Functions of the Work Management System (WMS)

Version 1.5

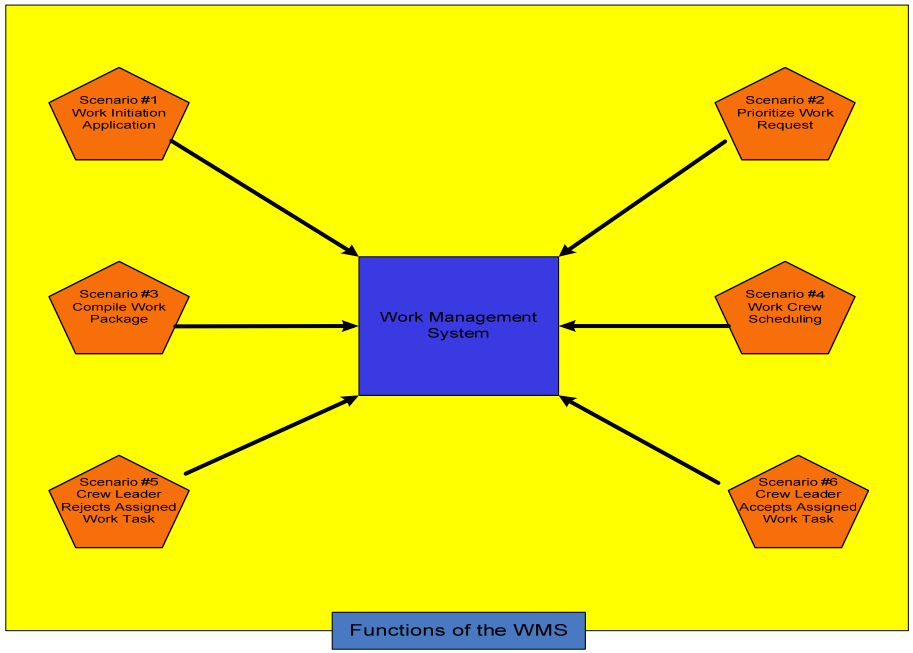
June 22, 2010

1 Descriptions of Function

This use case will discuss the functions of the Work Management System and how a work request is entered into the system, how the WMS prioritizes the work requests, how the Work Crews accept/reject Work Requests and what documentation is delivered to the Work Crew once a Work Request is accepted.

1.1 Function Name

Functions of the Work Management System.



1.2 Function ID

Identification number of the function

1.3 Brief Description

This use case will discuss the functions of the Work Management System and how a work request is entered into the system, how the Work Management System prioritizes the work requests, how the Work Crews accept/reject Work Requests and what documentation is delivered to the Work Crew once a Work Request is accepted.

1.4 Narrative

Work is a generic term meaning that it is not dependent on which system initiates the work. The assumption here is that all work can be treated the same and is received by the mobile workforce management system. It should also not matter if the mobile system and the work initiation system are the same system or different systems.

Whichever system initiates the work, if the work has a completed design, the following information will be communicated to the work crew:

1. Work ID is received from the initiation process,
2. A bill of materials consisting of the planned equipment and compatible units
3. An estimated time of completion is calculated and a start or completion time is calculated.
4. Crew type (based on skill sets or roles)
5. Detailed work tasks

1.5 Actor (Stakeholder) Roles

Describe all the people (their job), systems, databases, organizations, and devices involved in or affected by the Function (e.g. operators, system administrators, technicians, end users, service personnel, executives, SCADA system, real-time database, RTO, RTU, IED, power system). Typically, these actors are logically grouped by organization or functional boundaries or just for collaboration purpose of this use case. We need to identify these groupings and their relevant roles and understand the constituency. The same actor could play different roles in different

Functions, but only one role in one Function. If the same actor (e.g. the same person) does play multiple roles in one Function, list these different actor-roles as separate rows.

Grouping (Community)		***Group Description***
Actor Name	***Actor Type (person, organization, device, system, or subsystem)***	***Actor Description***
Work Crew	Person	A work crew is defined as a group of individuals with specific skills that works together on a regular or ad hoc basis. It is assumed that the work crew will have a suitably equipped vehicle.
Work Initiation Application	System	This system is the initiator of work. It may be a work management system, which also schedules the work or it may be a separate system such as a CIS system or web based customer facing system where the details and complexities of work management are hidden from the user.
Work Management System (WMS)	System	This is where the work is scheduled. It can be different systems including: • Construction management system • Maintenance system • Outage management system • Mobile workforce management system • Meter reading or meter management system
Mobile Workforce Management System	System	This is the system that is in the field for the crews to use. It may be part of one of the systems that schedules work or a separate system.
Maintenance Management System	System	Module of the Work Management System that tracks inspections information and equipment maintenance schedules
Work Request	System	Module of the Work Management System that prioritizes the Work Requests.

Grouping (Community)		*Group Description*
Actor Name	*Actor Type (person, organization, device, system, or subsystem)*	*Actor Description*
Priority Engine		This engine runs at a pre-determined time every evening or any time a High priority Work Request is entered into the Work management System
24 Hour Load Forecaster	System	Predicts the upcoming 24 hour load for the specific area
Work Package	Package	The system has generated a Work ID Number associated with a specific set of tasks. The Work Request has a Work Package with procedures for completing the Work Request, drawings, bill of materials, estimated time to complete procedure and associated compatible units.
Maintenance Warehouse	Department	
Work Crew Scheduling Engine	System	Work Crew Scheduling Engine receives the prioritized Work Requests and develops Work Crews from the available employee and/or contractor resources.
Distribution Management System	System	
Distribution Operator	Person	
System Planner	Person	
Crew Leader	Person	

Grouping (Community)		*Group Description*
Actor Name	*Actor Type (person, organization, device, system, or subsystem)*	*Actor Description*
Station Inspector	Person	
24 Hour Load Forecast	System	
Scheduled System Outages for the Next 24 Hours	System	

1.6 Information exchanged

Information Object Name	*Information Object Description*
Potential Work Request	
Request to open or start Work Initiation Application System	
Required Information for the Work Request	
Work ID Number	
Work ID Number & Required Information for the Work Request	
Work Requests	
24 Hour Load Forecast	

Information Object Name	*Information Object Description*
Scheduled System Outages for the Next 24 Hours	
Prioritization Calculation	
Prioritized Work Requests	
Prioritized Work Requests	
Work Package	
Link to the Work Package	
Skills Set for a Work Crew necessary to complete the Work ID	
Estimated Completion Time necessary to complete the Work ID	
Updated Work ID	
Updated Work IDs	
Crew Availability	
Work Crew Schedule	
Assigned Work Requests	
Available Crew Personal and Time Resources	
Necessary Resources are not Available	
Rejects Work Request	

Information Object Name	*Information Object Description*
Confirmation Reason	
Most Correct Rejection Reason	
Next Assigned Work Requests	
Assigned Work Requests	
Available Crew Personal and Time Resources	
Necessary Resources are Available	
Accepts Work Request	
Acceptance Confirmation	
Confirms Acceptance	
Work Package Link	
Bill of Materials	
Materials from the Bill of Materials	

1.7 Activities/Services

Describe or list the activities and services involved in this Function (in the context of this Function). An activity or service can be provided by a computer system, a set of applications, or manual procedures. These activities/services should be described at an appropriate level, with the understanding that sub-activities and services should be described if they are important for operational issues, automation needs, and implementation reasons. Other sub-activities/services could be left for later analysis.

