Frameworx 10

Business Process Framework R8.0

Product Conformance Certification Report

Hewlett-Packard
OSS Assurance Suite, V1.4

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1 Introduction

1.1 Executive Summary

This document provides details of Hewlett-Packard's (HP) self-assessment and TM Forum's certification of HP OSS Assurance Suite V1.4 against the TM Forum's Business Process Framework Release 8.0.

1.2 Representation of HP OSS Assurance Suite V1.4 Functionality/Capability

HP offers products and solutions for enterprise IT operations and for communication service providers (CSP) operations support systems (OSS). Due to this broad portfolio HP is positioned exceptionally to address the convergence of IT and Telco: Services become an Internet and All-IP based technology, Service Production platforms become IT infrastructures, CSP joins IT Operations and eTOM applies ITIL processes. HP's offering comprises IT tools with Telco Extensions (e.g. HP Service Manager for ITIL Incident Management in a CSP's environment) or "carrier grade" specific tools (e.g. HP TeMIP for Fault Management of big CSP Networks).

The underlying case of this assessment was consciously selected, to demonstrate the use of ITIL in a Telco environment. The standard product documentation of chosen IT management products has been used in conjunction with case specific documentation, to demonstrate the mapping to eTOM (and SID, see parallel assessment). The customers target architecture was required to be based on eTOM, but Assurance processes were required to be ITIL conformant, what represents a very typical market situation. Other requirements of that case are typical for today's OSS market:

a) the call control technology for All-IP services: an IMS platform
b) largely automation of Incident diagnostics and resolution
c) supporting a collaboration of "factories" managing resources or services (handled like suppliers/partners)

HP applies its "NGOSS Blueprints" to describe the functional offerings and description of solutions for different customer cases. The NGOSS Blueprints are defined in a version 1.4 as "HP OSS Assurance Suite V1.4". It comprises an agreed set of solutions with pre-integrated products. See [HP NGOSS BP] for understanding the Blueprints as well as certain explanations how HP covers above mentioned requirements. The paper is available to download from the TM Forum website area for this Assessment Report.

Taking above requirements and using HP's Assurance Suite V1.4, the following HP products have been assessed against eTOM 8.0 and SID 9.0:

- **HP Service Manager** V7.11
  with Telco Extensions V1.0 for SID and eTOM support
  and configured using HP Operations Orchestrations (HP OO) to automate Diagnostics
  and Resolutions of Incidents
- **HP TeMIP** V6.1 with TeMIP Client V6.3 and
  HP Universal Correlation Analyzer for Event Correlation
- **HP Universal Correlation Analyzer** V1.2
  for Event-Correlation, –Automation and Root Cause Analysis
- **HP Operations Manager** V9.00
  with **Operations Manager i V8.10** for Service Impact Analysis
- **HP SQM** V2.3
  based on HP Business Availability Center (BAC) 8.04

- **HP UCMDB** V8.04
  with HP Telco Universe for SID support, provided with SQM
- **HP Universal SLA Manager** V2.0
- **HP Performance Insight** V5.4
- **HP Adapter Framework** V4.1

See also Product Scope in section 2.2. Documentation of products is listed in section 3.7.3.

Note, while the Frameworx Assessment was carried out on the above product versions, there are more recent versions for the above products with additional functionality.

1.3 Mapping Technique Employed

Business Process Framework L3 descriptions are analyzed by looking for implied tasks. (This is similar to how process decomposition can use Semantic Analysis.) Each task is mapped to appropriate company documentation to show how the tasks are supported.

Color coded text highlighting is used as part of the process mapping whereby highlighted text indicates the level of support for a Level 3 process implied task as follows:

- GREEN is used to highlight key words/ key statements that are fully supported
- YELLOW is used to highlight key words/key statements that are partially supported or supported by different processes
- GREY is used to highlight key words/key statements that are not supported
- No Highlighting is the text added, to indicate the mapping to certain documentation.

For any Level 3 process not presented in scope for an in-scope Level 2 process, these Level 3 out-of-scope processes are provided in the mapping table with no highlighting but with appropriate commentary as to why the Level 3 process is out of scope.

Manual and Automated Support

It is important to determine whether the implied task is supported by manual steps, automated steps, or a combination of both. In this document, “A”, “M”, or “AM” is used for each task to indicate that the step or steps is/are Automated (A), Manual (M), or Both (AM).

2 Assessment Scope

2.1 Business Process Framework Level 2 Scope

Figure 2.1 represents Business Process Framework Level 2 processes (blue background) that were presented in scope for the assessment, and the textual callouts represent the modules of the HP OSS Assurance Suite that were assessed and that support the corresponding eTOM processes.

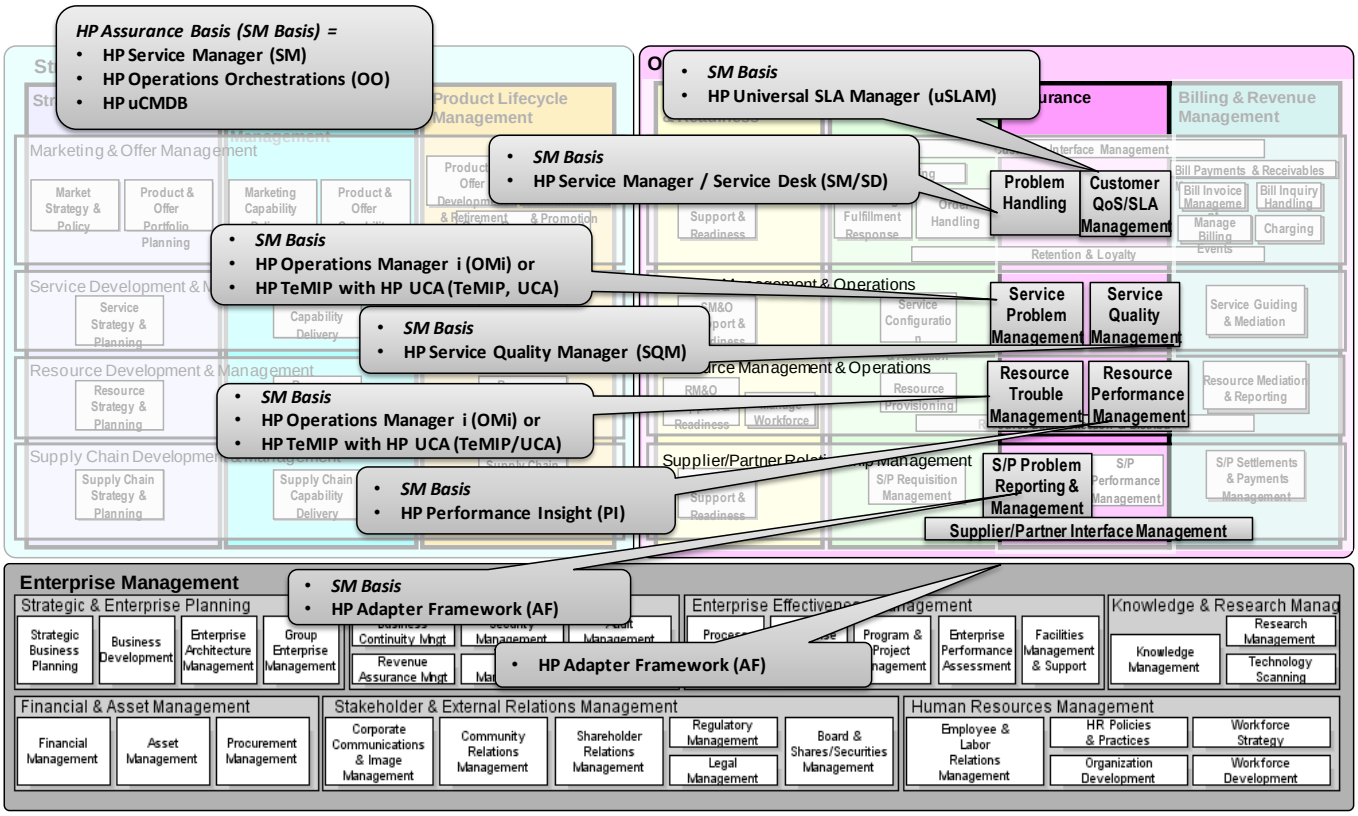

Figure 2.1 Business Process Framework Level 2 Scope

Note: as mentioned in section 2.3 the assessment was done twice for certain process elements. The product abbreviations indicated in Figure 2.1 (e.g. “SM”,”OO”, “OMi”, “PI”) are used in subsequent text or headings for clarity.

2.2 Product Scope

Taking up the products listed in section1.2, they can be associated to TM Forum Business Process Framework processes, as shown in Figure 2.2 below. The textual callouts indicate the TM Forum Business Process Framework Level 2 and 3 processes that were assessed and that are supported by HP's OSS Assurance Suite. The figure takes up the simplified HP NGOSS Functional Blueprint (cf. [HP NGOSS BP] "The Functional Blueprint") and indicates the assessed products in context with further functionality offered for Assurance:

- orange blocks indicate the products assessed,
- blue blocks indicate other functional building blocks of HP offering for assurance, not in assessment.

