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SUBJECT: Mission Support Planning and Coordination

Contents

PURPOSE.....	2
SCOPE AND APPLICABILITY	2
PROCESS.....	3
1. MISSION PLANNING	3
2. WORK/SUPPORT SCHEDULING	5
3. REPORT READINESS.....	6
3.1. Types of Readiness to report	7
3.1.1. Flight readiness for CCAF ELV	7
3.1.2. Facility Readiness	8
3.1.3. Milestone/Test/Flight Readiness	8
3.1.4. Flight readiness for Commercial Customer on KSC property.....	8
3.2. SUPPORT ORGANIZATIONS	10
3.3. FACILITIES EFFECTIVITY LIST	11
3.4. PREPARE AND SUBMIT READINESS.....	12
3.5. Level of reporting.....	13
3.6. Required Support Organization reporting categories	14
3.6.1. Personnel Training/Certifications	14
3.6.2. Documentation	15
3.6.3. Validations/Critical Checks.....	16
3.6.4. Open Work.....	17
3.6.5. Mission Essential (ME) spare parts.....	19
3.6.6. Concerns/Constraints/Highly Desirable.....	20
3.6.7. Waivers/Deviations/Out of Configuration	20
3.6.8. Preventive Maintenance Open Work.....	20
3.7. REPORT BOSS READINESS TO SUPPORT MILESTONES.....	20
3.8. Internal BOSS Readiness Review.....	22
4. Mission Support Documents.....	22
4.1. Requirements documents.....	22
4.2. Payload Requirements documents.....	22
4.3. Requirements response	22
Appendix A: PWS requirements	23
RECORDS	26
AFFECTED DIVISIONS	26
ROLES AND RESPONSIBILITIES.....	26
REFERENCE DOCUMENTS	27
ACRONYMS	27
DEFINITIONS	27
REVISION RECORD.....	29

PURPOSE

To provide the Base Operations and Spaceport Services (BOSS) Program Management with the information necessary to determine the BOSS readiness posture for NASA and other contract vehicle launches in support of PWS 2.1.2 and DRD 037, Launch Readiness Briefings DRD 038, Launch Readiness Statements, DRD 039, Facility and Equipment Readiness Reports.

SCOPE AND APPLICABILITY

The BOSS Mission Support Office (MSO) facilitates the reporting of mission readiness to support NASA Space Launch System (SLS), USAF and Commercial mission (Space X, Blue Origin, Boeing, Etc...) requirements, including infrastructure and support service readiness for Expendable Launch Vehicle (ELV) launches and other programmatic milestones at KSC and CCAFS. This procedure addresses mission planning and scheduling performed by MSO as well as milestone reporting and readiness briefings which require input from multiple BOSS organizations. This procedure identifies the milestone reporting process for each identified BOSS department and addresses the support organization readiness reporting requirements that are required to be submitted via KMOST (Kennedy Mission Operations Support Tool <http://kmost.ksc.nasa.gov>)

PROCESS

The process of launch planning and coordination involves planning a mission, scheduling work, reporting readiness and briefing readiness is shown in Figure 1: Mission Planning and Coordination.

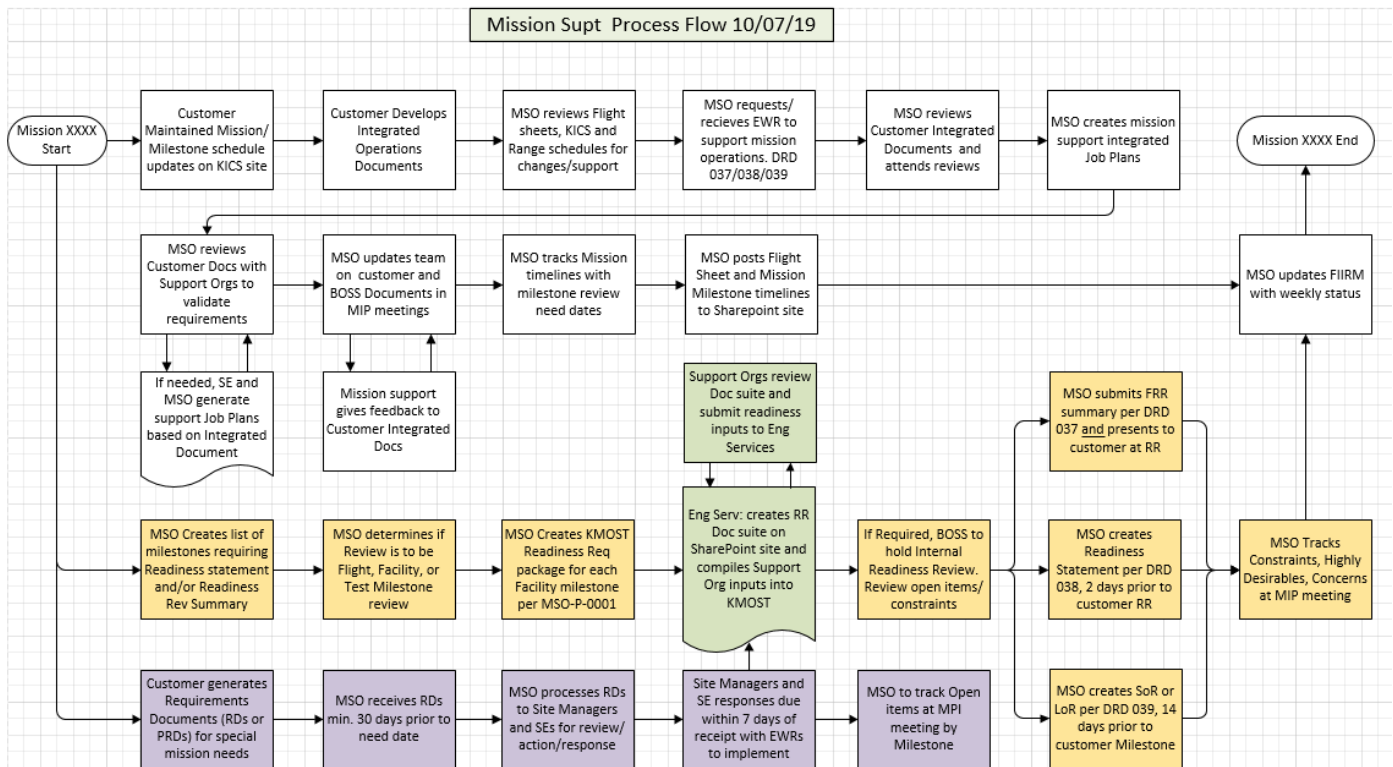
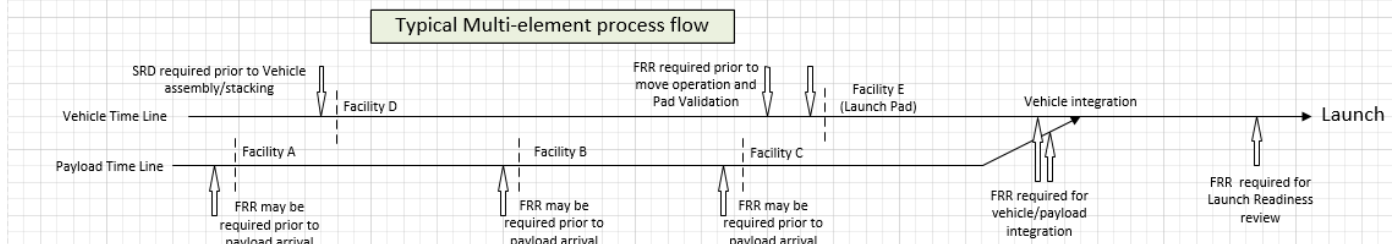


Figure 1: Mission Planning and Coordination



1. MISSION PLANNING

- MSO reviews the Range and the KSC Integrated Control Schedule/Payload Operations Support Schedule (KICS/POSS) Schedules for all planned missions and associated major milestones that require BOSS support to properly plan and coordinate program support.
- The following areas are monitored for mission activity and milestone dates: Launch Pad A, Launch Pad B, Mobile Launcher (ML), CCAF Launch pads, Vehicle Assembly Building (VAB), Launch Control Center (LCC) Firing Rooms, Multi-payload Processing Facility (MPPF), Payload Hazardous Servicing Facility (PHSF), Radio-Thermal-isotopic Generator Facility (RTGF), Launch Abort

System Facility (LASF), the Operations and Checkout (O&C) facility Industrial Operating Zone (IOZ), Space Station Processing Facility (SSPF) and Payload delivery processes.

