



## Universal Stage Adapter Fact Sheet

Dynetics is the prime contractor building the Universal Stage Adapter (USA) for NASA's Space Launch System (SLS). The SLS is a powerful, advanced heavy-lift launch vehicle and is designed to be flexible and evolvable for deep-space destinations.

SLS will begin using the USA on the Block 1B configuration, which is scheduled for launch in the early 2020's. It will also be used on future SLS configurations.

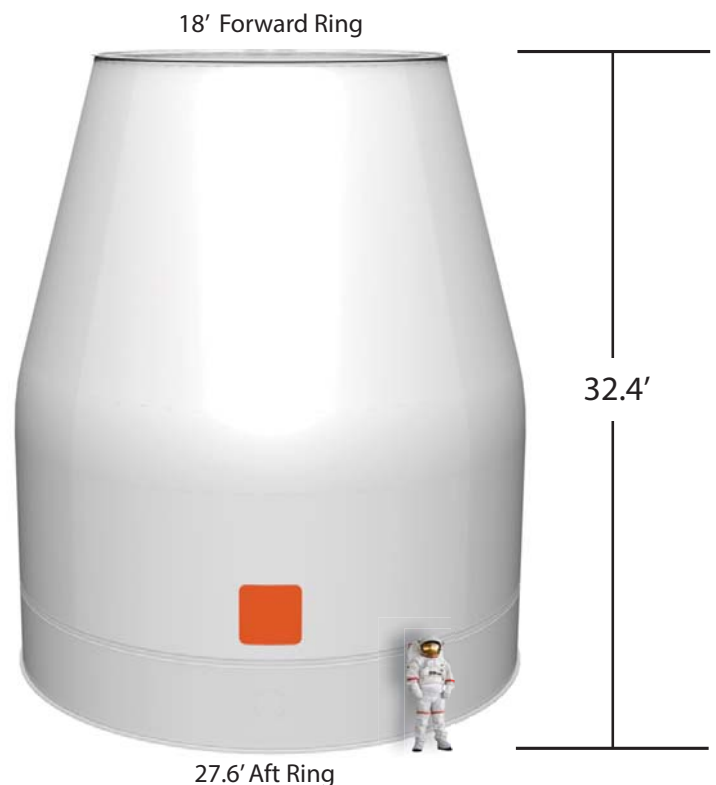
The USA will integrate the Exploration Upper Stage (EUS) to the Orion crew module while providing structural, electrical, and communication paths. The USA will also provide environmental control to payloads during integrated ground operations, launch, and ascent phases. The USA will integrate primary, co-manifested and secondary payloads on the EUS.

The USA is 32.4 feet long and 18 feet in diameter at the forward skirt and 27.6 feet in diameter at the aft skirt. The maximum payload and internal volume area will be 10,100 ft<sup>3</sup>.

The USA will be made of four composite honeycomb-core quarter panels and umbilicals and disconnects. At liftoff, the USA will weigh approximately 9,650 pounds. Once the Orion is deployed, the USA will separate to release payloads.

### USA Dimensions

- Shape: Conical Bell
- Diameter: 18 ft Forward Ring; 27.6 ft Aft Ring
- Length: 32.8 ft
- Max Payload Volume: 10,100 ft<sup>3</sup>



Artist Rendering

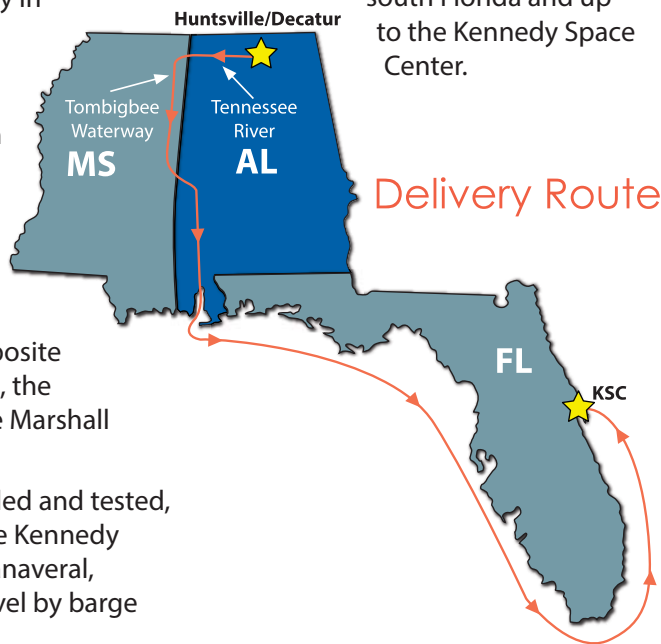
## Manufacturing and Assembly Facilities & Delivery

The key USA structural parts will be manufactured in Northern Alabama at the Dynetics Research and Development facility in Huntsville, the Dynetics Aerospace Structures Complex, and RUAG Space USA's facility both in Decatur.

