

Deep Space Network Operations and Maintenance

Request for Proposal

Industry Briefing

February 18-20, 2003



National Aeronautics and
Space Administration

JPL

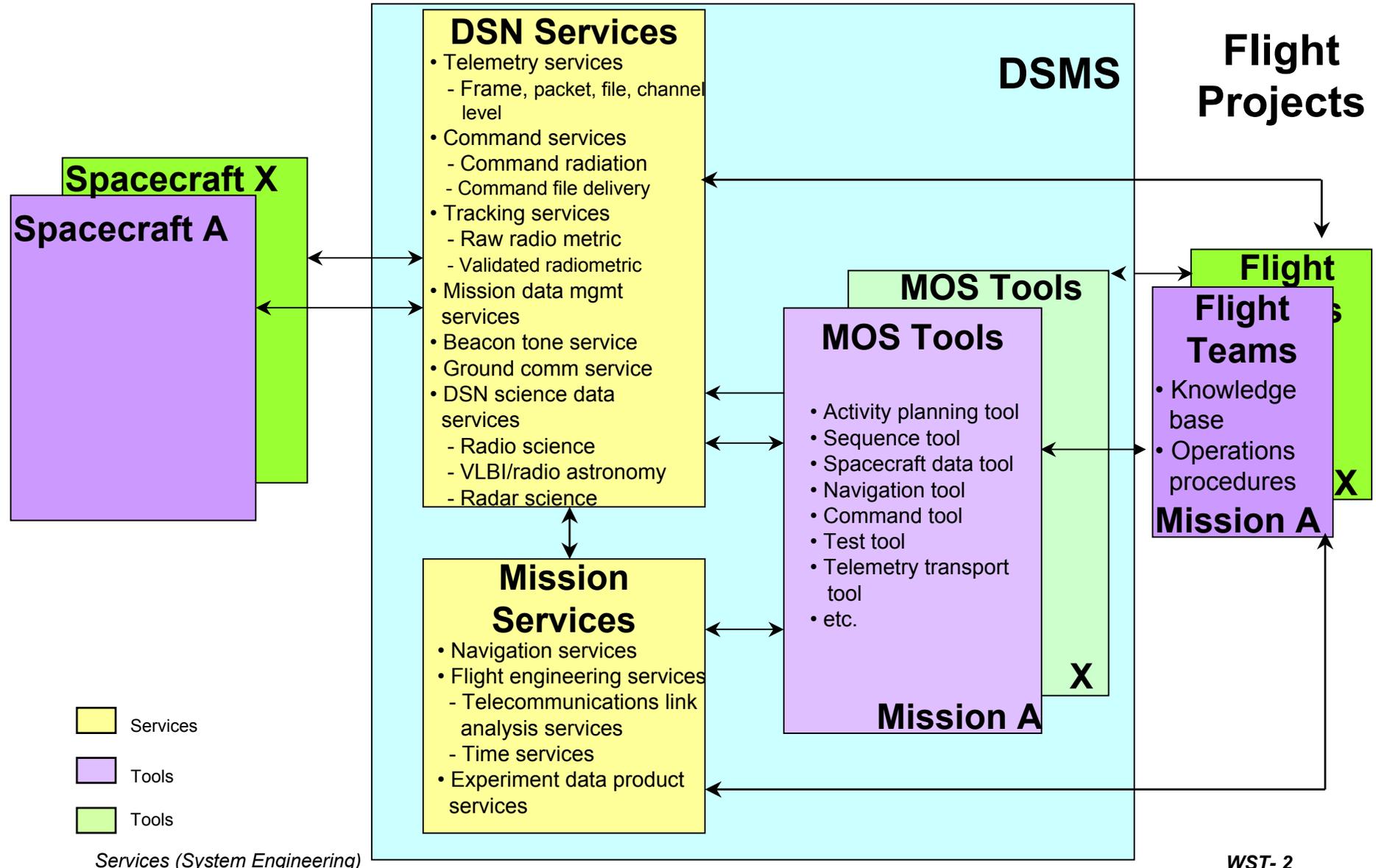
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**Service (System Engineering) -
Wallace Tai**