- For ELV and commercial Launches, MSO reviews the Flight Sheets to identify BOSS support requirements. Flight Sheets are distributed to the MSO via the Air Force Launch Integration Office (AFLIO) based on scheduled launch dates.
- MSO verifies the BOSS operational status from the Flight Sheet Reviews and with the supporting shop supervisors or designee. Pre-Operations verifications are required to be reported per the scheduled timeline.
- MSO will post the Mission Support Operations Forecast (KSC/CCAFS), timelines, and the flights sheets on the BOSS homepage for review by the functional organizations.



MISSION SUPPORT OPERATIONS FORECAST (KSC/CCAFS)

****PROPOSED DATES - FOR PLANNING PURPOSES ONLY****
NOTE: ALL TIMES IN EASTERN (DAYLIGHT/STANDARD) TIME
***BOLDED ITEMS INDICATE CHANGE SINCE LAST REVISION**

Updated: 8/28/19
Page 1 of 2

DATE	TIME	LOC	LAND	OPERATION	PAYLOAD	OPNR	WON	CRITICAL DAYS
9/20/19		41		Atlas V WDR	CST-100 OFT	A7921		9/20/19
10/6/19	1303 - 1324	41		Atlas V	CST-100 OFT	A6278		10/6/19
10/10/19	2125 - 2255	AIR		Pegasus XL	ICON	U9524		10/10/19



MISSION SUPPORT OPERATIONS FORECAST (KSC/CCAFS)

****PROPOSED DATES - FOR PLANNING PURPOSES ONLY****
NOTE: ALL TIMES IN EASTERN (DAYLIGHT/STANDARD) TIME
***BOLDED ITEMS INDICATE CHANGE SINCE LAST REVISION**

Updated: 8/27/19
Page 2 of 2

DATE	TIME	LOC	OPERATION
8/ 6 – 8/29 (pick up again on 8/29)		MPPF	INT-VV-0030 MPPF Oxidizer Hot Flow Preps INT-VV-0001 Hazardous Hypers Events INT-VV-0031 Post Ops
Test #2: 8/30 – 8/31		39B	INT-VV-0014 IOP/SS Integrated Water Flows
9/7 – 9/11		39B/ML1	INT-VV-0004 ML Umbilical Arm Simultaneous Retract Test
9/17 – 10/9		39B	INT-VV-0015 ML/Pad Launch Preps Demo
9/25 – 9/30		39B/ML1	INT-VV-0017 ML/Pad Cryogenic Cold Flow Testing

Figure #2: Examples of MSO Forecast

- MSO along the Integrated Planning Operations Office will produce an integrated launch schedule showing launch vehicle along with major hardware or test milestone activities requiring BOSS support or readiness activities. This schedule shall show preoperational activity completion dates as well as BOSS supported or lead Readiness Reviews and Call-to-Station timelines. Major BOSS activities

and support will be listed as well as impacts to other milestone activities where they conflict for proper scheduling of resources.

- MSO will chair a weekly Mission Planning and Integration (MPI) meeting) to discuss Integrated operations and BOSS support/constraining work. A meeting Agenda will be provided the day before to Meeting.
- MSO will create mission support task or Job Plans (JP) in the Non-PM Job Plan MAXIMO application for required integrated support to customer Integrated mission plans. These documents will reference the calling step from the customer integrated plan as well as the supporting BOSS steps needed to fulfill the requirement. These documents will be reviewed and coordinated in the MPI meetings or in separate meetings as a table top review as soon as possible to feedback coordination steps to the customer to update their documents.
- Systems engineering will create shop level Mission Support JPs in the Non-PM Job Plan MAXIMO application to support the MSO support plans when the relevant work is either complex, repetitive or requires documentation traceability by the customer. The Job Plans will be created in accordance with BOSS mission related Job plan protocol (Document TBD) to ensure properly Mission Support protocol is followed and all support step call outs are preformed per schedule.

2. WORK/SUPPORT SCHEDULING

- Electronic Work Requests (EWR) are submitted by the launch customer for launch support work order(s) to be issued by the Work Control & Spaceport Integration Center (WCSIC). MSO will include EWR and Work Order information in the Flight Sheet and post on the BOSS homepage as required and insure all requirements are integrated.
- MSO along with the Planning and Integration office will coordinate with the FSEU shops, console operations and engineering to plan support for the integrated operations testing to ensure all personnel are available and ready to support each integrated customer milestone or launch activity.

3. REPORT READINESS

- BOSS is required to support SLS, ELV and commercial customer milestone processing requirements per DRD-037, 038 and 039 and **Table #1**. The KMOST Readiness Reporting is shown **in Figure 2**. Identified organizations are required to submit their support organization readiness via KMOST for all support.

			DRD-037	Internal	DRD-038	DRD-038	DRD-039	DRD-039
			Readiness Rev	Review	Readiness	Readiness Rev	SoR	LoR
Facility	Hazardo	Milestone	Required	Level	Statement	Required	Required	Required
Cape Launch	Yes	Launch	No	TBD	Yes	Yes	Yes	No
PHSF	Yes	Payload arrival	Yes	TBD	No	No	Yes	No
PHSF	Yes	Hazardous ops	Yes	TBD	No	No	Yes	No
MPPF	Yes	Payload arrival	Yes	TBD	No	No	Yes	No
MPPF	Yes	Hazardous ops	Yes	TBD	No	No	Yes	No
LASF	Yes	Payload arrival	Yes	TBD	No	No	Yes	No
SSPF	No	Payload arrival	Customer ?	TBD	No	No	No	Customer?
SSPF VCF	Yes	VCF Haz Ops	Yes	TBD	No	No	Yes	No
SSPF	No	Animal Arrival	Customer ?	TBD	No	No	No	Customer?
IOZ	No	Payload arrival	Customer ?	TBD	No	No	No	Yes
VAB	No	Stacking	Yes	TBD	No	No	No	Yes
VAB	No	Integrated ops	Customer ?	TBD	No	No	No	Yes
Pad-B	Yes	Launch Pad Val	Yes	TBD	No	No	Yes	No
Pad-B	Yes	Roll to pad	Yes	TBD	No	No	Yes	No
Pad-B	Yes	Haz Ops	Yes	TBD	No	No	Yes	No
Pad-B	Yes	TCDT	Customer ?	TBD	No	No	Customer?	No
Pad-B	Yes	ISVV ??	Customer ?	TBD	No	No	Customer?	No
Pad-B	Yes	Launch	Yes	TBD	Yes	No	Yes	No
Pad-A	Yes	Hot Fire	Customer ?	TBD	No	No	No	No
Pad-A	Yes	Launch	Yes	TBD	Yes	No	Yes	No
Notes:								
This does not address OPF 1/2 as Commercial customer								
A complete milestone list can be compiled								
ISVV documents are Milestones?? Customer question.								
Under Levels, TBD signifies to be determined in Mission Planning and Integration meetings								

Table #1 Mission/Launch Milestone reporting

See Appendix A for DRD requirements

- Per DRD-037, The Contractor shall deliver and present readiness briefings of each pending mission milestones and missions launched from Kennedy Space Center (KSC). Details of the requirement are in Appendix A. This review is “As-Required” by the customer. This requirement to perform a readiness data review will be decided by the customer either at the MPI meeting or via request for support through the EWR process. The review data:
 - To be compiled along with a readiness summary and submitted to the customer prior to the performing activity.