Activity/Service Name	*Activities/Services Provided*
CREATE(Work)	
CREATED(Work)	

1.8 Contracts/Regulations

Identify any overall (human-initiated) contracts, regulations, policies, financial considerations, engineering constraints, pollution constraints, and other environmental quality issues that affect the design and requirements of the Function.

Contract/Regulation	*Impact of Contract/Regulation on Function*

Policy	*From Actor*	*May*	*Shall Not*	*Shall*	*Description (verb)*	*To Actor*

Constraint	*Type*	*Description*	*Applies to*

2 Step by Step Analysis of "Functions of the Work Management System WMS"

Describe steps that implement the function. If there is more than one set of steps that are relevant, make a copy of the following section grouping (Steps to implement function, Preconditions and Assumptions, Steps normal sequence, Post-conditions) and provide each copy with its own sequence name.

2.1 Original Sequence

Original Sequence

2.1.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Work Management System	The system has generated a Work ID Number associated with a specific set of tasks. The Work Request has a Work Package with procedures for completing the Work Request, drawings, bill of materials, estimated time to complete procedure and associated compatible units.
Work Management System	The Work Management System prioritizes the Work Requests via the Work Request Prioritization Engine at a certain time every evening, unless a High Priority Work Request is entered into the system. Once a High Priority Work Request is entered into the system the Work Management System automatically enables the Work Request Priority Engine.

2.1.2 Steps – Original Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[1]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*

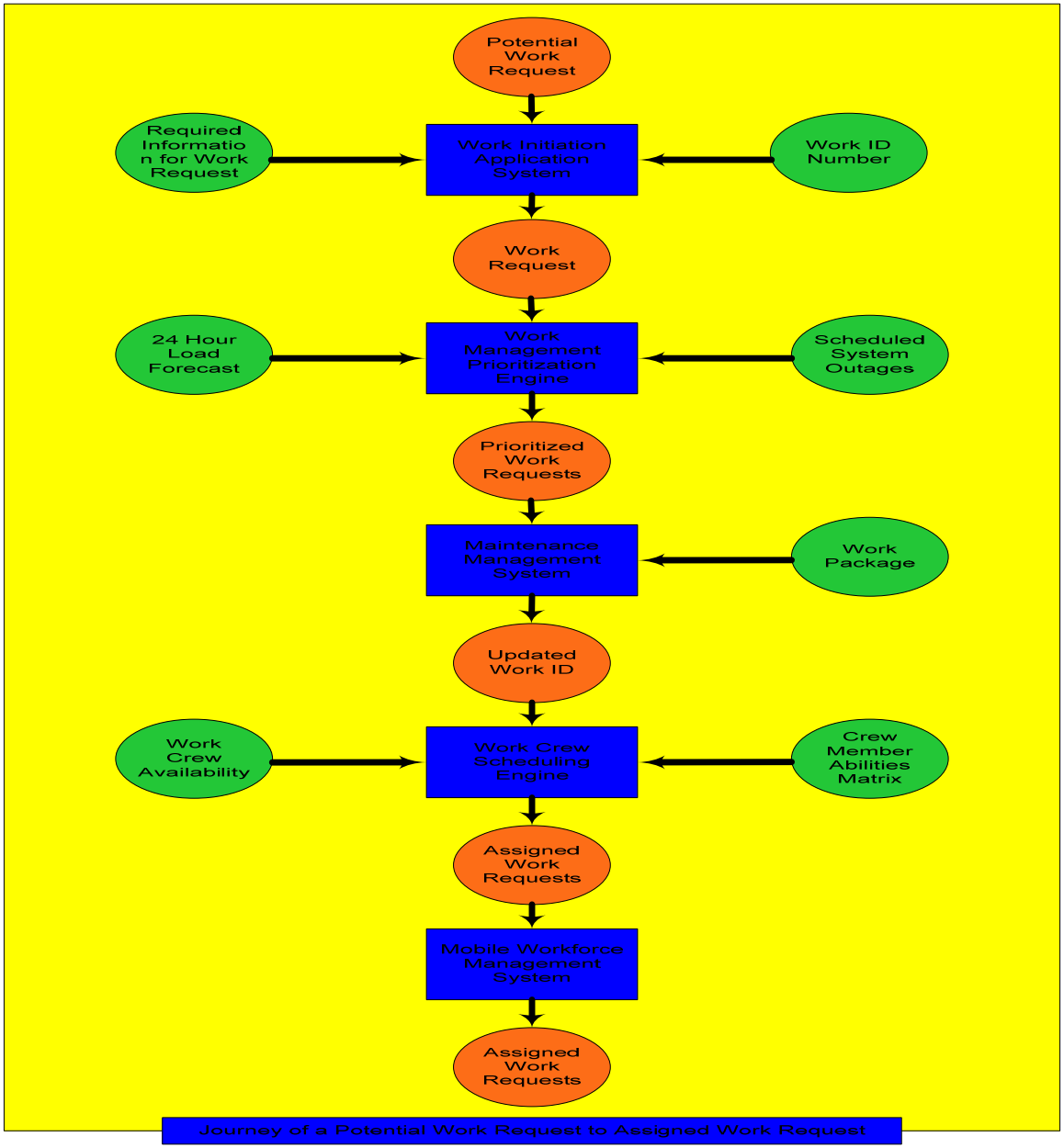
[1] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
	CREATED(Work)	WMS	Auto-Schedule Work	The WMS may have the capability to interpret the work created and auto-schedule work based on the work type and available crews.	WMS	WMS	Work Schedule		
	CREATED(Work)	WMS	Manual-Schedule Work	The WMS creates a work item that resides in a queue until the work is manually scheduled. This may also be a manual override of the auto-scheduling of the work.	WMS	WMS	Work Schedule		
		WMS	Send Work	The WMS communicates the work to the mobile workforce system (MWS). The WMS and MWS may be parts of the same system or the MWS may be a separate system that is able to receive scheduled work from other systems.	WMS	MWS	Work Schedule		

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
		MWS	Work Received	A new work item is placed in the queue of the Work Crew. They Work Crew may have the option of rejecting the work.	MWS	Work Crew	Work Schedule		
		Work Crew	Crew Accepts/Acknowledges Work	The crew acknowledges or accepts the work that has been assigned to them	Work Crew	MWS			
		MWS	Acknowledgement Sent	Acknowledgement sent back to the Work Management System	MWS	WMS	Acknowledgement		
		Work Crew	Crew Rejects Word	The Work Crew rejects the work assigned to them. A message is sent back to the Work Management System for re-scheduling	Work Crew	MWS	Reject Work		
		MWS	Reject Work	The Reject Work message is sent back to the Work Management System for re-scheduling.	MWS	WMS	Reject Work		

