



5...4...3...2...1...

SPACE LAUNCH SYSTEM

SLS /SPIE Overview

Steve Creech

Spacecraft Payload Integration and Evolution (SPIE) Element Manager



SLS CAPABILITY AVAILABILITY

SLS Block 1
As Early As 2019

Provides

Initial Heavy-Lift Capability

Enables

Orion Test
SmallSats to Deep Space

SLS Block 1B Crew
As Early As 2021

Provides

105 t lift capability via Exploration Upper Stage

Co-manifested payload capability in Universal Stage Adapter

Enables

Deep Space Gateway

Larger CubeSat- and ESPA-Class Payloads

SLS Block 1B Cargo
As Early As 2022

Provides

8.4-meter fairings for primary payloads

Regular flight cadence for additional launches

Enables

Europa Clipper/Lander

Deep Space Transport

Large-Aperture Space Telescopes

Ice or Ocean Worlds Missions

Interstellar Medium

SLS Block 2
As Early As 2028

Provides

130 t lift capability via advanced boosters

10-meter fairings for primary payloads

Enables

Crewed Mars Orbit Missions

Crewed Mars Surface Missions



PROGRESS TOWARD LAUNCH



Core Stage production at Michoud



Booster testing at Orbital ATK



Engine testing at Stennis Space Center



Upper stage prep at Cape Canaveral



Structural testing at Marshall



Ongoing work for Block 1B

PROGRESS TOWARD EM-2/BLOCK 1B



EM-2 Core Stage Welding



EM-2 Booster
Insulation
Installation



EM-2 Flight
Engine Testing



EUS Development Panel Forming



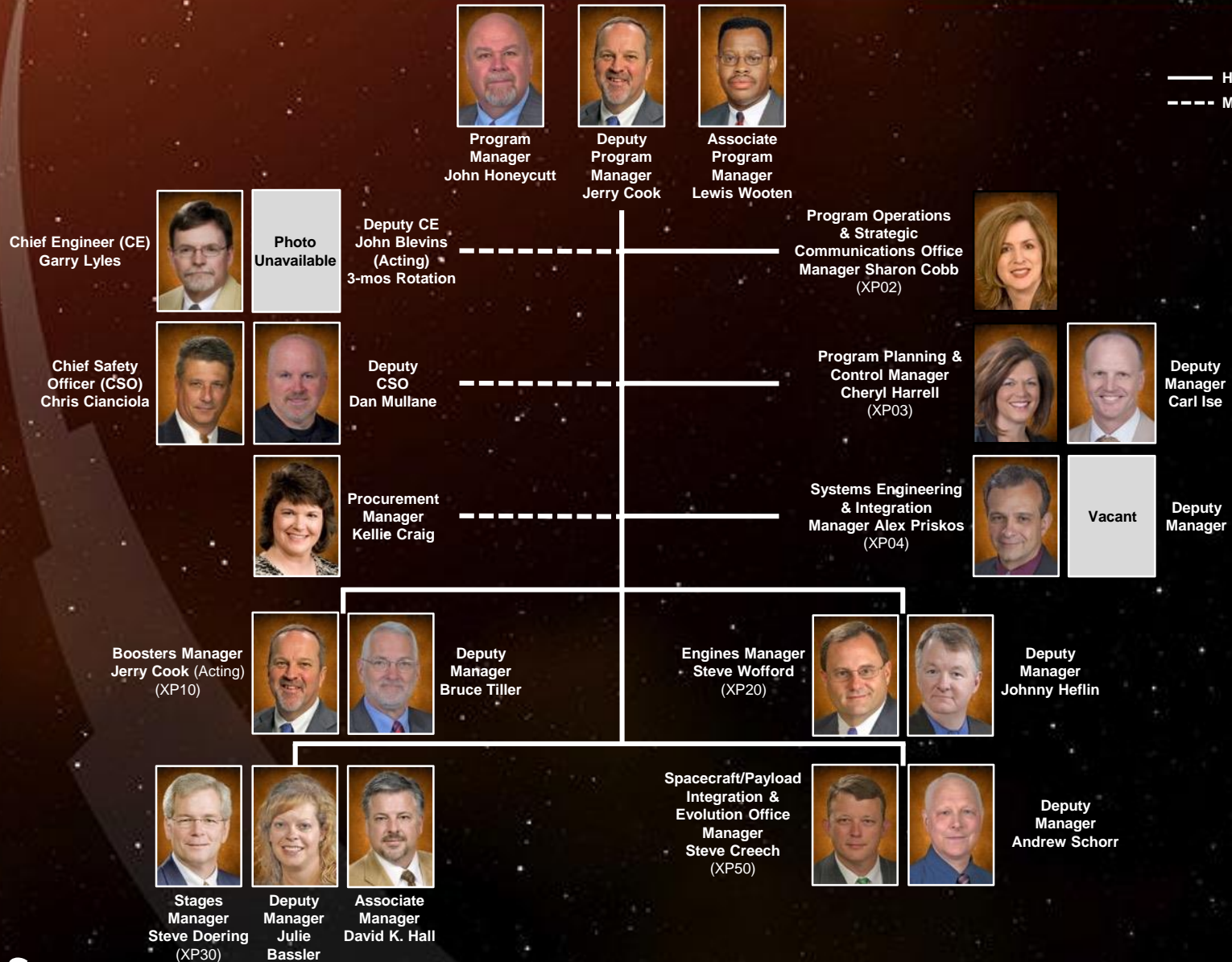
Stephen D. Creech
Marshall Space Flight Center