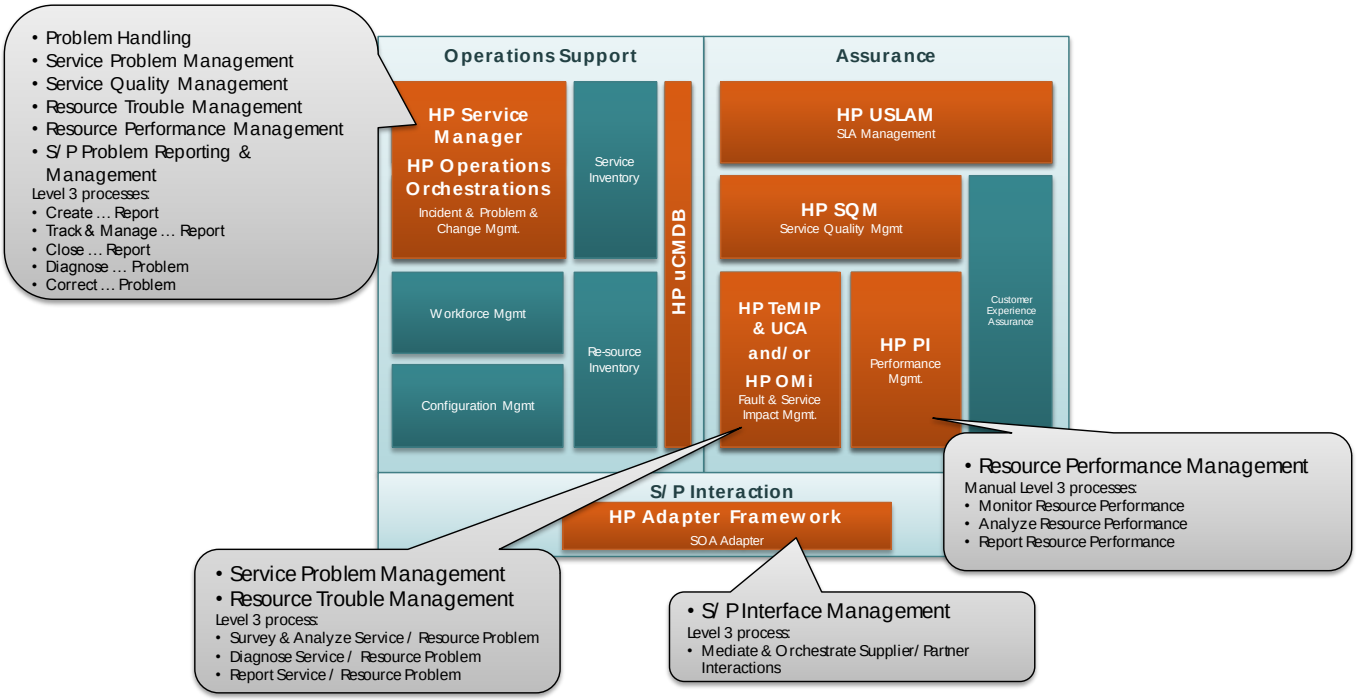

Figure 2.2 Hewlett-Packard OSS Assurance Suite V1.4 – Product Scope

Brief description of product mappings:

- **HP Service Manager (SM)** is used for Incident, Problem and Change Management, which are classic ITIL processes. They complement various eTOM process elements (see [HP NGOSS BP] "Combining eTOM and ITIL").
  HP Service Manager's Service Desk (SM/SD) functionality provides ITIL based Interaction Management and is used to realize the eTOM process of customer problem handling.
- **HP Operations Orchestrations (OO)** is used to automate parts of the Incident, Problem and Change Management (see also [HP NGOSS BP] "Automation of Problem Management")
- **HP uCMDB** uses federation with the 3rd party inventories. It provides the assurance relevant part of the data model while avoiding data duplication. HP uCMDB serves as a basis to various HP assurance applications.

  Note; since SM, automated with OO and integrated with uCMDB is used for quite all eTOM processes, their combination is also called "***SM Basis***" in subsequent text and headings.

- **HP TeMIP** provides the classical umbrella Fault Management. It may use other HP event management applications (e.g. OMi, OM, NNMi, see below) or 3rd party EMS as underlying domain management systems. See also section 2.3 about the double assessments with TeMIP and OMi.
- **HP Universal Correlation Analyzer (UCA)** is used by TeMIP for topology based event correlation, automation (e.g. incident creation) and for service impact analysis.
- **Operations Manager i (OMi)** provides topology based event correlation and the service health management for IT Environments (see also [HP NGOSS BP] "Event and Service Health ManagementEvent and Service Health Management"). It collects events from underlying HP Operations Manager (OM) for IT Systems or from HP Network Node Manager (NNMi) for IP Networks. See also section 2.3 about the double assessment for TeMIP and OMi.
- **HP Performance Insight (PI)** provides the Resource Performance Management
- **HP SQM** based on Business **Availability Center (BAC)** implements the Service Quality Management. HP SQM comprises extensions for uCMDB CI-types to support the TM Forum Business Information Framework.
- **HP Universal SLA Manager (USLAM)** provides contractual SLA management for dedicated customers.
- **HP Adapter** Framework (AF) enables the integration of Supplier/Partner organizations, providing resources or services (see [HP NGOSS BP] "Factory integration")

2.3 Assessment Phases

The assessment was done in two phases:

1st phase: SM Basis with OMi, SQM, PI, AF, using products and customer example documents for references

2nd phase: SM Basis with TeMIP/UCA, USLAM, SM/SD, using only product documents for references

That approach comprised a double assessment for process elements of "Resource Trouble Management" and "Service Problem Management": first OMi, then with TeMIP and UCA. Both are able to fulfill the same TM Forum Business Process Framework processes, but the products differentiate in scalability and integration capabilities. Their selection depends on the context and scope of managed technology.

The heading of subsequent sections indicate the product set assessed. Chapter 3 shows assessments of 1st phase , chapter 4 of 2nd phase. The results are combined in chapter 5.

3 Self-Assessment – Process Mappings Phase 1 (SM Basis, OMi, SQM, PI, AF)

1st phase of assessment (see section 2.3).

3.1 Service Problem Management (1.1.2.3) (SM Basis, OMi)

Table 3.1 Process Mappings – Service Problem Management (1.1.2.3)

Level	eTOM process element	Alignment	Mapping
1	1.1.2 Service Management & Operations		See detailed comments against Level 3 processes later
2	1.1.2.3 Service Problem Management		See detailed comments against Level 3 processes later

3	1.1.2.3.1 Create Service Trouble Report	A Service Problem Report is typically created as Incident associated with the concerned Services object (see 1.1.2.3.7 Survey & Analyze Service Problem).
		
		Following ITIL, the processes , realized in HP SM (see [HP SM ITIL Procs]) are:
		• Incident Logging (process SO 2.1), p61f
		• Incident Assignment (process SO 2.2), p64f
		
		Assignment of concerned Service is a field in the incident:
		• [Exp UG SM] 2.2.1.2 CFS-ID in Incidents
		  ○ Figure 6 Affected Items area on incident from (SMF), p11
		  ○ Figure 7 Affected Items area on incident form (RMF IMS), p11
		
		In the customer case, an Incident can be created in Service Management Factory from BSS/CRM (Customer driven), or escalated from Resource Management Factory (Network driven):
		• [Exp UC SMF] 2.2.3.1 V.1 BSS Reports Usage Incident
		• [Exp UC SMF] 2.2.4.6 SR.7 RMF Reports Usage Incident to SM" The user sees it in the HPSM GUI:
		• [Exp UG SM] 2.2.1 Open an Incident
		• [Exp UG SM] 2.2.5 Receiving Incidents
		
		Note: the Factory Concept allows escalating service trouble report (Incidents) directly from RMF to SMF. The conversion is realized using the adapters (see [HP NGOSS BP], section "Factory Integration"). Details of adapters are defined in [Exp TD I/F
			Brief Description
			Create a new service trouble report.
			Fully supported based on ITIL Incident Management:
			[HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f
			[HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64f
			See Extended Description.
			
			Extended Description
			The objective of the Create Service Trouble Report process is to create a new service trouble report.
			Details provided with the following text.
			
			A new service trouble report may be created as a result of service alarm event notification analysis, and subsequent creation of new service alarm event records, undertaken by the Survey & Analyze Service Problem processes, Note 2; see 1.1.2.3.7 Survey & Analyze Service Problem, Incident is created
			
			or at the request of analysis undertaken by other processes in the CRM (in particular a Customer Problem Report can generate one or more Service Trouble Reports), RM&O, SM&O or S/PRM layers which detect that some form of failure has occurred for which service restoration activity is required to restore normal operation.
			The typical use case is the Incident Creation request received from BSS/CRM, forwarded to Service Management Factory, or escalated from Resource Management Factory:
			[Exp UC SMF] 2.2.3.1 V.1 BSS Reports Usage Incident, p21f (A)
			[Exp UC SMF] 2.2.4.6 SR.7 RMF Reports Usage Incident to SM, p41f (AM)
			[Exp UG SM] 2.2.5 Receiving Incidents, p22 (A)
			
			If the service trouble report is created as a result of a notification or request from processes other than the Survey & Analyze Service Problem processes, the Create Service Trouble Report processes are responsible for converting the received information into a form suitable for the Service Problem Management processes,
			Reporting of Incidents between factories is enabled by the Adapters.
			[Exp TD I/F Assu] 3.2.3.1 Incident Creation from External Consumer, p28 (A)
			
			and for requested additional information if required.
			Updates sent back to requestor, may request additional information, received with update to resource trouble.
			Requestor can be BSS or RMF:
			[Exp UC SMF] 2.2.3.7 V.9 Report Usage Incident Update to BSS, p30f (AM)
			[Exp UC SMF] 2.2.3.2 V.2 BSS Reports Usage Incident Update, p23f (A)
			[Exp UC SMF] 2.2.4.2 SR.2 SM Reports Usage Incident Update to RMF, p37f (AM)
			[Exp UC SMF] 2.2.4.7 SR.8 RMF Reports Usage Incident Update to SM, p42f (AM)

