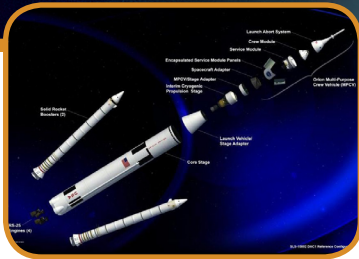




Marshall Space Flight Center Systems Engineering and Integration

Engineering Solutions for Space Science and Exploration



Space Launch System



Robotic Landers



ISS Science Payloads



Fast Affordable Science and
Technology Satellite (FASTSAT)

Systems Engineering and Integration

provides projects value-added solutions to a broad spectrum of SE&I challenges from initial Trade Studies through Sustaining Engineering. The specialized and experienced SE&I technical staff applies the seventeen NASA common technical practices to all elements of a system and all hierarchical levels of a system over the complete project life cycle. The SE&I discipline brings together technologies, hardware, and software to create an efficient product that satisfies operational needs and is critical to the successful operation of any system comprised of multiple and interdependent subsystems and functions. The SE&I Division Chief reports to the Space Systems Department Manager within the MSFC Engineering Directorate. The division is organized into three branches—Project Engineering, Avionics Systems Integration, and Systems Engineering of which all share in and contribute to the successfulness of the division's objectives and goals.

Project Engineering provides Department Lead Engineers (DLEs) with crosscutting engineering capabilities required to meet the challenges of current and future projects. They provide Interface Management, develop and execute Ground Integration, Operations, and Maintenance, Sustaining Engineering, Project Supportability, and Logistics Planning.

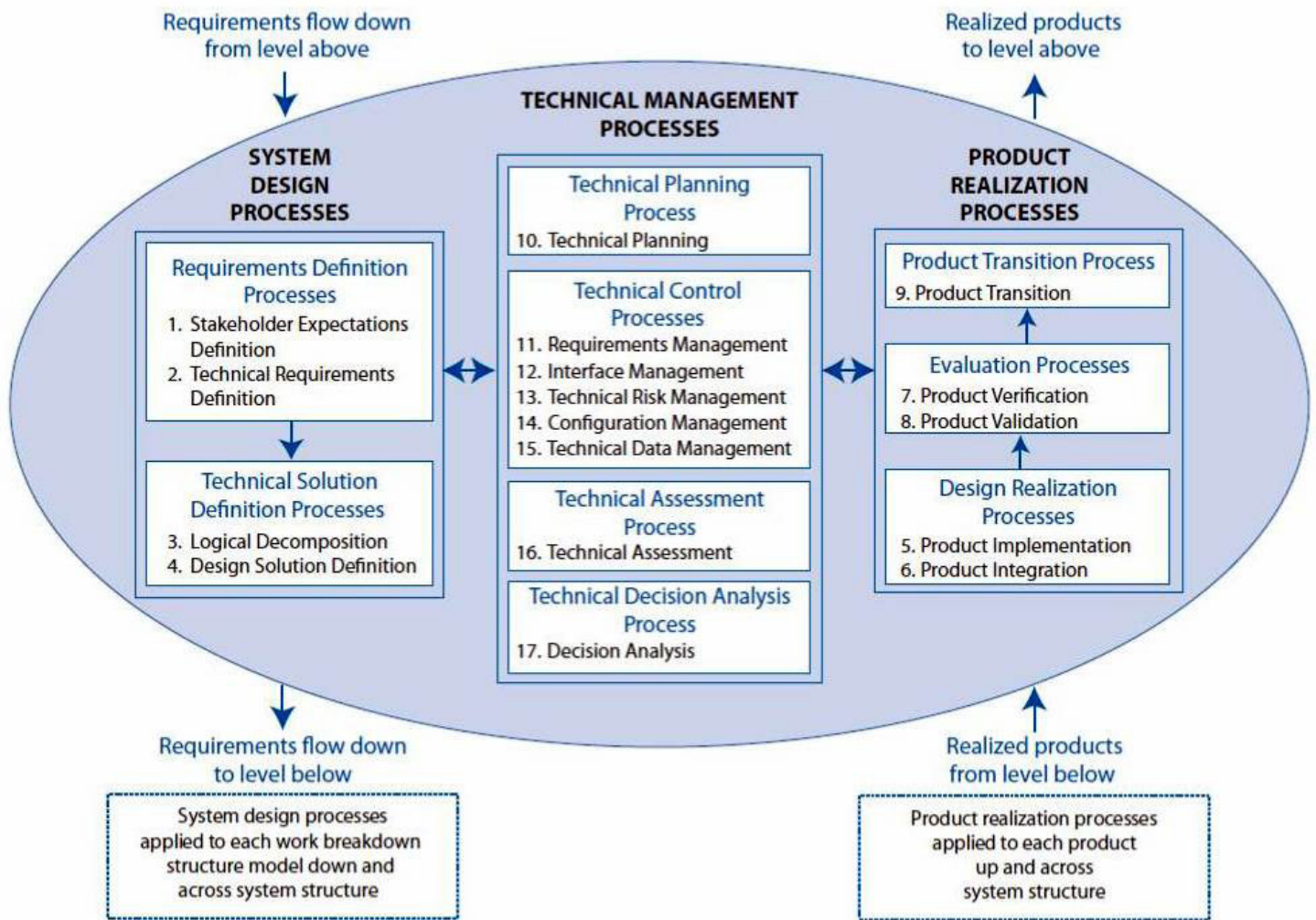
- > Develop, document, and communicate assigned project technical approach.
- > Coordinate the day-to-day engineering support.
- > Manage the development and implementation of the project Systems Engineering products.
- > Execute technical/design reviews.

Avionics Systems Integration provides Avionics Department Lead Engineers (DLEs) to various launch vehicle and space system projects for the overall vehicle-level avionics hardware and software integration activities, including NASA's Space Launch System (SLS).

- > Coordinate the day-to-day avionics and software support.
- > Coordinate the development of avionics and software products.
- > Manage and coordinate avionics and software resources.
- > Coordinate Change Requests (CR).
- > Provide technical integration.
- > Responsible for integrated avionics and software testing insight and evaluation for the vehicle.

Systems Engineering provides expert discipline Systems Engineers and applies Systems Engineering principles and practices to help solve the complex science and engineering challenges of projects.

- > Develop and manage Requirements, Verification, and Validation Plans.
- > Conduct Trade Studies.
- > Risk Analysis/Assessment, Systems Analysis and Modeling, and Logical Decomposition of System and Subsystem Architectures and Functions.
- > Develop Interface Definition and Control, Use/Need Definitions, and Operations Concepts.



Systems Engineering Engine — NASA Procedural Requirement (NPR) 7123

Key Benefits

- > Provide projects value-added solutions to a broad spectrum of challenges from initial Trade Studies through Sustaining Engineering.
- > Provide crosscutting engineering capabilities required to meet the challenges of current and future projects.
- > Manage the development and implementation of the project Systems Engineering products.

For more information, go to <http://www.nasa.gov/marshall/>

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