The substructure parts will be shipped to the Decatur facility for integration and assembly with the composite panels. Once assembled, the USA will be tested at the Marshall Space Flight Center.

After the USA is assembled and tested, it will be delivered to the Kennedy Space Center in Cape Canaveral, Florida. The USA will travel by barge

from Decatur down the Tennessee River and the Tombigbee Waterway to the Gulf of Mexico and then around south Florida and up to the Kennedy Space Center.

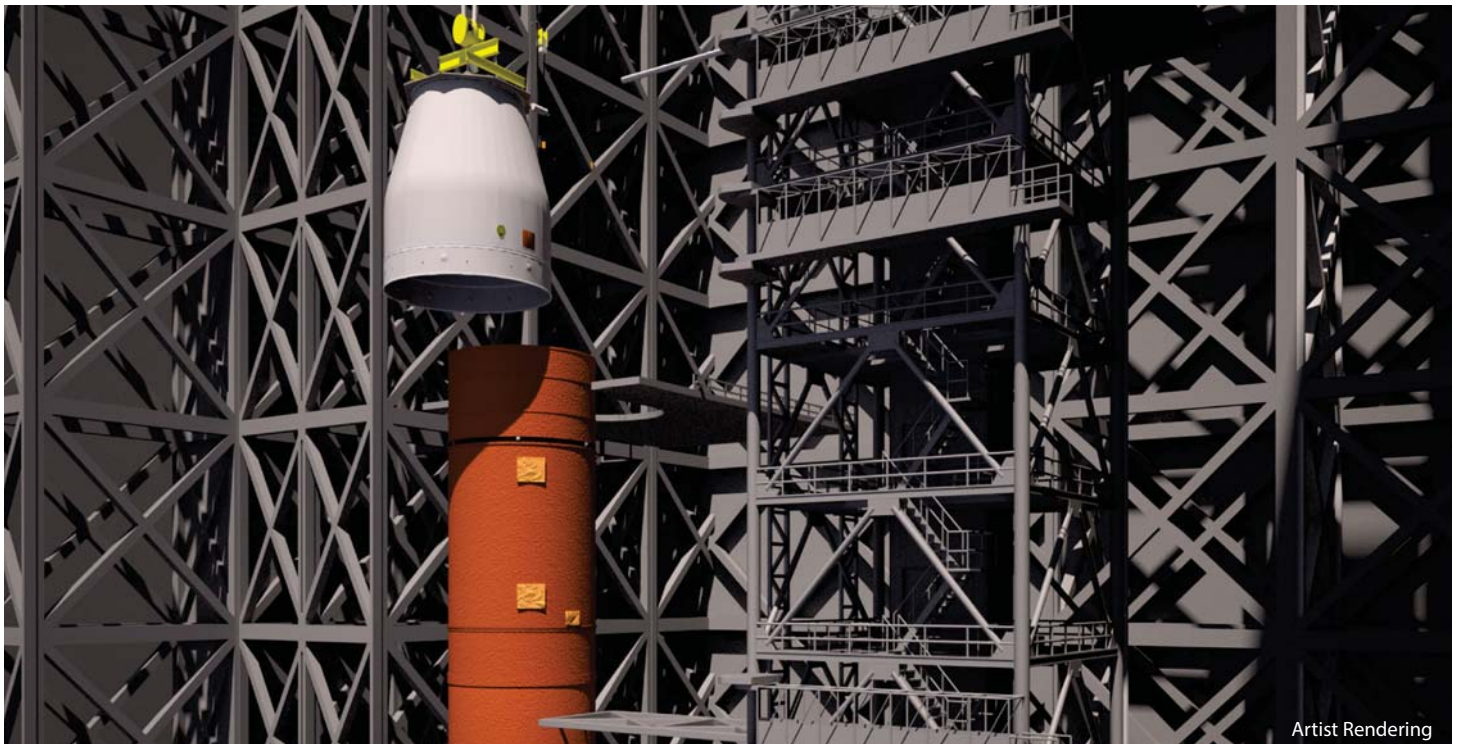


## Team Members

Dynetics will manage the design, analysis, manufacturing, testing, and assembly for the program.

The Dynetics Universal Stage Adapter Team is comprised of the following companies with their specialties:

- **RUAG Space USA**
  - Composite panels
- **ZIN Technologies**
  - Acoustic mitigation
- **Dynamic Concepts, Inc. (DCI)**
  - Structural Analysis
- **Craig Technologies**
  - Umbilicals & disconnects
- **Tuskegee University**
  - Composite material research & test
- **Paragon Tec**
  - Educational support services



Artist Rendering

*The Universal Stage Adapter will be integrated with the Exploration Upper Stage at NASA's Kennedy Space Center. The USA and the EUS will sit atop the SLS Block 1B configuration's core stage and solid rocket boosters. It is scheduled for launch in the 2020's.*

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