2.1.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*


Potential Work Request
Required Information for Work Request
Work Initiation Application System
Work ID Number
Work Request
24 Hour Load Forecast
Work Management Prioritization Engine
Scheduled System Outages
Prioritized Work Requests
Maintenance Management System
Work Package
Updated Work ID
Work Crew Availability
Work Crew Scheduling Engine
Crew Member Abilities Matrix
Assigned Work Requests
Mobile Workforce Management System
Assigned Work Requests
Journey of a Potential Work Request to Assigned Work Request

2.2 Entering a Work Request into the Work Initiation Application Sequence

Entering a Work Request into the Work Initiation Application

2.2.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Work Initiation Application System	May or may not be a function of the Work Management System.
Distribution Operator	The Distribution Operator can identify and enter a potential Work Order Request into the Work Initiation Application System. We will only be using the Distribution Operator in this use case scenario.
System Planner	The System Planner can identify and enter a potential Work Order Request into the Work Initiation Application System. We will only be using the Distribution Operator in this use case scenario.
Crew Leader	The Crew Leader can identify and enter a potential Work Order Request into the Work Initiation Application System. We will only be using the Distribution Operator in this use case scenario.
Station Inspector	The Station Inspector can identify and enter a potential Work Order Request into the Work Initiation Application System. We will only be using the Distribution Operator in this use case scenario.
Maintenance Management System	The Maintenance Management System can identify and deliver a potential Work Request into the Work Initiation Application System. We will only be using the Distribution Operator in this use case scenario.

2.2.2 Steps – Entering a Work Request into the Work Initiation Application Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[2]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*

[2] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
1.1	Distribution Operator identifies a potential Work Request	Distribution Operator	Identify Potential Work Request	The Distribution Operator identifies a Potential Work Request	Distribution Operator	Distribution Operator	Potential Work Request	The Distribution Operator (or others) can identify Potential Work Requests. Potential Work Requests can come from SCADA alarms, the Maintenance Management System, information from outside sources, reports from field personal, etc.	
1.2		Distribution Operator	Open Work Initiation Application System	The Distribution Operator opens the Work Initiation Application System	Distribution Operator	Work Initiation Application System	Request to open or start Work Initiation Application System		

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
1.3		Distribution Operator	Enter Required Information	The Distribution Operator enters the required information for the Work Request into the Work Initiation Application System	Distribution Operator	Work Initiation Application System	Required Information for the Work Request	Required Information may be but not limited to: Equipment Identification Number Type of equipment Model of equipment Associated problem or alarm Outage necessary Relative Priority	
1.4		Work Initiation Application System	Receives Required Information for the Work Request	The Work Initiation Application System receives the Required Information for Work Request	Work Initiation Application System	Work Initiation Application System	Required Information for the Work Request		

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
1.5		Work Initiation Application System	Creates Work ID Number	The Work Initiation Application System creates a Work ID Number for the Work Request	Work Initiation Application System	Work Initiation Application System	Work ID Number	The Work ID Number is not necessarily the Charge Code to bill to the Work Request	
1.6		Work Initiation Application System	Combine Work ID Number and related information	The Work Initiation Application System combines Work ID Number & Required Information into a Work Request	Work Initiation Application System	Work Initiation Application System	Work Request	Work Request is a data package that combines the Work ID Number & Required Information for the Work Request	
1.7		Work Initiation Application System	Deliver Work Request	The Work Initiation Application System delivers Work Request to the Work Management System	Work Initiation Application System	Work Management System	Work Request		

2.2.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*
Distribution Operator	The Distribution Operator is able to input a Work Request to the Work Initiation Application System
Work Initiation Application System	The Work Initiation Application System is able to receive a potential Work Request and output a

Actor/Activity	*Post-conditions Description and Results*
	corresponding Work ID Number

2.3 WMS Prioritizes Work Requests Sequence

WMS Prioritizes Work Request

2.3.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Work Management System	The Work Management System prioritizes the Work Requests via the Work Request Prioritization Engine at a certain time every evening, unless a High Priority Work Request is entered into the system. Once a High Priority Work Request is entered into the system the Work Management System automatically enables the Work Request Priority Engine.

2.3.2 Steps – WMS Prioritizes Work Requests Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[3]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*

[3] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
2.1.1	At a certain time every evening, unless a High Priority Work Request is entered into the Work Management System, the Work Request Prioritization Engine runs to prioritize the Work Requests available in the system	Work Management System	Deliver Work Requests to the Prioritization Engine	Work Management System compiles the available Work Requests in the system and delivers them to the Work Management Prioritization Engine	Work Management System	Work Management Prioritization Engine	Work Requests	At this time the information contained in the Work Requests may only be the Work ID and the Required Information for the Work Request	
2.1.2		24 Hour Load Forecaster	Deliver the 24 Load Forecast	The 24 Hour Load Forecaster delivers the 24 Hour Load Forecast to the Work Management Prioritization Engine	24 Hour Load Forecaster	Work Management Prioritization Engine	24 Hour Load Forecast	This information will help with the prioritization calculations	

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
2.1.3		Distribution Management System	Deliver the Scheduled System Outages for the Next 24 Hours	The Distribution Management System delivers the Scheduled System Outages for the Next 24 Hours to the Work Management Prioritization Engine	Distribution Management System	Work Management Prioritization Engine	Scheduled System Outages for the Next 24 Hours	This information will help with the prioritization calculations	
2.2		Work Management Prioritization Engine	Prioritization Calculation	The Work Management Prioritization Engine performs a Prioritization Calculation with the Work Requests, the 24 Hour Load Forecast and the Scheduled System Outages for the Next 24 Hours.	Work Management Prioritization Engine	Work Management Prioritization Engine	Prioritization Calculation	The Prioritization Calculation may consider inputs like: Type of Equipment Location of Equipment Load Forecasts Scheduled Outages Priority Rankings input by the personal that input the Work Request	

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
2.3		Work Management Prioritization Engine	Prioritized Work Requests	The Work Management Prioritization Engine delivers the Prioritized Work Requests to the Work Management System	Work Management Prioritization Engine	Work Management System	Prioritized Work Requests		

2.3.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*

2.4 WMS and MMS Create a Work Package for the Specific Work ID

Work Management System and MMS creates a Work Package for the specific Work ID

2.4.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Work Management System	The Work Management System prioritizes the Work Requests via the Work Request Prioritization Engine at a certain time every evening, unless a High Priority Work Request is entered into the system. Once a High Priority Work Request is entered into the system the Work Management System automatically enables the Work Request Priority Engine.