- To be posted to the Government contract management portal one day prior to the review.
 - The summary will be presented with relevant data to the customer's Readiness Review for discussion of BOSS involvement.
 - Per DRD, no Inspection or Acceptance Review is required
- Per DRD-038, Launch Readiness Statements, BOSS shall deliver readiness statements to document overall BOSS readiness for launches prior to readiness reviews and the commencement of launch operations. This review/statement is "As-Required" by the customer.

1. KSC Flights: The Contractor shall deliver an official correspondence, signed by the BOSS Contract Program Manager and addressed to the NASA/KSC Director of Spaceport Integration and Services (SI), containing an overall assessment and commitment of the Contractor's readiness posture for launches from Kennedy Space Center (KSC).

NASA Readiness Statements shall be delivered two business days prior to the appropriate readiness review prior to launches from KSC.

2. CCAFS Flights: The Contractor shall report its readiness to support 45th Space Wing (45 SW) launches at the appropriate 45 SW Launch Readiness Briefing and sign the 45 SW Statement of Readiness at the appropriate 45 SW Launch Readiness Briefing.
- Per DRD-039, Facility and Equipment Readiness Reports, The Contractor shall deliver a Statement of Facilities and Equipment Readiness (SoR) and a Letter of Facilities and Equipment Readiness (LoR) as required in the DRD to the customer no less than 14 days prior to the operation or milestone. These reports are "As-Required" by the customer.
 - Reports shall be submitted to the Government 14 days prior to major facility milestones (e.g., rollout, first lift in a facility), hazardous operations, scheduled spacecraft or payload support equipment (hereinafter referred to collectively as "payload") arrival/established milestones, unless otherwise specified in the Launch Site Support Plan (LSSP).
 - The Contractor shall verify processing facilities and equipment readiness a minimum of 1 week prior to operation or milestone, in a presentation at the Government led readiness reviews.

3.1. Types of Readiness to report

3.1.1. Flight readiness for CCAF ELV

- 1) If customer required, Per DRD-038, MSO will notify KMOST participants to conduct a CCAFS ELV Flight Readiness Review per the KMOST Launch Readiness reporting system. See table #2, 3 and 4 for the document and support review requirements.

- 2) If customer required, Per DRD-038, MSO shall report its readiness to support 45th Space Wing (45 SW) launches and sign the readiness letter prepared by the AFLIO at the launch readiness review as scheduled by the Det 1, 45th MSG AFLIO.
- 3) The readiness summary and all relevant data will be presented at the Customer Readiness/Open item/Technical review meetings.

3.1.2. Facility Readiness

- 1) If customer required, Per DRD-037, MSO will notify KMOST participants to conduct a Readiness Review per the KMOST Readiness reporting system. See table #2, 3 and 4 for the document and support review requirements.
- 2) If customer required, Per DRD-039, MSO shall complete and submit a SoR or LoR to the customer no less than 14 days prior to the operation or milestone.
- 3) The readiness summary and all relevant data will be presented at the Customer Readiness/Open item/Technical review meetings.
- 4) Readiness summary, SoR or LoR due dates shall be tracked on the Mission Support integrated plan.

3.1.3. Milestone/Test/Flight Readiness

If mission elements are routed through KSC facilities the Customer (NASA or AF) may require a Facilities Readiness Review to ensure facilities are operationally ready to receive the flight hardware.

- 1) If customer required, Per DRD-037, MSO will notify KMOST participants to conduct a Readiness Review per the KMOST Readiness reporting system. See table #2, 3 and 4 for the document and support review requirements.
- 2) If customer required for KSC Launch, Per DRD-038, MSO will prepare and submit a Launch Readiness statement based on the KMOST Readiness reporting system.
- 3) If customer required, Per DRD-039, MSO shall complete and submit a SoR or LoR to the customer no less than 14 days prior to the operation or milestone.
- 4) The readiness summary and all relevant data will be presented at the Customer Readiness/Open item/Technical review meetings.
- 5) Readiness summary, SoR or LoR due dates shall be tracked on the Mission Support integrated plan.

3.1.4. Flight readiness for Commercial Customer on KSC property

At this point in the BOSS contract no Facility Readiness reviews are anticipated as the Customer provides Requirements Documents (RD) that require what services BOSS will provide, what infrastructure needs are required, and a flight schedule with timelines that limit KSC operations during certain customer activities. BOSS Support will be requested via a customer EWR with the RDs defined.

- 1) If customer required, Per DRD-037, MSO will notify KMOST participants to conduct a Readiness Review per the KMOST Readiness reporting system. See table #2, 3 and 4 for the document and support review requirements.

- 2) If customer required for KSC Launch, Per DRD-038, MSO will prepare and submit a Launch Readiness statement based Infrastructure Support and Requirements Documents status. See table #2, 3 and 4 for the document and support review requirements
- 3) If customer required, Per DRD-039, MSO shall complete and submit a SoR or LoR to the customer no less than 14 days prior to the operation or milestone.
- 4) The readiness summary and all relevant data will be presented at the Customer Readiness/Open item/Technical review meetings.
- 5) Readiness summary, SoR or LoR due dates shall be tracked on the Mission Support integrated plan.

3.2. SUPPORT ORGANIZATIONS

MSO will request support organization readiness based on the specific DRD requirements above. The readiness summaries are to be completed via K-MOST based upon requested timeline. Figure 3 below shows a typical Readiness review Summary and details section below that. Note: These are only partial views.

MSO will maintain a listing of all support organizations required to support readiness statements. This will be periodically reviewed by MSO and SE Management.

Summary: Readiness Request - Delta IV GPS III-1

Delta IV GPS III-1 (1)			
KSC Facilities			
Power/Generator Systems	Ready	8/15/2019 8:51:11 AM	Melquiades Lopez
Engineering Services			
Engineering	Ready	8/15/2019 7:58:54 AM	Catherine Buckingham
Mission Data		Milestone Data	
Name DELTA IV GPS III-1 Vehicle Name Delta IV Status Complete Payload GPS III-1 Payload Abbreviation Payload Orient N/A Operation Number Description Completed 8/22/2019 12:00:00 AM Notes		Payload GPS III-1 Facility Launch Complex 37 (Launch Complex) Name GPS III-1 Document Description Acronym Sequence Number 1 Start 8/22/2019 9:00:00 AM End 8/22/2019 9:27:00 AM Time Status Stations Station Time Status Completed True Note	

Detailed Summary: Readiness Request - Delta IV GPS III-1

Delta IV GPS III-1 (1)					
KSC Facilities					
Power/Generator Systems					
1. Personnel					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
All required personnel are trained and certified with sufficient backups.	N/A		Ready	N/A	No
2. Documentation					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
All open OMD documentation has been reported under ENGINEERING SERVICES READINESS.	N/A		Ready	N/A	No
3. Validation/Critical Checks					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
Facilities of importance to launch readiness have been reviewed for concerns including facilities that have been called out on the latest PSP.BOSS Support Plan Flight Sheet / SEE ATTACHMENT.	SEE ATTACHMENT		Ready	N/A	Yes
4. Open Work					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
All open work in support of DELTA IV GPS III-1 has been evaluated and reviewed per an ALL OPEN WORK ORDER Report / SEE ATTACHMENT REPORT.	SEE ATTACHMENT		Ready	N/A	Yes
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?

