



**CWDS**  
Child Welfare Digital Services

# **CWDS**

## **Problem Management High Level Design**

Created By:



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## 1. Introduction

The purpose of this document is to provide a high level or management view of the CWDS Problem Management (PM) process. The PM High Level Process flow diagram is the focal point for this document, with a corresponding section that defines each of the PM High Level Process activities.

Global Process Policies that span the entire PM Process define the expected behavior for each Service Provider (internal and external). These Policies are decided upon and agreed to by the CWDS PM Process Team and have responsibilities for the day-to-day process operations.

Touch points with other service management processes are listed in the final section. These touch points identify process inputs and outputs that are necessary for successful PM operations. The PM Process Team should consider these inputs and outputs, regardless of organizational plans to fully implement additional processes.

The content within this document is based on the best practices of the ITIL® framework<sup>1</sup>.

## 2. Problem Management High Level Process Flow

At a very high level, ITIL defines eleven (11) activities for the PM Process. These process activities are illustrated in the PM High Level Process flow below. There are additional definitions for Proactive PM's.

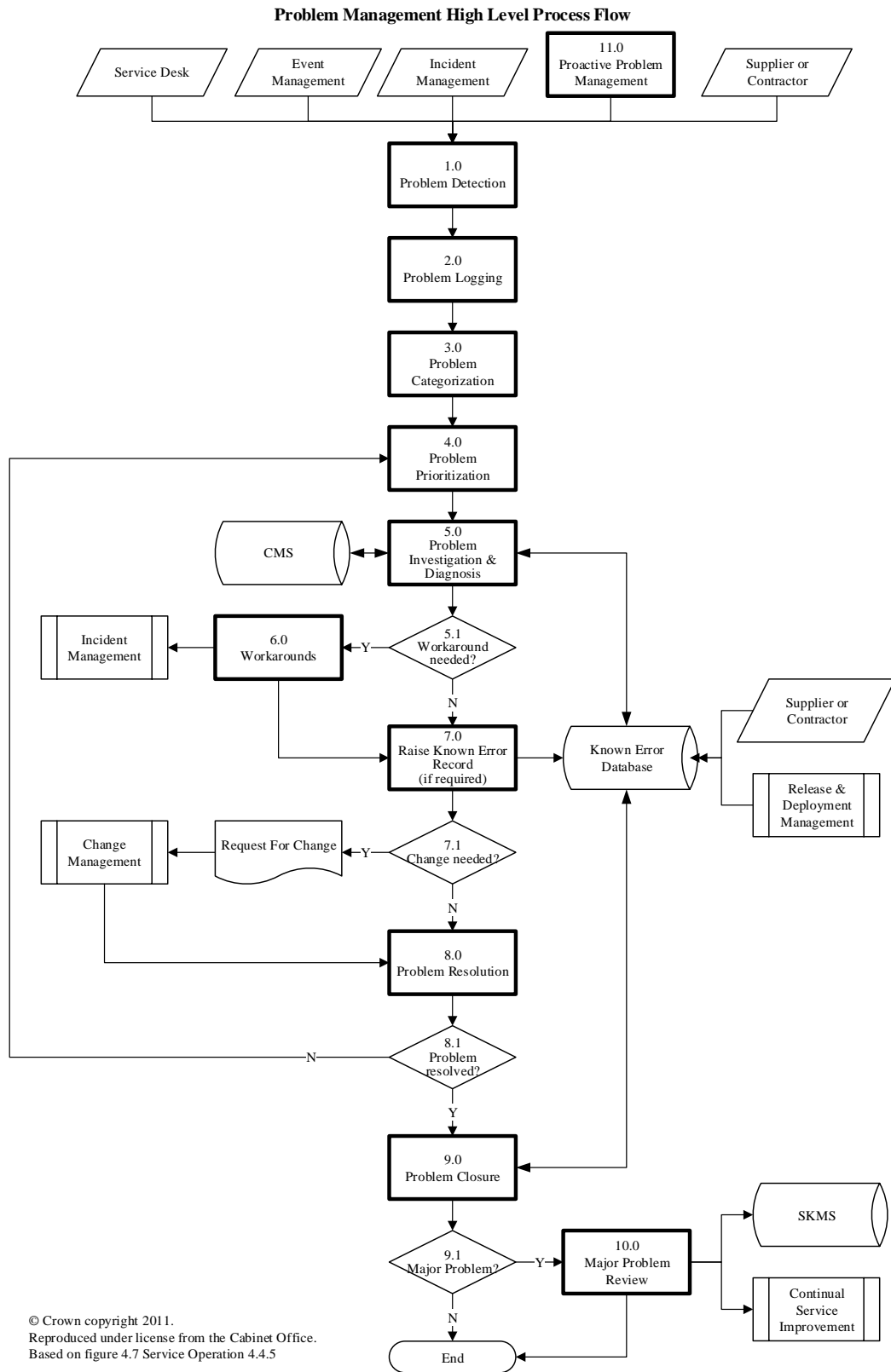
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# Problem Management ITIL High Level Design



### 3. Problem Management High Level Process Activity Descriptions

The following table provides a description of each activity in the Problem Management (PM) high level process flow diagram:

Activity	Description
1.0 Problem Detection	Identify problems from the following activities: <ul style="list-style-type: none"> <li>• Incident Matching</li> <li>• Trend Analysis</li> </ul> Review problem alerts raised by Incident Management and other processes.
2.0 Problem Logging	All relevant information relating to the nature of the problem must be logged so that a full historical record is maintained. The following details are input during problem logging, if available: <ul style="list-style-type: none"> <li>• ServiceNow Problem record #</li> <li>• Date/Time recorded</li> <li>• Cross reference to related incidents</li> <li>• User details</li> <li>• Service details</li> <li>• Configuration Item (CI) details</li> <li>• Priority and category details</li> <li>• Description of incident symptoms that resulted in problem identification</li> <li>• Details of diagnostic or attempted recovery actions taken</li> </ul>
3.0 Problem Categorization	Properly categorize the problem to indicate what expertise may be required for problem investigation and diagnosis and so it enhances management reporting.
4.0 Problem Prioritization	Problems should be prioritized using the same priority matrices for impact and urgency that are used for incidents. Prioritization provides the order for working on problems.
5.0 Problem Investigation & Diagnosis	Properly investigate, diagnose, test and verify the root cause of the problem and determine the associated CIs. Problem analysis, diagnosis and solving techniques should be used to facilitate finding the root cause.
6.0 Workarounds	The Known Error Database (KEDB) can be searched to match the problem against any known errors and possible workarounds. Existing workarounds should be identified and assessed as possible resolutions for incidents related to the problem. This activity will also define new workaround(s), if feasible, to take the place of existing workaround(s), or to define a workaround if one does not exist.

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<b>Activity</b>	<b>Description</b>
7.0 Raise Known Error Record	Once the root cause has been determined, the CI has been discovered and a workaround or permanent fix is identified, a known error record must be created and recorded in the known error database (KEDB). Depending on the tools used, creating a known error record may be equivalent to changing a status of a problem record to 'Known Error.'
8.0 Problem Resolution	As soon as a resolution is found, it should be applied to resolve the problem. This resolution may lead to initiation of a Request For Change (RFC) and approval through the Change Management Process before the resolution can be applied. In some cases the cost and/or impact of resolving the problem cannot be justified. In that case a decision may be made to leave the problem open and continue to resolve subsequent incidents using a validated workaround. This decision is usually made by the Change Advisory Board (CAB) as part of the Change Management Process.
9.0 Problem Closure	The known error and associated problems will be closed by PM after successful implementation of the resolution and Post Implementation Review (PIR) by Change Management.
10.0 Major Problem Review	A review to identify lessons learned should be conducted with all appropriate parties soon after any major problem is resolved.
11.0 Proactive Problem Management	Trend analysis against incident records and other IT Service Management processes is used to proactively identify problems that might otherwise be missed.

#### 4. Problem Management High Level Responsibility Matrix

A responsibility matrix (RACI, see legend below) is a tool used to help understand which parties are involved in activities and their level of involvement. Because this is a high level view, there are several levels of involvement shown. More detailed RACIs are provided in the detailed design.

<b>Process Roles</b>	<b>Problem Management Process Owner</b>	<b>Problem Management Process Manager</b>	<b>Problem Analyst</b>	<b>N-Level Support/Problem Management Process Practitioner</b>	<b>Service Desk</b>	<b>Service Stakeholder</b>
<b>Activities Within Process</b>						
1.0 Problem Detection	A	R	R			
2.0 Problem Logging	A	R	R	R/C/I	R/I	C/I
3.0 Problem Categorization	A	R	R	C		
4.0 Problem Prioritization	A	R	R	I	I	I
5.0 Problem Investigation and Diagnosis	A	R	R/C	R/C/I	C/I	C
6.0 Workarounds	A	R	R	R	C	
7.0 Raise Known Error Record (if required)	A	R	R	R	C/I	C
8.0 Problem Resolution	A	R	R	R/C	C/I	C
9.0 Problem Closure	A	R	R	C	I	C/I
10.0 Major Problem Review	A	R	R/C/I	R/C/I	I	C/I
11.0 Proactive Problem Management	A	R/C	R/C	R/C	C/I	C/I

Legend:

R = Responsible: Executes the task

A = Accountable: Accountable for final result

C = Consulted: Consulted about the task to provide additional information

I = Informed: Needs to be kept up-to-date on activities/tasks



## 5. Global Process Policies For Problem Management

PM Global Process Policies represent decisions made by the PM Process Owner and PM/Service Stakeholders for end-to-end management and execution of the PM Process. All technologies, organizations and staff defined in CWDS’s PM Scope are expected to adhere to these Global Policies.

The PM Global Process Policies are designed to ensure that all Service Provider organizations (internal and external) work together to successfully meet CWDS’s PM Objectives. Policies required to support external regulations (i.e., legislation) and/or business/customer requirements are also included.

The PM Global Process Policies are owned and monitored by the PM Process Owner. They will provide Management Information to senior and mid-level managers to demonstrate overall process effectiveness and efficiency, compliance at an organizational level and compliance at a department and individual level. The PM Process Owner is also accountable for ensuring that Global Policies add value to the organization and are reviewed and updated on a regular basis.

The following table provides a list of Best Practice Global Process Policies for PM. These should be discussed, modified (if necessary) and agreed upon between the PM Process Owner and the PM/Service Stakeholders. The PM Process Owner is accountable to ensure end-to-end compliance to these policies. In this position the PM Process Manager must have the authority to make sure middle-management holds its teams accountable for effective and efficient execution of PM activities.

<b>Policy Statement</b>	<b>Reason For Policy</b>	<b>Benefits</b>
One PM process based on ITIL guidance will be utilized throughout OSI.	Provide effectiveness and efficiency in performing PM activities.	<ul style="list-style-type: none"> <li>• Improved data collection</li> <li>• Improved management information</li> <li>• Improved resource utilization</li> </ul>
The PM Process Owner is accountable for the entire PM Process and has the authority to develop policies and procedures pertaining to the process.	Provides a single point of accountability for the PM Process across OSI.	Ensures consistency in the execution of PM across OSI.