Level	eTOM process element	Alignment	Mapping
		Assu] In ITIL the determination of resolution time is part of the Incident Escalation Process, if done manually: • [HP SM ITIL Procs] SO 2.6.6 Determine expected resolution time, p76 Resolution time can be automatically calculated, as far as the single steps of resolution are known (as Known Errors). This is described within the UC • [Exp UC Assu] 3.1.6 L.6 Automatisierte Störungs-Behebung, p88, „Der KE hat definierte Zeit-Attribute, die Aussagen zur Dauer der Fehlerbehebung machen“ (english) “The Known Error has time-atributes, which allow a statement about needed resolution time.” Within the ITIL objects of Problem and KnownError the resolution time is reflected in certain fields, see • [HP SM ITIL Procs] Incident Management form details, Affected Items Outage End, p88 • [HP SM ITIL Procs] Problem Management form after escalation to known error, Known Error Resolution Date, p138	These processes will make estimates of the time to restore service which will be included in the new service trouble report so that other processes can gain access to this information. [HP SM ITIL Procs]) SO 2.6.6 Determine expected resolution time, p76 (M) [Exp UC Assu] 3.1.6 L.6 Automatisierte Störungs-Behebung, p88 (A)
3	1.1.2.3.2 Diagnose Service Problem	The process is initiated by Track & Manage Service Problem. Actions associated with a service event may trigger identification of root cause in a resource event directly; the products allow this. However, the customer case defines this following ITIL processes, based on an Incident. • [HP SM ITIL Procs] section “Incident Investigation and Diagnosis (process SO 2.3)”, p67 The automation is realized in the customer case, using the “Fault Tree” (see [HP NGOSS BP] “Automation of Problem Management”) provided with HP OO: • [Exp UC SMF] 2.2.6.4 L.4 Automatic Event and Performance Diagnostic, p55f • [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p57f HP SM allows triggering other processes, when an Incident-Update happens. Hence the result can be provided to other processes. E.g. the Survey & Analyze Service Problem process (realized thru the event management): the status change of a (service-) incident may trigger the update of an event:	**Brief Description** Identify the root cause of the specific service problem Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67 See Extended Description. **Extended Description** The objective of the Diagnose Service Problem processes is to identify the root cause of the specific service problem. [HP CLIP] Customer Scenario Steps 8-11, p23f (M) [HP SM ITIL Procs] Incident Investigation and Diagnosis, process SO 2.3, p67f (M) [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p57f (A) These processes are invoked by the Track & Manage Service Problem processes. Note 2, see 1.1.2.3.4 Track & Manage Service Problem The responsibilities of these processes include, but are not limited to: Below tasks are all possible (AM) started from HP SM, according to [HP SM ITIL Procs], processes SO 2.3, specific step SO 2.3.3 Investigate and Diagnose, p69 (M) Automated using the “Fault Tree” with HP OO, see [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p57 (A) Manually from Incident GUI, [Exp TD SM] 4.6.1, “Principles” , U.11 User Starts Test or Diagnostic Manually (M), p86 (M) · Verifying whether the service configuration matches the appropriate product features; · Performing diagnostics against the specific services; · Running tests against the specific services; Example Test: [Exp TD OO T&D] 4.4.1.2.2 Diagnose configuration of VOIP

Level	eTOM process element	Alignment	Mapping
		• [Exp TD RTM] 3.15, Application Function "Update Alarm Message for Incident Update", p32	(UC RMA.T2), p63 (A) · Starting and stopping audits against specific services; and · Scheduling routine testing of the specific services. [Exp TD OO T&D] 5.2.4 Scheduler,p79, allows to schedule workflows. The customer case shows examples. (A) The Diagnose Service Problem processes will make the results of the root cause analysis available to other processes. The Diagnose Service Problem processes will update the open service trouble report, as required during the assessment, and when the root cause has been identified. When the process is complete the Diagnose Service Problem processes will notify the Track & Manage Service Problem processes. **[Exp UC SMF]** 2.2.6.5 L.5 Automatic Incident Diagnostic, Step 8, p57 (A)
	1.1.2.3.3 Correct & Resolve Service Problem	Service Problems are typically resolved by resolving a Resource Trouble. Any case the process can be automated, using the Fault Tree Automation (see [HP NGOSS BP] "Automation of Problem Management") provided with HP OO: • [Exp UC RMF] 2.2.5.6 L.6 Automatic Incident Resolution, p45 The automation may trigger a direct resolution or a Change. When triggered from the SMF, • [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution, p58 the resolution can be a direct call to RMF, given the resolution workflow is published call to SMF: • [Exp UC SMF] 2.2.4.12 SR.13 SM Requests Automatic Resolution, p48 Following ITIL the problem resolution may be realized as request for Change. • [HP SM ITIL Procs] section "Incident Resolution and Recovery (process SO 2.4)", p70 • [HP SM ITIL Procs] section "Incident Escalation (process SO 2.6)", p70 Workarounds can be applied at various stages within the *Incident* (see previous lines) or as *Problem* Resolution, e.g. : • [HP SM ITIL Procs], section "Problem Detection, Logging, and Categorization (process SO 4.1)", p103f	**Brief Description** Restore the service to a normal operational state as efficiently as possible Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 See Extended Description. **Extended Description** The objective of the Correct & Resolve Service Problem processes is to restore the service to a normal operational state as efficiently as possible. [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 (AM) Based on the nature of the service failure leading to the associated service alarm event notification, automatic restoration procedures might be triggered. Restauration may be triggered from SMF to RMF: [Exp UC SMF] 2.2.4.12 SR.13 SM Requests Automatic Resolution, p48 (A) Any case Resolution happens on RMF [Exp UC RMF] 2.2.6.6 L.6 Automatic Incident Resolution, p58f (A) Manual restoration activity is assigned to the Correct & Resolve Service Problem processes from the Track & Manage Service Problem processes. Note 2, see 1.1.2.3.4 Track & Manage Service Problem Depending on the nature of the specific service failure, these processes may possibly re-assign services or re-configure service parameters. [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70f (AM) SO 2.4.2 Change required to resolve incident?, p72 SO 2.4.3 Analyst entitled to implement resolution? , p72 SO 2.4.4 Implement resolution, p72 For large service failures requiring extensive re-assignment and/or re-configuration activity to restore normal operation, these processes will attempt to implement work-arounds to recover the specific service operation. In these circumstances, recovery of normal operation may require invocation of the Support Service Problem Management processes. [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70f SO 2.4.1 Review incident, p72 (M) They will also report successful restoration of normal service operation, restoration through temporary work-arounds or an unsuccessful attempt at service restoration to Track & Manage Service Problem through updates to the associated service trouble report. [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70f (M) SO 2.4.5 Errors occurred?, p72 SO 2.4.6 Escalation required?, p72 [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72f (M)
	1.1.2.3.4 Track & Manage Service Problem	In general the process is based on ITIL Incident, Problem and Change Management process. Each has own Assignment, Initial and Verification Tests. For simplification only references to Incident Management are provided:	**Brief Description** Ensure that testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open service trouble reports in jeopardy Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74

Level	eTOM process element	Alignment	Mapping
		Initial Testing is addressed in: • [HP SM ITIL Procs] section "Incident Investigation and Diagnosis (process SO 2.3)", p67 Assignment is addressed: • [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64 Generation of resource trouble reports is possible using the dependency analysis of the service hierarchy, provided by the uCMDB: • [Exp TD UCMDB] 4.9.1 TQL Queries for Resource Management, p31f • [Exp UG SM] 2.2.1.4 uCMDB-Query (RMF IMS), p13 i.e. the user can execute the dependency analysis, find the affected CIs, and create a new Resource Trouble Report (Incident) from there. This can be automated using the HP OO Fault Tree. Final testing is addressed • [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 OLA Management is addressed • [HP SM ITIL Procs] OLA and UC Monitoring (process SO 2.8) p79 Bigger Changes are tracked via Change Request: • [HP SM ITIL Procs]) Change Management process overview, p145, or • [Exp TD SM], section 2.1.3.3, Process Diagram for Change Management, p21 Incident tracking and lifecycle management is provided with • [Exp TD SM] Incident Management application, 1st paragraph, p54, In general and more concrete, with the processes: • [Exp TD SM] Monitor SLA (SO 2.7), p77 • [Exp TD SM] OLA and UC Monitoring (SO 2.8), p97 The customer case uses the Diagnostics and Resolution Automation, based on the "Fault Tree" concept (see [HP NGOSS BP] "Combining eTOM and ITIL"). This is described with the Use Cases: • [Exp UC SMF] sections • 2.2.6.5, L.5 Automatic Incident Diagnostics, p57 • 2.2.6.6, L.6 Automatic Incident Resolution, p58f • 2.2.6.7, L.7 Automatic Incident Documentation and Completion,	See Extended Description. **Extended Description** The purpose of the Track & Manage Service Problem processes is to ensure that testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open service trouble reports in jeopardy. See next explanations. Responsibilities of these processes include, but are not limited to: · Initiating first-in testing using automated remote testing capabilities; This is part of ITIL Incident Investigation and Diagnosis: [HP SM ITIL Procs], processes SO 2.3, specific step SO 2.3.3 Investigate and Diagnose, p69 (M) automated using the "Fault Tree" with HP OO, see [Exp UC RMF] 2.2.6.5 L.5 Automatic Incident Diagnostic (A), p44 Manually from Incident GUI, [Exp TD SM] 4.6.1, "Principles" , U.11 User Starts Test or Diagnostic Manually , p92 (M) · Adding additional information to an open service trouble report based on the first-in testing; [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, step 8, incident is updated, p57, (A) this will trigger [Exp TD OO FB], 3.4.2 FB documentation Detailed Description, p31, (A) · Scheduling, assigning and coordinating repair and restoration activities; [Exp UC SMF] 2.2.6.6, L.6 Automatic Incident Resolution, step 2, resolution via change management initiated (A) [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64 (M) or [Exp TD SM], section 2.1.3.3, Process Diagram for Change Management, p21 (M) · Generating the respective resource trouble report creation request(s) to Create Resource Trouble Report based on specific service trouble reports; Note 4, no customer requirement but possible, using dependency analysis of resources to services. See also Alignment column. [Exp TD UCMDB] 4.9.1 TQL Queries for Resource Management, p31f (AM) · Initiate any final testing to confirm clearance of the service problem; [Exp UC SMF] 2.2.6.6, L.6 Automatic Incident Resolution, step 6, verify solution , p59 (A) · Undertake necessary tracking of the execution progress; [Exp TD SM] Monitor SLA (SO 2.7), p77 (A) [Exp TD SM] OLA and UC Monitoring (SO 2.8), p97 (A) See also alignment about incident tracking. · Modifying information in an existing service trouble report based on assignments; [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 (M) · Modifying the service trouble report status; [Exp TD OO FB] 3.4 FB documentation (detailed description of incident updates) (A) · Canceling a service trouble report when the specific problem was related to a false service alarm event; and Fehlerbaum will not be able to diagnose the fault, and triggers manual processing. [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, Alternative Courses, Step 3, p58 (A) Manual processing will identify a false Incident, following the ITIL Incident Investigation and Diagnosis (process SO 2.3) workflows in [HP SM ITIL Procs]) (M): SO 2.3.3 Investigate and Diagnose, p69 SO 2.3.4 Incident reproduced?, p69 SO 2.5.5 Incident initiated by an event?, p74