Engineering Services					
Engineering					
1. Personnel					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
Nothing to report.	N/A		Ready	N/A	No
2. Documentation					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
All open OMD's were reviewed by ACAM and the responsible Engineer. No open OMD's were reported as risk to facilities critical to the DELTA IV GPS III-1 mission.	SEE ATTACHMENT		Ready	N/A	Yes
3. Validation/Critical Checks					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
Nothing to report.	N/A		Ready	N/A	No
4. Open Work					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
Nothing to report.	N/A		Ready	N/A	No
5. Mission Essential Spares					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
Nothing to report.	N/A		Ready	N/A	No
6. Concerns/Constraints					
Description	WO Tracking Num	ECD	Reporting Status	Work Around	Att?
An Engineering (SHARP TEAM) (systems health and readiness program) report that addresses all condition codes of 1 (bad) or 2 (poor-requiring assessment review by SE) was run for facility assets in facilities of importance to this mission / SE reviewed and responded to update the status / no concerns or risks were identified for the DELTA IV launch readiness support / SEE ATTACHED REPORT.	SEE ATTACHMENT		Ready	N/A	Yes

Figure 3: Readiness Summary Reporting – Partial view

3.3. FACILITIES EFFECTIVITY LIST

MSO will maintain a list of all facilities having a potential effect to the launch, facility or test milestone review and use this to update KMOST for the review process. Each facility milestone review will effect a unique subset of facilities. This list should be updated by customer and BOSS input in the MPI meetings prior to review requests. For ELV Flight reviews the primary list will come from the Flight Sheets or the Operations Directive (OD) for each launch

Mission/Test	Test Facility	Facilities affected in mission test
Launch	CX-41	CX-41, Various Camera sites (UCS-TBD), 500' W.T (J6-0490), TEL IV (N6-2296 Complex), MCAR (E3-1133), CCF (K7-0468)
Payload Arrival	MPPF	MPPF/MOSB (M7-1104/M7-1357)
Haz Ops	MPPF	MPPF/MOSB (M7-1104/M7-1357), Orsino (M6-0996)
Payload Arrival	PHSF	PHSF/MOSB (M7-1354/M7-1357)
Haz Ops	PHSF	PHSF/MOSB (M7-1354/M7-1357), Orsino (M6-0996)
Payload Arrival	LASF	LASF M7-0777)
Payload Arrival	IOZ	IOZ (M7-0355)
Payload Arrival	SSPF	SSPF(M7-0360) and VCF (M7-0360/M7-0361)

Payload Arrival	RTGF	RTGF (M7-1472)
SLS ML Move	VAB	LCC (K6-0900), ML1, VAB H.B-3, Twrs E and F, Xfer Aisle (K6-0848)
SLS Move	Pad-B	LCC (K6-0900), ML1, Pad-B (J7-0XXX and J7-1XXX), VABR (K6-1193), 500' W.T.(J6-0490), KDC (M6-0547)
SLS Stacking	VAB	VAB (K6-0848), LCC (K6-0900), ML1
SLS TCDT	Pad-B	VAB (K6-0848) or Pad-B (J7-0XXX and J7-1XXX), ML1, LCC (K6-0900), 500' W.T.(J6-0490), VABR (K6-1193), KDC (M6-0547), CD&SC (M6-0138)
SLS Pad Valid	Pad-B	Pad-B (J7-0XXX and J7-1XXX),
SLS Launch	Pad-B	VAB (K6-0848) or Pad-B (J7-0XXX and J7-1XXX), ML1, LCC (K6-0900), 500' W.T. (J6-0490), VABR (K6-1193), KDC (M6-0547), CD&SC (M6-0138), C-5 (K6-1141, K6-1141A, K6-1090, K6-1091), UA (K6-0947), Pump Station (J7-1388), TEL IV (N6-2296 Complex), MCAR (E3-1133), CCF (K7-0468), DSAR Tower (C2-1300, C2-1305), DOAMS Tracking (F6-2375, F6-2375A) Mos. Lag. Weather Profiler (G5-0960), TIP shack (J8-1567), Wind Profiler (J8-2227), Press site Complex (K7-11XX, K7-12XX), Radar Tower (K8-0590A), UCS-15 (K8-1403), Wind Profiler site C (L6-0133), UCS-2 (M7-0286, UCS-7 (J8-0754), UCS-9 (H7-0163, H7-0163A), UCS-12/FCA Van (J8-2228), UCS-17 (J7-2162)
Hot Fire	Pad-A	Various Camera sites (UCS-TBD), 500' W.T (J6-0490), VABR(K6-1193), Pump Station (J7-1388)
Commercial Launch	Pad-A	Various Camera sites (UCS-TBD), 500' W.T (J6-0490), VABR, TEL IV (N6-2296 Complex), MCAR (E3-1133), CCF (K7-0468), Pump Station (J7-1388), C-5 (K6-1141, K6-1141A, K6-1090, K6-1091),
Manned flight related Launch	Pad-A	VAB (K6-0848) or Pad-A (J8-1XXX, J8-2XXX), LCC (K6-0900), 500' W.T. (J6-0490), VABR (K6-1193), KDC (M6-0547), CD&SC (M6-0138), C-5 (K6-1141, K6-1141A, K6-1090, K6-1091), UA (K6-0947), Pump Station (J7-1388), TEL IV (N6-2296 Complex), MCAR (E3-1133), CCF (K7-0468), DSAR Tower (C2-1300, C2-1305), DOAMS Tracking (F6-2375, F6-2375A) Mos. Lag. Weather Profiler (G5-0960), TIP shack (J8-1567), Wind Profiler (J8-2227), Press site Complex (K7-11XX, K7-12XX), Radar Tower (K8-0590A), UCS-15 (K8-1403), Wind Profiler site C (L6-0133), UCS-2 (M7-0286, UCS-7 (J8-0754), UCS-9 (H7-0163, H7-0163A), UCS-12/FCA Van (J8-2228), UCS-17 (J7-2162)

Table 2 – Facilities effectivity listing**3.4. PREPARE AND SUBMIT READINESS**

Upon request from the MSO, each identified organization will submit their organization Readiness Summary either to KMOST or to the Engineering Services representative to compile and enter into KMOST. The eight categories required on the Readiness Summary are to be briefed at the required readiness briefings. Each category is described in paragraphs 3.6.1 through 3.6.8 below. Process flow is as follows:

- 1) **MSO:** Sends out a request for readiness review to all supporting organizations to respond back with readiness review details as per the 8 parts in KMOST to be

- completed within a 15 business day lead time. Review data to be posted on the Mission Support SHAREPOINT site [<LINK>](#)
- 2) Engineering services: Provide required document suite for the support organizations to review as required per Tables 3, 4 and 5. This portion needs to be done within 5 business days of the notice. This document suite will be uploaded to a Readiness Review Sharepoint site for review by all Support organizations at: [<LINK>](#). These documents will be attached by Engineering Services Representative to the KMOST form when the review is completed.
 - 3) Configuration Management (CM): Provide required document suite for the support organizations to review as required per Table 5. This portion needs to be done within 5 business days of the notice. This document suite will be uploaded to a Readiness Review Sharepoint site for review by all Support organizations at: [<LINK>](#). These documents will be attached by CM representative to the KMOST form when the review is completed.
 - 4) Support organizations: Review, based on table 2, 3, 4 requirements, the open documentation, provide project status, review and disposition Requirements Documents, perform walkdowns, review concerns/Issues/TALs and provide a status of READY, WORKAROUND, NOT READY or N/A for each of the eight categories. A status of READY requires no explanation. A status of WORKAROUND OR NOT READY requires that an explanation be included in the appropriate section. Open Item Descriptions should include but not be limited to: A summation detailing why the organization is not ready and if possible, the work order, estimated completion date (ECD), and any workaround, which has been partnered/negotiated with the government that would achieve readiness. Forward review comments, concerns, constraints and if the system is ready to support the mission milestone to Engineering Services Representative to compile and upload to KMOST.
 - 5) MSO: Review the completed on-line readiness and any attachments for generation of DRD required Readiness Briefing summaries, Readiness Statements, Flight Readiness Statements, SoR or LoR for submission to the customer and use at readiness briefings.

Once an organization has submitted their Readiness Summary for a specific milestone operation, any changes in status to the summary must be reported to the JSTC console via phone (321) 861-5464 if we are in milestone support operations.

If a milestone is not currently in process, then an updated readiness summary and any pertinent information should be submitted to the Mission Support Office for review of potential impacts to the mission milestone. Organizations should include any Event Report associated with the change in status as applicable.

All Support Organizations reporting Launch Readiness must maintain record copies of the supporting data and documents used to complete the Launch Readiness Summary.