2.4.2 Steps – WMS and MMS Create a Work Package for the Specific Work ID Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[4]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*
3.1	Work Management System, upon completion of the Prioritization Process, needs to have Work Packages developed for each specific Work ID	Work Management System	Deliver Work Requests to the Maintenance Management System	Work Management System compiles the Prioritized Work Requests and delivers them to the Maintenance Management System	Work Management System	Maintenance Management System	Prioritized Work Requests		

[4] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
3.2 A.1		Maintenance Management System	Create Work Package	The Maintenance Management System creates Work Packages for each Prioritized Work Requests	Maintenance Management System	Maintenance Management System	Work Package	Work Packages may include the following: Original Work ID Bill of Materials Necessary Drawings Necessary or specialty tools Detailed Work Tasks Tailgate (safety briefing) forms Switching Orders Equipment Manuals Necessary equipment Pictures (if possible) Etc.	

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
3.2 A.2		Maintenance Management System	Develop a link	The Maintenance Management System develops a link to the Work Package	Maintenance Management System	Maintenance Management System	Link to the Work Package		
3.2 A.3		Maintenance Management System	Materials are in stock	Maintenance Management System verifies materials for the Bill of Materials are available	Maintenance Management System	Maintenance Warehouse	Bill of Materials		
3.2 B.1		Maintenance Management System	Develop a Skills Set	The Maintenance Management System develops a Skills Set for a Work Crew necessary to complete the Prioritized Work Requests	Maintenance Management System	Maintenance Management System	Skills Set for a Work Crew necessary to complete the Prioritized Work Requests		
3.2 C.1		Maintenance Management System	Develop an Estimated Completion Time	The Maintenance Management System develops an Estimated Completion Time necessary to complete the Prioritized Work Requests	Maintenance Management System	Maintenance Management System	Estimated Completion Time necessary to complete the Prioritized Work Requests		

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
3.3		Maintenance Management System	Combines Information	The Maintenance Management System combines the Prioritized Work Requests, Link to the Work Package, Skills Set for a Work Crew necessary to complete the Work ID and the Estimated Completion Time necessary to complete the Work ID into a Updated Work ID	Maintenance Management System	Maintenance Management System	Updated Work ID	The Updated Work ID is the Prioritized Work Requests, Link to the Work Package, Skills Set for a Work Crew necessary to complete the Work ID and the Estimated Completion Time necessary to complete the Work ID into a Updated Work ID	
3.4		Maintenance Management System	Delivers Updated Work ID	The Maintenance Management System delivers the Updated Work ID to the Work Management System	Maintenance Management System	Work Management System	Updated Work ID		

2.4.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*

2.5 WMS Schedules Work Crew

Work Management System Schedules Work Crew

2.5.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Crew Leaders	The Crew Leaders have input crew availability into the Work Management System

2.5.2 Steps – WMS Schedules Work Crew Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[5]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*

[5] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
4.1.1	The WMS needs to schedule the Work Crews to performs the Updated Work IDs	Work Management System	Deliver Updated Work IDs	Work Management System compiles the Updated Work IDs and delivers them to the Work Crew Scheduling Engine	Work Management System	Work Crew Scheduling Engine	Updated Work IDs		
4.1.2		Work Management System	Delivers Crew Availability	Work Management System compiles Crew Availability and delivers them to the Work Crew Scheduling Engine	Work Management System	Work Crew Scheduling Engine	Crew Availability	Could this be pulled from the crew's Outlook calendar?	
4.1.3		Work Management System	Delivers Crew Member Abilities Matrix	Work Management System compiles Crew Member Abilities Matrix and delivers them to the Work Crew Scheduling Engine	Work Management System	Work Crew Scheduling Engine	Crew Member Abilities Matrix	Could this be pulled from an HR File? Each Crew Member has specific training and abilities that will need to be taken into account for scheduling. Or does this come from generic job titles?	

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
4.2		Work Crew Scheduling Engine	Delivers Crew Availability	Work Crew Scheduling Engine creates Assigned Work Requests and Work Crew Schedule	Work Crew Scheduling Engine	Work Crew Scheduling Engine	Assigned Work Requests and Work Crew Schedule	Work Crew Schedule should take into account the crew schedules and priority of the work the needs to be completed.	
4.3		Work Crew Scheduling Engine	Deliver Work Crew Schedule to Crew Leaders	The Work Crew Scheduling Engine delivers the Assigned Work Requests and Work Crew Schedule to the Crew Leader	Work Crew Scheduling Engine	Crew Leaders	Assigned Work Requests and Work Crew Schedule	Via email, text, other	
4.4		Work Crew Scheduling Engine	Deliver Work Crew Schedule to Mobile Workforce Management System	The Work Crew Scheduling Engine delivers the Assigned Work Requests and Work Crew Schedule to the Crew Leader	Work Crew Scheduling Engine	Mobile Workforce Management System	Assigned Work Requests and Work Crew Schedule		

2.5.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*

Actor/Activity	*Post-conditions Description and Results*

2.6 Work Crew Rejects Work Request Sequence

Work Crew Rejects Work Request

2.6.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Work Management System	The system has generated a Work ID Number associated with a specific set of tasks. The Work Request has a Work Package with procedures for completing the Work Request, drawings, bill of materials, estimated time to complete procedure and associated compatible units.
Work Management System	The Work Management System prioritizes the Work Requests via the Work Request Prioritization Engine at a certain time every evening, unless a High Priority Work Request is entered into the system. Once a High Priority Work Request is entered into the system the Work Management System automatically enables the Work Request Priority Engine.
Maintenance Warehouse	We will assume that all materials for the Bill of Materials are available from the Maintenance Warehouse at this time.

2.6.2 Steps – Work Crew Rejects Work Request Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[6]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*
5.1	Crew Leader signs on to the Mobile Workforce Management System	Mobile Workforce Management System	Review assigned Work Requests	Crew Leader reviews the Assigned Work Requests for Work Crew from the Mobile Workforce Management System	Mobile Workforce Management System	Crew Leader	Assigned Work Requests		
5.2		Crew Leader	Review available resources	Crew Leader reviews Available Work Crew Personal and Time Resources	Crew Leader	Crew Leader	Available Work Crew Personal and Time Resources	Available Crew may have changed from schedule due to sickness or other unforeseen event	

[6] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
5.3.1		Crew Leader	Necessary Resources are not Available	Crew Leader determines that the Necessary Resources are not Available to perform the Assigned Work Request	Crew Leader	Crew Leader	Necessary Resources are Not Available		
5.3.2		Crew Leader	Crew Leader Rejects Work Request	Crew Leader Rejects Assigned Work Requests via the Mobile Workforce Management System	Crew Leader	Mobile Workforce Management System	Rejects Assigned Work Requests		
5.3.3		Mobile Workforce Management System	Receives Rejected Work Request.	Mobile Workforce Management System receives Rejected Assigned Work Requests.	Mobile Workforce Management System	Mobile Workforce Management System	Rejects Assigned Work Requests		
5.3.4		Mobile Workforce Management System	Sends Confirmation Reason to the Crew Leader	Mobile Workforce Management System sends Confirmation Reason to the Crew Leader	Mobile Workforce Management System	Crew leader	Confirmation Reason	The Confirmation Reason will ensure that the Crew leader did want to reject the Assigned Work Requests and will ask for a reason why the Work Request was Rejected.	

