



Mission Integrated Master Scheduling Tool



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Launch Services Program



Agenda

- Launch Services Program
- Project Overview & Objectives
- Applicability
- Yesterday's Process vs. Improved Process
- Partnership Agreement
- Resulting Documents
- Agreement Format
 - Content
 - Process of Delivery
- Process Flow
- Future Work
- Summary



LSP Overview

- The Launch Services Program provides a single NASA focus for the acquisition and management of ELV launch services
 - Commercial launch services available today from:
 - Boeing (Delta vehicles)
 - Lockheed Martin (Atlas vehicles)
 - Orbital Sciences Corp. (Pegasus/Taurus vehicles)
- The LSP provides launch services for NASA, NASA-sponsored, and other government payloads (e.g., NOAA, NMD) as required. Launch sites include:
 - Cape Canaveral Air Force Station (CCAFS)
 - Vandenberg Air Force Base (VAFB)
 - Wallops Flight Facility (WFF)
 - Other remote sites (Kwajalein; Kodiak, Alaska)
- The ELV Program consolidated and located at KSC in October 1998



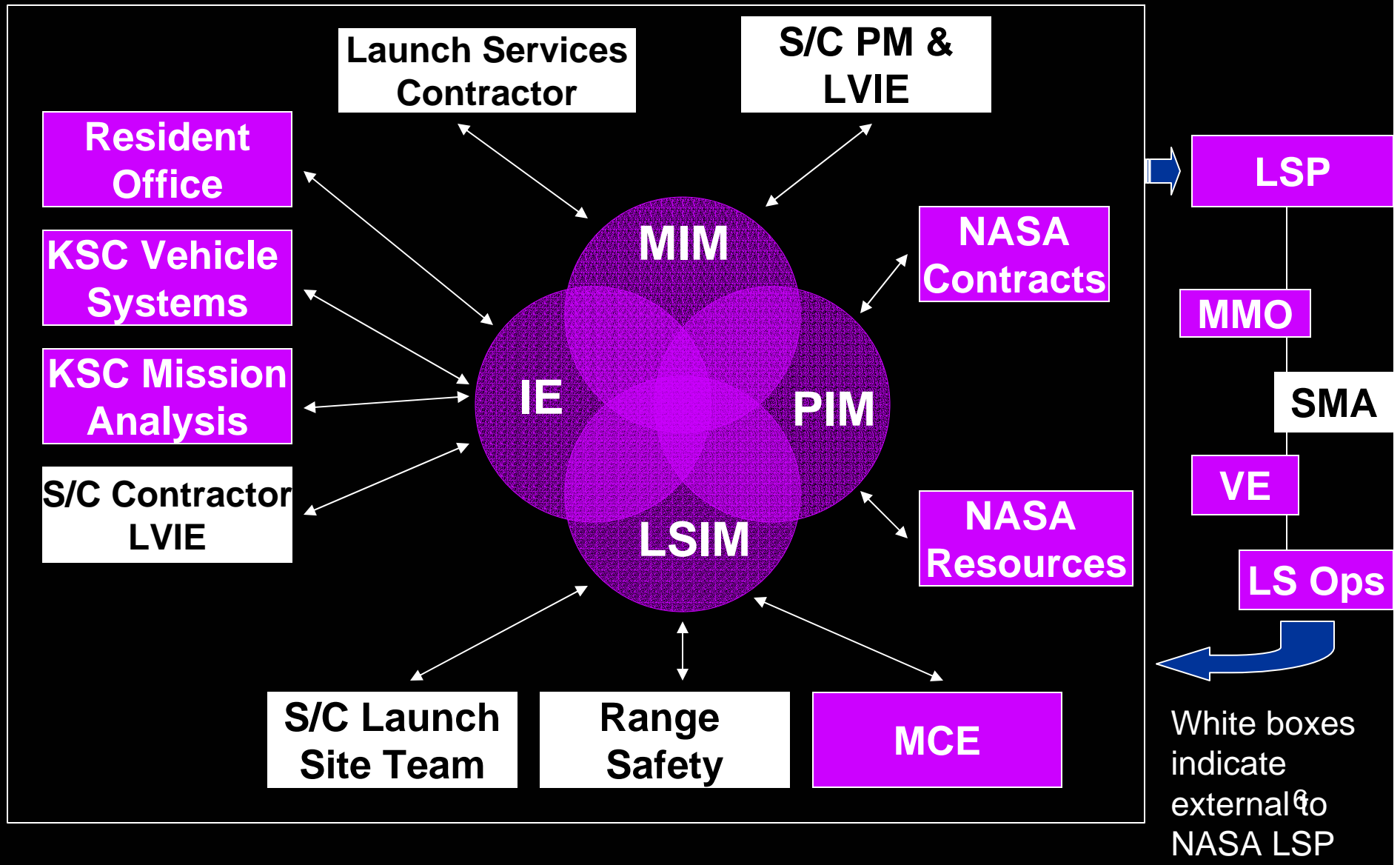
LSP Goals

- Provide a successful launch rate at or above 95 percent for consecutive success of missions managed with NASA technical oversight on schedule and within budget
- Ensure launch service contracts are in place to support all approved NASA missions and enable mechanisms to utilize new capabilities as they become available
- Serve as Agency ELV focal point for advanced planning/mission analysis and repository for ELV databases
- Implement partnerships with other NASA Centers, academia, and industry to create new technological capabilities for lower costs and more reliable access to space



[LSP 2003 Launches](#)

Introduction to the MIT





Project Overview

- Federal Career Intern Program (FCIP)
 - Hiring authority providing entry level training