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<b>Policy Statement</b>	<b>Reason For Policy</b>	<b>Benefits</b>
<p>The following criteria must be used to identify and create a problem record:</p> <p>Multiple incidents showing the same symptoms where the cause is unknown.</p> <p style="text-align: center;">- or -</p> <p>Where a single significant incident has been identified based on the Major Incident criteria within the Major Incident Policy.</p>	<p>A clear definition of problem criteria will limit the scope of PM and ensure that the appropriate energy and time are allocated to actual problems.</p>	<p>Consistent criteria for defining and creating problem records.</p>
<p>ServiceNow will be used for logging and tracking of problems and known errors.</p>	<p>To provide effectiveness and efficiency to the PM Process.</p>	<ul style="list-style-type: none"> <li>• Improved data collection</li> <li>• Improved management information</li> <li>• Improved decision making capability</li> </ul>
<p>PM will periodically attempt to match open incidents to known errors or defined problems. During the problem identification and logging activity, PM will also attempt to match single or multiple incidents to existing Known Errors (KE) or defined problems.</p>	<p>To ensure that proper information is being input in problem tickets for matching by the Incident Management process.</p>	<ul style="list-style-type: none"> <li>• Improved matching of incidents</li> <li>• Reduced number of new problems that have to be recorded</li> <li>• Improved understanding of the impact of incidents</li> <li>• Better resource utilization</li> </ul>
<p>Each support group who works on a problem will be responsible for updating the problem ticket on an ongoing basis.</p>	<p>To ensure proper collection of work is generated and provide the ability to properly communicate the status of the problem.</p>	<ul style="list-style-type: none"> <li>• Improved communication</li> <li>• Ongoing record of actions taken and status of problem</li> <li>• Improved and more accurate management reporting</li> </ul>
<p>All problems will be prioritized based upon impact and urgency defined in the priority model that has been defined for Incident, Problem and Change Management.</p>	<p>Ensure that the right problems are being worked on in the right order.</p>	<ul style="list-style-type: none"> <li>• Improved resource utilization</li> <li>• Improved decision making capability</li> <li>• Improved management reporting</li> </ul>

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<b>Policy Statement</b>	<b>Reason For Policy</b>	<b>Benefits</b>
PM will review workarounds that have been submitted by Incident Management and other processes or functional groups.	To ensure that the defined workarounds are feasible, are in the best interest of OSI and are validated and populated in the PM database.	<ul style="list-style-type: none"> <li>• Fewer incidents caused by poor workarounds</li> <li>• Improved service/system availability</li> <li>• Proper resource/skill set utilized to validate workaround</li> </ul>
Support teams with specific Subject Matter Experts (SME) will be assigned to conduct root cause analysis activities. SMEs should use structured root cause analysis techniques for more effective diagnosis.	To ensure that the appropriate resource(s) are assigned to work on problem diagnosis. To ensure that PM doesn't become an extension of Incident Management resources.	<ul style="list-style-type: none"> <li>• Helps define skill requirements to perform root cause analysis</li> <li>• Improved time to identify root cause</li> <li>• Focus on identifying root cause vs. restoring service</li> </ul>
After successful identification of the root cause, which CI is at fault and identification of a workaround or temporary fix, the problem will be closed and a known error record opened. Once a root cause is known the problem record status will change to "Known Error."	Provide a clear indication that the root cause has been identified and efforts at identifying a permanent resolution can proceed.	<ul style="list-style-type: none"> <li>• Help with communication of the status of the problem</li> <li>• Improved reporting on the PM activities</li> </ul>
Known errors and associated problems will only be closed after the successful implementation of a RFC, including verification that incidents related to the specific problem are no longer occurring.	Ensure known errors are not closed prematurely, nor kept open forever.	<ul style="list-style-type: none"> <li>• Improved management reporting</li> <li>• Consistent procedure on when to close the known error</li> </ul>
Decisions to resolve a problem, through raising a RFC, should be based on cost to implement that change versus cost and impact to OSI if the problem is left unresolved. Any decision to refrain from resolving a problem should be documented and communicated to the appropriate stakeholders.	To ensure that proper financial decisions are applied to the PM Process.	<ul style="list-style-type: none"> <li>• Improved financial and resource utilization</li> <li>• Improved decision making</li> </ul>

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<b>Policy Statement</b>	<b>Reason For Policy</b>	<b>Benefits</b>
An RFC must be completed and submitted to Change Management in order to facilitate the change that has been identified to remove the error from the infrastructure.	Following the policies of Change Management ensures that there is a structured approach to implementing the required change.	<ul style="list-style-type: none"> <li>• Change is reflected on the change schedule</li> <li>• Improved ability to assess the impact, risk and cost of the change</li> <li>• Improved Change Management reporting</li> <li>• Improved tracking of change</li> </ul>
PM metrics and management reports will be provided to management, staff and customers in accordance with outlined procedures and agreements.	Assess performance measures (e.g., efficiency and effectiveness) and compliance to the PM Process, including creating RFCs to resolve problems requiring a change to the infrastructure.	<ul style="list-style-type: none"> <li>• Identifies Service Provider performance for end-to-end incident resolution</li> <li>• Identifies opportunities for improvement</li> </ul>
Reviews are conducted by the PM Process Owner on a regular basis. Reviews will focus on the process consistency and repeatability and Key Performance Indicators (KPIs).	Maximize process benefits and reduce costs.	<ul style="list-style-type: none"> <li>• Identifies opportunities for process, tool and staff improvements</li> <li>• Identifies opportunities for staff training on process and tools</li> </ul>