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
5.3.5		Crew Leader	The Crew Leader chooses Most Correct Rejection Reason	The Crew Leader receives the Confirmation Reason and chooses Most Correct Rejection Reason	Crew Leader	Crew Leader	Most Correct Rejection Reason	The Confirmation Reasons will be in the form of a drop down box to allow the Crew Leader to Explain why the crew could not perform the Assigned Work Request	
5.3.6		Crew Leader	The Crew Leader sends the Most Correct Rejection Reason	The Crew Leader sends the Most Correct Rejection Reason to the Mobile Workforce Management System	Crew Leader	Mobile Workforce Management System	Most Correct Rejection Reason		
5.4		Mobile Workforce Management System	Crew Leader reviews the Next Assigned Work Requests	Crew Leader reviews the Next Assigned Work Requests for Work Crew from the Mobile Workforce Management System	Mobile Workforce Management System	Crew Leader	Next Assigned Work Requests		

2.6.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*

2.7 Steps to implement function – Work Crew Accepts Work Request Sequence

Work Crew Accepts Work Request

2.7.1 Preconditions and Assumptions

Actor/System/Information/Contract	*Preconditions or Assumptions*
Work Management System	The system has generated a Work ID Number associated with a specific set of tasks. The Work Request has a Work Package with procedures for completing the Work Request, drawings, bill of materials, estimated time to complete procedure and associated compatible units.
Work Management System	The Work Management System prioritizes the Work Requests via the Work Request Prioritization Engine at a certain time every evening, unless a High Priority Work Request is entered into the system. Once a High Priority Work Request is entered into the system the Work Management System automatically enables the Work Request Priority Engine.
Maintenance Warehouse	We will assume that all materials for the Bill of Materials are available from the Maintenance Warehouse at this time.

2.7.2 Steps – Work Crew Accepts Work Request Sequence

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
#	*Triggering event? Identify the name of the event.*[7]	*What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.*	*Label that would appear in a process diagram. Use action verbs when naming activity.*	*Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If …Then…Else" scenarios can be captured as multiple Actions or as separate steps.*	*What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.*	*What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.* *(Note – May leave blank if same as Primary Actor)*	*Name of the information object. Information objects are defined in section 1.6*	*Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.*	*Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.*
6.1	Crew Leader signs on to the Mobile Workforce Management System	Mobile Workforce Management System	Review assigned Work Requests	Crew Leader reviews the Assigned Work Requests for Work Crew	Mobile Workforce Management System	Crew Leader	Assigned Work Requests		
6.2		Crew Leader	Review available resources	Crew Leader reviews Available Crew Personal and Time Resources	Crew Leader	Crew Leader	Available Crew Personal and Time Resources	Available Crew may have changed from schedule due to sickness or other unforeseen event	

[7] Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
6.3.1		Crew Leader	Necessary Resources are Available	Crew Leader determines that the Necessary Resources are Available to perform the Assigned Work Request	Crew Leader	Crew Leader	Necessary Resources are Available		
6.3.2		Crew Leader	Crew Leader Accepts Work Request	Crew Leader Accepts Assigned Work Requests via the Mobile Workforce Management System	Crew Leader	Mobile Workforce Management System	Accepts Assigned Work Requests		
6.3.3		Mobile Workforce Management System	Receives Accepted Work Request	Mobile Workforce Management System receives Accepted Assigned Work Requests.	Mobile Workforce Management System	Mobile Workforce Management System	Accepts Assigned Work Requests		
6.3.4		Mobile Workforce Management System	Sends Acceptance Confirmation to the Crew Leader	Mobile Workforce Management System sends Acceptance Confirmation to the Crew Leader	Mobile Workforce Management System	Crew leader	Acceptance Confirmation	The Acceptance Confirmation will ensure that the Crew leader did want to accept the Assigned Work Requests.	
6.3.5		Crew Leader	Confirms Acceptance	The Crew Leader receives the Acceptance Confirmation and Confirms Acceptance	Crew Leader	Crew Leader	Confirms Acceptance	Confirms Acceptance will be in the form of a drop down box.	

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environment
6.3.6		Crew Leader	The Crew Leader sends the Confirms Acceptance	The Crew Leader sends Confirms Acceptance to the Mobile Workforce Management System	Crew Leader	Mobile Workforce Management System	Confirms Acceptance		
6.4		Mobile Workforce Management System	Work Package Link to the Crew Leader via email or other method	The Mobile Workforce Management System sends the Work Package Link to the Crew Leader via email or other method	Mobile Workforce Management System	Crew Leader	Work Package Link		
6.5		Mobile Workforce Management System	Bill of Materials to the Maintenance Warehouse	Mobile Workforce Management System sends Bill of Materials to the Maintenance Warehouse	Mobile Workforce Management System	Maintenance Warehouse	Bill of Materials		
6.6		Maintenance Warehouse	Bill of Materials	Maintenance Warehouse fills Bill of Materials	Maintenance Warehouse	Maintenance Warehouse	Bill of Materials		
6.7		Crew leader	Crew Leader receives Materials	Crew Leader receives Materials from the Bill of Materials from the Maintenance Warehouse	Crew leader	Maintenance Warehouse	Materials from the Bill of Materials		