3.5. Level of reporting

In the MPI meetings each milestone review will be discussed for level of reporting necessary to complete the DRD requirements. Depending on last use of a facility, type of use for the facility and what has happened in the facility since last use will dictate the

level of reporting needed. MSO will list all of the facilities needing Readiness Review based on their effectivity listing when notification is provided to support organizations.

Level 1 reporting requires an in depth analysis of the facility open work, PM scheduling, Asset Management, Personnel certification and OMD documentation.

A level 1 analysis is required if:

- A facility usage is coming out of Mothball/Abandon status to active mission support.
- The facility next milestone usage is Launch or rollout. Launch pad and supporting facilities will be included.
- The facility is coming out of an extensive Modification period.
- The facility has not been in a ready posture in over 3 months.

Level 2 reporting requires mainly PM scheduling and corrective documentation analysis since the last review period. If any mods were performed, OMD and asset management will need review. Certified personnel support the milestone

A level 2 Analysis is required if:

- A facility usage has experienced only a minimal modification period since the last facility usage.
- The facility was not maintained in a ready posture for less than 3 months.
- Next Milestone usage is a payload arrival or a customer major Integrated or Hazardous test
- Corrective or Preventive Maintenance has been performed.
- Minimal configuration changes were allowed.
- The last Level 1 review was within 1 year.
-

Level 3 reporting requires minimal Open PM and Corrective documentation review

A level 3 Analysis is required if:

- A facility usage has no modification period and no configuration changes were allowed since the last facility usage.
- The facility remained in a ready posture.
- Next Milestone usage is a payload arrival or a customer major Integrated or Hazardous test
- Only documented Corrective or Preventive Maintenance has been performed. No modification work was allowed.
- Turnaround time from last facility usage was less than 1 month
- The last level 1 or 2 review was within 1 year.

3.6. Required Support Organization reporting categories

The following nine categories are used to report readiness and appear on the KMOST readiness form to be completed by all support organizations.

3.6.1. Personnel Training/Certifications

Ensure for the specific Milestone review (See table 4), all required support personnel and sufficient back-up personnel are trained and certified to support. BOSS Training Coordinator will post a current list of all required trained personnel on the Sharepoint site [<LINK>](#) for shop supervisors to review and determine if they have properly trained personnel to support the milestone. If the

list is out of date then the supervisor should contact BOSS training coordinator to update the requirements. The shop supervisors will respond with their input for readiness regarding sufficient required personnel on-hand and trained to support the milestone.

3.6.2. Documentation

For certain milestones as identified in table 3 Configuration Management to Identify open/in work Operations and Maintenance Documents (OMD) to verify assets are properly identified, Maintenance is being properly performed per the maintenance plan and Configuration drawings are up to date. Identify open IDCs or IRAs needing completion prior to systems being used that may impact mission milestone readiness. Provide a worksheet of all open data to the Sharepoint data review site [<LINK>](#).

MSO to identify mission related Test Plans or Job plans and include a table with status to the Sharepoint data review site [<LINK>](#). CCC/JSTC Mission support plans to be included in this reporting. Related SE/Shop Mission support job plans to be included in this reporting.

MSO to provide a list of Current Payload Requirements Documents and other support Requirement Documents to the Sharepoint data review site [<LINK>](#).

Ensure documentation has been reviewed by the Responsible System Engineer (SE) or Support Organization and evaluated for risk to mission support or milestone impact. Ensure documentation is current and ready to support milestone(s) per Table 3.

Milestone review	Documents to review	Report Provided by	Review By
Level 1 Review			
CCAFS Launch - all	Requirements Documents, Support requirements	MSO	SE, MSO
Payload arrival	Requirements Documents	MSO	SE, MSO
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	Requirements Documents, MSO support plans	MSO	SE, MSO
	SE/Shop support plans,	ENG Serv	
	Console operations support plans	MSO-CCC	
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	Requirements Documents, MSO support plans	MSO	SE, MSO
	SE/Shop support plans,	ENG Serv	
	Console operations support plans	MSO-CCC	
Commercial	Requirements Documents, Support requirements	MSO	SE, MSO
SLS	Requirements Documents, MSO support plans	MSO	SE, MSO
	SE/Shop support plans,	ENG Serv	
	Console operations support plans	MSO-CCC	
Level 2 Review			
Payload Arrival	Requirements Documents	MSO	SE, MSO
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	Requirements Documents, MSO support plans	MSO	SE, MSO
	SE/Shop support plans	ENG Serv	
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	Requirements Documents	MSO	SE, MSO
Commercial	Requirements Documents, Support requirements	MSO	SE, MSO
SLS	Requirements Documents,	MSO	SE, MSO
Level 3 Review			
Payload arrival	Requirements Documents	MSO	SE, MSO
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	Requirements Documents, MSO support plans	MSO	SE, MSO
	SE/Shop support plans	ENG Serv	
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	Requirements Documents	MSO	SE, MSO
Commercial	Requirements Documents, Support requirements	MSO	SE, MSO
SLS	Requirements Documents,	MSO	SE, MSO

Table 3 – Open Support Documentation review by milestone

Open Supporting documentation to be statused at weekly Mission Planning and Integration (MPI) meeting

Any items having potential to impact the mission will be identified to management and MSO for determination of need for constraint identification in the readiness statement and tracking at the Focus on Infrastructure, Issues, Risks, & Mission Support (FIIRM) meeting.

3.6.3. Validations/Critical Checks

For specific milestone reviews, ensure validations have been performed and critical checks have been completed for NASA facilities per AFLIO Flight Sheet or Facilities Effectivity List requirements. Validations/critical checks are reported by equipment or facility number and are the responsibility of the appropriate system owner to report completion per the requested timeline. Ensure documentation is current and ready to support milestone(s) per Table 4.

Milestone review	Crit chks/Validations/Certs to review	Review By
Level 1 Review		
CCAFS Launch - all	Critical checks, Validations, Certifications	SE, FSEU,MSO
Payload arrival	Critical checks, Validations	SE, MSO
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	Critical checks, Validations, Certifications	SE, FSEU,MSO
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	Critical checks, Certifications	SE, MSO
Commercial Launch	Critical checks, Validations, Certifications	SE, FSEU,MSO
SLS Launch	Critical checks, Validations, Certifications	SE, FSEU,MSO
Level 2 Review		
Payload Arrival	Critical checks, Validations	SE, MSO
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	Critical checks, Validations, Certifications	SE, FSEU,MSO
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	Critical checks, Certifications	SE, MSO
Commercial Launch	Critical checks, Validations, Certifications	SE, FSEU,MSO
SLS Launch	Critical checks, Validations, Certifications	SE, FSEU,MSO
Level 3 Review		
Payload arrival	Critical checks, Validations	SE, MSO
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	Critical checks, Validations, Certifications	SE, FSEU,MSO
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	Critical checks, Certifications	SE, MSO
Commercial Launch	Critical checks, Validations, Certifications	SE, FSEU,MSO
SLS Launch	Critical checks, Validations, Certifications	SE, FSEU,MSO

Table 4 – Critical checks/Validations/Certs review by milestone

3.6.4. Open Work

Review all open work in support of specific milestones to ensure there is no impact to mission milestone support. Identify any open work affecting or having the potential to affect milestone readiness status.

The MSO designee will compile a list of open work for the facilities identified in the Facilities Effectivity List. This step may not be required for all reviews. See table 5 below of what is required for open document reviews.

Ensure documentation has been reviewed by the Responsible System Engineer (SE) or Designated (SE) and evaluated for risk to mission support or milestone impact. Ensure documentation is current and ready to support milestone(s).

Any items having potential to impact the mission will be identified to management and MSO for determination of need for constraint identification in the readiness statement and tracking at the Focus on Infrastructure, Issues, Risks, & Mission Support (FIIRM) meeting.