## 6. Guidelines for invoking Problem Management

The rules for invoking Problem Management can vary and are at the discretion of OSI. The activities described would be executed by the OSI staff member that the incident is assigned to. *Some general situations where it may be desired to invoke Problem Management might include situations where:*

- Incident Management cannot match an incident to existing problems and known errors.
- Trend analysis of logged incidents reveals an underlying problem exists (from proactive Problem Management reviews)
- A major incident has occurred where Problem Management activities need to be undertaken to identify the root cause. (A major incident is the highest category of impact for an incident. A major incident results in significant disruption to the business. It is, therefore, an incident with the greatest impact and urgency. Special procedures, with shorter timescales and greater urgency for major incidents are outlined in the Incident Management ITIL Detailed Design plan. But if the cause of the incident needs to be investigated at the same time, then Problem Management would be involved as well. However, the Incident Manager must ensure that service restoration, by Incident Management, and underlying cause, by Problem Management are kept separate)
- Major incident reviews which are trying to prevent the recurrence of any major incident can provide identification of an underlying cause or underlying error. Problem management would likely participate in these reviews. When causes or errors are identified during these reviews, Problem Management would initiate the appropriate corrective action. If changing a Configuration Item is necessary to correct the underlying error, Problem Management would fill out a RFC and submit it to the Change Management process. Change Management would assess and evaluate the change, and if approved, would authorize Release and Deployment Management to build, test and deploy the release to correct the error.
- Other IT functions identify that a problem condition exists
- The Service Desk may have resolved an incident but has not determined a definitive cause and suspects that the incident is likely to recur
- Analysis of an incident by a support group which reveals that an underlying problem exists, or is likely to exist
- A notification from a (third-party) supplier that a problem exists and has to be resolved
- A single incident occurs that has Special Circumstances. (Special Circumstances are purposely not defined so that we can be flexible in its meaning so that Problem Management can be invoked whenever it is deemed necessary. It is then up to the Problem Management Process Owner to decide if a root cause investigation needs to be initiated)
- Multiple Incidents have occurred that may indicate they are all related to a single technical fault. (These are usually discovered through proactive Problem Management activities such as trending analysis of historical incident records).

## 7. Applicable COBIT Controls

The COBIT 4.1 controls that correspond most closely<sup>2</sup> to the ITIL Problem Management process are the following<sup>3</sup>:

### **DS Deliver and Support**

#### DS10 Manage Problems

##### **DS10.1 Identification and Classification of Problems**

Implement processes to report and classify problems that have been identified as part of incident management. The steps involved in problem classification are similar to the steps in classifying incidents; they are to determine category, impact, urgency and priority. Categorize problems as appropriate into related groups or domains (e.g., hardware, software, support software). These groups may match the organizational responsibilities of the user and customer base, and should be the basis for allocating problems to support staff.

##### **DS10.2 Problem Tracking and Resolution**

Ensure that the problem management system provides for adequate audit trail facilities that allow tracking, analyzing and determining the root cause of all reported problems considering:

- All associated Configuration Items
- Outstanding problems and incidents
- Known and suspected errors
- Tracking of problem trends

Identify and initiate sustainable solutions addressing the root cause, raising change requests via the established Change Management process. Throughout the resolution process, Problem Management should obtain regular reports from Change Management on progress in resolving problems and errors. Problem Management should monitor the continuing impact of problems and known errors on user services. In the event that this impact becomes severe, Problem Management should escalate the problem, perhaps referring it to an appropriate board to increase the priority of the RFC or to implement an urgent change as appropriate. Monitor the progress of problem resolution against SLAs.

##### **DS10.3 Problem Closure**

Put in place a procedure to close problem records either after confirmation of successful elimination of the known error or after agreement with OSI on how to alternatively handle the problem.

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<sup>2</sup> COBIT® Control mapping from *COBIT® Mapping: Mapping of ITIL v3 With COBIT® 4.1*, 2008, IT Governance Institute

<sup>3</sup> COBIT® Control language is from *COBIT® 4.1*, 2007, IT Governance Institute

**DS10.4 Integration of Configuration, Incident and Problem Management**

Integrate the related processes of configuration, incident and problem management to ensure effective management of problems and enable improvements.

**AI Acquire and Implement**

AI2 Acquire and Maintain Application Software

**AI2.4 Application Security and Availability**

Address application security and availability requirements in response to identified risks and in line with the organization's data classification, information architecture, information security architecture and risk tolerance.

AI4 Enable Operation and Use

**AI4.4 Knowledge Transfer to Operations and Support Staff**

Transfer knowledge and skills to enable operations and technical support staff to effectively and efficiently deliver, support and maintain the system and associated infrastructure.

These COBIT® control numbers may be cited in the detailed design procedure descriptions. See the official COBIT® 4.1 documentation at [www.isaca.org](http://www.isaca.org) for more details.

## 8. Integration With Other Processes & Functions

As each process is designed, it is important to recognize that there are key integrations between processes. Even if the goal is not to reach integration, there is a certain level of integration (inputs become outputs) that naturally takes place.

The following tables describe key areas where PM integrates with other processes. The ‘Key Actions’ column shows activities or triggers from one process/function to the other. The ‘Key Information’ column describes the data or output that is transferred to the other processes functions, for information or for reporting purposes.