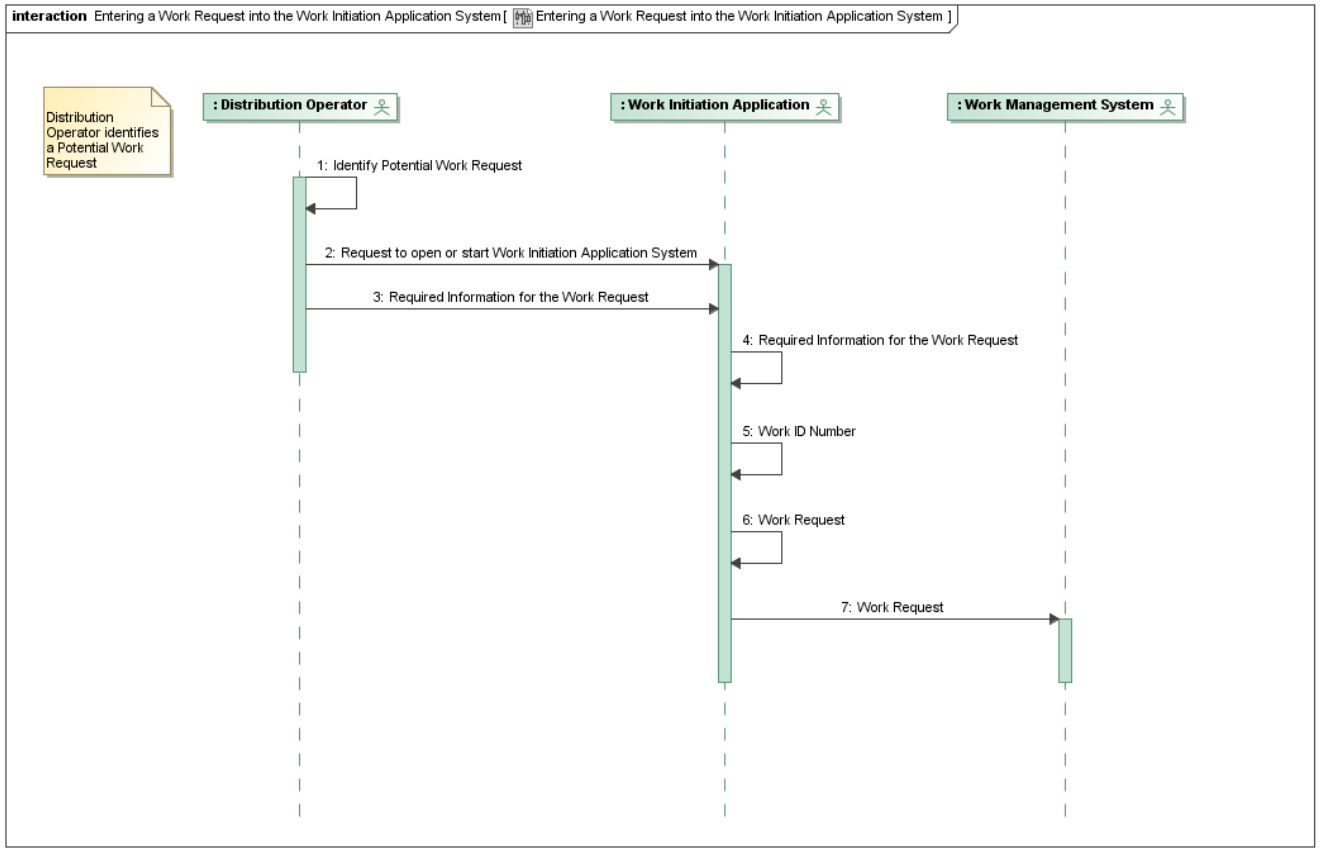
2.7.3 Post-conditions and Significant Results

Actor/Activity	*Post-conditions Description and Results*

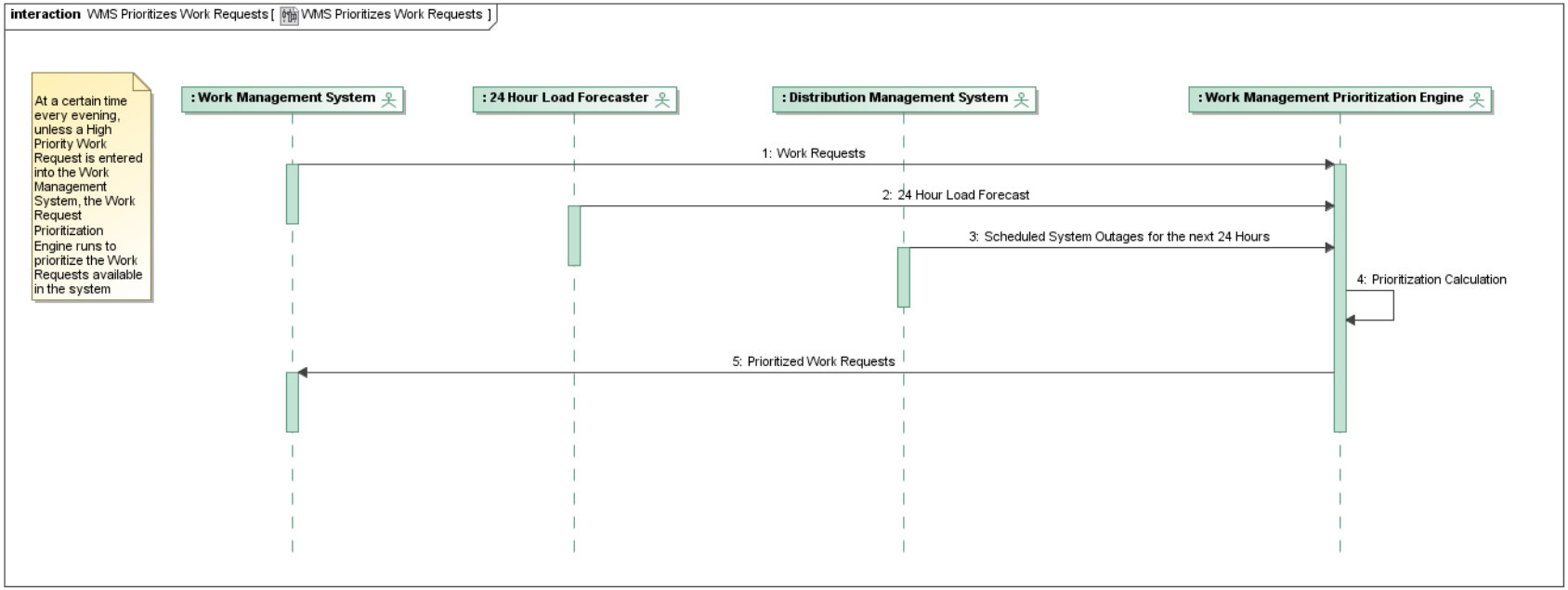
2.8 Architectural Issues in Interactions

Elaborate on all architectural issues in each of the steps outlined in each of the sequences above. Reference the Step by number.