Universal Stage Adapter RFP

SLS PROGRAM ORGANIZATION AT MSFC

April 2017

— Hard line programmatic
 - - - Matrix relationship



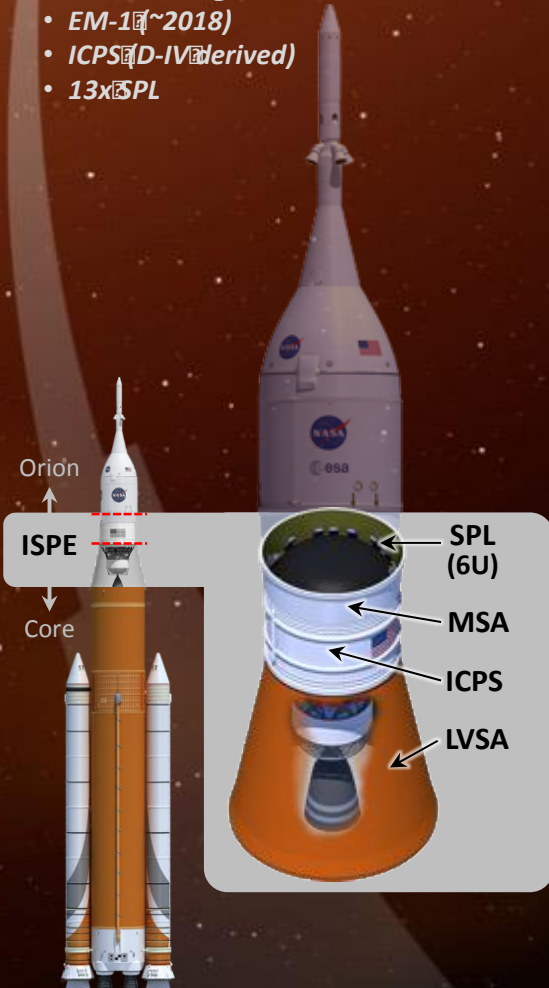
SLS Spacecraft/Payload Integration & Evolution (SPIE)