Level	eTOM process element	Alignment	Mapping
		p60 More details of "Fault Tree" functionality are provided in • [Exp TD OO FB], chapter 3, application functions, p24f e.g. the result of the Fault Tree is documented using the Incident Journaling and appropriate changes of the Incident status: • [Exp TD OO FB], 3.4 FB documentation, Detailed Description, p31 Forwarding service problems to external "suppliers" is typical example in the factory concept (see [HP NGOSS BP], section "Factory Integration") meaning forwarding to resource managing factory: • [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident to RMF, p18f "	· Monitoring the jeopardy status of open service trouble reports, and escalating service trouble reports as necessary. [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) [Exp UC SMF] 2.2.3.8 V.10 Report Production Incident to BSS, p31 (A) Note that some specific resource components may be owned and managed by suppliers/partners. In these cases the Track & Manage Service Problem process is responsible for initiating requests, through S/P Problem Reporting & Management processes for restoration and recovery by the supplier/partner of the specific resource components. [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident to RMF (A) This is realized by the customers Factory Concept (see Alignment). These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time [HP SM ITIL Procs] OLA and UC Monitoring (process SO 2.8) p79 (A) and in the appropriate sequence. Either by defined resolution workflows in (A): [Exp UC SMF] 2.2.6.6, L.6 Automatic Incident Resolution, p58 (A) [Exp TD OO FB] 3.3 Execution of FB resolution, p28f (A), for more details Or via Change Management (M): [HP SM ITIL Procs] Coordinate Change Implementation (process ST 2.5), p171 (M) The Track & Manage Service Problem processes are responsible for engaging external suppliers/partners in correction and recovery activities when: · higher level expertise and/or higher level support is required to resolve the service problem, (which may be automatic in the case of highest priority service problems); [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) Automated "Escalation" to responsible resource management factory (service supplier) [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution, step 3, p59 (A) Higher level support can be workforce [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution, Alternative Course, step 7, p60 (A) · the specific service has been purchased from an external supplier (as in an interconnect service); or · the specific service is delivered by an external partner. [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident to RMF, step 1, p36 (A) This is realized by the customers Factory Concept (see Alignment). Where the engagement with an external supplier/partner is for purchased or delivered services, as the case may be, the tracking and management of the supplier/partner problem resolution activity is actually performed by the S/P Problem Reporting & Management processes, with the Track & Manage Service Problem processes relegated to an overall coordination role. The Track & Manage Service Problem processes will also inform the Close Service Problem processes by modifying the service trouble report status to cleared when the service problem has been resolved. Note 2, see 3.5, S/P Problem Reporting & Management (1.1.4.3) (SM Basis, This is realized by the customers Factory Concept (see Alignment): Supplier is a Resource Management Factory
	1.1.2.3.5 Report Service Problem	Main functionality of HP SM. Users have an overview to new or assigned incidents. The customer use case applies standard GUIs: • [Exp TD SM] 2.2 Supported Component Use Cases, use case U.5 User controls incidents, p29 • [Exp UG SM] 2.2.5 Receiving Incidents, p22 - shows an example of Incident overview.	**Brief Description** Monitor the status of service trouble reports, provide notifications of any changes and provide management reports Fully supported based on ITIL Incident Management in general. See Extended Description. **Extended Description** The objective of the Report Service Problem processes is to monitor the status of service trouble reports, provide notifications of any changes and provide management reports. See below for details.

Level	eTOM process element	Alignment	Mapping
		Integrations with other assurance applications are described in • [Exp TD SM] 4.4.3 Interfaces internal to assurance, p79 HP SM provides a specific reporting module. This is used in the customer case: • [Exp TD SM] 4.7 Reports, p94 Note, that the Incident management is also monitored by SQM to report and control efficiency and effectiveness of the Resource Trouble Management process. ITIL foresees different mechanisms to report processing of troubles. Creation of Incidents, relating them to Problems and Known Errors is already a sort of reporting. • [HP SM ITIL Procs] Incident Management application, 1st paragraph, p54, Further details of Incidents are stored with the Incident for reporting purpose: • [HP SM ITIL Procs] Incident Management form details, table about Incident Details, p89, e.g. "Incident Detail > Sub-area" mentions reporting explicitly, Journal and history of activities is provided with Incidents, Problems and Changes. Example for Incident history: • [Exp UG SM] Figure 22 historic activities tab, p21 Root cause analysis is defined with problem management, and Root Causes are stored as a result in a Known Error. • [HP SM ITIL Procs] Problem Investigation and Diagnosis (process SO 4.3), p109 • Known Error Logging and Categorization (process SO 4.4), p113	These processes are responsible for continuously monitoring the status of service trouble reports [Exp UG SM] 2.2.5 Receiving Incidents, p22 (A) and managing notifications to processes and other parties registered to receive notifications of any status changes, The update of a Service Problem status will be made available to process 1.1.2.3.7 Survey & Analyze Service Problem thru the systems interfaces: [Exp TD SM] 4.4.3.4 Interface Between HP Service Manager and HP Operations Manager (AM), processes of interaction are shown on p77, for example, Service Quality Management (A) Note 2, Service Quality Management is addressed in 3.2 Service Quality Management (1.1.2.4) (SM Basis, and Customer QoS/SLA Management processes. (A) Note 1 , customer SLA management is not in scope not in scope of assessment, but can be supported by HP Unified SLA Manager, Notification lists are managed and maintained by the Support Service Problem Management processes. Note 1 , OS&R process not in scope of assessment, but supported by HP SM These processes record, analyze and assess the service trouble report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Service Problem Management process. These specialized summaries could be specific reports required by specific audiences. [Exp TD SM] 4.7 Reports, out of the box reports (p89) (A) can be extended. These processes will make the necessary reports about the problem that occurred, the root cause and the activities carried out for restoration. Applying ITIL in general, is the basis for reporting (see also Alignment) See also example for Incidents: [HP SM ITIL Procs] 7 Incident Management Form Details, p86. Journaling is configured for all workflows: [Exp UG SM], Figure 22 historic activities tab, p21 (A) All fields and journals can be used in reports.
	1.1.2.3.6 Close Service Trouble Report	Incident closure is defined in • [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 It can be automated using HP OO as for the customer case • [Exp UC SMF] 2.2.6.7 L.7 Automatic Incident Documentation and Completion , p60 – referring to • [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution , p58 – will update the status to "cleared" That will be communicated to the requestor, either RMF or BSS: • [Exp UC SMF] 2.2.3.7 V.9 Report Usage Incident Update to BSS, p30 • [Exp UC SMF] 2.2.4.2 SR.2 SM Reports Usage Incident Update to RMF, p30 And finally the requestor will send the	**Brief Description** Close a service trouble report when the service problem has been resolved Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 See Extended Description. **Extended Description** The objective of the Close Service Trouble Report processes is to close a service trouble report when the service problem has been resolved. [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 (M) [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution – will update the status to "cleared" (A) [Exp UC SMF] 2.2.3.2 V.2 BSS Reports Usage Incident Update – will close the incident (A) (see also alignment description for complete options) These processes monitor the status of all open service trouble reports, and recognize that a service trouble report is ready to be closed when the status is changed to cleared. Standard GUI Functionality, addresses uses cases [Exp TD SM] 4.6.1, Principle - about use cases for user, to be covered by standard GUI (M) [Exp UG SM] 2.2.5 Receiving Incidents - provides example of Incident overview (A). User can build the list

Level	eTOM process element	Alignment	Mapping
		update to "close" • [Exp UC SMF] 2.2.3.2 V.2 BSS Reports Usage Incident Update, p23 • [Exp UC SMF] 2.2.4.7 SR.8 RMF Reports Usage Incident Update to SM, p42	
	1.1.2.3.7 Survey & Analyze Service Problem	The solution to this process is delivered as part of the Fault Management (see also [HP NGOSS BP] section "Event and Service Health Management"). In particular HP OMi detects and indicates service impacting events. Service alarm events are created as a result of Service Impact Analysis, based on Network Events. • [Exp UC RMF] 2.2.5.4 L.4 Automatic Event and Performance Diagnostic, see diagram Figure 2 20 – Use Case L.4 Sequence Diagram, p43 In the customer case Service alarm events may also be created on SMF level, but triggered by an RMF Incident: • [Exp UC SMF] 2.2.4.6 SR.7 RMF Reports Usage Incident to SM with 2.2.4.6.2 Alternative Courses, p41f For the mapping here and for editorial simplification, only the first case is used. Within operations and looking at resource facing services, the service impact, starting from resource events, is standard feature of the OMi product and mentioned with the technical design • [Exp TD RTM] 3.19 Application Function "Service Impact Analysis", p36 Services are represented as CIs; the dependency of services to resources is shown in CI Tree Views, see also: • [HP OMi Concepts] section "The Health Perspective", p60ff Identification of root cause event is the main task of event correlation, in particular the topology based correlation within OMi. As resource and service alarms are managed with the same tool, root cause can directly identify resource trouble causing the service problem. See • [HP OMi Concepts] sections "Topology-Based Event Correlation", in chapters 2 and 5, p24ff and p97ff. To manage resource alarm event record jeopardy conditions, a self monitoring is realized: • [Exp TD RTM] 2.2 Supported Component Use Cases, E.1 and E.2 in table on p16 and • [Exp TD RTM] 5.1 Self Monitoring, p82	**Brief Description** Monitor service alarm event notifications and manage service alarm event records in real-time Fully supported based on Event Management: [HP OMi Concepts] section "The Health Perspective", p60ff See Extended Description. **Extended Description** The objective of the Survey & Analyze Service Problem processes is to monitor service alarm event notifications and manage service alarm event records in real-time. Standard GUI of OMi: [HP OMi Concepts] Event Browser, p53 (A) (see also [HP NGOSS BP] section "Event and Service Health Management") Responsibilities of the Survey & Analyze Service Problem processes include, but are not limited to: · Detecting and collecting service alarm event notifications; · Initiating and managing service alarm event records; [Exp UC RMF] 2.2.6.1, Use Case N.1 Process Network Event , see Figure 2 25 on p51 for step Impact Analysis (A) [Exp TD RTM] 3.19 Application Function "Service Impact Analysis" (A) · Performing service alarm event notification localization analysis; [HP OMi Concepts] Section "CI Resolution" p50f, (A) · Correlating and filtering service alarm event records; [HP OMi Concepts] sections "Topology-Based Event Correlation, p24ff (A) · Reporting service alarm event record status changes to other processes; [HP OMi Concepts] Section "Life-Cycle State Synchronization", p79 (A) [HP CLIP] CLIP Customer Scenario, Story—Variations, Step 5, p24, Steps 6,12, 15, p25 (A) · Managing service alarm event record jeopardy conditions. Event record jeopardy conditions can be applications malfunctions. This is monitored: [Exp TD RTM] 5.1 Self Monitoring, p82 (AM) Service alarm event notification analysis encompasses the identification of the service alarm event in terms of reporting entity and nature of the service alarm event. [HP OMU Concepts] section "How Messages Are Processed by Policies", p316ff, (A) HP OMi Concepts] Events and Configuration Items It will then analyze the service alarm events based on a number of criteria and then suppress redundant, transient or implied service alarm events by means of filtering and correlation. It includes the notification of new service alarm event records, or status changes of previously reported service alarm event records, as well as abatement messages when service alarm event records have been cleared. [HP OMi Concepts] sections "Topology-Based Event Correlation, p24ff (A) The analysis will correlate service alarm event notifications to planned outage notifications to remove false service alarm event notifications arising as a result of the planned outage activity. [Exp UC RMF] 2.2.5.9, L.9 Maintenance Management, Step 4 (A) Planed outages are typically managed on resources: [HP OMU Concepts] section "About Scheduled Outages", p416ff Impact Analysis to Services depend on this: suppressed resource event will