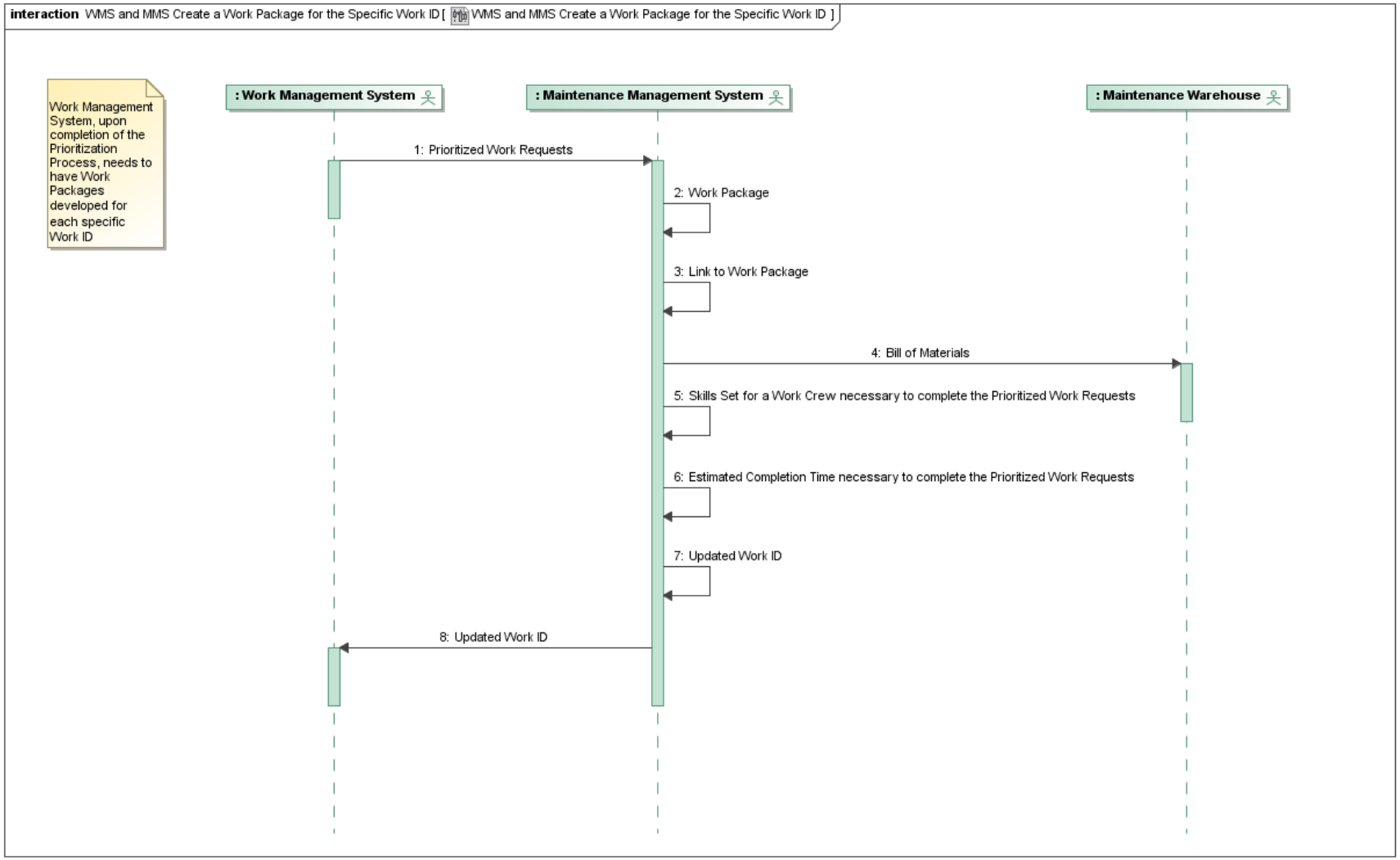
2.9 Diagrams



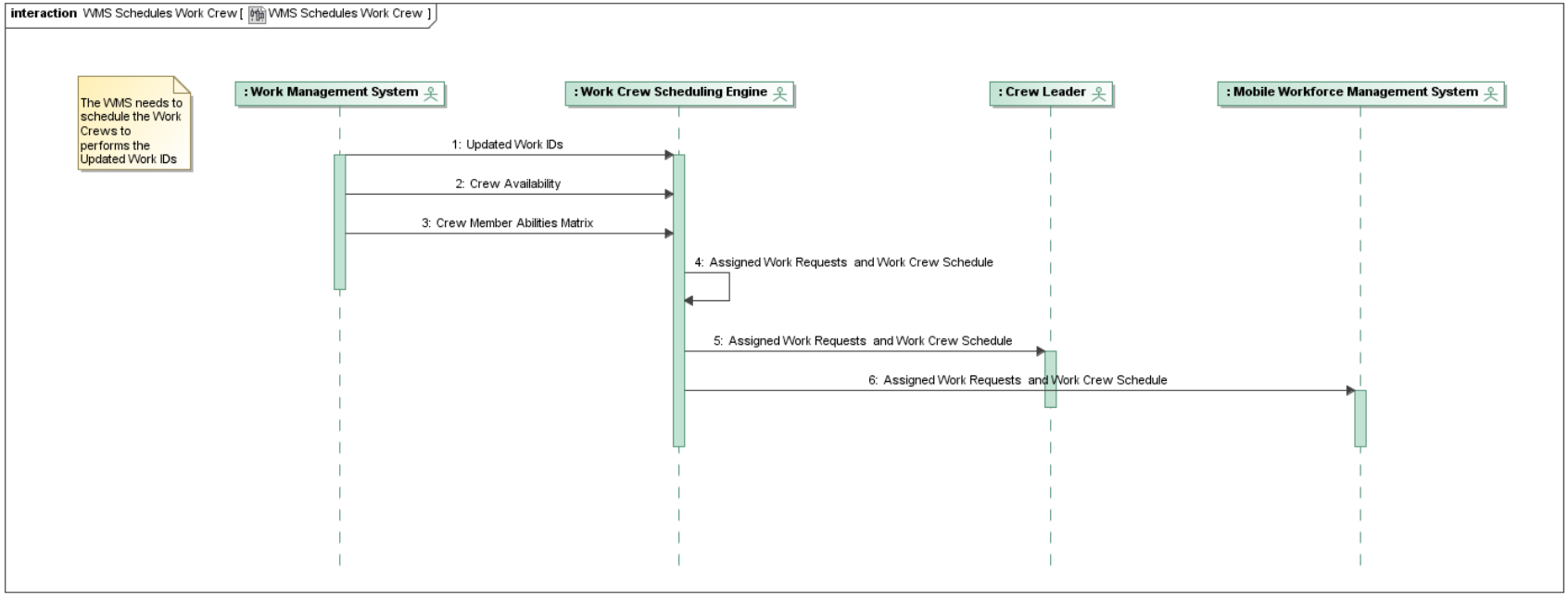
Entering a Work Request into the Work Initiation Application System – Scenario #1



