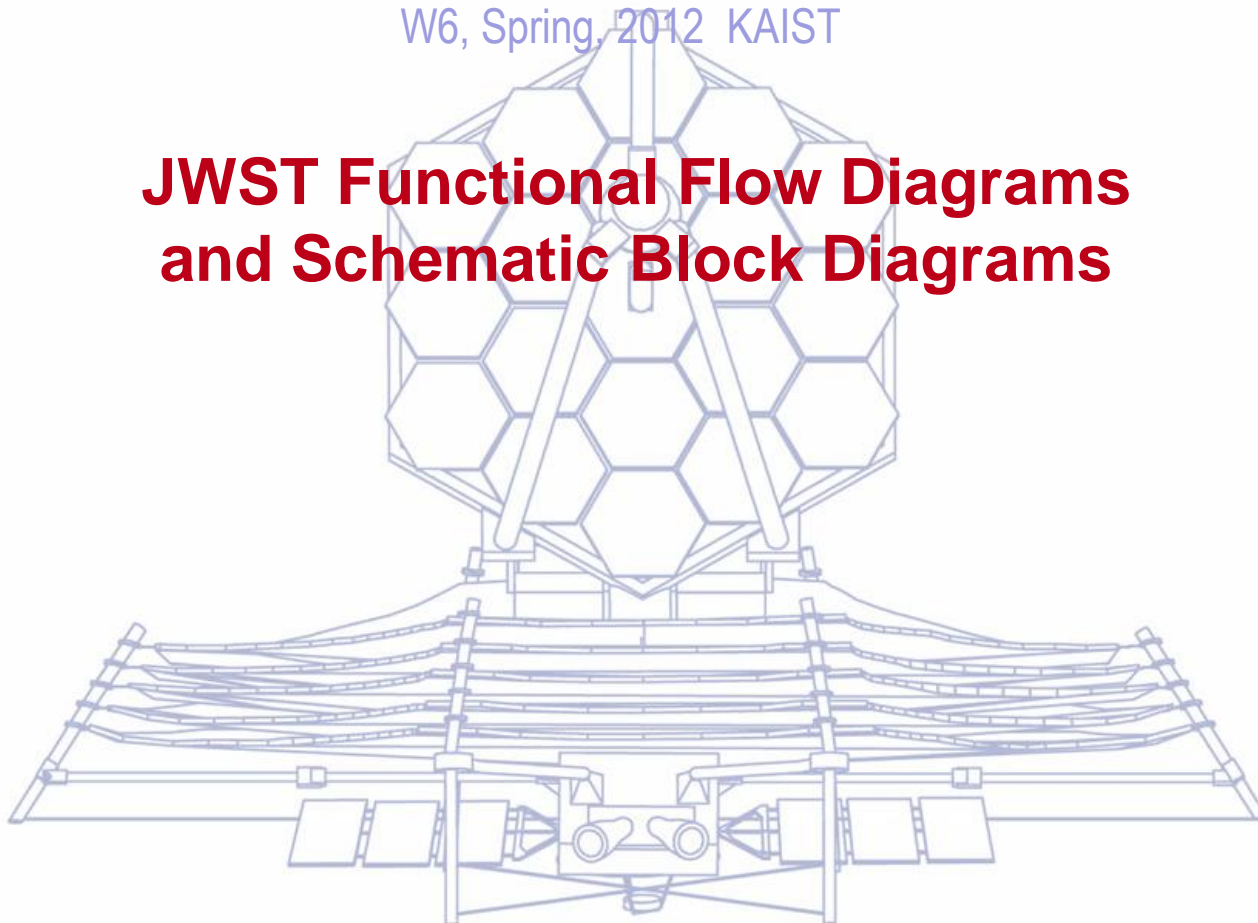
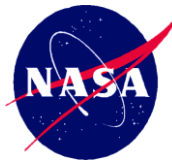


