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NASA LAUNCH SERVICES PROGRAM

**DISCOVERY 2014 AO
PRE-PROPOSAL CONFERENCE
NOVEMBER 24, 2014**

**Diana Manent Calero
Flight Projects Office**



Launch Services Program



NASA Strategic Plan 2014

Strategic Goal 3:

Serve the American public and accomplish our Mission by effectively managing our people, technical capabilities, and infrastructure.



Objective 3.2:

Ensure the availability and continued advancement of strategic, technical, and programmatic capabilities to sustain NASA's Mission



Key Strategy:

Provide access to space

Lead Office: **HEOMD**

Contributing Program: **LSP**

Key Strategy "Provide access to space" citation:

"...certify and procure domestic commercial space transportation services for the launch of robotic science, communication, weather, and other civil sector missions"

"...provide robust, reliable, commercial and cost-effective launch services"

"...assured access to space through a competitive 'mixed Fleet' approach utilizing the breadth of U.S. industry's capabilities"



LSP Strategic Goals 2014

Goal 1: Maximize Mission Success

Goal 2: Assure Long-Term Launch Services

Goal 3: Promote Evolution of a U.S. Commercial Space Launch Market

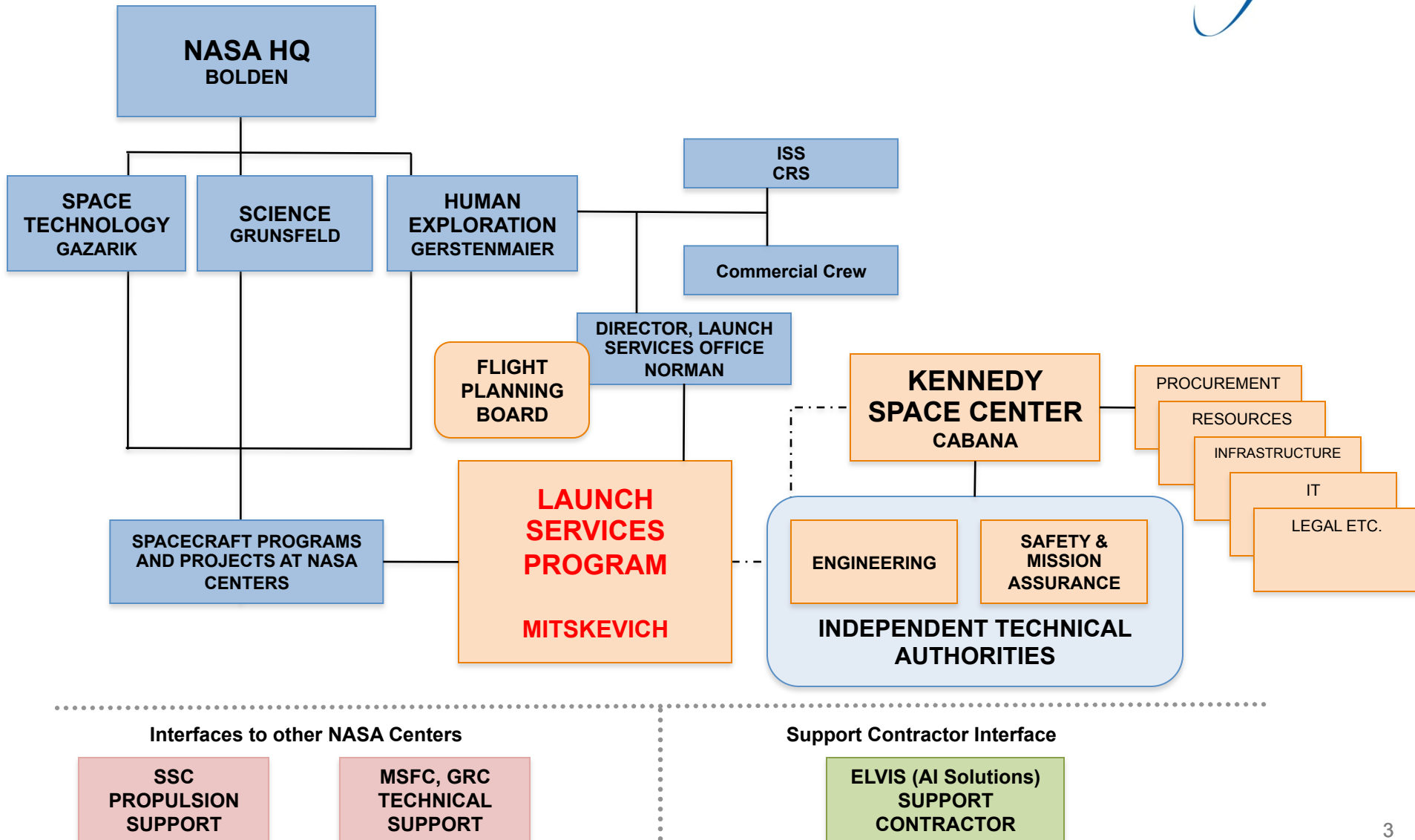
Goal 4: Continually Enhance LSP's Core Capabilities