 - Intended for Grades GS-5, 7, and 9 positions
- Accelerated Training Program (ATP)
 - Rigorous six month program which includes diverse training as well as targeted work with other organizations
 - Required to complete a project after six months
- Key words to keep in mind:
 - On Schedule & Within Budget
 - Advance Planning & Analysis



Overview Cont'd

- Recognized the need for snapshots of the big picture
- Wanted a better way to serve our S/C Customers
- Process improvement on schedule development for the Mission Integration Team
 - Applicable to LSP & external entities and managed out of Mission Management Office

Mission Integrated Master Schedule

ATP Project Milestones

TASK	Start	End	2004					
			F	M	A	M	J	J
RESEARCH	2/3/04	5/31/04						
PARTNERSHIP DEVL	2/3/04	5/3/04						
External Partnership	2/3/04	2/3/04						
MIM Partnership	4/29/04	4/29/04						
Internal Partnership (Division Chiefs)	5/3/04	5/3/04						
PROCESS DEVL	5/10/04	5/31/04						
TOOL DEVL	5/31/04	6/14/04						
OUTREACH ANNOUNCEMENTS via Launch Services Connections	6/4/04	6/4/04						
VERIFICATION & TESTING (KEPLER)	6/14/04	6/19/04						
PRCB Approval	7/2/04	7/2/04						
IMPLEMENTATION	7/2/04	7/2/05						



Project Objectives

- Provide a scheduling process focusing on simplification and ease-of-use for us & our S/C customers
- Improve communication in content and flow by giving the S/C ONE schedule for Launch Services
- Facilitate early S/C planning & contract definition
- Clarify each group's contribution of content to the schedule
- Honor ownership of data





Objectives Cont'd

- Provide efficient & accurate automated updates
- Eliminate consistency issues
- Allow a visible communication channel for the MIT
- Provide a proactive approach in analyzing resource conflicts
- KNPG 7150.1 compliant (LSP Scheduling System)