Level	eTOM process element	Alignment	Mapping
		Specific case of resource alarm event record jeopardy conditions is the time-dependent correlation of events. If expected events do not arrive within a certain time window, or it is not cleared within a certain time window, appropriate event rules can be customized using the HP OM correlation composer. • [HP OMU Compo] within chapter "Case 6: Transient Correlation", Table 11, p184, see Functionality description of Window Period button: "If no clear alarm is received in this window period, the failure alarm is forwarded."	result in no service event. These processes may determine that a service alarm event notification may represent a customer impacting condition. In these circumstances this process is responsible for indicating a potential customer problem to the Problem Handling processes. As a part of this indication this process is responsible for identifying the impacted deployed product instances associated with the service instances presenting alarm event notifications and passing this information to the Problem Handling processes. Customer impact is detected on RMF layer, and forwarded to BSS on SMF layer: [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, p44 (A) [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p57 (A) Note, for this customer case : for mass market a trouble on a CFS is only escalated to BSS (customer care), if it is a "VIP", or in case many customers (e.g. whole region etc.) are impacted. Service alarm event record correlation and filtering encompasses the correlation of redundant, transient or implied service alarm event notifications with a specific "root cause" service alarm event notification and associated service alarm event record. [Exp TD RTM] sections 3.11 Application Function "Reduction of Alarm Messages via Root Cause Analysis and Correlation" and 3.12 Application Function "Show Root Cause Alarm Message" (A) The Survey & Analyze Service Problem processes might trigger a well-defined action based on specific service alarm event notification information [HP OMi Concepts] Event-Related Actions, p87ff (A) [Exp TD RTM] sections 3.13 Application Function "Processing of Alarm Message (without Incident)" , and 3.14 Application Function "Create Incident for Alarm Message" (AM) as well as the non-arrival of service alarm event notification information after a specific time interval has elapsed. These processes are also responsible for monitoring and triggering the appropriate action when a service alarm event record is not cleared within a pre-defined period of time. Can be configured using HP OM Composer (see Alignment).(A)

3.2 Service Quality Management (1.1.2.4) (SM Basis, SQM)

Table 3.2 Process Mappings – Service Quality Management (1.1.2.4)

Level	eTOM process element	Alignment	Mapping
1	1.1.2 Service Management & Operations		See detailed comments against Level 3 processes later
2	1.1.2.4 Service Quality Management		See detailed comments against Level 3 processes later
3	1.1.2.4.1 Monitor Service Quality	Primarily supported by the HP SQM tool. HP SQM is based on Business Availability Center (BAC), and documented in [HP SQM UG]. HP SQM comprises • collection and calculation of service quality data and KPI [HP SQM UG] 1.4.3. Metrics Collection, p12 • analysis of service quality KPI based on business rules, with detection of degradation or OLA/SLA violation [HP SQM UG] 1.4.4. Service Monitoring, p12, [HP SQM UG] 1.4.5 Service Level Monitoring, p12 and • initiation of alerts to trigger service degradation reports in form of Incidents or Events (within this mappings, only Incidents are considered) [HP SQM UG] 6.1, Alerts for Service Monitoring, p41 [HP SQM UG] 7.2, Define Alerts in SLM, p47 About KPI collection from probes: KPIs can also be collected from probes. The probes themselves are out of scope for SQM, SQM just knows KPIs to be collected (most important definition for SQM). These KPIs are fed the adapters, collecting from the probes. These Adapters are realized using the "SiteScope" technology (see [HP SIS UG]).	**Brief Description** Monitor received service quality information and undertake first-in detection Fully supported based on HP SQM Solution: [HP SQM UG] sections 1.4.3. Metrics Collection, p12 1.4.4. Service Monitoring, p12 1.4.5 Service Level Monitoring, p12 See Extended Description for details below. **Extended Description** The objective of the Monitor Service Quality processes is to monitor received service quality information and undertake first-in detection. [HP SQM UG] 1.4.4. Service Monitoring, p12 The responsibilities of the processes include, but are not limited to: · Undertake the role of first in detection and collection by monitoring and logging the received specific service performance quality data; [HP SQM UG] - section 1.4.3, Metrics Collection, p12, (A) - chapter 4, Service Adapter, p28f, about adapters to collect data (A) · Comparing the received specific service performance quality data to performance quality standards set for each specific service (available from the Service Inventory); Performance quality standards sets are defined as KPIs per Service [HP SQM UG] 5.1, Key performance indicators, p30f, about generic and technical KPIs (A) [HP SQM UG] 5.1.3, Mapping technical KPIs to TMF categories, p31 (A) [HP SQM UG] Appendices B and C, starting p50, about KPIs of predefined specific Services (Mobile and Digital) Precondition is the populate of HP SQM, which specifies hierarchy of service components as a of set of related configuration items, which have to be instantiated: [HP SQM UG] chapter 3, Service Instantiation, p23, (M) Within the customer case, this is automated thru the uCMDB and its access to the service inventory: [Exp TD UCMDB] 3.1, Application Function "Topology Request", p10f, automates the service population into UCMDB (A) Note: the UCMDB provides access to the Inventories from Assurance: [ASSM Intro] within " Implementation Model...", about products used in figure 6 on p7, see numbered list below "2. NetCracker Integrations: federating NC Inventories into HP uCMDB, based on SID" · Assessing and recording received specific service performance quality data which is within tolerance limits for performance quality standards, and for which continuous monitoring and measuring of performance is required; [HP SQM UG] 5.2 Business rules, and Assignment to KPIs, p35 (A) · Recording the results of the continuous monitoring for reporting through the Report Service Quality Performance processes; [HP SQM UG] 7.3 Viewing SLA Reports, p47 (A) [HP BAC SLM UG] Service Management Reports, Overview, p276 (A)

Level	eTOM process element	Alignment	Mapping
			· Detect performance quality threshold violations which represent specific service failures due to abnormal performance, [HP SQM UG] 6.1, Alerts for Service Monitoring, p41 (A) [HP SQM UG] 7.2, Define Alerts in SLM, p47 · Pass information about specific service failures due to performance quality threshold violations to Service Problem Management to manage any necessary restoration activity as determined by that process; Alerts (see before) can trigger Events on Services or Incidents, hence triggering Service Problem Management: [Exp AG SQM] 2.1.7 Event- and incident management, p31 (A) · Pass information about potential specific customer SLA/QoS performance degradations arising from specific service quality performance degradations (using knowledge about service to purchased product offering linkages) to Problem Handling [HP SQM UG] 7.2, Define Alerts in SLM, p47 to manage any necessary restoration activity as determined by that process; Note 2, see 1.1.2.4.6 Track & Manage Service Quality Performance Resolution · Detect performance degradation for specific services which provide early warning of potential issues; [HP SQM UG] 5.3.3.1 Defining objectives for monitor CIs, p37f, in particular steps 9 and 10, p40 allows several thresholds to trigger alerts also for early warnings. · Forward service performance degradation notifications to other Service Quality Management processes, which manage activities to restore normal specific service performance quality; and Note 4, this can be configured, but is handled thru Incident management, as described with previous quotes concerning alerts. · Log specific service performance quality degradation and violation details within the repository in the Manage Service Inventory processes to ensure historical records are available to support the needs of other processes. Note, the Manage Service Inventory process is not in scope of the assessment, but also the logging of SQM outputs is not seen as part of Service Inventory from a product implementation point of view; actually HP SQM reports may be seen like a logical extension to the repository of the Manage Service Inventory process: SQM reports to log specific service performance quality degradations are created and can be configured as needed: [HP SQM UG] 7.3 Viewing SLA Reports. p47 (A) [HP BAC SLM UG] Service Level Management Reports – Overview, p276f (A) The processes also perform automated service testing using simulated calls simulating standard user behavior, Possible using various probes (A): [HP SQM UG] Appendix B, KPIs for mobile services domain, p50, using Avenage probes, [Exp UG SQM] 2.1.2 NGSSM SQM VoIP Consumer Service Active Probing View, p11f, using Sigos Site probes (See also explanation about probes in Alignment) and collect data related to service usage which may supply information to other processes (i.e. marketing, service cost, etc) and identify abnormal usage by the service users (i.e. bad passwords, terminal configurations, etc). Note 4, this can be configured, using appropriate “service adapters”: [HP SQM UG] chapter 4 service adapters in general
3	1.1.2.4.2 Analyze Service Quality	See also alignment description for 1.1.2.4.1 Monitor Service Quality. The “Monitoring” of HP SQM comprises after collection of KPIs also the analysis of the collected data a) by calculating resulting Service	**Brief Description** Analyze and evaluate the service quality performance of specific services The Monitoring process provided by the SQM solution comprises the analysis of service quality by calculating secondary KPIs about Service Quality, using collected KPIs from the monitoring process. This is realized using Business Rules:

Level	eTOM process element	Alignment	Mapping
		Quality KPIs, using business rules [HP SQM UG] 5.2 Business Rules, p35 b) taking dependencies of the service to the underlying resources and their status (based on events) into account [HP OMi Concepts] section "HI-based Key Performance Indicators", p143 c) allowing manual root cause analysis by providing service hierarchies and their status visualization to the operator [HP SQM UG] 6.2 User Interfaces, example hierarchy on p42 b) final detection service quality degradations using service level objectives [HP SQM UG] 5.3 Objectives Once HP SQM recognizes a Service Quality Degradation or SLA Violation, it creates an Incident. The Incident creation will cause further (automated) diagnostics using the "Fault Tree" (see [HP NGOSS BP] "Combining eTOM and ITIL"). This is described with a customer use case in [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, p44. Depending on the fault signature, the "fault tree" may be able to detect the root cause. If not, the alternative course ([Exp UC RMF], p45, step 3) happens, and sets the Incident to status "manual". The operator sees status of automated diagnostics in: [Exp UG SM] figure 36 historic activities of an event based incident, p32, and 2.2.6 View about Incidents with running Test & Diagnosis workflows, p23-24	[HP SQM UG] 5.2 Business Rules, p35 See extended description for Details. **Extended Description** The purpose of the Analyze Service Quality processes is to analyze the information received from the Monitor Service Quality process to evaluate the service quality performance of specific services. This is achieved using the SQM tool, in combination with further diagnostics using the automated trouble management, based on an Incident. Details provided with the following text. Using the data from Monitor Service Quality, these processes will correlate events in order to filter repetitive alarms and failure events that do not affect the quality delivered, and they will calculate key service quality indicators, Events will be preprocessed using the resource trouble management and service problem management. HP OMi realizes the service impact analysis, by transforming event information into "health indicators", which will be propagated and mapped to availability and performance KPIs: [HP OMi Concepts] (A) - section "The Health Perspective", p127 - section "Health Indicators" (HI), p133 - section "HI-based Key Performance Indicators", p143 (such as Mean Time Between Failures and other chronic problems). Note 4, MTBF can be calculated based on Events or within Incident management. The responsibilities of the processes include, but are not limited to: · Undertaking analysis as required on specific service performance information received from the Monitor Service Quality processes; Analysis is provided by calculating Service Quality KPIs based on collected KPIs using Business rules: [HP SQM UG] 5.2 Business Rules, p35 (A) · Initiating, modifying and cancelling continuous performance data collection schedules for specific services required to analyze specific service performance. Collection of data is realized using "Service Adapters", which are based on "SiteScope Monitors": [HP SQM UG] chapter 4, Service Adapters, p28 (A) Any Service Adapter has its own configuration settings. However, as example there are some common settings, described in [HP SIS UG] chapter 14, Working with Monitors, Common Monitor Settings, p510, about settings of collection frequency etc. These schedules are established through requests sent to the Enable Service Quality Management processes. Note 1 Enable Service Quality Management is out of scope for this assessment, however configuration is part of the SQM tool. · Determining the root causes of specific service performance degradations and violations, Root Cause of specific service performance degradations and violations is a) Supported by SQM, expanding the service hierarchy down to resources with their status (M) [HP BAC GUI] Dashboard User Interface, stating p72, e.g. Main Option "Expand to problem", p78 Services trees are predefined for specific services: [HP SQM UG] Appendix B, views for mobile service domain or configured for the Customer project: [Exp UG SQM], 2.1.1 NGSSM Top View b) using automated diagnostics, once an Incident is created as consequence of the violation (A) see [HP NGOSS BP] "Combining eTOM and ITIL". [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Steps 1-5, p44 (A) It may result in standard manual Incident handling, as for 1.1.2.3.2 Diagnose Service Problem (M). See [HP NGOSS BP] Combining eTOM

Level	eTOM process element	Alignment	Mapping
			and ITIL and also specific note in Alignment column. · Recording the results of the analysis and intermediate updates in the Service Inventory for historical analysis and for use as required by other processes; and The results of automated analysis are recorded with the Incident: [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Step 8, p44 (A) Service Status is automatically presented in the SQM dashboard view: [HP SQM UG] chapter 5, key performance indicators, see figures on p32, (A) showing real time status updates of KPIs to the operator Note: service quality status is recorded in SQM, not in Service Inventory · Undertaking specific detailed analysis (if the original requested came from Customer QoS/SLA Management processes) to discover the root cause of customer QoS performance degradations that may be arising due to interactions between service instances, without any specific service instance having an unacceptable performance in its own right. SLA's with customers may be monitored by HP SQM: [HP SQM UG] chapter 7, monitoring service level agreements, p44 (A) Hence analysis applies as described above (A/M) Note, Note 1 the Customer QoS/SLA Management process is not in scope of this assessment, but in the customer case, such SLA violation analysis requests are sent to domains of SM&O and RM&O using Incidents (e.g. raised by CRM of BSS), like any other Incident from BSS . The automatic diagnostics of the solution for Incidents may detect the relationship of the concerned CFS with an RFS, monitored by HP SQM.: [Exp UC SMF] 2.2.6.1, L.1 Management of BSS Incidents, steps 1-2 p54 (A), BSS incidents can mean SLA violation, recognized by CRM. That will trigger automated diagnostics: [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, Steps 1-5, p57 (A) calls the "Fehlerbaum-Analysis": [Exp TD OO FB] 4.2.5.4.2 HP uCMDB Operations , p58, "Get Related CIs" finds the related CIs i.e. RFS below an CFS to analyze root cause etc
c3	1.1.2.4.4 Report Service Quality Performance	This process element is about monitoring the service performance degradation reports. There are two complementary approaches to support this process: 1. Monitor service performance degradation reports in form of ITIL Incidents. I.e. the standard ITIL Incidents apply. They can be automated as shown in the customer example and similar as for service problem management or resource trouble management. The main reference is to the process of SLA Monitoring: [HP SM ITIL Procs] SLA Monitoring (SO 2.7), p77, as Incident SLA monitoring assures the progress of Incidents. But note, that Incident SLA Monitoring is different from SQM related SLAs or OLAs. 2. Management reports about service quality performance itself. This is provided using HP SQM directly. [HP SQM UG] 7.3 viewing SLA Reports, p48	**Brief Description** Monitor the status of service performance degradation reports, provide notifications of any changes and provide management reports Managing service quality performance reports (Incidents), is supported based on ITIL Incident Management, putting SLA to control management of the Incident itself: [HP SM ITIL Procs] SLA Monitoring (SO 2.7), p77 Managing and reporting service quality performance, specific reports of HP SQM are available: [HP SQM UG] 7.3 viewing SLA Reports, p47 See Extended Description. **Extended Description** The objective of the Report Service Quality Performance processes is to monitor the status of service performance degradation reports, provide notifications of any changes and provide management reports. see details below These processes are responsible for continuously monitoring the status of service performance degradation reports and managing notifications to other processes in the SM&O and other process layers, the status of service performance degradation reports is monitored (like other incidents) thru [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) [HP SM ITIL Procs] SLA Monitoring (SO 2.7), p77 (A) [HP SM ITIL Procs] Update incident form, p85, shows screenshot of incident form with SLA details, and [HP SM ITIL Procs] Incident Management form details, p90, shows details about SLA status and alert stats details and to other parties registered to receive notifications of any status changes. Notification lists are managed and maintained by the Enable Service Quality Management processes.

Level	eTOM process element	Alignment	Mapping
		Note: the Incident Management of HP Service Manager is extended with specific category names for Telco use. Thus Incidents may identify themselves as service performance degradation report. See also screenshots of configuration of Incident categories in [HP SM IM Ext], Chapter 2, Telco Category Definition, screenshots with some values, pages 7-8	E.g. SQM listens and records to Incidents in HP Service Manager. [Exp UG SQM] 2.2 Open/ Close Incidents in HP Service Manager, p27 (A) Other processes listen to Incident changes in HP Service Manager either by direct integrations (e.g. Event Mgmt) or thru the Adapter (note: this is generic and not SQM specific): [Exp UC RMF] 2.2.3.7 SR.8 RMK Reports Usage Incident Update to SM, p29f (A) These processes record, analyze and assess the service performance degradation report status changes to provide management reports Realized using ITIL Incident management as in 1.1.2.3.5 Report Service Problem Reporting of Incidents also mentioned in: [Exp TD SM] 4.7 Reports, out of the box reports (p88), which can be extended for specific service performance degradation report incidents. (A) and any specialized summaries of the efficiency and effectiveness of the overall Service Quality Management process. These specialized summaries could be specific reports required by specific audiences. Specific reports about service quality management are available: [HP SQM UG] 7.3 viewing SLA Reports, p47 [HP BAC SLM UG], part II, chapter 10, p275f, reports are explained in various subsections [Exp UG SQM] 2.3.3 SLA Reporting p28-p30 These processes also report any identified constraints that can affect service quality standards to other processes. These constraints may include specific resource failures, capacity shortages due to unexpected demand peaks, etc. Note 4, possible to be configured,
3	1.1.2.4.5 Create Service Performance Degradation Report	HP SQM creates ITIL Incidents, as consequence of an alert, after a service performance degradation or an SLA/OLA violation: • [Exp AG SQM] 2.1.7 Event- and incident management, p31 Afterwards, the standard ITIL processing happens • [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f with automation as described for the customer examples. See also 1.1.2.4.6 Track & Manage Service Quality Performance Resolution. Note, thanks to the use of ITIL Incidents for resource, service, customer level as well as for degradation reports, information classification of different "reports" (i.e. incidents) is possible just by setting appropriate fields of the Incident (e.g. Category).	**Brief Description** Create a new service performance degradation report. Service performance degradation report are created from SQM as Incidents or Events: [Exp AG SQM] 2.1.7 Event- and incident management, p31 Further support based on ITIL Incident Management, here triggered by the Monitor Service Quality process: [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64f See Extended Description. **Extended Description** The objective of the Create Service Performance Degradation Report process is to create a new service performance degradation report, modify existing service performance degradation reports, and request cancellation of existing service performance degradation reports. Details provided with the following text. A new service performance degradation report may be created as a result of specific service performance notifications undertaken by the Monitor Service Performance processes, Note 2; see 1.1.2.4.1 Monitor Service Quality, an Incident is created or at the request of analysis undertaken by other CRM, SM&O or RM&O processes which detect that some form of deterioration or failure has occurred requires an assessment of the specific service performance. The typical use case is the Incident Creation request received from BSS/CRM, forwarded to Service Management Factory, or escalated from Resource Management Factory: [Exp UC SMF] 2.2.3.1 V.1 BSS Reports Usage Incident, p21f (A) [Exp UC SMF] 2.2.4.6 SR.7 RMF Reports Usage Incident to SM, p41f (A) [Exp UG SM] 2.2.5 Receiving Incidents, p22 (A) Note: for all received incidents the automatic diagnostics may not find the cause, hence manual treatment of the Incident is required: [Exp UC SMF] 2.2.3.1 V.1 BSS Reports Usage Incident, step 10. Alternative course: Manual processing, p23 (M) [Exp UC SMF] 2.2.4.6.2 Alternative Courses, step 1. The escalation is