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Launch Services Program Relationships (NASA/HEOMD/KSC)



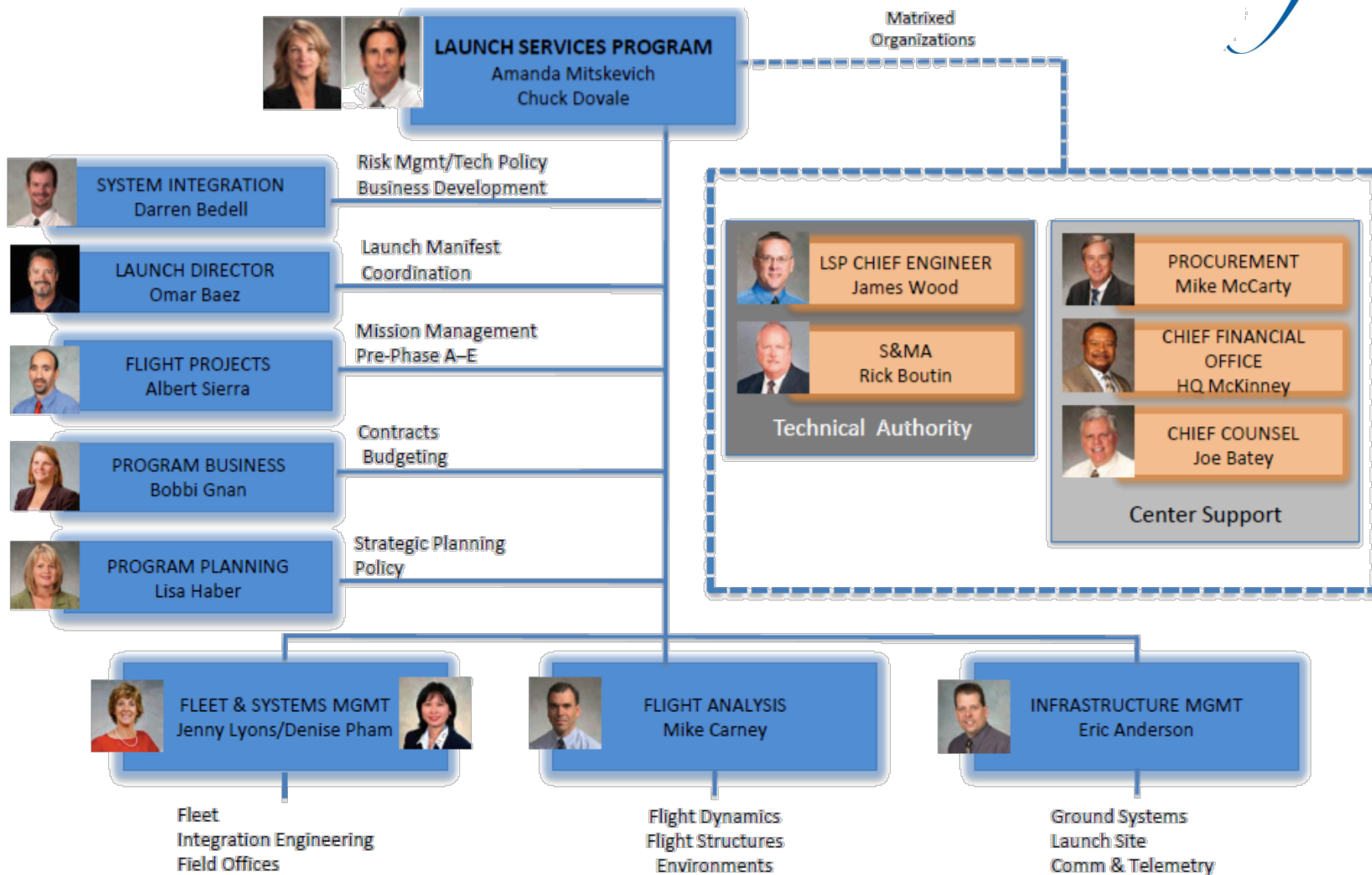


LSP Organizational Structure

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LAUNCH SERVICES PROGRAM





LSP Functional Structure



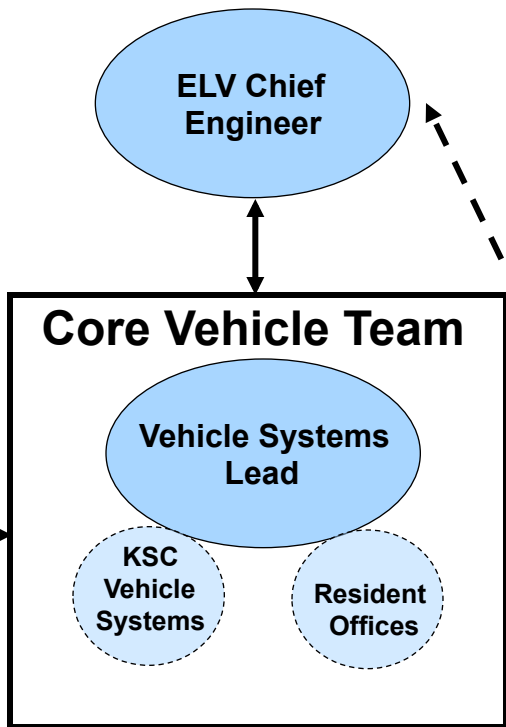
- **LSP procures/provides a Launch Service**
 - Its more than the basic launch vehicle
 - We don't buy a tail number
 - This is a commercial FFP procurement with additional insight and oversight
- **To enable this, LSP has two functional sides**
 - **Mission integration**
 - » Mission Integration Team (MIT) assigned to each mission
 - » Manages mission specific procurement, integration, and analysis
 - » Includes launch site integration and processing
 - **Fleet management**
 - » Personnel assigned to each contracted rocket
 - » Includes resident offices within the production facilities of all active providers
 - » We watch the production and performance of entire fleet – we certify the manufacture's production line, not just a particular unit (tail number)
 - » We have a say in any change/upgrade/anomaly
- **LSP maintains the final go or no-go for launch**
- **Interface with Safety and Mission Assurance**
 - Safety
 - Quality



