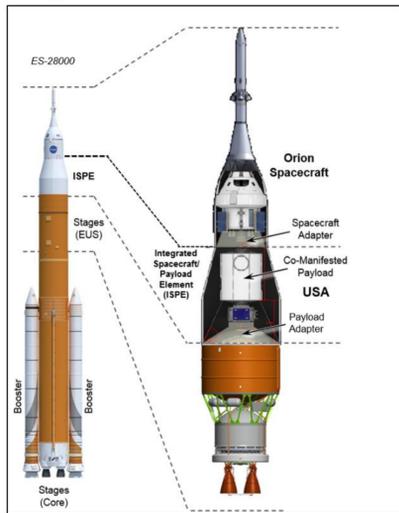


Advanced Manufacturing of the SLS Block 1B Payload Adapter: Engineering Development Unit



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Launch Vehicle Location



PLA aft ring interfaces with the Exploration Upper Stage (EUS) and the Universal Stage Adapter (USA) or the Cargo Fairing

PLA forward ring interfaces with the Co-Manifested or Primary Payload via a Payload Separation System

PLA Baseline Configuration

Forward ring:

- Aluminum forging
- Single-piece

Aft ring:

- Aluminum plate
- Segmented
- Single-flange

Panels:

- Eight panels
- Carbon fiber / epoxy composite facesheets
- Perforated aluminum honeycomb core

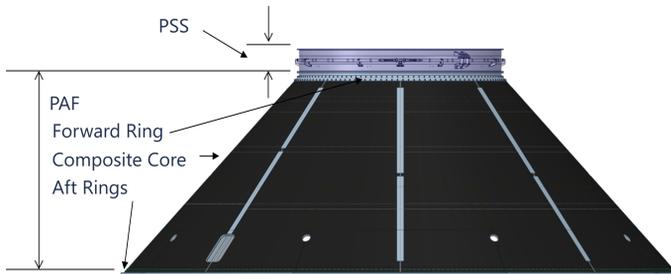
Attachments:

Forward and aft –

- Mechanically fastened

Panel to panel –

- Bonded longitudinal joints



Development Approach

Pathfinder Panels

- Demonstrate in-house manufacturing viability
- Full-scale panel manufacturing development
- Preliminary processing parameters development

Manufacturing Demonstration Article (MDA)

- Refine panel fabrication parameters
- Develop in-process inspection techniques
- Simulate flight-like tracking processes (Solumina)
- Demonstrate and evaluate full-scale article assembly

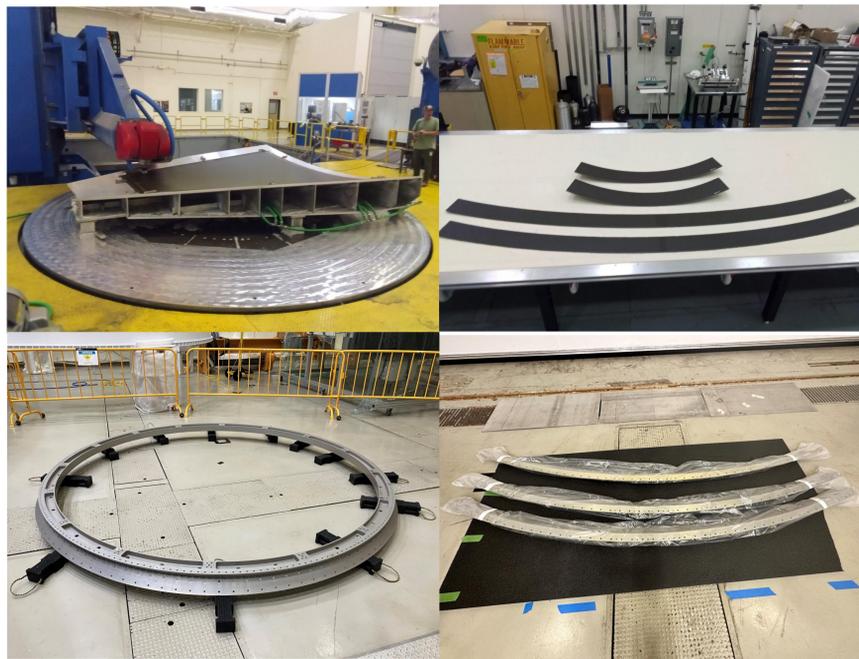
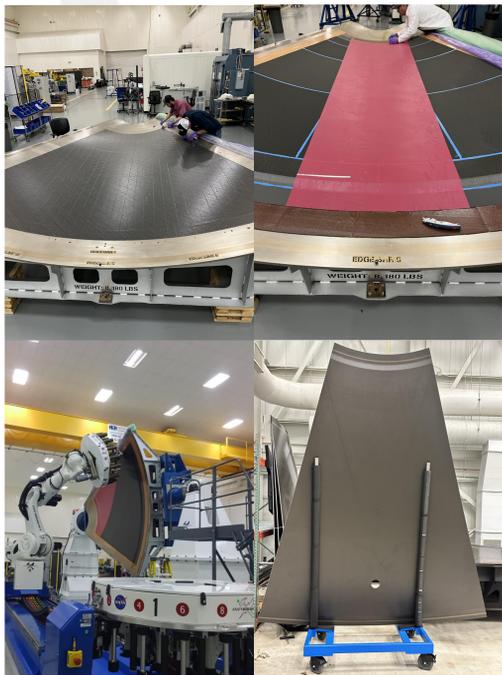
Engineering Development Unit (EDU)

- Full-scale proof test
- Modal and static load testing for technical risk reduction to confirm feasibility of the PAF structural design concept
- Identify failure modes and confirm analytical methods
- Full-scale evaluation of bonded longitudinal joints

Qualification Article

- Full-scale static load test to verify strength and stability
- Demonstrate that structural design requirements have been met

Fabrication, Machining, & Determinant Assembly



Final Assembly, Bonding, Transportation, & Installation