For certain milestones as identified in table 5 Configuration Management to Identify open/in work Operations and Maintenance Documents (OMD) to verify assets are properly identified, Maintenance is being properly performed per the maintenance plan and Configuration drawings are up to date. Identify open IDCRs or IRAs needing completion prior to systems being used that may impact mission milestone readiness. Identify configuration Drawings for systems as per table 5 that are being updated Forward list of configuration documents to the Readiness review Sharepoint site at [<LINK>](#) to allow review for possible Mission Milestone impact.

Milestone review	Open Work review	Report Provide d by	Data Review By
Level 1 Review			
CCAFS Launch - all	For all facilities on Effectivity list:		SE, FSEU, MSO
	open WONs (type BRR, SO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage	ENG SERV	
	Pending or in-work warranty work	CM	
Payload arrival	For facility where test is performed only:		SE, FSEU, CM, MSO
	Open WONs (type BRR, SO, TO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage. Condition code 1 or 2 assets.	ENG SERV	
	NASA and BOSS Project review including long range plan, and in-work projects, open OMD, facility system drawing status, open or pending IDCR, and IRA. Pending or in-work warranty work.	CM	
Integrated Test - Major (ML move to pad, Launch Sim test, Stacking...)	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONs (type BRR, SO, TO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage. Condition code 1 or 2 assets.	ENG SERV	
	NASA and BOSS Project review including long range plan, and in-work projects, open OMD, facility system drawing status, open or pending IDCR, and IRA. Pending or in-work warranty work.	CM	
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	For facility where test is performed only:		SE, MSO
	Open WONs (type BRR, SO), Open and Closed TAL 2 and 3 review since last facility usage. Condition code 1 or 2 assets.	ENG SERV	
	Pending or in-work warranty work.	CM	
Commercial Launch	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONs (type BRR, SO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage. Condition code 1 or 2 assets.	ENG SERV	
	Facility system drawing status. Pending or in-work warranty work.	CM	
SLS Launch	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONs (type BRR, SO, TO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage. Condition code 1 or 2 assets.	ENG SERV	
	NASA and BOSS Project review including long range plan, and in-work projects, open OMD, facility system drawing status, open or pending IDCR, and IRA. Pending or in-work warranty work.	CM	

Level 2 Review			
Payload Arrival	For facility where test is performed only:		SE, FSEU, CM, MSO
	Open WONS (type BRR, SO, TO), PM forecast, Open WONS (type BRR, SO), PM forecast. Open and Closed TAL 1, 2 and 3 review since last facility	ENG SERV	
	NASA and BOSS Project review of in-work projects, open OMD, pending or in-work warranty work.	CM	
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONS (type BRR, SO, TO), PM forecast, Open WONS (type BRR, SO), PM forecast. Open and Closed TAL 1, 2 and 3 review since last facility usage. Validations.	ENG SERV	
	NASA and BOSS Project review of in-work projects, open OMD, pending or in-work warranty work.	CM	
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	For facility where test is performed only:		SE, MSO
	Open WONS (type BRR, SO). Open and Closed TAL 1, 2 and 3 review since last facility usage.	ENG SERV	
	Pending or in-work warranty work.	CM	
Commercial Launch	For all facilities on Effectivity list:		SE, FSEU, MSO
	Open WONS (type BRR, SO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage.	ENG SERV	
	Pending or in-work warranty work.	CM	
SLS Launch	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONS (type BRR, SO, TO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage. Validations.	ENG SERV	
	NASA and BOSS Project review of in-work projects, open OMD, facility system drawing status, open or pending IDCR, and IRA. Pending or in-work warranty work.	CM	
Level 3 Review			
Payload arrival	For facility where test is performed only:		SE, FSEU, MSO
	Open WONS(type BRR, SO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage.	ENG SERV	
	NASA and BOSS Project review of in-work projects.	CM	
Integrated Test - Major (ML move, Launch Sim test, Stacking...)	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONS(type BRR, SO), PM forecast, Open and Closed TAL 1, 2 and 3 review since last facility usage.	ENG SERV	
	NASA and BOSS Project review of in-work projects.	CM	
Integrated Test - Minor (Flow test, power up, cryo test, Hot Flow...)	For facility where test is performed only:		SE, MSO
	Open WONS(type BRR, SO), Open and Closed TAL 2 and 3 review since last facility usage.	ENG SERV	
	None	CM	
Commercial Launch	For all facilities on Effectivity list, open WONS (type BRR, SO), PM forecast. Open and Closed TAL 2 and 3 review since last facility usage.		SE, MSO
	Open WONS(type BRR, SO), PM forecast, Open and Closed TAL 2 and 3 review since last facility usage.	ENG SERV	
	None	CM	
SLS Launch	For all facilities on Effectivity list:		SE, FSEU, CM, MSO
	Open WONS(type BRR, SO), PM forecast, Open and Closed TAL 2 and 3 review since last facility usage.	ENG SERV	
	NASA and BOSS Project review of in-work projects, facility system drawing status, open or pending IDCR, and IRA. Pending or in-work warranty work.	CM	

Table 5 – Open Work review by milestone**3.6.5. Mission Essential (ME) spare parts**

ME/Critical spares as identified in appropriate Spare Parts Analysis (SPA) for facilities directly related to support of mission milestones are to be reviewed and evaluated by the SE to determine if parts are properly provisioned and available in the event of need.

3.6.6. Concerns/Constraints/Highly Desirable

Concerns, constraints, or highly desirable work are to be identified and reported. All shall be tracked by MSO at the MPI meetings and briefed to management at the FIIRM meeting.

- Concerns are defined as problems, usually with workarounds, but not a constraining impact to a facility or mission milestone.
- Constraints are defined as problems that if not resolved could prevent a facility or mission milestone start or completion. The item should be listed along with justification for completing the work before the milestone need date or operational sequence.
- All highly desirable work in the open work list should be listed along with justification for completing the work before the milestone need date or operational sequence.

3.6.7. Waivers/Deviations/Out of Configuration

All reviews shall list all Process Waivers/Deviations and out-of-configuration assets or systems. There are no waivers/deviations processed for ELV launches.

Any Out of Configuration items identified in the open work list with mission or facility impact should be listed along with documented Configuration Control Board (CCB) approval to be used through the milestone.

3.6.8. Preventive Maintenance Open Work

When required per Table 5, Open Work review by milestone, Review Preventive Maintenance (PM) forecast open work scheduled within 30 days prior to and 30 days post the milestone call to stations until end of the milestone event to ensure there is no impact to mission milestone support. List all PMs with milestone impact and obtain FSEU shop management and SE review rescheduling if deemed an impact.

3.7. REPORT BOSS READINESS TO SUPPORT MILESTONES

MSO reviews the on-line Readiness Summaries for completeness and open issues. Any items that require further information will be discussed at the MPI meetings and additional information requested from the functional organizations as necessary. High visibility items (constraints, Concerns or highly desirables) will be statused at the FIIRM meeting. Per DRD-037, 038 and 039, for all milestones, MSO will report BOSS Readiness to support the milestone to the BOSS, NASA and customer test teams as required.

View SO	Summary	History	Delete	Edit	New	Request
View Readiness Request Supporting Org. Summary						
Organization:	KSC FACILITIES					
Name:	Power/Generator Systems					
Sequence:	2					
System:	60 Hz Distribution Systems					
Reporting Date:	05/10/2010 at 09:01					
Ready:	Yes					
Reporting Official:	CORAL DESHOTEL					
Official's Phone:	1-9043					
Categories						
0.	PERSONNEL	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 All required personnel are trained and certified with sufficient backups.					
					No	
1.	DOCUMENTATION	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 All open documentation has been reviewed and evaluated for risk to mission support of STS-132 - No open documentation risk - No Mission impact.					
					No	
2.	VALIDATION/CRITICAL CHECKS	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 All validation/critical checks are performed per JOMI/work orders. 3230007F					
					No	
3.	OPEN WORK	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 All open work in support of milestones has been evaluated and reviewed per the Mission Non-maintenance Open Work report. No Mission impact.					
					No	
4.	MISSION ESSENTIAL SPARES	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 ME/Critical Spares in support of milestones has been reviewed and evaluated per the ME/Critical Logistics Spares list report dated 5/3/2010 - 100% validation compliance.					
					No	
5.	CONCERNS/CONSTRAINTS	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 No concerns or constraints have been identified that would affect support of mission milestones.					
					No	
6.	WAIVERS/DEVIATIONS	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 Identified through Mission Support or the Shuttle community.					
					No	
7.	PREVENTIVE MAINTENANCE	R				
	Description	WO Tracking Num	ECD	Work Around	Att?	
	1 All Preventive Maintenance in support of milestones has been evaluated and reviewed per the Mission PM Burn down Projection report. Open maintenance part the target completion date is being partnered with the Government. No mission impact. see attachment sheet					
					Yes	
Last Updated:		On 05/10/2010 By cdeshote				

Figure 4: Launch Readiness Statement

3.8. Internal BOSS Readiness Review

BOSS internal readiness reviews may be scheduled in support of Major milestone tests or Flight readiness tests at the discretion of the FIIR or MIP review team members. MSO will schedule these meetings based on readiness input.