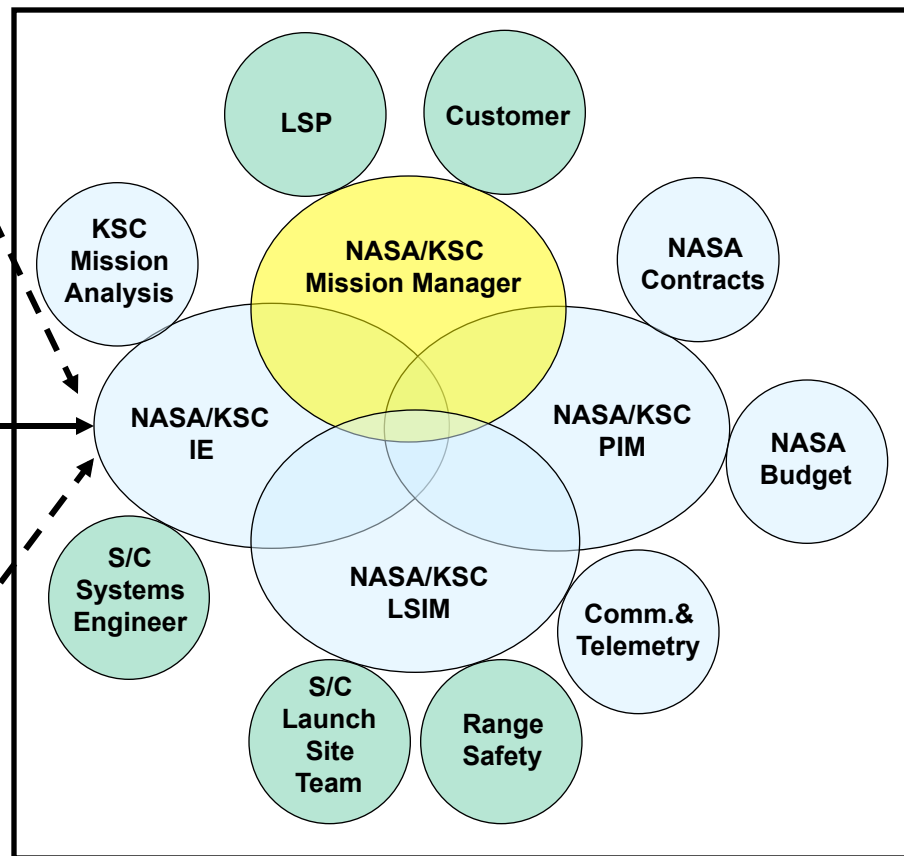
Technical Information flow into the MIT



Core Vehicle Test & Build



Mission Integration





NASA Provided Launch Services



- **The NLS II Contract is LSP's primary method to acquire all classes of Category 2 and Category 3 commercial launch services for spacecraft customers**
- **Provides NASA with domestic launch services that are safe, successful, reliable, and affordable**
- **Provides services for both NASA-Owned and NASA-Sponsored payloads through multiple Indefinite Delivery Indefinite Quantity (IDIQ) Launch Service Task Order (LSTO) contracts with negotiated Not To Exceed (NTE) Prices**
- **Provides services on a Firm-Fixed-Price (FFP) basis**
 - **Incorporates best commercial practices to the maximum extent practical**
 - **Includes Standard and Non-Standard services**
 - **Mission unique modifications**
 - **Special studies**
- **Allows LSP to turn on a Task Assignment or Non-Standard Service at any time for analyses**



NLS II Contracts Overview



- **Launch Services Risk Mitigation Policy for NASA-owned and/or NASA-sponsored Payloads/Missions can be found under NPD 8610.7. Document can be found at <http://nodis3.gsfc.nasa.gov>**
 - Risk Category 1: Low complexity and/or low cost payloads-Classified as Class D payloads pursuant to NPR 8705.4
 - Risk Category 2: Moderate complexity and/or moderate cost payloads-Classified as Class C payloads and, in some cases, Class B payloads, pursuant to NPR 8705.4
 - Risk Category 3: Complex and/or high cost payloads-Classified as Class A payloads and, in some cases, Class B payloads, pursuant to NPR 8705.4
- **NLS II Launch Service Payment, Milestone & Completion Criteria**
 - Authority to Proceed (ATP) concurrent with Task Order Award
 - Cumulative payment of 10% due at L-30 (Nominal)
 - Nominal Mission Integration begins at L-30 months, with quarterly milestone payments
 - » NTE will be based on the L-30 date, not the LSTO order year
 - » Includes the capability to begin payments at L-33 or L-27 months with no change to Firm-Fixed-Price
 - Each NLS II Contract has standardized work plans tied to the milestone payment. Each work plan varies based on unique vehicle configuration differences.
 - » In the event a contractor completes a milestone ahead of the completion date, the contractor may submit an invoice for Government consideration
 - Modified payment schedule may be negotiated through bilateral agreement