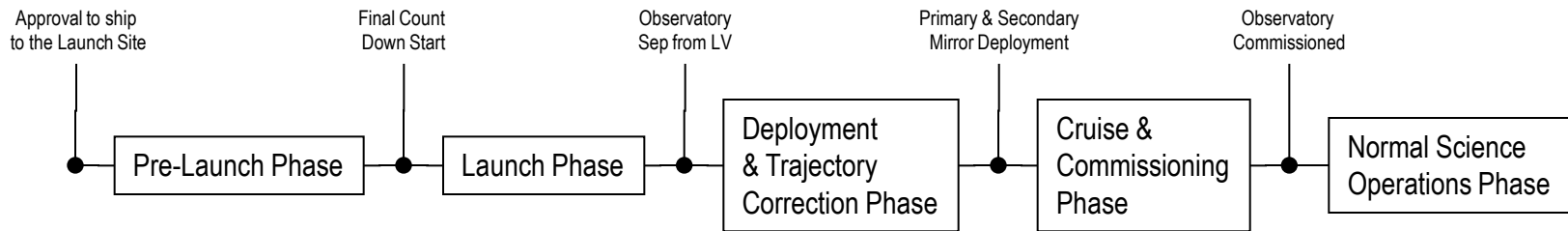
CC532 Collaborate System Design
Fundamentals of Systems Engineering
W6, Spring, 2012 KAIST

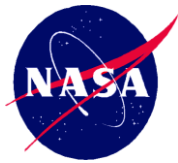
