SLS Supports NASA’s Vision and Mission

To reach for new heights... and reveal the unknown so that what we do and learn will benefit all humankind
Exploring Space for America’s Future

Inspiration

Scientific Knowledge

National Security

Economic Prosperity

Global Partnerships

Technology Development
Exploration and Science

- Earth
- International Space Station
- Commercial Partners
- Moon
- Lagrangian Point L2
- Near-Earth Asteroid
- Mars
- Europa

- 100s of Miles
- 1,000s of Miles
- 10,000s of Miles
- 100,000s of Miles
- 1,000,000s of Miles
- 10,000,000s of Miles
- 100,000,000s of Miles

- Commercial Partners
- Exploration and Science
- Human Space Operations
- Human Space Exploration
- Robotic Science
Initial Capability Stands on the Shoulders of Legacy Systems
# SLS Development Schedule

<table>
<thead>
<tr>
<th>Year</th>
<th>Concept Studies</th>
<th>Concept &amp; Technology Development</th>
<th>Preliminary Design &amp; Technology Completion</th>
<th>Final Design &amp; Fabrication</th>
<th>System Assembly, Integration &amp; Test, Launch &amp; Checkout</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>✔️ SLS Design Chosen</td>
<td>✔️ Engines Delivered to Inventory</td>
<td>✔️ Manufacturing Tooling Installed</td>
<td>✔️ Main Engine Test-Firing</td>
<td>✔️ Vehicle Stacking at KSC</td>
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<td>2012</td>
<td>✔️ SRR/SDR</td>
<td>✔️ Wind Tunnel Testing</td>
<td>✔️ Production of First New Flight Hardware</td>
<td>✗ Core Stage Structure Testing</td>
<td>✗ First Flight</td>
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<td>2013</td>
<td>✔️ PDR</td>
<td>✔️ Orion Flight Test</td>
<td>✗ ICPS Production Begins</td>
<td>✗ Booster Assembly at KSC</td>
<td>✗</td>
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<tr>
<td>2014</td>
<td></td>
<td></td>
<td>✗ Booster Test-Firings</td>
<td>✗ Core Stage Test/Firing</td>
<td>✗</td>
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<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td>✗ Core Stage Assembly</td>
<td>✗</td>
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<tr>
<td>2016</td>
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<td>2017</td>
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**Program Progress**

- **MCR**: Mission Concept Review
- **SRR**: System Requirements Review
- **SDR**: System Definition Review
- **PDR**: Preliminary Design Review
- **PDR**: Post-Launch Assass. Review
- **CDR**: Critical Design Review
- **SIR**: System Integration Review
- **FRR**: Flight Readiness Review
- **PLAR**: Post-Launch Asses. Review
Concept to Preliminary Design in 21 Months

Liquid Engines
Tested selective laser melted part on J-2X at Stennis Space Center (March 2013), and storing RS-25 Core Stage Engines at Stennis Space Center

Boosters
Conducted Thrust Vector Flight Control Test at ATK in Promontory, UT (Jan 2013)

Core Stage
Completed welding on first confidence barrel section at Michoud Assembly Facility (July 2013)

Spacecraft & Payload Integration
Performed fit-check of Multi-Purpose Crew Vehicle Stage Adapter for 2014 Exploration Flight Test at the Marshall Space Flight Center (June 2013)

Advanced Development
Conducted F-1 engine gas generator hot-fire testing at Marshall (Jan 2013)

Systems Engineering & Integration
Tested buffet model in Langley Research Center’s Transonic Dynamics Wind Tunnel (Nov 2012)

Low Technical Risk Due to Hardware Maturity
SLS Nationwide Team

- Engaging the U.S. Aerospace Industry
- Strengthening Sectors such as Manufacturing
- Advancing Technology and Innovation

224 Subcontracts in 30 States

2012–2013 Data
SLS Contracts and Suppliers in AL, MS, LA, and FL

Contracts

Alabama
- Dynetics Technical Services

Florida
- Baker Hill Industries, Inc.
- Bernd Group, Inc.
- Channel Comp., LLC
- Concurrent Computer Corp.
- Honeywell International, Inc.
- Hydraulic House, Inc.
- International Bolting Technologies, Inc.
- United Technologies Corp.

Suppliers

Alabama
- Alabama A&M
- All Points Logistics, Inc.
- Amtec Corp.
- Analytix, LLC
- Avans Machine & Tool
- AZ Technology
- B&B Precision Machine, Inc.
- Barnhart Crane & Rigging Co.
- Concurrent Computer Corp.
- Dynetics, Inc.
- GE Intelligent Platforms, Inc.
- Medtherm Corp.
- Packaging Unlimited
- Watring Technologies, Inc.

Louisiana
- Geocent, LLC

To be updated
America’s Rocket for Deep-Space Missions

- National platform for space leadership
- Opens frontiers for commerce and economic expansion
- Unrivaled capability for strategic missions
- On track for first flight in 2017
- Opportunities for large and small businesses

www.nasa.gov/sls