NLS II Contracts Overview



- **Each Provider has their own unique Launch Delay Table**
 - Delay terms are identical for both parties (Contractor/NASA)
 - **No-fault Launch delays**
 - » Include: range constraints, floods, acts of God, strikes and other conditions
 - » No adjustment made to mission price
 - » No limit on number of days
- **For the remaining delay cases grace days are based on sliding scale for both Contractor and NASA delays**
 - 150 days of grace at ATP through L-24
 - Sliding down to 7 days of grace at L-10 days



Launch Services Program Budget



The Launch Services Program provides:

- Procurement and Management of the launch service
- Technical insight/oversight of the launch vehicle production/
test
 - Mission Integration Management and engineering support
 - Oversight of Mission unique launch vehicle hardware/software development – approval of Mission Unique Reviews
- Launch campaign/countdown management – Formal Readiness Reviews
- Risk Management for Launch Service
- Downrange telemetry assets for launch vehicle data
- Budget does not include launch delay



Launch Services Program Budget



- **Integrated Services:**

- Payload processing facility and support
- Range support and services
- Contractor engineering support
- Base Support Contracts
- Logistics
- Hazardous support

- **Standard Services:**

- “Baseline” launch vehicle based on a medium performance with a 4-m payload fairing (credit for low performance with a 4-m fairing)
- Payload Fairing with 2 access doors with thermal/acoustic blankets
- Payload Separation System
- Payload Adapter with availability of test payload adapter
- Electrical Interface Connectors (approximately 3 sets)
- Collision/Contamination Avoidance Maneuver (CCAM) capability
- Spacecraft Spin/De-spin capability



Launch Services Program Budget



- **Non Standard Launch Services are NOT covered under the LSP budget and cost must be included in the PI-Managed Mission Cost:**
 - Nuclear Launch services utilizing a Radioisotope Heater Unit (RHU) – detailed list included in the ELV LSP Information Summary - \$11M
 - Enhanced contamination control, planetary protection, operational clean enclosures
 - Cameras on the LV
 - Extended mission integration periods (in excess of 33 months)
 - LV HW modifications required to accommodate unique payload configuration
 - Non-“baseline” launch vehicle based on high performance curve for a 4-m payload fairing or any performance for a 5-m payload fairing

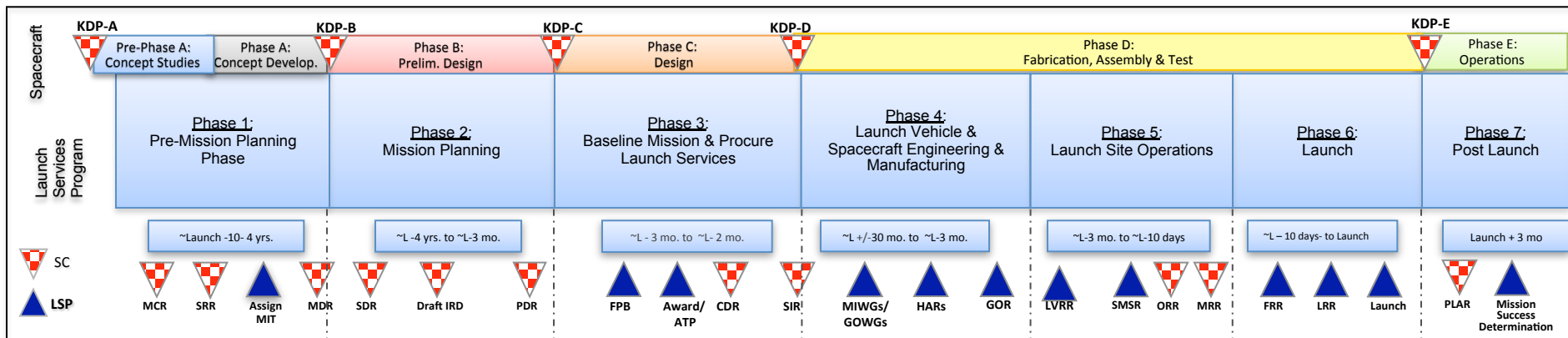
	4m	5m
Low	(\$16M)	\$13M
Med	Baseline	\$28M
High	\$14M	\$43M