JWST Functional Flow Diagrams and Schematic Block Diagrams



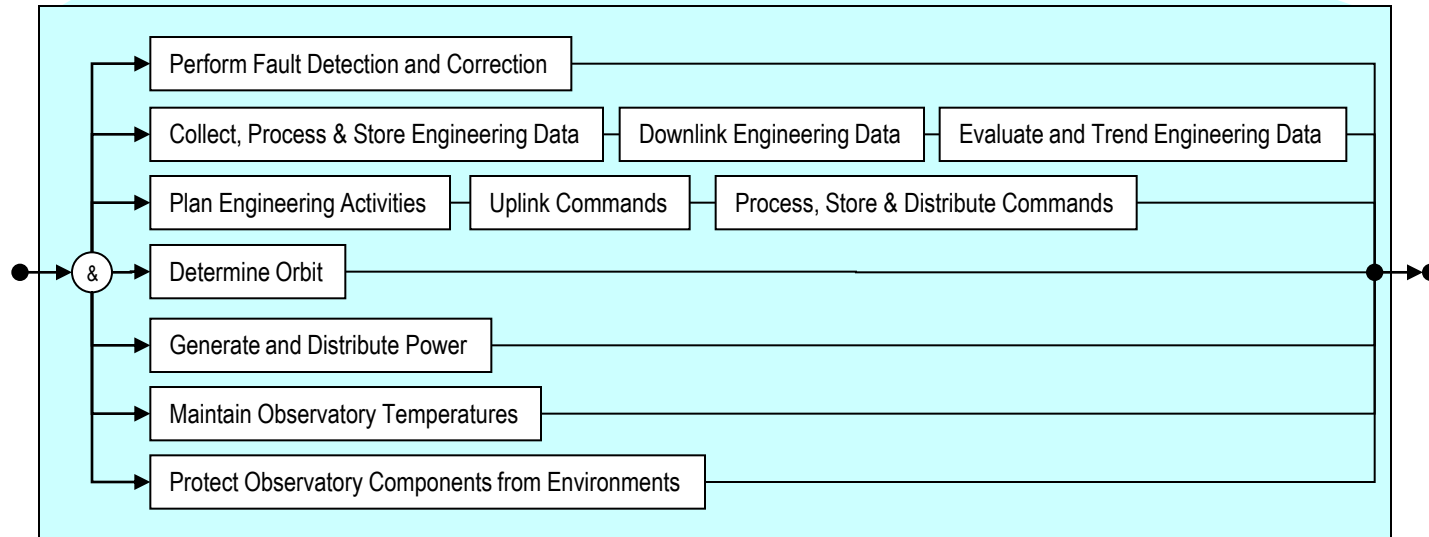
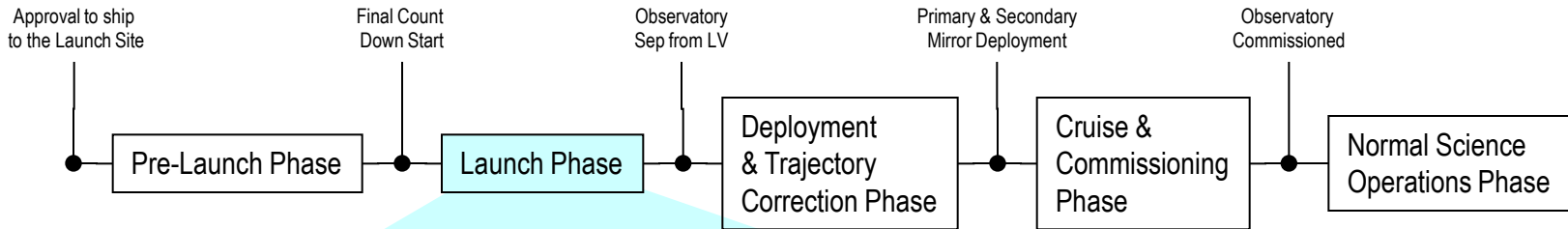