<b>By: Problem Management</b>		<b>For: Process/Function</b>
<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Access Management	<ul style="list-style-type: none"> <li>• Oversee Access Management problems and known errors to closure</li> <li>• Direct access problems and known errors to Access Management for action</li> <li>• Solicit Access Management involvement in Problem Management activities that may benefit from Access Management input or action</li> <li>• Accept proactive access-based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• Requests for action or input</li> <li>• Problem Management policies and procedures, roles and responsibilities</li> </ul>
Application Management	<ul style="list-style-type: none"> <li>• Collaborate with Application Management to solve problems that are application related</li> <li>• Identify problems that are related to the services and components supported by Application Management</li> <li>• Assist Application Management in the resolution of major incidents and problems</li> <li>• Assist with continual improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Management information: trend information</li> <li>• Problem and known error records</li> <li>• Major problem review records</li> <li>• Problem Management policies and procedures, roles and responsibilities</li> </ul>



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<b>By: Problem Management</b>		<b>For: Process/Function</b>
<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Availability Management	<ul style="list-style-type: none"> <li>• Oversee Availability Management problems and known errors to closure</li> <li>• Direct availability problems and known errors to Availability Management for action</li> <li>• Solicit Availability Management involvement in PM activities that may benefit from Availability Management input or action</li> <li>• Accept proactive availability-based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• Requests for action or input</li> <li>• Problem Management policies and procedures, roles and responsibilities</li> </ul>
Capacity Management	<ul style="list-style-type: none"> <li>• Oversee Capacity Management problems and known errors to closure</li> <li>• Direct capacity problems and known errors to Capacity Management for action</li> <li>• Solicit Capacity Management involvement in PM activities that may benefit from Capacity Management input or action</li> <li>• Accept proactive capacity-based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• Requests for action or input</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>

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<b>By: Problem Management</b>		<b>For: Process/Function</b>
<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Change Management	<ul style="list-style-type: none"> <li>• Associate problem and known error records with changes suspected of causing the associated incident(s)</li> <li>• Associate problem and known error records with RFCs submitted to investigate and/or resolve the incident(s)</li> <li>• Ensure that all resolutions or workarounds requiring a change to a CI are handled in compliance with Change Management policies and procedures</li> <li>• Rectify any situations caused by unsuccessful changes</li> <li>• Participate in the CAB</li> <li>• Participate in PIRs</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records referencing RFCs</li> <li>• RFCs</li> <li>• Success criteria for problem related changes</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Demand Management	<ul style="list-style-type: none"> <li>• Oversee Demand Management problems and known errors to closure</li> <li>• Send demand problems and known errors to Demand Management for action</li> <li>• Solicit Demand Management involvement in PM activities that may benefit from Demand Management input or action</li> <li>• Accept proactive demand-based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• Requests for action or input</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Event Management	<ul style="list-style-type: none"> <li>• Provide PM monitoring requirements</li> <li>• Suggest Event Management process and technology improvements</li> </ul>	<ul style="list-style-type: none"> <li>• PM monitoring, event and logging requirements</li> <li>• Event log access requests</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>

<b>By: Problem Management</b>		<b>For: Process/Function</b>
<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Financial Management for IT Services	<ul style="list-style-type: none"> <li>• Historical data for computing cost of problems, known errors: time, material, hardware, people, software</li> <li>• Cost of workarounds</li> <li>• Cost of analysis and resolution</li> <li>• Cost of implementing or not implementing a change initiated by PM</li> </ul>	<ul style="list-style-type: none"> <li>• Management information about the cost of resolving and preventing problems</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Incident Management	<ul style="list-style-type: none"> <li>• Problems raised because multiple incidents can be solved to prevent further incidents from occurring</li> <li>• PM staff may provide education and training to Incident Management staff (e.g., the Service Desk) on investigation and diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>• Information on problems and known errors</li> <li>• Workarounds and temporary solutions</li> <li>• Reports on major problem reviews</li> <li>• Incident associations with problems and known errors</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Information Security Management	<ul style="list-style-type: none"> <li>• Report all security related problems to Information Security Management</li> <li>• Maintain restricted access to security problems and known errors</li> <li>• Comply with Information Security policies</li> <li>• Maintain Information Security process access controls</li> </ul>	<ul style="list-style-type: none"> <li>• Problems related to Information Security Management</li> <li>• Problem data related to information security</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>

<b>By: Problem Management</b>		<b>For: Process/Function</b>
<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
IT Operations Management	<ul style="list-style-type: none"> <li>• Collaborate with IT Operations Management to solve problems that are related to facilities and component issues for which they are responsible</li> <li>• Identify problems that are related to the services and components supported by IT Operations Management</li> <li>• Assist IT Operations Management in the resolution of major incidents and problems in which they are engaged</li> <li>• Assist with continual improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Management information: trend information</li> <li>• Problem and known error records</li> <li>• Major problem review records</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
IT Service Continuity Management	<ul style="list-style-type: none"> <li>• Warn IT Service Continuity Management (ITSCM) of problems or known errors that have a high impact, a high risk of recurrence, and cannot be expediently resolved</li> <li>• Oversee ITSCM problems and known errors to closure</li> <li>• Direct ITSCM problems and known errors to ITSCM for action</li> <li>• Solicit ITSCM involvement in PM activities that may benefit from ITSCM input or action</li> <li>• Accept proactive ITSCM based problems</li> </ul>	<ul style="list-style-type: none"> <li>• PM procedures</li> <li>• Problem records</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Knowledge Management	<ul style="list-style-type: none"> <li>• Provide Knowledge Management data utilization and feedback data</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge Management entry and access feedback</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>