Level	eTOM process element	Alignment	Mapping
			triggered by manual interactions, p41 (M) [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67f (M) If the service performance degradation report is created as a result of a notification or request from processes other than Monitor Service Performance processes, the Create Service Performance Degradation Report processes are responsible for converting the received information into a form suitable for the Service Performance Management processes, and for requesting additional information if required. Thanks to the use of ITIL processes, the differentiation of various Incidents is realized by use of appropriate categories. There is a predefined set of Telco Categories: [HP SM IM Ext] Chapter 2, Telco Category Definition, p6f, this can be extended as needed, e.g. for Service Performance Degradation Reports.
3	1.1.2.4.6 Track & Manage Service Quality Performance Resolution	This process element is realized based on ITIL Incident Management. Hence it is similar to 1.1.2.3.4 Track & Manage Service Problem and 1.1.2.3.3 Correct & Resolve Service Problem, both within 3.1Service Problem Management (1.1.2.3) (SM Basis, . Note: If not explicitly described differently, the process does not differ from Incident management as for any service problem. Automation can be achieved using the Fault Tree concept (see [HP NGOSS BP] "Automation of Problem Management"), based on Use Cases in [Exp UC SMF] sections • 2.2.6.5, L.5 Automatic Incident Diagnostics, p57 • 2.2.6.6, L.6 Automatic Incident Resolution, p58f • 2.2.6.7, L.7 Automatic Incident Documentation and Completion, p60 Generation of resource trouble reports is possible using the dependency analysis of the service hierarchy, provided by the uCMDB: • [Exp TD UCMDB] 4.9.1 TQL Queries for Resource Management, p31f • [Exp UG SM] 2.2.1.4 uCMDB-Query (RMF IMS), p13 i.e. the user can execute the dependency analysis, find the affected CIs, and create a new Resource Trouble Report (Incident) from there. This can be automated using the HP OO Fault Tree. 1. Forwarding service problems to external "suppliers" is typical example in the factory concept (see [HP NGOSS BP] ´"Factory Integration"), meaning forwarding to resource managing factory: • [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident to RMF,	**Brief Description** Efficiently assign, coordinate and track specific service performance analysis, restoration and improvement activities, and escalate any open service performance degradation reports in jeopardy. Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 See Extended Description. **Extended Description** The objective of the Track & Manage Service Quality Performance Resolution processes is to efficiently assign, coordinate and track specific service performance analysis, restoration and improvement activities, and escalate any open service performance degradation reports in jeopardy. See next explanations. Responsibilities of these processes include, but are not limited to: · Adding additional information to an open service performance degradation report based on the first-in and on-going analysis; [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67, allows to add additional information (M) [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, step 8, incident is updated, p57, (A) this will trigger [Exp TD OO FB], 3.4.2 FB documentation Detailed Description, p31, (A) · Scheduling, assigning and coordinating analysis and specific service performance restoration activities and/or repair activities delegated to other processes; [Exp UC SMF] 2.2.6.6, L.6 Automatic Incident Resolution, step 2, resolution via change management initiated (A) [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64 (M) or [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), SO 2.4.3 Analyst entitled, p72 (M) [Exp UG SM] 2.4 Handling of the Maintenance Workflow, see figure 37 to initiate change, p32 (M) See also [Exp TD SM], section 2.1.3.3, Process Diagram for Change Management, p21 (M) · Generating the respective resource trouble report creation request(s) to Create Resource Trouble Report based on specific service performance degradation reports where analysis the root cause is related to resources; Note 4, no customer requirement but possible, using dependency analysis of resources to services. See also Alignment column. [Exp TD UCMDB] 4.9.1 TQL Queries for Resource Management, p31f (AM) · Modifying information in an existing service performance degradation report based on assignments; Either this happens, when reviewing the incident, if it is not solved: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 (M) Or it is a planned assignment to different operators, so the Incident review

Level	eTOM process element	Alignment	Mapping
		p18f See also section 3.5 S/P Problem Reporting & Management (1.1.4.3) (SM Basis,	is started again: [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3) (M) · Modifying the service performance degradation report status; [Exp TD OO FB] 3.4 FB documentation (detailed description of incident updates) (A) See also for manual updates: [Exp UG SM] 2.2.2 Update an Incident, p17 (M) · Canceling a service performance degradation report when the specific request was related to a false service failure event; and Fehlerbaum will not be able to diagnose the fault, and triggers manual processing. [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, Alternative Courses, Step 3, p58 (AM) Manual processing will identify a false Incident, following the ITIL Incident Investigation and Diagnosis (process SO 2.3) workflows in [HP SM ITIL Procs]) (M): SO 2.3.3 Investigate and Diagnose, p69 SO 2.3.4 Incident reproduced?, p69 SO 2.5.5 Incident initiated by an event?, p74 · Monitoring the jeopardy status of open service performance degradation reports, and escalating service performance degradation reports as necessary. [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) [Exp UC SMF] 2.2.3.8 V.10 Report Production Incident to BSS, p31 (A) Note that some specific resource components may be owned and managed by suppliers/partners. In these cases the Track & Manage Service Quality Performance process is responsible for initiating requests, through S/P Performance Management for resolution by the supplier/partner of the specific resource components. [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident to RMF (A) This is realized by the customers Factory Concept (see Alignment). These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time [HP SM ITIL Procs] OLA and UC Monitoring (process SO 2.8) p79 and in the appropriate sequence. Either by defined resolution workflows in (A): [Exp UC SMF] 2.2.6.6, L.6 Automatic Incident Resolution, p58 (A) [Exp TD OO FB] 3.3 Execution of FB resolution, p28f, for more details Or via Change Management (M): [HP SM ITIL Procs] Coordinate Change Implementation (process ST 2.5), p171 (M) The Track & Manage Service Quality Performance Resolution processes will also inform the Close Service Performance Degradation Report processes by modifying the service performance degradation report status to cleared when the specific service performance quality issues have been resolved. [HP SM ITIL Procs] Incident Management Form Details, status field, p86 The field will be set appropriately by process: [HP SM ITIL Procs] Incident Closure (process SO 2.5), SO 2.5.2 Verify and confirm resolution p74 (M) No difference for the Incident to other processes closing Incidents; [Exp UG SM] 2.2.2 Update an Incident, p17, status to be set to “Close”, however, category with area and sub area will indicate it was CFS or RFS and performance or QoS : [HP SM IM Ext] 2.3 List all sub-areas, screenshot on p9 However, the color of the KPIs of SQM GUI will turn from red to green again, and show their status when clicking at them [HP SQM UG] 5.1.2 Technical KPIs, screenshots p32, status “OK” [HP SQM UG] 6.1.1 Configuring alarms in Dashboard, see screenshot p41. The example shows the option to send email; for the customer case Incidents are created.

Level	eTOM process element	Alignment	Mapping
3	1.1.2.4.7 Close Service Performance Degradation Report	Incident closure is defined in • [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 It can be automated using HP OO as for the customer case • [Exp UC SMF] 2.2.6.7 L.7 Automatic Incident Documentation and Completion , p60	**Brief Description** Close a service performance degradation report when the service performance has been resolved Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 See Extended Description. **Extended Description** The objective of the Close Service Performance Degradation Report processes is to close a service performance degradation report when the service performance has been resolved. [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 (M) [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution , p58 – will update the status to “cleared”, finally close [Exp UC SMF] 2.2.6.7 L.7 Automatic Incident Documentation Completion , p60 (A) These processes monitor the status of all open service performance degradation reports, and recognize that a service performance degradation report is ready to be closed when the status is changed to cleared. Standard GUI Functionality, addresses uses cases [Exp TD SM] 4.6.1, Principle - about use cases for user, p86, to be covered by standard GUI. This will provide overview to Incidents filtered or sorted by status, category etc. (M) [Exp UG SM] 2.2.5 Receiving Incidents, p22 - provides example of Incident overview. User can build the list as needed.