JWST Operational Phases and System Functional Breakdown



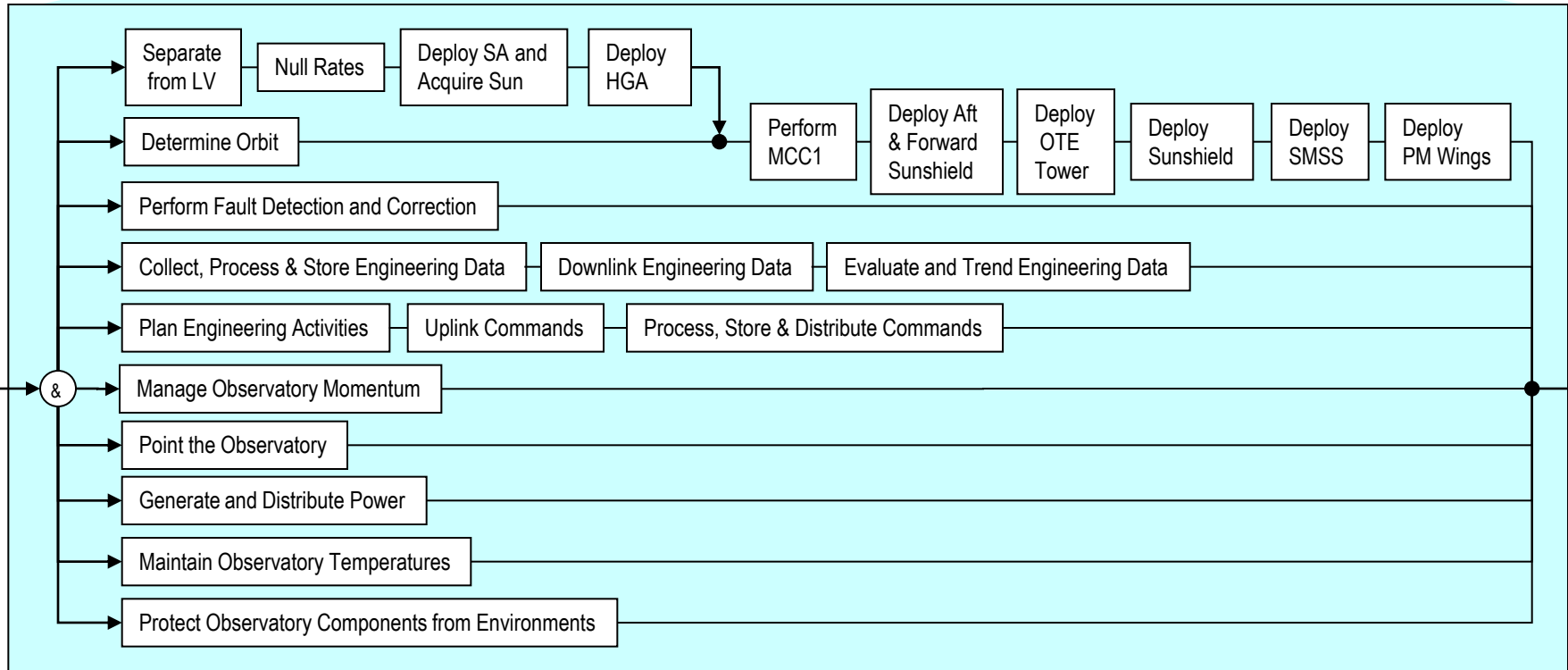
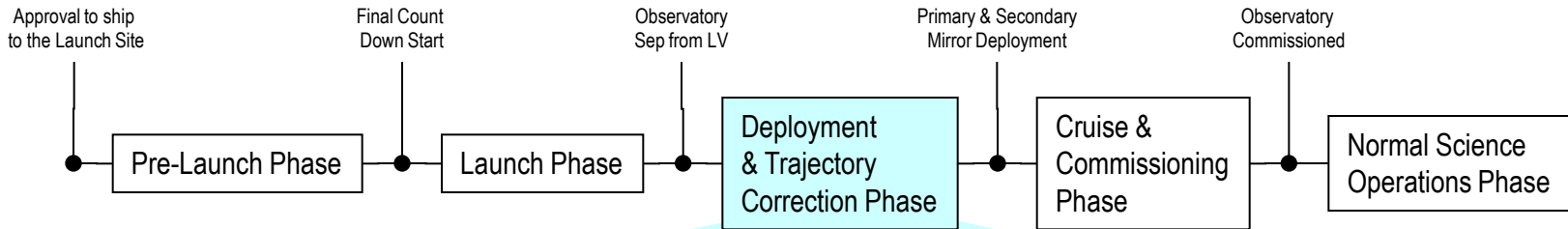