<b>By: Problem Management</b>		<b>For: Process/Function</b>
<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Release & Deployment Management	<ul style="list-style-type: none"> <li>• Oversee Release &amp; Deployment problems and known errors to closure</li> <li>• Direct Release &amp; Deployment Management problems and known errors to Release &amp; Deployment Management for action</li> <li>• Solicit Release &amp; Deployment Management involvement in PM activities that may benefit from Release &amp; Deployment Management input or action</li> <li>• Accept proactive Release &amp; Deployment Management based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• Workarounds</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Request Fulfillment	<ul style="list-style-type: none"> <li>• Ensure that all workarounds that can be fulfilled via a service request are available in ServiceNow</li> <li>• Participate in evaluation of service request list</li> <li>• Oversee Request Fulfillment problems and known errors to closure</li> <li>• Direct Request Fulfillment problems and known errors to Request Fulfillment for action</li> <li>• Solicit Request Fulfillment involvement in PM activities that may benefit from Request Fulfillment input or action</li> <li>• Accept proactive Request Fulfillment based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>

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<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Service Asset & Configuration Management	<ul style="list-style-type: none"> <li>• Associate problem and known error records with symptom, cause, workaround, and fixed CIs and affected service CIs</li> <li>• Oversee Service Asset &amp; Configuration Management problems and known errors to closure</li> </ul>	<ul style="list-style-type: none"> <li>• Problem and known error records with CI links</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Service Catalog Management	<ul style="list-style-type: none"> <li>• Provide access to information requested</li> <li>• Oversee Service Catalog Management problems and known errors to closure</li> <li>• Direct Service Catalog Management problems and known errors to Service Catalog Management for action</li> <li>• Solicit Service Catalog Management involvement in PM activities that may benefit from Service Catalog Management input or action</li> <li>• Accept proactive Service Catalog-based problems</li> </ul>	<ul style="list-style-type: none"> <li>• Number of currently outstanding problems and known errors by urgency and impact</li> <li>• Problem closure rate over a rolling meaningful interval</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Service Desk	<ul style="list-style-type: none"> <li>• Oversee Service Desk problems and known errors to closure</li> <li>• Direct Service Desk problems and known errors to Service Desk for action</li> <li>• Solicit Service Desk involvement in PM activities that may benefit from Service Desk input or action</li> <li>• Accept proactive Service Desk based problems</li> </ul>	<ul style="list-style-type: none"> <li>• PM policies and procedures, roles and responsibilities</li> <li>• Training</li> <li>• Problem and known error records</li> <li>• Workaround information</li> </ul>

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<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Service Level Management	<ul style="list-style-type: none"> <li>• Notify Service Level Management of status and resolution of problems and known errors affecting service levels</li> <li>• Provide status of service problems and known errors as input for service level reviews and Service Improvement Program (SIPs)</li> </ul>	<ul style="list-style-type: none"> <li>• Problems and known errors affecting service levels</li> <li>• PM information for service reviews</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Service Portfolio Management	<ul style="list-style-type: none"> <li>• Provide known error defect feedback on implemented services</li> <li>• Provide access to information requested</li> <li>• Propose known error elimination or mitigation projects</li> </ul>	<ul style="list-style-type: none"> <li>• Number of problems and known errors and their impact and status by implemented service</li> <li>• Known error mitigation or elimination project requests</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Service Validation & Testing	Provide problem summary data for future testing criteria and service validation analysis	<ul style="list-style-type: none"> <li>• Problem data following new deployments for future testing criteria</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Seven-Step Improvement	Provide problem data and PM Process measures for the Seven-Step Improvement process	<ul style="list-style-type: none"> <li>• Problem and known error records</li> <li>• PM Process measures and targets</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>

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<b>Recipient Process/Function</b>	<b>Key Actions Taken By Problem Management For Process/Function</b>	<b>Key Information Provided To Process/Function By Problem Management</b>
Supplier Management	<ul style="list-style-type: none"> <li>• Provide training for and integration of supplier support teams</li> <li>• Provide interfaces and integrations between supplier and organization PM processes and tools</li> </ul>	<ul style="list-style-type: none"> <li>• Problem information and triggers to supplier support teams</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>
Technical Management	<ul style="list-style-type: none"> <li>• Collaborate with Technical Management to solve problems that are related to the services and components which they support</li> <li>• Identify problems that are related to the services and components supported by Technical Management</li> <li>• Assist Technical Management in the resolution of major incidents and problems</li> <li>• Assist with continual improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Problem information</li> <li>• Problem and known error records</li> <li>• Major problem review records</li> <li>• PM policies and procedures, roles and responsibilities</li> </ul>