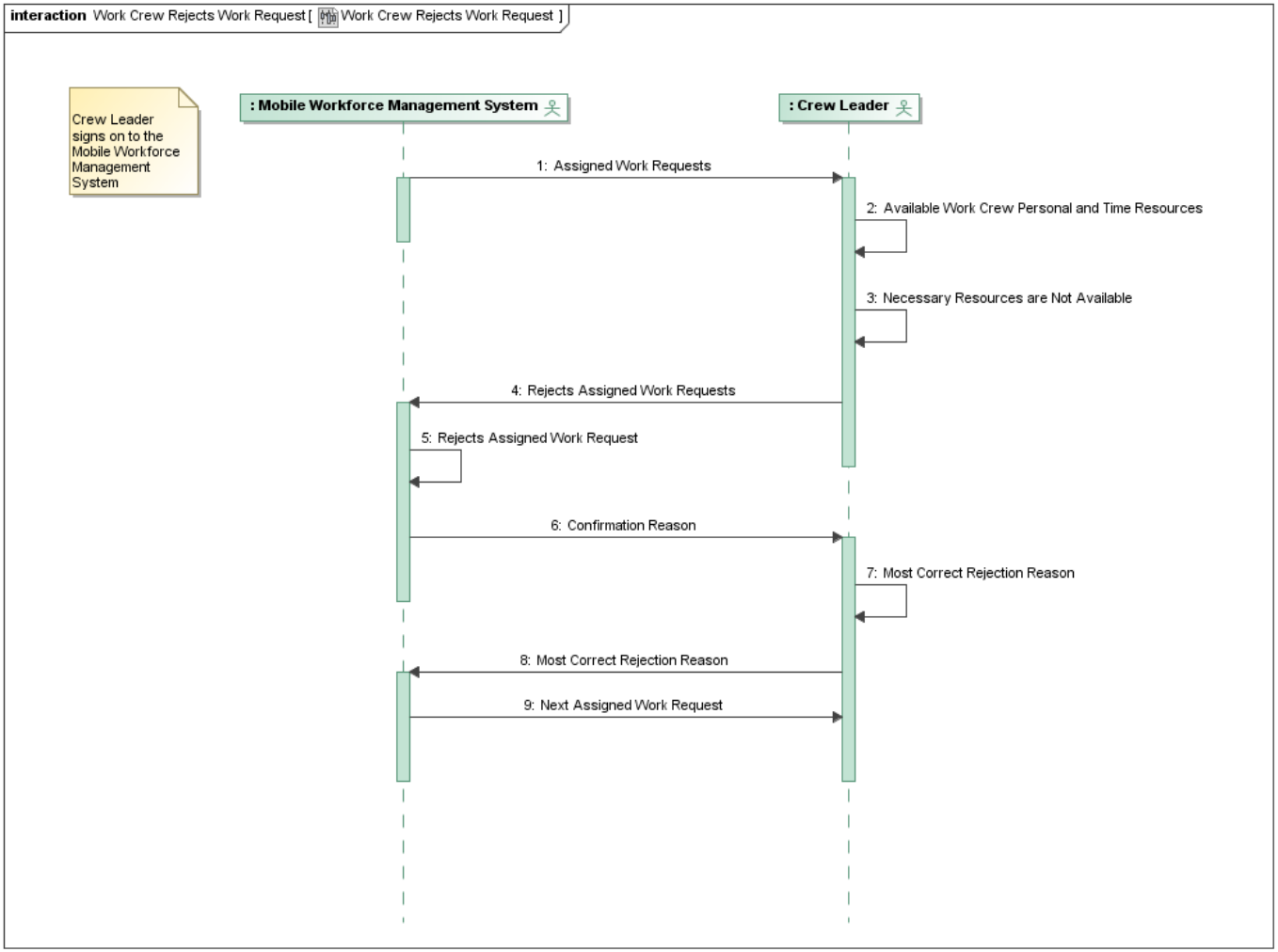
WMS Prioritizes Work Requests – Scenario #2



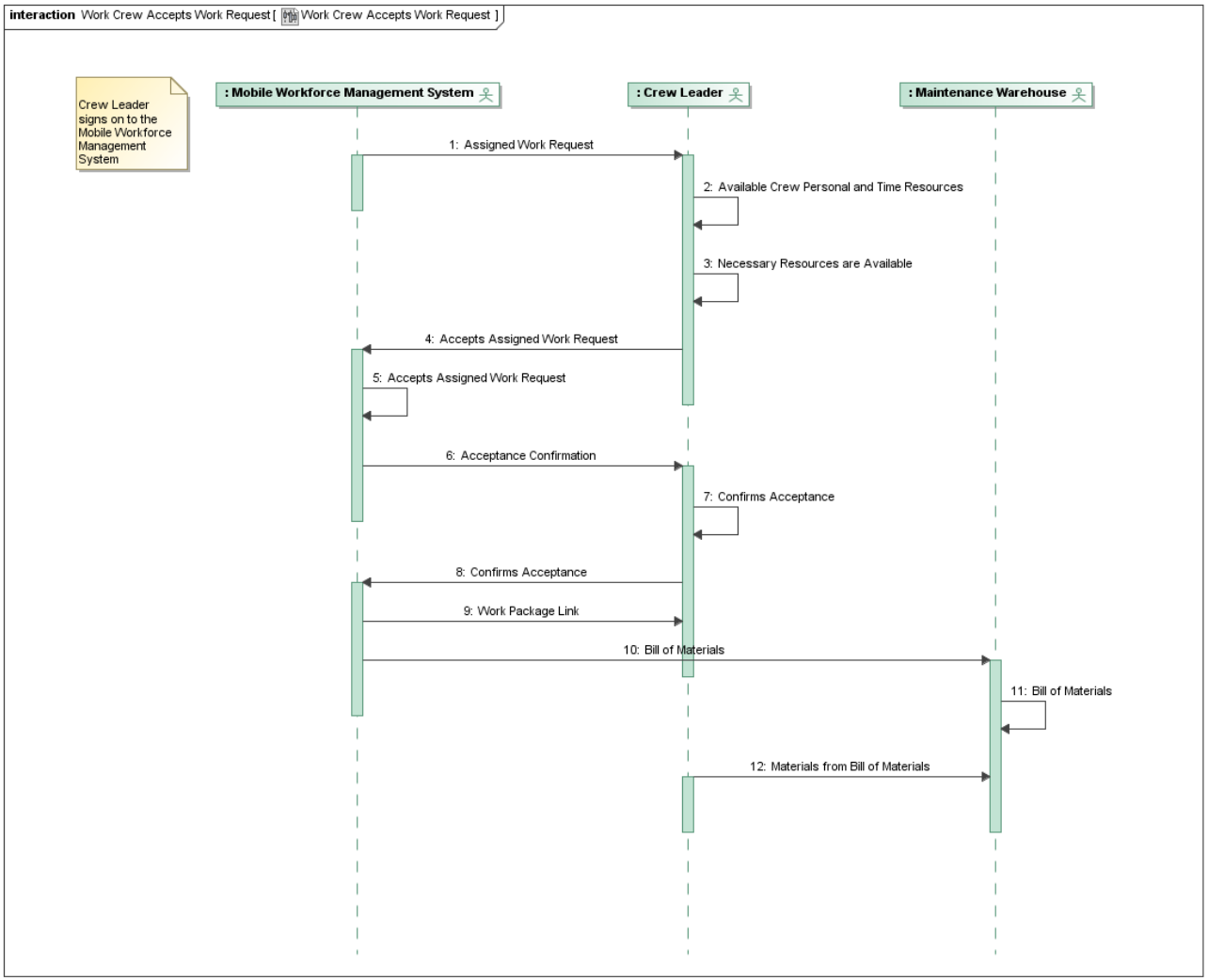
WMS and MMS Create a Work Package for the Specific Work ID – Scenario 3



WMS Schedules Work Crew – Scenario #4



Work Crew Rejects Work Request – Scenario #5



Work Crew Accepts Work Request – Scenario #6

3 Auxiliary Issues

3.1 References and contacts

ID	Title or contact	Reference or contact information
[1]		

3.2 Action Item List

ID	Description	Status
[1]	Alternate Scenario Could be Considered; What if the Materials for the Bill of Materials are not available?	TBD

3.3 Revision History

No	Date	Author	Description
1.0	6-6-2010	John Simmins	Original Use Case
1.1	6-7-2010	Faisal Khan	Revisions to the original
1.2	6-8-2010	Brian D. Green	Add additional scenarios
1.3	6-21-2010	Brian D. Green	Incorporate changes
1.4	6-22-2010	Brian D. Green	Include transitions for clarity
1.5	6-22-2010	Brian D. Green	Include Sequence Diagrams