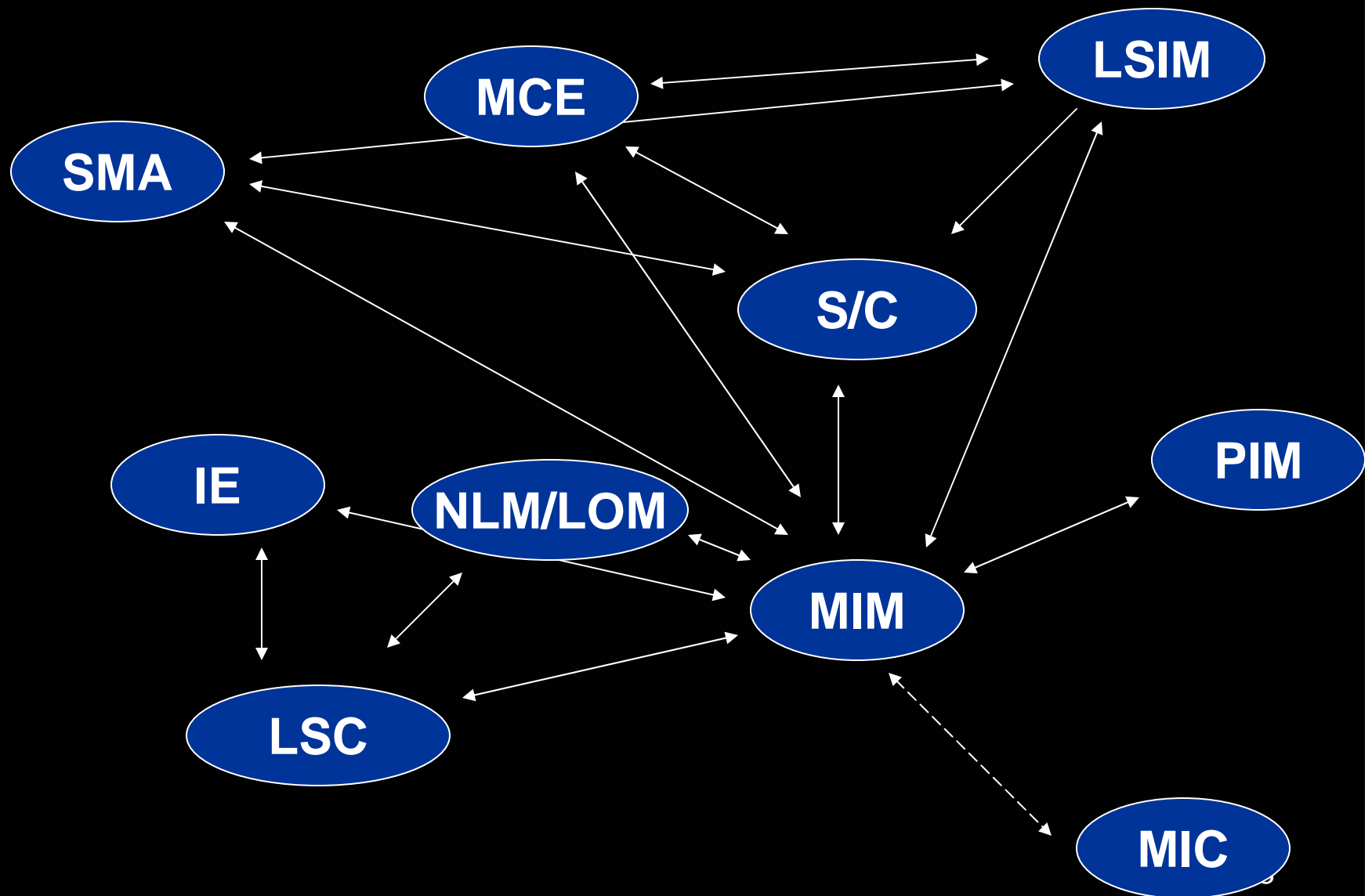


Applicability

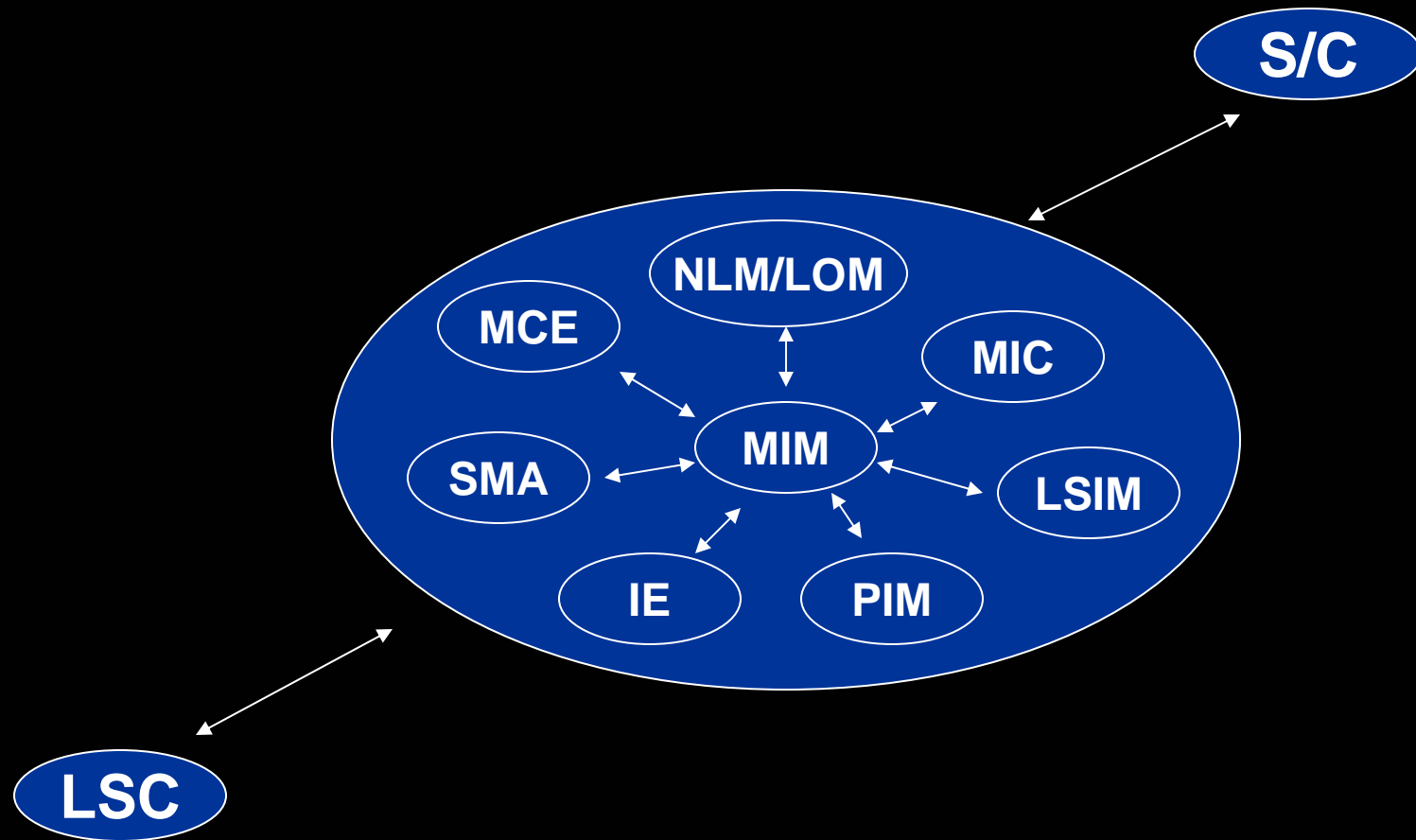
- Missions launching on Delta II Vehicles
- All phases of integration



Yesterday's Scheduling Process



Improved Scheduling Process



Partnership Agreements

Internal

- MIM
- LSIM
- MCE
- IE
- PIM
- NLM/LOM
- MIC

External

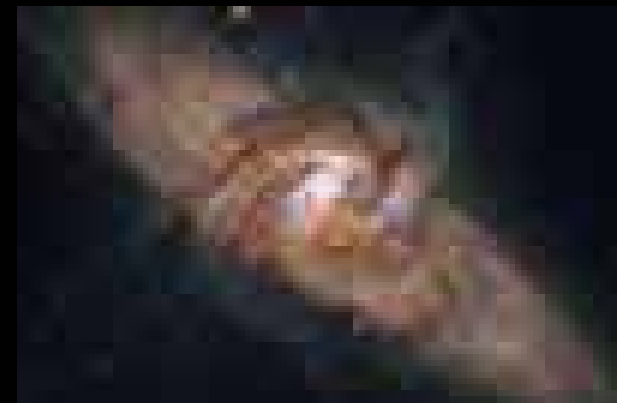
- SMA
- Boeing HB
- S/C





Resulting Documents

- Mission Integrated Master Schedule, for Delta II Vehicles (KSC-KTI-2891)
- Mission Integrated Master Schedule Process (KDP-P-2894)





Agreement Format

- Key player X
 - Provide schedule inputs for line items as defined
 - Frequency of updates
 - Format
 - Content
 - Process of Delivery