DSMS - Provider of Services & Tools





DSMS - Types of Services

1. Command services:	5. Experiment data product services:
• Command radiation service	• Level 1 processing service
• Command delivery service	• Science visualization service
2. Telemetry services:	6. Flight engineering services:
• Bit stream service*	• Telecommunication link analysis service
• Frame service	• Spacecraft time correlation service
• Packet service	
• Telemetry channel service	7. Beacon tone service
• Telemetry file service	
3. Mission data management services:	8. Ground communications services:
• Short-term data retention service	• Ground network service
• Long-term data repository service	• Data transport service
• Archive product preparation service	
	9. Radio science services:
4. Tracking & navigation services:	• Experiment access service
• Raw radio metric measurements service*	• Data acquisition service
• Validated radio metric data service	
• Delta-DOR service	10. Radio astronomy/VLBI services:
• Orbit determination service	• Signal capturing
• Trajectory analysis service	• VLBI data acquisition
• Maneuver planning/design service	• VLBI correlation
• Navigation ancillary data service	
• Ephemerides service	11. Radar science services:
• Modeling and calibrations service	• Experiment access service
• Gravity modeling	• Data acquisition service
• Cartography	
Notes:	
* Services which are being decommissioned and not available to new missions.	



DSMS Tools - Categories

Activity Plan Tools

Catalog Tools

Command Tools

Computing Environment Tools

Experiment Product Tools

File Transport Tools

Flight S/W Tools

Navigation Tools

S/C Data Tools

S/C Model Tools

Schedule Tools

Sequence Tools

Telemetry Transport Tools

Test Tools

Time Tools

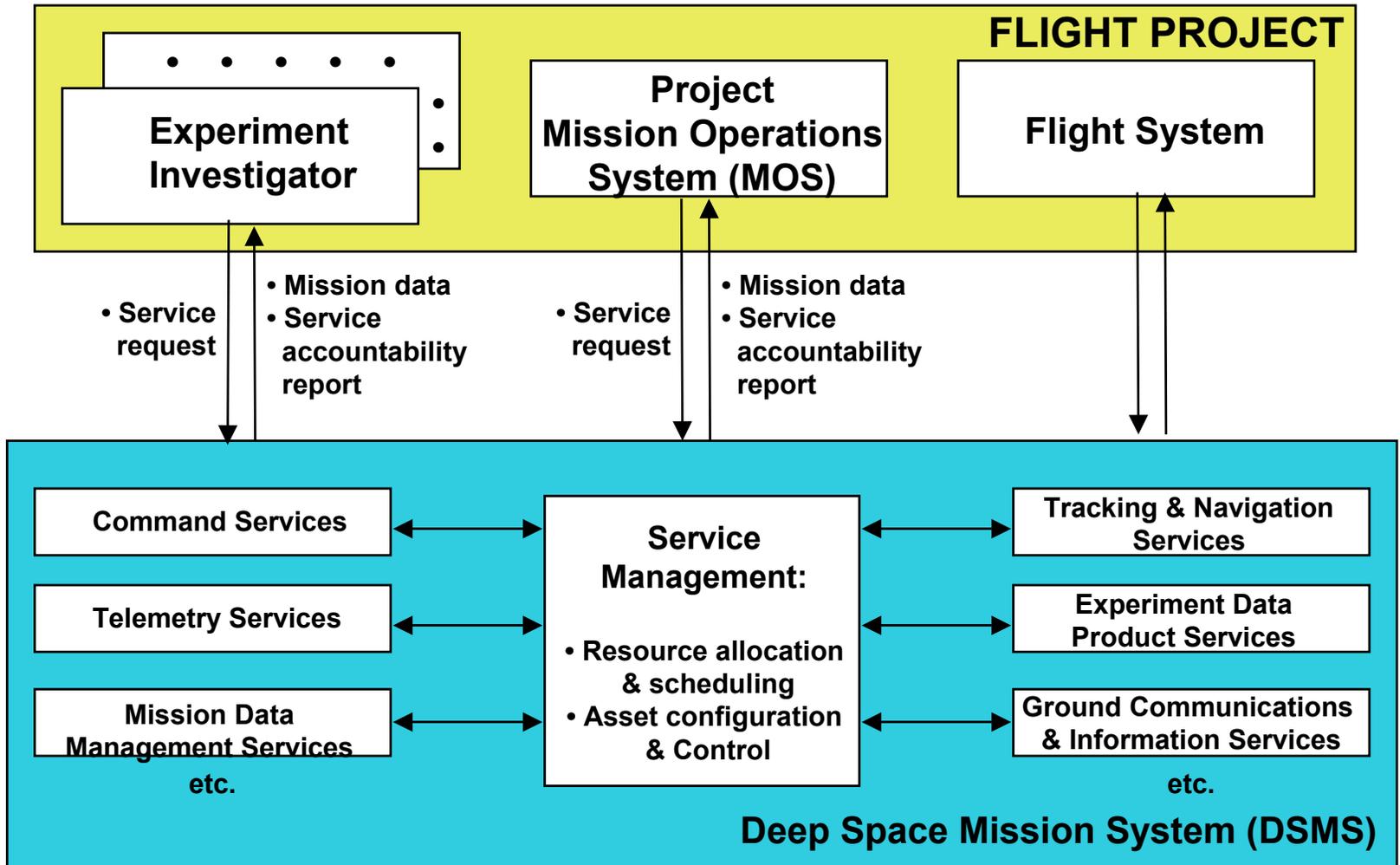
Workflow Tools

Integrated Data System

*For complete definition of DSMS Services and tools,
please access the DSMS Services Catalog at URL
<http://deepspace.jpl.nasa.gov/advmis/>*