4. Mission Support Documents

4.1. Requirements documents

Customers will submit specific requirements for support of Flight, Payload, or testing for missions. These documents provide details for any requested BOSS support from infrastructure services or specific utility needs. The customer is strongly encouraged to provide these requests at a minimum of 60 days in advance to properly plan and provide the BOSS services in a timely manner that will not impact their mission flow.

4.2. Payload Requirements documents

Customers will submit specific requirements for support of Payload, or testing for missions. These documents provide details for any requested specific utility needs for supporting the flight hardware or payload while in a facility. The customer is strongly encouraged to provide these requests at a minimum of 60 days in advance to properly plan and provide the BOSS services in a timely manner that will not impact their mission flow.

4.3. Requirements response

Mission support receives the Requirements Documents and forwards them to the appropriate support Organization for response to the needs. If the requirements can be met, the Support organization will respond back with Will Comply – (WILCO), more information requested, WILCO with an EWR/WON to comply, or No COMPLY indicating BOSS cannot meet the requirement.

The support organizations have **14 days** upon receipt of the Requirements documents to respond. If A WON for Work is needed to meet the requirement, then it needs to be identified to MSO and management to track in the MIP and/or FIIRM meetings.

Appendix A: PWS requirements**DRD-037:**From PWS: Develop and provide DRD 037, *Mission Readiness Briefings*.

Data Requirement															
Contract Application Information for DRL BOSS					A. Item Number 037										
B. Line Item Title Mission Readiness Briefings															
C. OPR COR	D. Type 3	E. Inspect / Accept 6	F. Frequency AR	G. Initial Sub. See I. Remarks	H. As of Date See I. Remarks										
I. Remarks J. Type "D": Electronic submittal. Product shall be compatible with Microsoft Office suite of software and posted to the Government contract management portal one day prior to the review. Briefings to be conducted in support of mission milestones.															
J. Distribution Government contract management portal					<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Totals</th> </tr> <tr> <th style="text-align: center;">No.</th> <th style="text-align: center;">Type</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">D</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> </tbody> </table>	Totals		No.	Type	1	D				
Totals															
No.	Type														
1	D														
Data Requirement Description															
1. Title Briefings, Mission Readiness			2. Number PWS 2.1.2												
3. Use To perform a comprehensive internal integrated assessment of each pending mission or mission milestone.			4. Date												
7. Interrelationship			5. Organization KSC												
8. Preparation Information			6. References												
The Contractor shall deliver and present readiness briefings of each pending mission milestones and missions launched from Kennedy Space Center (KSC). The readiness reviews and the associated briefings shall provide the required detailed insight to certify the completion or disposition of all tasks and planned work required to prepare for flight readiness. The briefings shall discuss the identification, elimination, or mitigation of safety or technical risks throughout the complete life cycle (design, development, manufacture, test, operations, maintenance, and disposal) of assigned facilities, systems, equipment, and utilities (FSEU) to ensure the safe performance of assigned mission objectives. These activities include (1) analytical methods, both quantitative and qualitative, as appropriate, in the assessment of the FSEU to assist the decision process for risk identification and mitigation; (2) exception, deviations, or waivers from safety requirements or other requirements with safety or mission success impact; and (3) assessment of significant off-nominal performance. The Mission Readiness Briefings shall document the Contractor's support organizations readiness summaries for issues/status. Attributes to be discussed include personnel availability, training and certifications; projected work hour deviations; currency and completion of required documentation (plans, drawings, procedures, preventive maintenance job plans); validations and visual checks; the identification of open work (unfinished maintenance, service, repair, calibration, modification, and/or anomaly/close call) affecting mission milestone readiness status; status of configured spares; concerns and constraints; and waivers and deviations.															

DRD-038:

From PWS: Report Contractor's readiness and submit a Launch Readiness Letter to the 45 SW for launches in accordance with DRD 038, *Launch Readiness Statements*.

Per 4.6.1.2 (2), "ensuring excavation permit requests are included in launch readiness documentation."

Data Requirement															
Contract Application Information for DRL BOSS					A. Item Number 038										
B. Line Item Title Launch Readiness Statements															
C. OPR COR	D. Type 3	E. Inspect / Accept 6	F. Frequency AR	G. Initial Sub. See I. Remarks	H. As of Date See I. Remarks										
I. Remarks F. NASA Readiness Statements shall be delivered two business days prior to the appropriate readiness review prior to launches from KSC. F. 45 SW Statement of Readiness shall be signed at the appropriate 45 SW Launch Readiness Briefing. J. Type "D": Electronic submittal. Product shall be compatible with Microsoft Office suite of software and posted to the Government contract management portal.															
J. Distribution NASA Readiness Statements: Government contract management portal (1 D) Scanned in signed 45 SW Statement of Readiness: Government contract management portal (1 D)					<table border="1"> <thead> <tr> <th colspan="2">Totals</th> </tr> <tr> <th>No.</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>D</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Totals		No.	Type	2	D				
Totals															
No.	Type														
2	D														
Data Requirement Description															
1. Title Statements, Launch Readiness			2. Number PWS 2.1.2												
3. Use To document overall Contractor readiness for launches prior to readiness reviews and the commencement of launch operations			4. Date												
7. Interrelationship			5. Organization KSC												
8. Preparation Information 1. The Contractor shall deliver an official correspondence, signed by the BOSS Contract Program Manager and addressed to the NASA/KSC Director of Spaceport Integration and Services (SI), containing an overall assessment and commitment of the Contractor's readiness posture for launches from Kennedy Space Center (KSC). This readiness statement shall be delivered two business days prior to readiness reviews. 2. The Contractor shall report its readiness to support 45th Space Wing (45 SW) launches at the appropriate 45 SW Launch Readiness Briefing and sign the 45 SW Statement of Readiness. Requirements for reporting Launch Readiness: The Contractor shall include a top-level status of all configured facilities, systems, equipment, and utilities (FSEU) and services required to support launch-related activities, including public affairs and support to other contractors. The Contractor shall confirm all personnel are trained, certified, and ready to support; all necessary pre-launch tasks are closed (or on track to be closed); status of configured and mission essential spares; highlight the status of any deviations or waivers; document any issues, concerns, open work and associated mitigation plans; and provide a recommendation to proceed with launch countdown. Launch Readiness reporting shall also include readiness of any subcontractors, vendors, or other team members providing launch support.			6. References												

DRD-039:

From PWS: Prepare and submit DRD 039, *Facility and Equipment Readiness Reports*.