ISPE Hardware Development & Payload Integration for SLS Missions

SLS Block 1

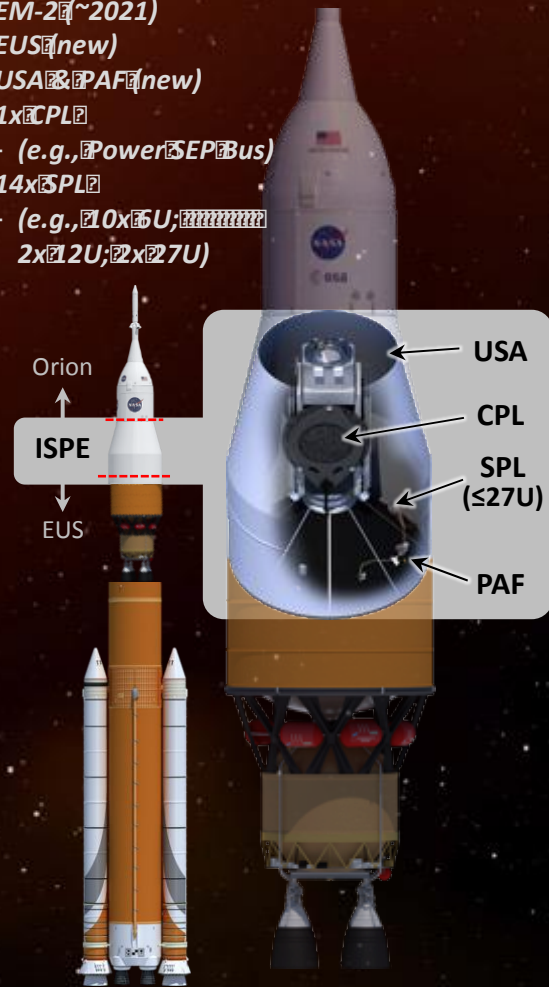
Test Flight

- EM-1 (~2018)
- ICPS (D-IV derived)
- 13x SPL



Crew

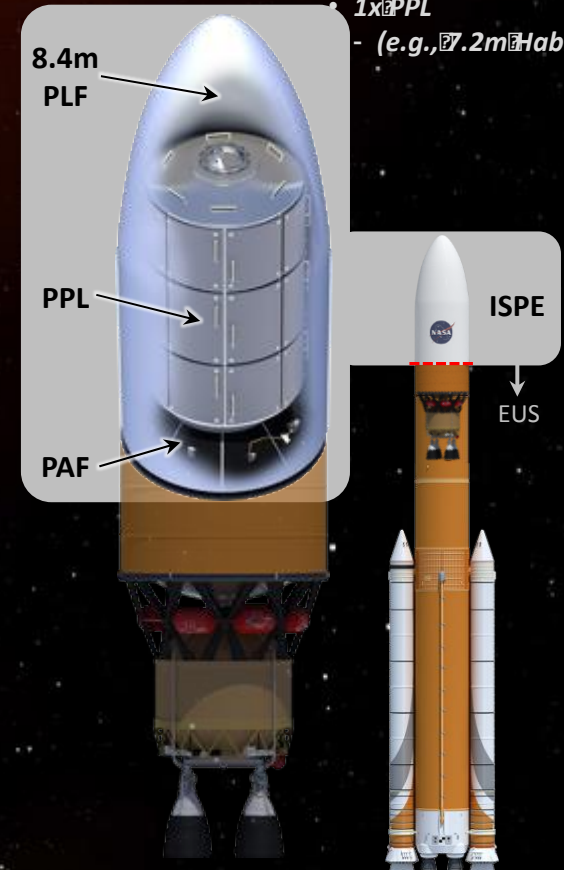
- EM-2 (~2021)
- EUS (new)
- USA & PAF (new)
- 1x CPL
- (e.g., Power SEP Bus)
- 14x SPL
- (e.g., 10x 5U, 2x 12U; 2x 27U)



SLS Block 1B

Cargo

- EM-7 (~2027)
- EUS
- PLF (new)
- 1x PPL
- (e.g., 7.2m Habitat)



