

## SM Harness

## Consumable Storage

- water delivery system
- Gas delivery system

## Thermal Control

- Passive thermal control
- Active thermal control
- Thermal control unit

## Data Management

- Command & management unit

## Electrical Power

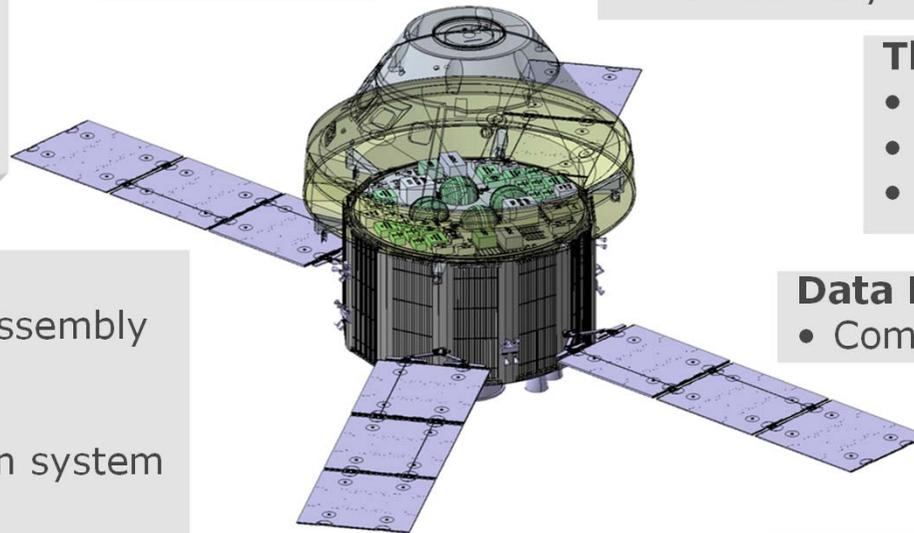
- Power control & distribution unit

## Solar Generator

- Solar array wing assembly

## Solar array drive assembly

- Solar array drive mechanism
- Solar array drive electronics



# Orion EFT-1 Service Module at KSC



NASA Photo. The EFT-1 Service Module is geometrically representative of the ESM