JWST Phases and System Functional Breakdown



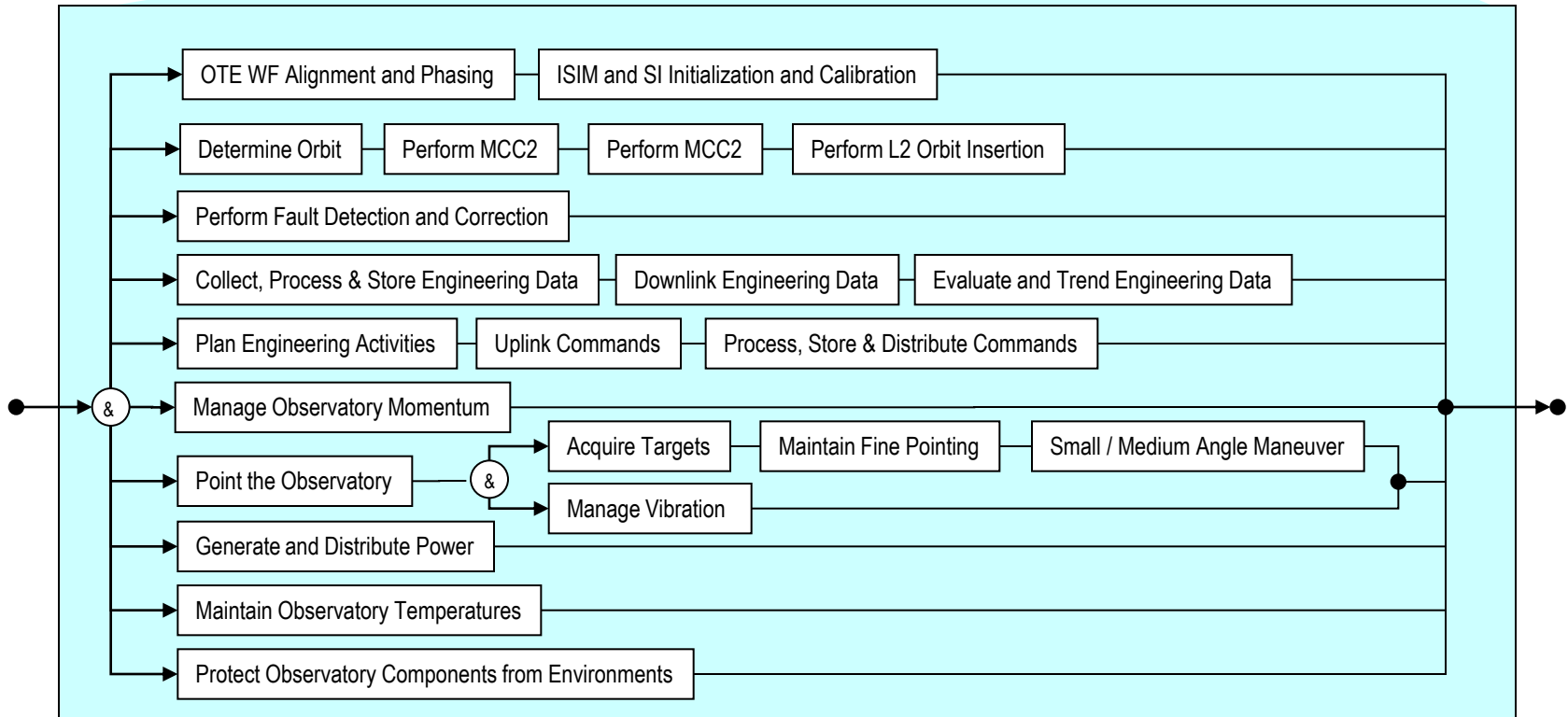
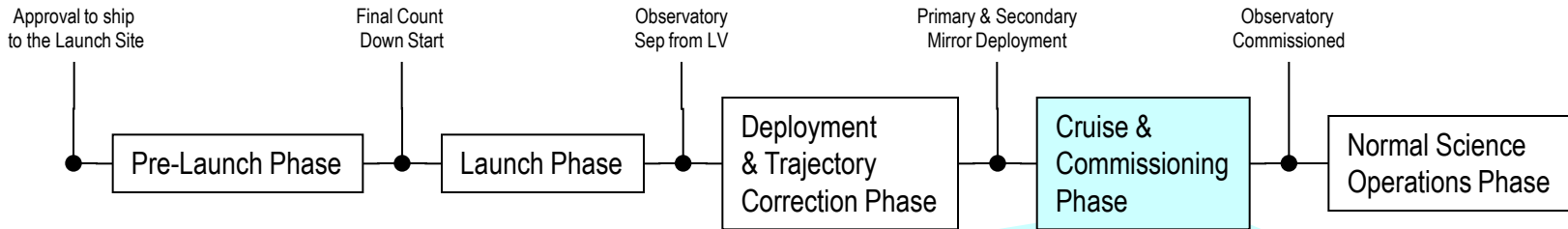