Generic Template Example

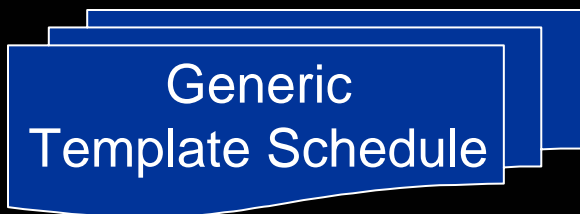
Task	Agency	Sharing	Req't	Submittal Time	2004		
					Jan	Feb	Mar
Task 1							
Task 1.1a	KSC						
Task 1.1b	KSC	S/C	NPG 2190	ATP-1month			
Task 1.1c	KSC	S/C	NPG 2190	ATP+1month			
Task2							
Task 2.1a	Boeing	KSC	KDP-P-X X	L-21month			
Task 2.2b	Beoing	KSC	KDP-P-X X	L-21month			

When sharing with S/C, every one can see it; Boeing means KSC & Boeing only; KSC means KSC only.

Planned

Process of Delivery

Functional Org Portal



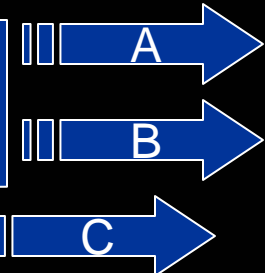
MIT Coordination Site (LSP Internal)

Transition to
mission tailored



MIT Coordination Site (LSP Internal)

MIC (early planning)



Filters (ex. S/C)
Mission Portal Site
(pdf format)



Process Flow

Click:

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Back up: [Process](#)



Future Work

- Missions launching on all other vehicles
- Resource loading
- Automated comparison capability & report generation from one update to another
- Automated children updates
- NPG 7120.5 rev C alignment (NASA Program: PM Processes & Req'ts)





Verification of Objectives

- Provided a scheduling process focusing on simplification & ease of use for us and our S/C customers
- Improved communication in content and flow by having ONE schedule for LSP
- Facilitated early S/C planning & contract definition
- Provided efficient & accurate automated updates
- Eliminated consistency issues
- Allowed a visible communication channel for the MIT
- Provided the first step in a proactive approach for analyzing resource conflicts
- Honored ownership of data



Side Benefits

- Process of base lining template
 - Base lining template created consistency within each organization
 - Clarified and documented ownership based on agreements
 - Considered to be a “good idea” by everyone, Ebert & Roeper would give it “two thumbs up”

Thank you....

- Denise Pham
- Ken Hale
- Mike Martin
- Chuck Tatro
- Randy Mizelle
- Emilio Cruz
- Omar Baez
- Tracey Post
- Marty Lougheed
- Enoch Moser
- Karen Crook
- Milt Draves
- James Lichtenthal
- Cheryle Mako

QUESTIONS?



The end....