Ground Rules



- Any domestic expendable launch vehicle proposed for this AO will be procured and managed by the NASA/Launch Services Program (LSP) via the NASA Launch Services II (NLS II) contract.
- The LSP will competitively select a launch service provider for these missions based on customer requirements and NASA Flight Planning Board (FPB) approval.



Printed documents may be obsolete; validate with the LSP-Flight Projects Office Prior to use.



Available Vehicles under NLS II



- **Most likely candidate vehicles for the Discovery AO that are available on the NLS II contract are**
 - Atlas V
 - Falcon 9 v1.1
- **Bidders must remain compatible with vehicles that provide their performance requirements**
- **LSP uses the NLS II contract and not the launch vehicle providers users guides when determining LV configurations and performance**
- **Assumption of a specific launch vehicle configuration as part of this AO proposal will not guarantee that the proposed LV configuration will be selected for award of a launch service competitive procurement**
 - **Firm technical rationale for sole source justification is required in the proposal, and NASA would have to obtain appropriate approvals**



Available Vehicles under NLS II



- **The Agency policy, NPD 8610.7, “Risk Mitigation Policy for NASA-Owned and/or NASA-Sponsored Payloads/Mission” has been modified so newer launch service providers are eligible earlier to compete for any of NASA’s missions**
 - **Requires one successful launch of vehicle configuration in order to bid for a proposal**
- **Launch Services Program initiates the procurement of a launch service under the NLSII contract via a Launch Services Task Order (LSTO)**



LSTO Process



- **HQ Flight Planning Board (FPB) notifies LSP of mission requirement**
 - Launch Services Interface Requirements Document (LSIRD) has already been developed by Spacecraft Customer & provided to HQ FPB and to LSP (LSP works with Spacecraft Customer to develop LSIRD)
- **Launch Services Program Manager notifies procurement officer of requirement and provides recommended technical personnel for LSTO evaluation team**
- **Procurement officer establishes LSTO evaluation team with designated contracting officer and lead tech evaluator**
 - Note that the team includes up to 2 or 3 reps from the spacecraft project team
- **LSTO evaluation team performs the following:**
 - Develop tech requirements based on mission definition
 - Assures FAR guidelines are being followed
 - Determines and documents LSTO evaluation criteria
 - CO issues Request for Launch Services Proposal (RLSP) to multiple award contractors



LSTO Process

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- **LSTO eval team performs the following (cont'd):**
 - Evaluate contractor proposals in accordance with LSTO procedures
 - Complete evaluation and brief to Procurement officer, LSP Program Manager, FPB, sponsoring Program/Project on evaluation results
 - Verify status of Authority To Proceed (ATP)
- **Launch Services Program Manager makes selection and coordinates with KSC Contracting Officer (CO)**
- **KSC CO awards LSTO for mission launch service**



Summary



- It is the Launch Services Program's goal to ensure the highest practicable probability of mission success while managing the launch service technical capabilities, budget and schedule.
- Questions must be officially submitted to:

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