JWST Phases and System Functional Breakdown





JWST Phases and System Functional Breakdown





JWST Phases and System Functional Breakdown



Approval to ship to the Launch Site

Final Count Down Start

Observatory Sep from LV

Primary & Secondary Mirror Deployment

Observatory Commissioned

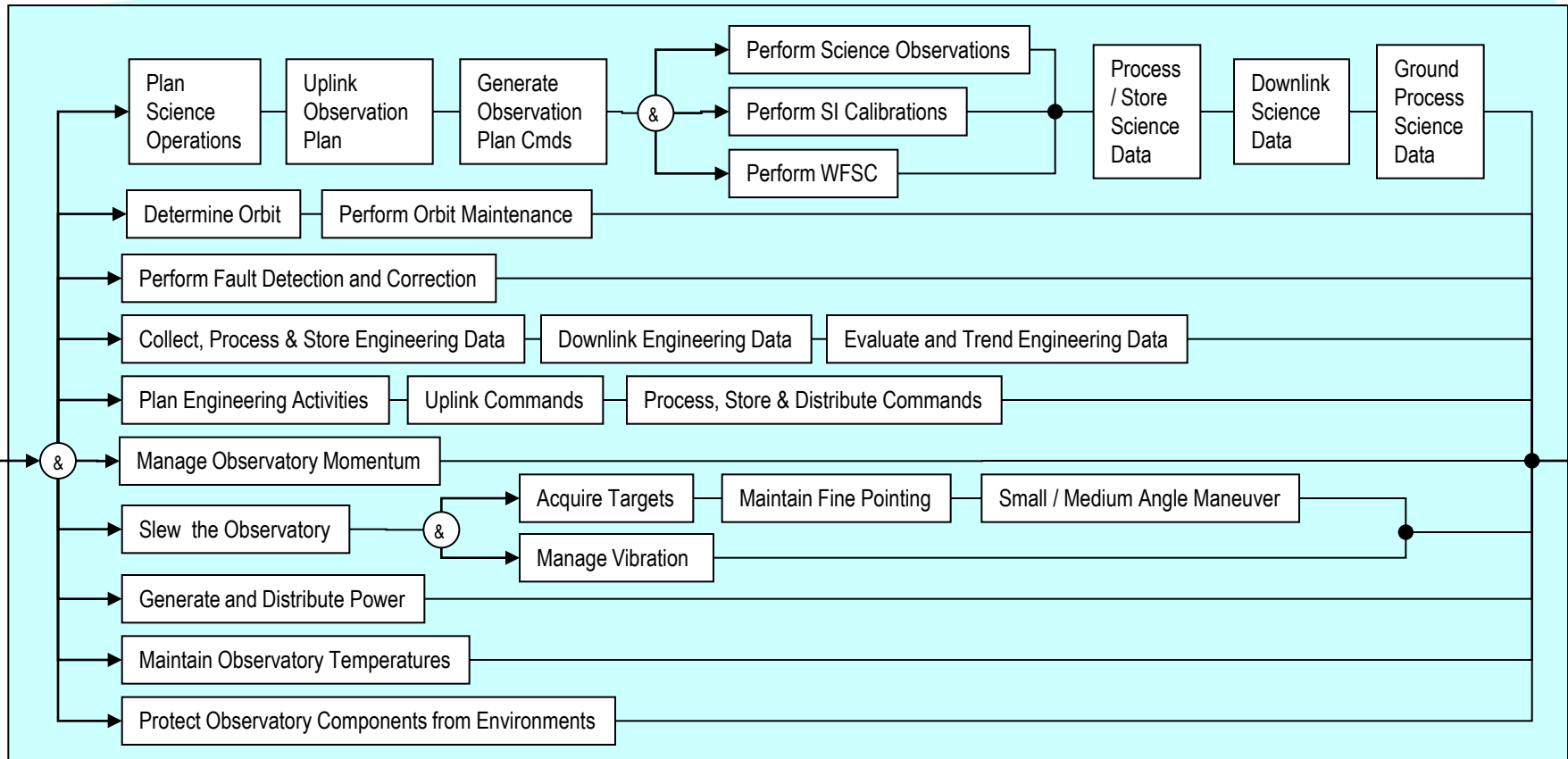
Pre-Launch Phase

Launch Phase

Deployment & Trajectory Correction Phase

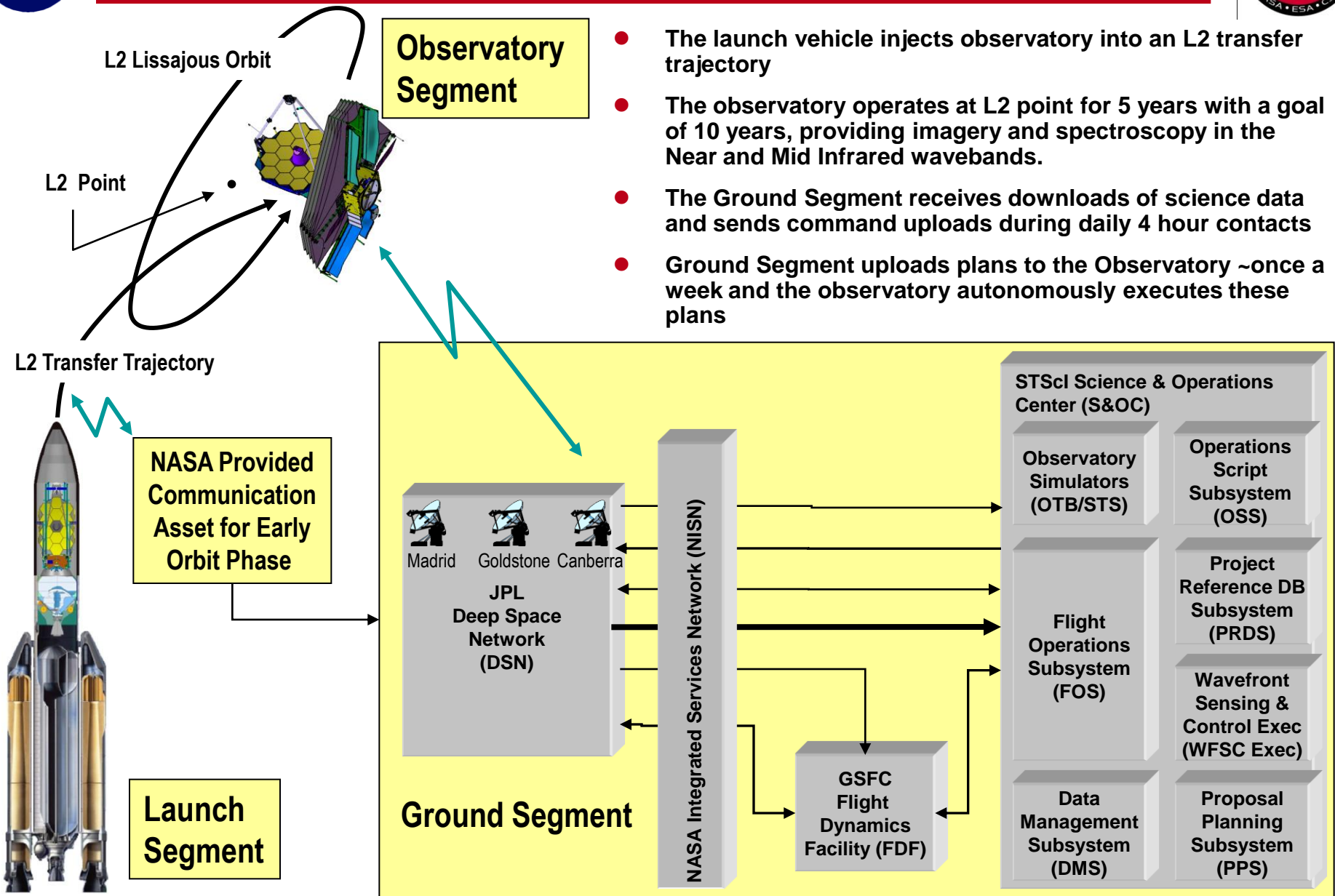
Cruise & Commissioning Phase

Normal Science Operations Phase

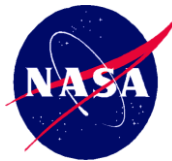