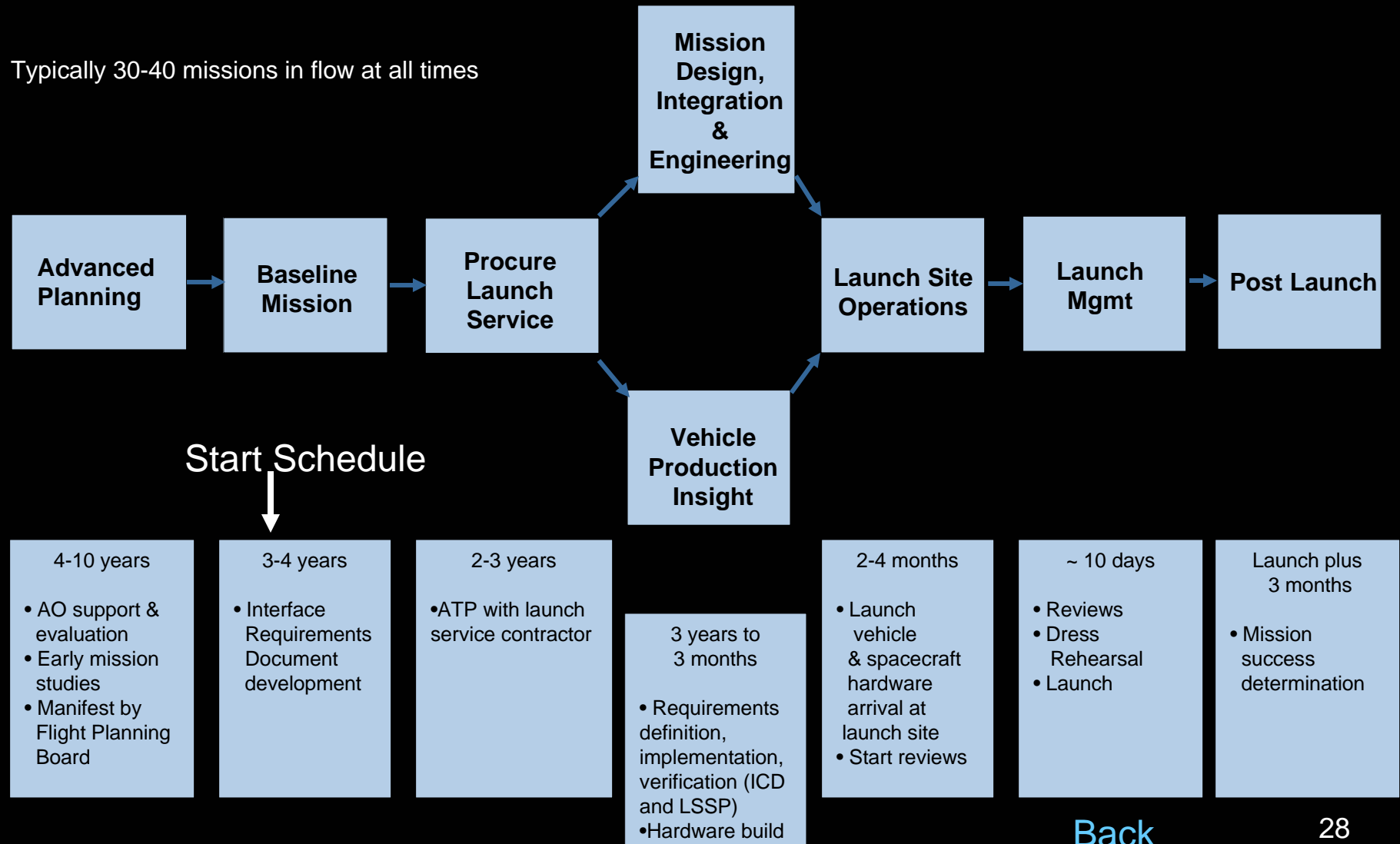


Acronyms

- **S/C**—Spacecraft
- **Boeing HB**—Boeing Huntington Beach
- **MIT**—Mission Integration Team
- **MIM**—Mission Integration Manager
- **LSIM**—Launch Site Integration Manager
- **IE**—Integration Engineer
- **PIM**—Program Integration Manager
- **MCE**—Mission Comm. Engineer
- **NLM/LOM**—NASA Launch Manager/Launch Ops Manager
- **MIC**—Mission Integration Coordinator
- **SMA**—Safety & Mission Assurance
- **LSP**—Launch Service Program
- **LSC**—Launch Service Contractor
- **MMO**—Mission Management Office
- **PM**—Project Manager
- **LVIE**—Launch Vehicle Integration Engineer