Data Requirement					
Contract Application Information for DRL BOSS					A. Item Number 039
B. Line Item Title Facility and Equipment Readiness Reports					
C. OPR COR	D. Type 3	E. Inspect / Accept 6	F. Frequency AR	G. Initial Sub. See I. Remarks	H. As of Date See I. Remarks
I. Remarks G./H. Reports shall be submitted to the Government 14 days prior to major facility milestones (e.g., rollout, first lift in a facility), hazardous operations, scheduled spacecraft or payload support equipment (hereinafter referred to collectively as "payload") arrival/ established milestones, unless otherwise specified in the Launch Site Support Plan (LSSP). The Contractor shall verify processing facilities and equipment readiness a minimum of 1 week prior to operation or milestone, in a presentation at the Government led readiness reviews. J. Type "D": Electronic submittal. Product shall be compatible with Microsoft Office suite of software and posted to the Government contract management portal.					
J. Distribution Government contract management portal					Totals No. Type 1 D
Data Requirement Description					
1. Title Reports, Facilities and Equipment Readiness			2. Number PWS 2.1.2		
3. Use To verify that the facility and institutional equipment: 1) are ready to support processing and testing; and 2) meets established requirements. This includes first time payload processing as well as repeat processing.			4. Date		
			5. Organization KSC		
7. Interrelationship			6. References		
8. Preparation Information I. Scope: All processing facilities, systems, and equipment for which the Contractor is assigned responsibility. II. Statement of Facilities and Equipment Readiness (SoR): A) The Contractor shall deliver a SoR to address the overall readiness of all processing facilities, systems, equipment, and commodities required to support the operation, milestone, processing, or testing throughout the required period. The SoR shall include all changes and modifications that have occurred since the last SoR. This verification statement shall be provided no less than 14 days prior to the operation or milestone. III. Letter of Facilities and Equipment Readiness (LoR): A) The Contractor shall deliver a LoR for continuous operational, non-hazardous facilities, whenever a repetitive customer or program payload is scheduled for delivery, the Contractor shall prepare and submit a LoR instead of the SoR described in II. A) above. B) The LoR shall address any processing facility, systems, and equipment changes and modifications that have occurred since the last SoR or LoR. The Contractor shall verify in the LoR that all new requirements for facilities and ground equipment have been identified and satisfied. C) An LoR shall be provided for transfers between previously activated facilities (e.g. payload returned from orbit to be processed for another flight. The intent is to make sure something hasn't gone out of maintenance after the spacecraft left and it has to return for planned or unplanned reasons).					

RECORDS

The following records are retained by the organizations listed below:

Record	Responsible Organization
45 th SW Flight Sheets	Mission Support Office
K-MOST Readiness Statements	Mission Support Office
Supporting Data for Readiness (COPIES ONLY)	Mission Support Office
BOSS Support Plan Flight Sheets (Launch Readiness Folder)	Mission Support Office

AFFECTED DIVISIONS

Engineering Services
FSEU and OM&E
Information Technology
Logistics
Work Control Center
Program Management Office
Systems Engineering
Safety & Mission Assurance

ROLES AND RESPONSIBILITIES

BOSS Program Manager: Ensures compliance to the requirements stated in this procedure. Reviews and approves or disapproves waiver requests written against this standard. Signs Launch Readiness Statements prior to submittal to the Government per DRD 038.

Division Manager: Ensures compliance within the Division to the requirements stated in this procedure.

Logistics: Reports availability status of MESPARES to system owner and the Mission Support Office.

Mission Support Office (MSO): Retains a list of Division Managers (and their alternates) authorized to sign Support Organization Readiness Summaries. Report BOSS status for requirements identified in the 45th Space Wing Flight Sheet to the Air Force Launch Integration Office (AFLIO). Provides NASA SLS program readiness statements. Provides Readiness Status to Commercial Customer readiness reviews. Attends Readiness status briefings as required.

System Engineering/Supporting Organizations: Prepare and submit Support Organization Readiness Summaries as requested by MSO for all requested facility, launch and test milestone reviews.

REFERENCE DOCUMENTS

The following documents are referenced in this procedure:

Document Number	Title
80KSC018C0017	BOSS Contract

ACRONYMS

AFLIO	Air Force Launch Integration Office
BOSS	Base Operations and Spaceport Services
CCAFS	Cape Canaveral Air Force Station
DRD	Data Requirements Descriptions
ECD	Estimated Completion Date
ELV	Expendable Launch Vehicle
EWR	Electronic Work Request
FIIRM	Focus on Infrastructure, Issues, Risks, & Mission Support
FSEU	Facilities, Systems, Equipment, and Utilities
JP	Job Plan
JSTC	Test Conductor Call-Sign on Console
KICS/POSS	KSC Integrated Control Schedule/Payload Operations Support Schedule
LCC	Launch Control Center
LoR	Letter of Facilities and Equipment Readiness
MEE	Mission Essential Equipment
MESPARES	List of Mission Essential Spares for launch support
ML	Mobile Launcher
MPI	Mission Planning and Integration
MSO	Mission Support Office
NTD	NASA Test Director
O&C	Operations & Checkout Facility
OD	Operations Directive
OMD	Operations and Maintenance Documentation
OMCR	
OMRSD	
OPF	Orbiter Processing Facility
PWS	Performance Work Statement
RD	Requirements Document
PMI	Preventive Maintenance Instruction
PRD	Payload Requirements Document
PV/S	Pressure Vessel/System
SAA	System Assurance Analysis
SoR	Statement of Facilities and Equipment Readiness
SPA	Spare Parts Analysis
VAB	Vehicle Assembly Building
WCSIC	Work Control & Spaceport Integration Center

DEFINITIONS

Concerns: Problems usually with workarounds, but not a constraining impact to a milestone.

Constraints: Problems that, if not resolved, could prevent milestone startup/completion.

Critical: A system is assessed as critical based on the worst case potential effect of failure (loss of function or inadvertent operation), that could result in loss of life, loss of vehicle, or damage to a vehicle system as defined in NSTS 22206.

Launch Readiness Statements: Generated (per DRD 038 to document the overall BOSS readiness for launches prior to a mission.

Milestone: During the lifecycle of a mission there are several paths that are integrated to get a vehicle to the launch pad. There is a vehicle path, a launch pad readiness path and a payload path. All three have certain tasks associated with getting to the launch date. For the SLS vehicle the following are some of the milestones:

- ML construction completion and turnover to BOSS
- ML certification of flight hardware
- ML start of stacking operations
- ML roll to and from pad operations
- Launch Pad Validation
- ML/SLS integrated tests such as launch simulation testing, tanking tests, etc...

For ELV operations from CCAFS:

- Facilities Readiness for payload processing through KSC facilities
- Payload hazardous operations testing
- Launch support from a CCAFS launch pad

For SpaceX or other commercial launches from KSC:

- Any Hazardous operations involving clears at KSC facilities
- Launch support from a KSC launch pad

Mission Essential: Loss of overall F/S/E/U function or improper performance of a F/S/E/U function that could result in deferment or unrecoverable delay of a mission or mission milestones.

Open Work: Any unfinished maintenance, service, repair, trouble calls, modification, and/or close call/anomaly affecting mission milestone readiness status. System owners will report the open work order written against facilities and equipment designated as mission essential to Mission Support. They also will give an estimated completion date (ECD), and an indication of whether it is or is not a "concern" or "constraint"

Operation and Maintenance Documentation (OMD): The documentation forming the configuration baseline documentation. OMD may include drawings, instructions, specifications, SAAs/SCAs and other Risk/Hazard Analysis Packages, SPAs, PV/S and DOT compliance reports, OMRSDs, OMCRs and PMIs.

Supporting Data: Any relevant backup information/data that will describe a problem as identified within one of the eight listed categories.

Validations/Critical Checks: An operational checkout of facilities, systems, and equipment conducted per approved specifications and documentation. Validations/critical checks are reported by equipment or facility number and are the responsibility of the appropriate system owner to report.

Work Around: A partnered solution to a specific issue that will result in no concerns/constraints to the milestone.

REVISION RECORD

The following revisions have been applied to this document:

Revision Number	Change Description	Date
0	Initial ISC Release. Supersedes WCC-P-003 Rev. 9	07/06/2009
1	Updates to document definitions.	07/15/2009
2	Removed Shuttle Information and updated format.	04/18/2016
3	Updated to BOSS format	01/07/2020

2/13/2020

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3/5/2020

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Signed by: cards