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<b>Provider <i>Process/Function</i></b>	<b>Actions Taken By <i>Process/Function</i> For Problem Management</b>	<b>Key Information Provided By <i>Process/Function</i> To Problem Management</b>
Access Management	<ul style="list-style-type: none"> <li>• Notify PM of any new or updated access related problems</li> <li>• Provide assistance in resolving problems related to access</li> </ul>	<ul style="list-style-type: none"> <li>• Access data</li> <li>• Access Management policies and procedures, roles and responsibilities</li> </ul>
Application Management	<ul style="list-style-type: none"> <li>• Perform PM tasks and activities as requested and in conformance with respective policies and procedures</li> <li>• Perform assigned root cause analysis, identification, testing, mitigation planning and tasks in the application domain</li> </ul>	<ul style="list-style-type: none"> <li>• Recommended resolutions for application related problems</li> <li>• Answers to requests for information</li> <li>• Acknowledgement of requests</li> <li>• Request completion notice</li> <li>• Application Management policies and procedures, roles and responsibilities</li> </ul>
Availability Management	<ul style="list-style-type: none"> <li>• Notify PM of any new or updated availability related problems</li> <li>• Provide assistance in resolving problems related to availability</li> </ul>	<ul style="list-style-type: none"> <li>• Availability data</li> <li>• Availability plans and policies</li> <li>• Availability Management policies and procedures, roles and responsibilities</li> </ul>
Capacity Management	<ul style="list-style-type: none"> <li>• Notify PM of any new or updated capacity related problems</li> <li>• Provide assistance in resolving problems related to capacity</li> <li>• Monitor utilization versus capacity</li> <li>• Determine utilization drivers</li> <li>• Conduct “what-if” capacity/demand assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity data</li> <li>• Capacity plans and policies</li> <li>• Capacity and utilization history and forecasts</li> <li>• Demand/capacity forecasts</li> <li>• Capacity Management policies and procedures, roles and responsibilities</li> </ul>

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Change Management	<ul style="list-style-type: none"> <li>• Provide PM access to the change history records to conduct point-in-time problem and known error root cause investigation and analysis, and to conduct risk assessments and root cause elimination/mitigation planning activities</li> <li>• Inform PM of problem requested change status and outcome</li> </ul>	<ul style="list-style-type: none"> <li>• RFC records and logs</li> <li>• PIR reports</li> <li>• Change schedule</li> <li>• Change information to close problem records</li> <li>• Change Management policies and procedures, roles and responsibilities</li> </ul>
Continual Service Improvement	<ul style="list-style-type: none"> <li>• Provide PM related vision and targets</li> <li>• Solicit PM improvement input</li> <li>• Support PM improvement initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Vision</li> <li>• As-Is assessment</li> <li>• To-Be targets</li> <li>• As-Is re-assessments</li> <li>• Continual Service Improvement policies and procedures, roles and responsibilities</li> </ul>
Demand Management	<ul style="list-style-type: none"> <li>• Notify PM of any new or updated demand related problems</li> <li>• Provide assistance in resolving problems that related to demand</li> <li>• Provide service demand drivers and driver patterns</li> <li>• Monitor demand</li> <li>• Conduct “what-if” capacity/demand assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Service demand drivers and patterns</li> <li>• Demand history and forecasts</li> <li>• Demand/capacity forecasts</li> <li>• Demand Management policies and procedures, roles and responsibilities</li> </ul>
Event Management	Provides IT environment and service status indicators to PM Process Manager for problem forensics	<ul style="list-style-type: none"> <li>• Logged event records</li> <li>• Event Management policies and procedures, roles and responsibilities</li> </ul>
Financial Management for IT Services	Provide procedures for budgeting, IT Accounting and Charging	<ul style="list-style-type: none"> <li>• Budget information related to approving spend for resolving and preventing Problems</li> <li>• Financial Management policies and procedures, roles and responsibilities</li> </ul>

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Incident Management	<ul style="list-style-type: none"> <li>• Warning of potential problems</li> <li>• Incident Management may provide resolution steps or workarounds to PM for validation and acceptance into the problem database</li> <li>• Provide incident records for PM processing</li> </ul>	<ul style="list-style-type: none"> <li>• Current incidents</li> <li>• Resolution steps</li> <li>• Potential impact</li> <li>• Identification of change impact</li> <li>• Priorities and required time scales</li> <li>• Incidents to be matched to existing problems or to spawn new problems</li> <li>• Incident Management policies and procedures, roles and responsibilities</li> </ul>
Information Security Management	<ul style="list-style-type: none"> <li>• Notify PM of any new or updated security related problems</li> <li>• Provide assistance in resolving problems related to security</li> <li>• Monitor security operations and exception parameters</li> <li>• Provide Information Security policies, standards and guidelines</li> <li>• Participate in problem and known error resolution whenever Information Security is affected or at risk</li> <li>• Collaboration in major incident reviews related to Information Security</li> </ul>	<ul style="list-style-type: none"> <li>• Information Security policies, standards and guidelines</li> <li>• Information Security forensic data</li> <li>• Training</li> <li>• Information Security Management policies and procedures, roles and responsibilities</li> </ul>

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IT Operations Management	<ul style="list-style-type: none"> <li>• Assists in implementing PM process</li> <li>• Identifies, collaborates on and resolves problems as well collaborating on major incidents and major problems and their reviews</li> <li>• Assists PM in assuring that problem resolutions are cost effective and efficient</li> <li>• Collaborates on continual improvement opportunities for the PM Process</li> </ul>	<ul style="list-style-type: none"> <li>• Process metrics</li> <li>• Problem data related to IT Operations</li> <li>• Monitoring</li> <li>• Operations logs</li> <li>• Operations reports</li> <li>• Facility access reports</li> <li>• Value enhancement information</li> <li>• IT Operations Management policies and procedures, roles and responsibilities</li> </ul>
IT Service Continuity Management	<ul style="list-style-type: none"> <li>• Notify the PM of any new or updated ITSCM related problems</li> <li>• Provide assistance in resolving problems related to ITSCM</li> <li>• Monitor continuity tests and readiness</li> <li>• Participate in problem and known error resolution whenever ITSCM is affected or at risk</li> <li>• Provide ITSCM policies, standards and procedures to PM to ensure appropriate handling of high impact problems and known errors</li> <li>• Provide business and IT Service Continuity plans to PM</li> <li>• Major incidents may be coordinated by a PM Process Manager. PM needs to know the criteria for declaring a disaster</li> </ul>	<ul style="list-style-type: none"> <li>• Business and IT Service Continuity plans</li> <li>• ITSCM policies, standards and procedures</li> <li>• ITSCM test results</li> <li>• Business Impact Assessment (BIA) ratings for prioritization</li> <li>• IT Service Continuity Management policies and procedures, roles and responsibilities</li> </ul>
Knowledge Management	<ul style="list-style-type: none"> <li>• Audit PM knowledge entries</li> <li>• Accept PM knowledge entries and entry assessments</li> <li>• Provide access paths to knowledge items for Problem Analysts and support teams</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge Management entries for use in problem and known error resolution activities</li> <li>• Knowledge Management policies and procedures, roles and responsibilities</li> </ul>