Phases of Integration

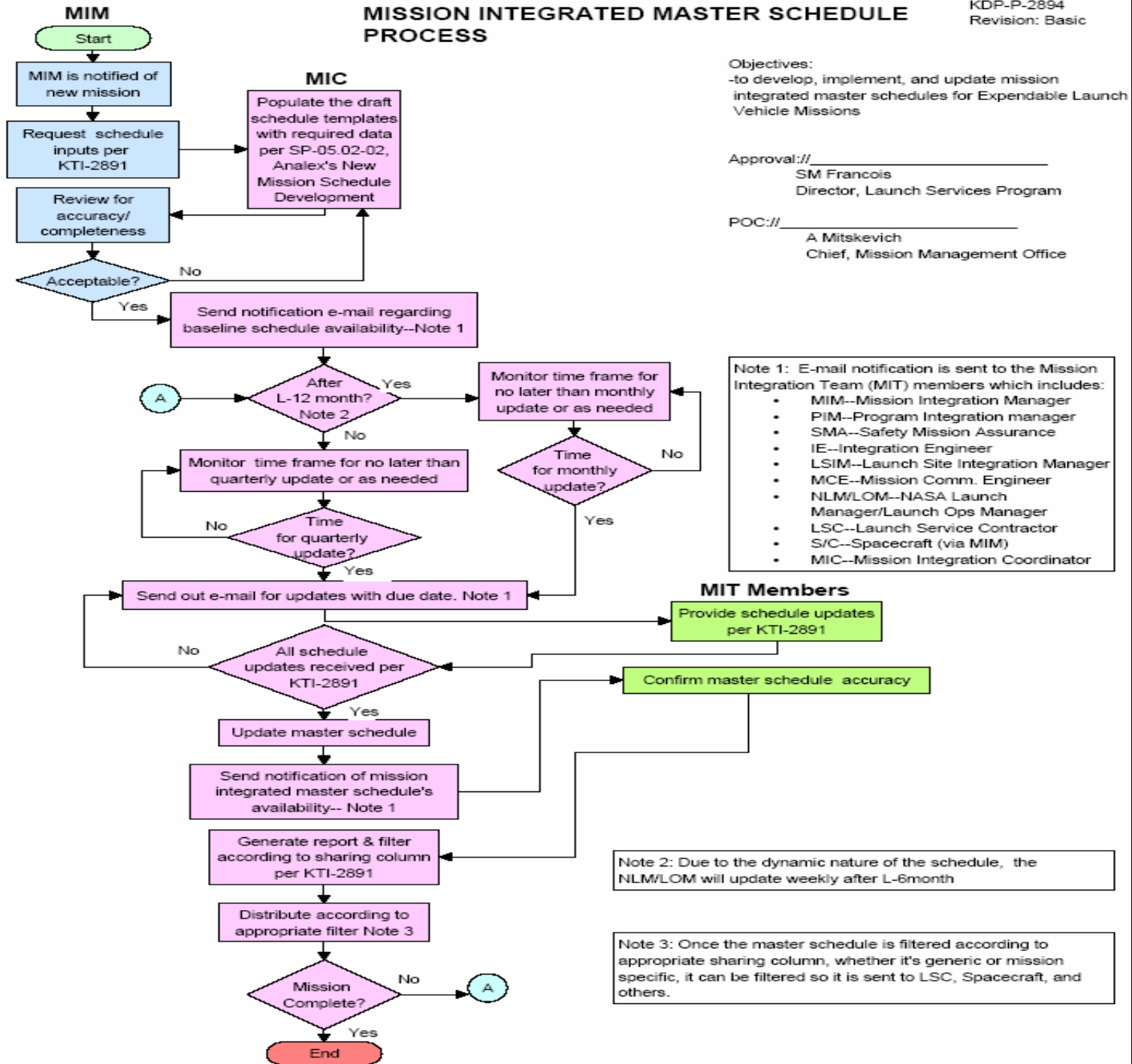
Typically 30-40 missions in flow at all times



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MISSION INTEGRATED MASTER SCHEDULE PROCESS

KDP-P-2894
Revision: Basic



Objectives:
-to develop, implement, and update mission integrated master schedules for Expendable Launch Vehicle Missions

Approval:// _____
SM Francois
Director, Launch Services Program

POC:// _____
A Mitskevich
Chief, Mission Management Office

- Note 1: E-mail notification is sent to the Mission Integration Team (MIT) members which includes:
- MIM--Mission Integration Manager
 - PIM--Program Integration manager
 - SMA--Safety Mission Assurance
 - IE--Integration Engineer
 - LSIM--Launch Site Integration Manager
 - MCE--Mission Comm. Engineer
 - NLM/LOM--NASA Launch Manager/Launch Ops Manager
 - LSC--Launch Service Contractor
 - S/C--Spacecraft (via MIM)
 - MIC--Mission Integration Coordinator

Note 2: Due to the dynamic nature of the schedule, the NLM/LOM will update weekly after L-6month

Note 3: Once the master schedule is filtered according to appropriate sharing column, whether it's generic or mission specific, it can be filtered so it is sent to LSC, Spacecraft, and others.

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