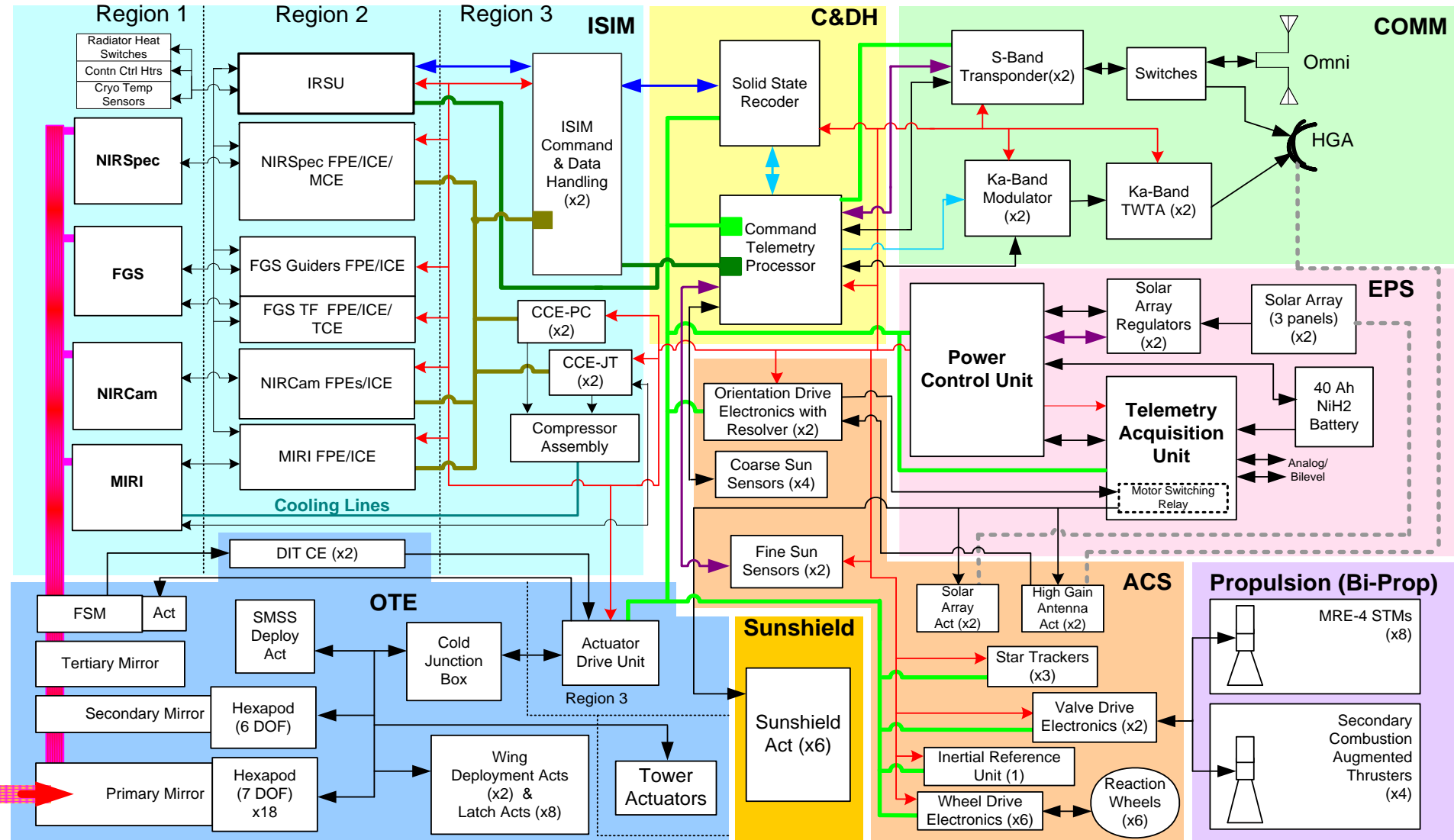
JWST Communications System Architecture



- The launch vehicle injects observatory into an L2 transfer trajectory
- The observatory operates at L2 point for 5 years with a goal of 10 years, providing imagery and spectroscopy in the Near and Mid Infrared wavebands.
- The Ground Segment receives downloads of science data and sends command uploads during daily 4 hour contacts
- Ground Segment uploads plans to the Observatory ~once a week and the observatory autonomously executes these plans

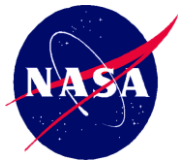


Observatory Schematic Block Diagram



Legends:

- Photons (Pink wavy line)
- S/C-ISIM1553B-SI (Green line)
- Spacewire (Blue double arrow)
- RS422 (Purple double arrow)
- Discrete-pt to pt (Black double arrow)
- LVDS (Cyan arrow)
- Primary Power (Red arrow)
- S/C 1553B-S (Green line)
- ISIM 1553B-I (Brown line)
- Mechanical I/F (Dashed line)
- Region 1-(within Si/OA)
- Region 2-(within IEC)
- Region 3-(within spacecraft bus)



JWST Phases and System Functional Breakdown