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Release & Deployment Management	<ul style="list-style-type: none"> <li>• Oversee the planning and execution of problem requested releases and deployments</li> <li>• Inform PM of problem requested release and deployment status and outcome</li> </ul>	<ul style="list-style-type: none"> <li>• Known errors associated with release development</li> <li>• Release &amp; Deployment schedule</li> <li>• Release &amp; Deployment policies and procedures, roles and responsibilities</li> </ul>
Request Fulfillment	<ul style="list-style-type: none"> <li>• Oversee service requests to implement workarounds and to fix known errors</li> <li>• Inform PM of problem service request status and outcome</li> </ul>	<ul style="list-style-type: none"> <li>• Service request records</li> <li>• Status communication</li> <li>• Request Fulfillment policies and procedures, roles and responsibilities</li> </ul>
Service Asset & Configuration Management	<ul style="list-style-type: none"> <li>• Provide PM access to the configuration management database (CMDB) to conduct point-in-time problem and known error root cause investigation and analysis</li> <li>• To conduct risk assessments and root cause elimination/mitigation planning activities</li> </ul>	<ul style="list-style-type: none"> <li>• CIs and relationship information</li> <li>• Service Asset &amp; Configuration Management policies and procedures, roles and responsibilities</li> </ul>
Service Catalog Management	<ul style="list-style-type: none"> <li>• Present the number of currently outstanding problems and known errors by urgency and impact</li> <li>• Present problem closure rate over a rolling meaningful interval</li> </ul>	Service Catalog Management policies and procedures, roles and responsibilities
Service Desk	<ul style="list-style-type: none"> <li>• Registration of problems</li> <li>• Monitoring of problems</li> <li>• Communication of problems</li> <li>• Escalation of problems</li> <li>• Incident matching</li> </ul>	<ul style="list-style-type: none"> <li>• Incident data</li> <li>• Problem data</li> <li>• Change data</li> <li>• Service Desk policies and procedures, roles and responsibilities</li> </ul>

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Service Level Management	<ul style="list-style-type: none"> <li>• Provide PM with service level parameters from Service Level Agreements (SLAs), Operational Level Agreements (OLAs) and underpinning contracts (UCs) to establish problem priority from impact and urgency</li> <li>• Inform PM of problem requested SIP status and outcome</li> </ul>	<ul style="list-style-type: none"> <li>• Parameters such as impact and risk information related to agreed service levels</li> <li>• SIP status</li> <li>• Service Level Management policies and procedures, roles and responsibilities</li> </ul>
Service Portfolio Management	Provide notice of change to service which may impact problem activities	<ul style="list-style-type: none"> <li>• Advance notice of portfolio changes affecting production</li> <li>• Service Portfolio Management policies and procedures, roles and responsibilities</li> </ul>
Service Validation & Testing	<ul style="list-style-type: none"> <li>• Collaborate on PM test requirements for services being changed or evaluated</li> <li>• Provide known errors or issues to PM for newly tested CIs</li> <li>• Perform tests for changes made to identify and/or isolate root causes</li> <li>• Perform tests for changes made to resolve known errors</li> </ul>	<ul style="list-style-type: none"> <li>• Known errors for new or changed CIs</li> <li>• Test results and analysis</li> <li>• Service Validation &amp; Testing policies and procedures, roles and responsibilities</li> </ul>
Supplier Management	<ul style="list-style-type: none"> <li>• Collaborate on defining and fulfilling PM goals and requirements for supplier services</li> <li>• Facilitate conflict resolution</li> <li>• Coordinate establishment of PM training and execution coordination activities for supplier and PM</li> <li>• Conduct supplier satisfaction survey</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier contracts and contacts</li> <li>• Requirements from users, suppliers and organization</li> <li>• Supplier problem and escalation contact information</li> <li>• Supplier satisfaction surveys</li> <li>• Supplier survey reports</li> <li>• Supplier Management policies and procedures, roles and responsibilities</li> </ul>

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<b>Provider <i>Process/Function</i></b>	<b>Actions Taken By <i>Process/Function</i> For Problem Management</b>	<b>Key Information Provided By <i>Process/Function</i> To Problem Management</b>
Technical Management	<ul style="list-style-type: none"> <li>• Perform PM tasks and activities as requested and in conformance with respective policies and procedures</li> <li>• Perform assigned root cause analysis, identification, testing, mitigation planning and mitigation tasks in the technical domain</li> </ul>	<ul style="list-style-type: none"> <li>• Root cause findings</li> <li>• Root cause mitigation plans</li> <li>• Root cause mitigation test results</li> <li>• Answers to requests for information</li> <li>• Acknowledgement of requests</li> <li>• Request completion notice</li> <li>• Technical Management policies and procedures, roles and responsibilities</li> </ul>