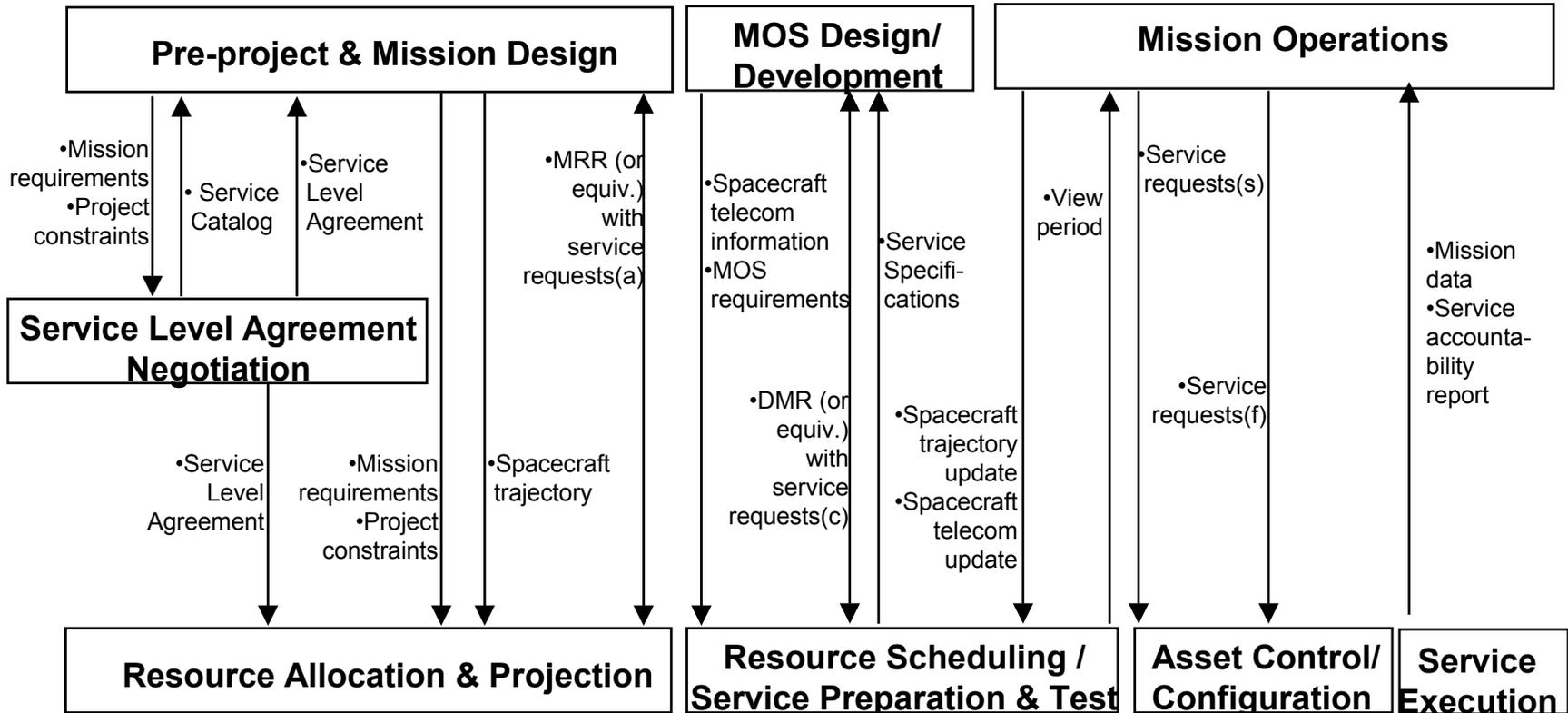
DSMS - Customer Interface View





Customer Interface for Services - Process Over Project Life Cycle

Flight Project



DSMS

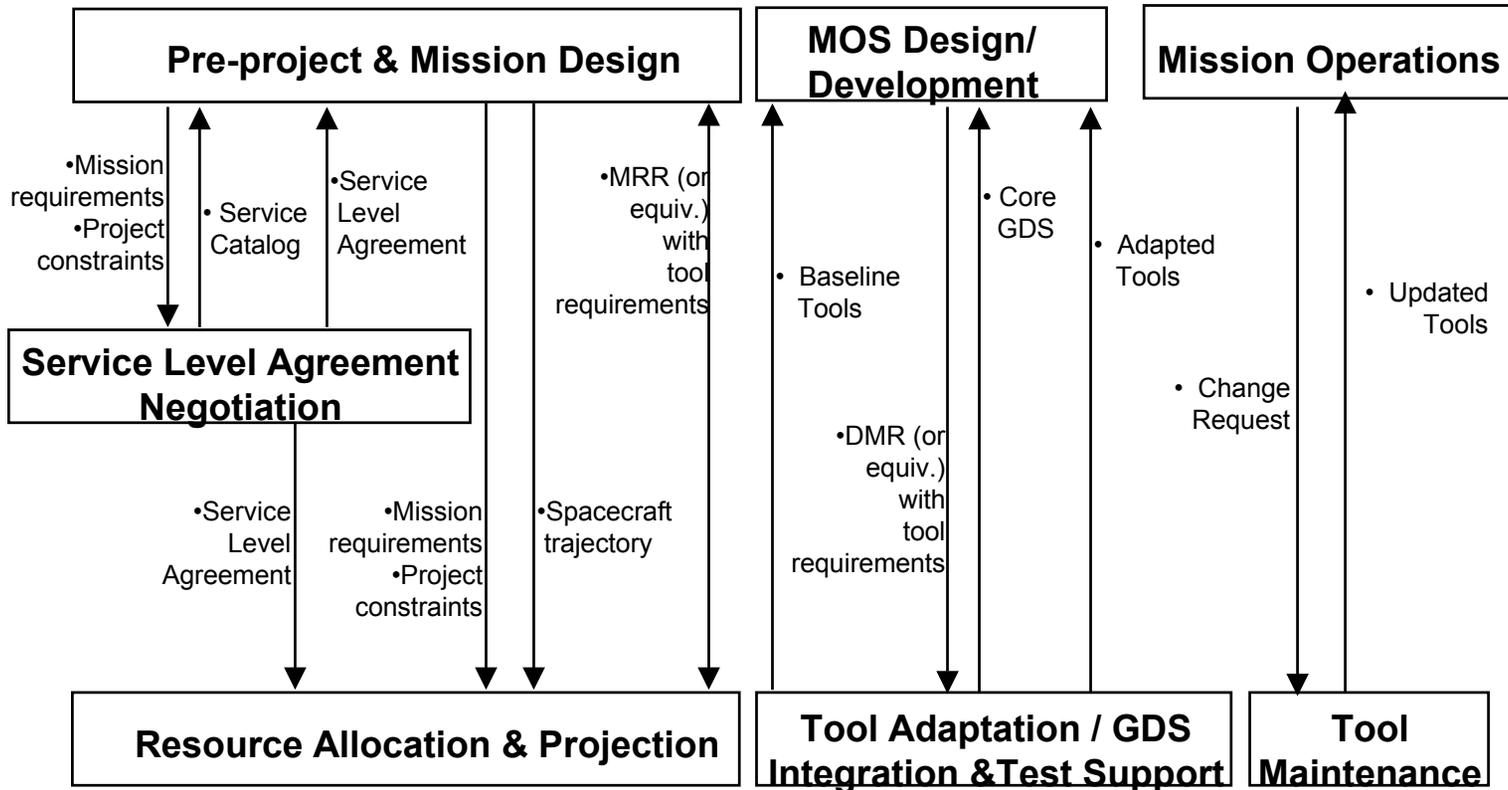
Footnote:

- Service request(a): Approved
- Service request(c): Committed
- Service request(s): Scheduled
- Service request(f): Finalized



Customer Interface for Tools - Process Over Project Life Cycle

Flight Project



DSMS



DSMS System Engineering - Interactions with Contractors

- System requirement specifications
 - Functional requirements
 - Performance requirements
 - Operational requirements
- Interface specifications
 - Definition of interfaces with external, i.e. flight project MOS and spacecraft
 - Definition of interfaces with other DSMS elements
- Requirement validation
 - Ensuring implementation, integration, and testing meet the requirements
 - Auditing of test plans and test reports