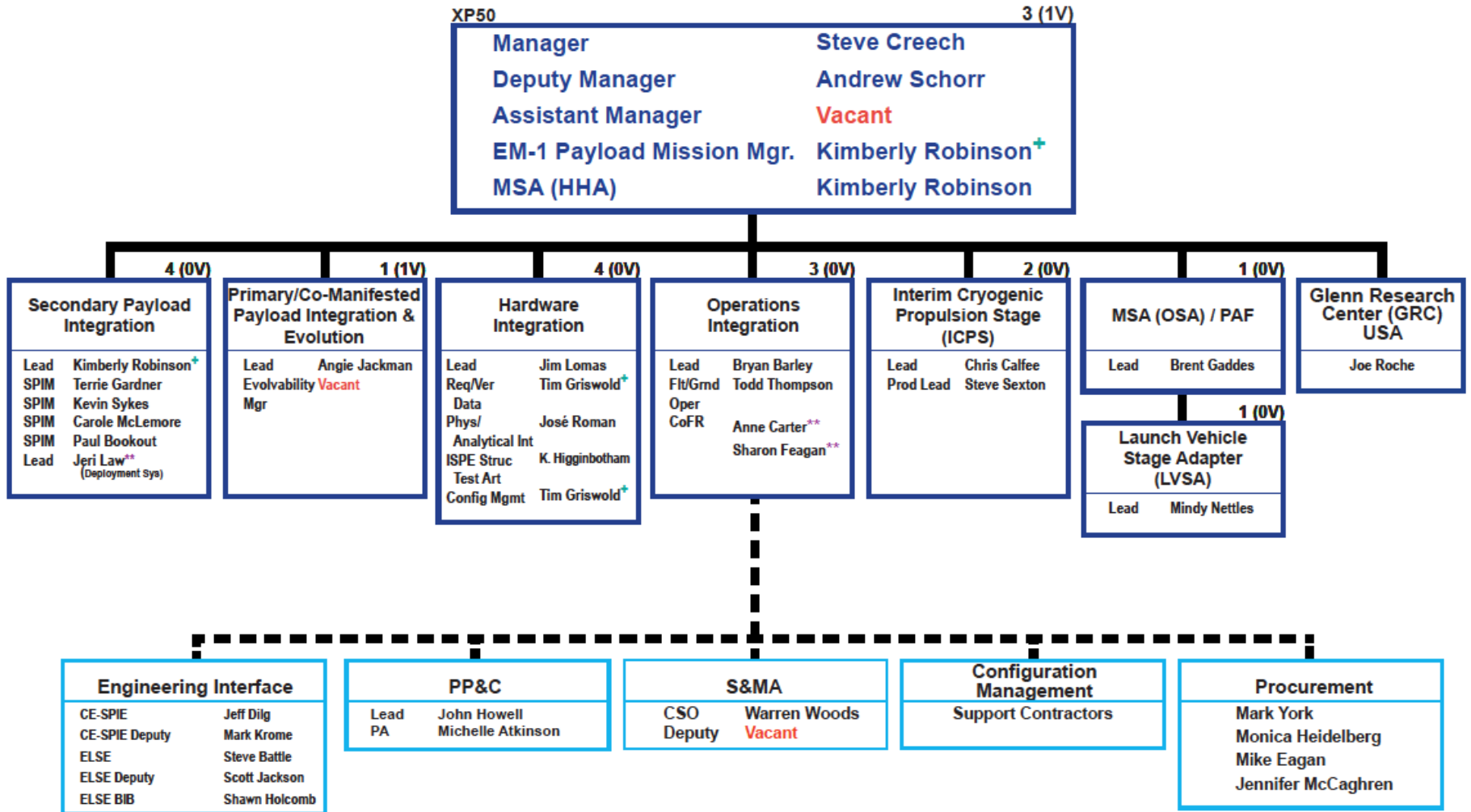
Notes: ISPE – Integrated Spacecraft Payload Element SPL – Secondary Payload MSA – MPCV Stage Adapter ICPS – Integrated Cryogenic Propulsion Stage LVSA – Launch Vehicle Stage Adapter EUS – Exploration Upper Stage USA – Universal Stage Adapter CPL – Co-manifested Payload PAF – Payload Attachment Fitting PLF – Payload Fairing PPL – Primary Payload

----- ISPE Separation Plane

SLS Spacecraft/Payload Integration and Evolution (SPIE)



On Board 19
Vacancies 2



** Detail + Dual Role *** Matrix

THE ADVENTURE BEGINS NOW.



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The SLS logo, featuring the letters "SLS" in a bold, white, sans-serif font, with "SPACE LAUNCH SYSTEM" written in smaller text below it, all within a white circular border.

SLS
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#JOURNEYTOMARS