3.3 Resource Trouble Management (1.1.3.3) (SM Basis, OMi)

Table 3.3 Process Mappings - Resource Trouble Management (1.1.3.3)

Level	eTOM process element	Alignment	Mapping
1	1.1.3 Resource Management & Operations		See detailed comments against Level 3 processes later
2	1.1.3.3 Resource Trouble Management		See detailed comments against Level 3 processes later
3	1.1.3.3.1 Survey & Analyze Resource Trouble	The solution to this process is delivered with the Fault Management (see also [HP NGOSS BP] section "Event and Service Health Management"). It responses to customer use cases described in [Exp UC RMF], section 2.2.6.1 N.1 Process Network Event [Exp UC RMF] 2.2.5.4 L.4 Automatic Event and Performance Diagnostic Note, service impact analysis is defined by use cases, starting from an Incident [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic But this UC is primarily regarding specific customer facing services / concerned VoIP subscribers. Within operations and looking at resource facing services, the service impact, starting from resource events, is standard feature of the OMi product and mentioned with the technical design [Exp TD RTM] 3.19 Application Function "Service Impact Analysis" Services are represented as CIs; the dependency of services to resources is shown in CI Tree Views, see also: [HP OMi Concepts] section "The Health Perspective", p60ff Features of products to realize above use case with concrete event policies are described in detail in [HP OMU Concepts], chapter "4 Implementing Message Policies", p299ff, and [HP OMi Concepts] Section "4 Event Management", p43ff Identification of root cause event is the main task of event correlation, in particular the topology based correlation within OMi. See [HP OMi Concepts] sections "Topology-Based Event Correlation", in chapters 2 and 5, p24ff and p97ff. To manage resource alarm event record jeopardy conditions, a self monitoring is realized: [Exp TD RTM] 2.2 Supported	**Brief Description** Monitor resource alarm event notifications and manage resource alarm event records in real-time Fully supported based on Event Management: [HP OMi Concepts] section "The Event Perspective", p53ff See Extended Description. **Extended Description** The objective of the Survey & Analyze Resource Trouble processes is to monitor resource alarm event notifications and manage resource alarm event records in real-time. [Exp UC RMF] 2.2.6.1, Use Case N.1 Process Network Event, p50f (A) See also Standard GUI of OMi: [HP OMi Concepts] Event Browser, p53 Responsibilities of the Survey & Analyze Resource Trouble processes include, but are not limited to: · Detecting and collecting resource alarm event notifications; [Exp UC RMF] 2.2.6.1, Use Case N.1 Process Network Event , Step 1, p51 (A) · Initiating and managing resource alarm event records; [Exp UC RMF] 2.2.6.1, Use Case N.1 Process Network Event , Step 2, p51 (AM) · Performing resource alarm event notification localization analysis; [HP OMi Concepts] Section "CI Resolution" p50f, (A) · Correlating and filtering resource alarm event records; [HP OMi Concepts] sections "Topology-Based Event Correlation, p24ff (A) [Exp UC RMF] 2.2.6.1, Use Case N.1 Process Network Event , Step 4, p51 (A) · Reporting resource alarm event record status changes to other processes; and [HP OMi Concepts] Section "Life-Cycle State Synchronization", p79 (A) [HP OMU Concepts] About Actions, p50 (A) [HP CLIP] CLIP Customer Scenario, Story—Variations, Step 5, p24, Steps 6,12, 15, p25 (A) · Managing resource alarm event record jeopardy conditions. [Exp TD RTM] 5.1 Self Monitoring – in general, p82 (AM) Resource alarm event notification analysis encompasses the identification of the resource alarm event in terms of reporting entity and nature of the resource alarm event. [HP OMU Concepts] section "How Messages Are Processed by Policies", p316ff, (A) It will then analyze the resource alarm events based on a number of criteria and then suppress redundant, transient or implied resource alarm events by means of filtering and correlation. It includes the notification of new resource alarm event records, or status changes of previously reported resource alarm event records, as well as abatement messages when resource alarm event records have been cleared.

Level	eTOM process element	Alignment	Mapping
		Component Use Cases, E.1 and E.2 in table on p16 and [Exp TD RTM] 5.1 Self Monitoring, p82 Specific case of resource alarm event record jeopardy conditions is the time-dependent correlation of events. If expected events do not arrive within a certain time window, or it is not cleared within a certain time window, appropriate event rules can be customized using the HP OM correlation composer. [HP OMU Compo] within chapter "Case 6: Transient Correlation", Table 11, p182, see Functionality description of Window Period button	[HP OMU Concepts] section "Filtering Messages with Conditions", p322ff, (A) [HP OMi Concepts] sections "Topology-Based Event Correlation, p24ff (A) The analysis will correlate resource alarm event notifications to planned outage notifications to remove false resource alarm event notifications arising as a result of the planned outage activity. [Exp UC RMF] 2.2.5.9, L.9 Maintenance Management, Step 4, p48 (A) [HP OMU Concepts] section "About Scheduled Outages", p416ff These processes may determine that a resource alarm event notification may represent a service impacting condition. In these circumstances this process is responsible for indicating a potential service problem to the Service Problem Management processes. As a part of this indication this process is responsible for identifying the impacted service instances associated with the resource instances presenting alarm event notifications and passing this information to the Service Problem Management processes. [Exp TD RTM] 3.19 Application Function "Service Impact Analysis", p36 (A) Resource alarm event record correlation and filtering encompasses the correlation of redundant, transient or implied resource alarm event notifications with a specific "root cause" resource alarm event notification and associated resource alarm event record. [Exp TD RTM] sections 3.11 Application Function "Reduction of Alarm Messages via Root Cause Analysis and Correlation", p28 (A) and 3.12 Application Function "Show Root Cause Alarm Message", p29 (A) The Survey & Analyze Resource Trouble processes might trigger a well-defined action based on specific resource alarm event notification information [HP OMi Concepts] Event-Related Actions, p87ff (A) [HP OMU Concepts] About Actions, p50 (A) [Exp TD RTM] sections 3.13 Application Function "Processing of Alarm Message (without Incident)", p30 (AM), and 3.14 Application Function "Create Incident for Alarm Message", p31 (AM) as well as the non-arrival of resource alarm event notification information after a specific time interval has elapsed. These processes are also responsible for monitoring and triggering the appropriate action when a resource alarm event record is not cleared within a pre-defined period of time. Note 4, Can be configured using HP OM Composer, see Alignment.(A)
3	1.1.3.3.2 Localize Resource Trouble	The root cause of a resource problem may already been identified within the *Survey & Analyze Resource Trouble*, using event correlation, as already indicated above: [HP OMi Concepts] Topology based event correlation, p97ff More specific: [HP OMi Concepts] Symptoms and Causes, p104 [HP OMi Concepts] Cross-Domain Event-Correlation Rules, p111 The further processing within *Track & Manage Resource Trouble* will create and incident, what triggers the ITIL process. [HP SM ITIL Procs]) section "Incident Investigation and Diagnosis (process SO 2.3)", p67 The automation is realized in the customer case, using the "Fault Tree" (see [HP NGOSS BP] "Automation of Problem Management") provided with HP OO:	**Brief Description** Identify the root cause of the specific resource trouble Supported based on [HP OMi Concepts] Topology based event correlation, p97ff And ITIL Incident Management: [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67 See Extended Description. **Extended Description** The objective of the Localize Resource Trouble processes is to identify the root cause of the specific resource trouble. [HP CLIP] Customer Scenario Steps 2, 4, 8-11, p22f (AM) [HP OMi Concepts] Topology based event correlation, p97ff (A) [HP SM ITIL Procs] Incident Investigation and Diagnosis, process SO 2.3, p67f (M) [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Step 8, p44 (A) These processes are invoked by the Track & Manage Resource Trouble processes. Note 2, see 1.1.3.3.4 Track & Manage Resource Trouble. The responsibilities of these processes include, but are not limited to: Below tasks are all possible started from HP SM, according to [HP SM ITIL Procs], processes SO 2.3, specific step SO 2.3.3 Investigate and Diagnose, p69 (M)

Level	eTOM process element	Alignment	Mapping
		[Exp UC RMF] 2.2.5.4 L.4 Automatic Event and Performance Diagnostic [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic	automated using the "Fault Tree" with HP OO, see [Exp UC RMF] 2.2.6.5 L.5 Automatic Incident Diagnostic (A), p44 Manually from Incident GUI, [Exp TD SM] 4.6.1, "Principles" , U.11 User Starts Test or Diagnostic Manually , p92 (M) · Verifying whether the resource configuration matches the appropriate service features; · Performing diagnostics against the specific resources;· · Running tests against the specific resources; Example Tests: [Exp UC RMF] 2.2.6.3 N.3 / N.5 Send Test Command to Probe / to NE , p53 (AM) · Starting and stopping audits against specific resources; and · Scheduling routine testing of the specific resources. [Exp TD OO T&D] 5.2.4 Scheduler, p79 – HP OO allows to schedule workflows. The customer case shows examples. (A) The Localize Resource Trouble processes will make the results of the root cause analysis available to other processes. The Localize Resource Trouble processes will update the open resource trouble report, as required during the assessment, and when the root cause has been identified. When the process is complete the Localize Resource Trouble processes will notify the Track & Manage Resource Trouble processes. [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Step 8, p44 (A)
3	1.1.3.3.3 Correct & Resolve Resource Trouble	The process is supported automated, using the Fault Tree Automation (see also [HP NGOSS BP] section "Automation of Problem Management") provided with HP OO. [Exp UC RMF] L.6 Automatic Incident Resolution The automation may trigger a direct resolution or a Change. Following ITIL the problem resolution may be realized as request for Change. [HP SM ITIL Procs] section "Incident Resolution and Recovery (process SO 2.4)", p70 [HP SM ITIL Procs] section "Incident Escalation (process SO 2.6)", p70 Resolution workflows are mentioned in the customer case as service to the Service Management Factory: [Exp UC RMF] 2.2.3.12 SR.13 SM Requests Automatic Resolution, p35f Manual resolution support is provided a) with access to resource configuration in resource inventory, which is visible to the operator manually (opening NetCracker Inventory) or for assurance applications thru the UCMDB: [Exp UC RMF] , Use Cases CD1/2, read topology, or read detailed information (from inventory into uCMDB), p19 b) the Known Error descriptions in HP SM	**Brief Description** Restore or replace resources that have failed as efficiently as possible Fully supported based on ITIL Incident Management [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 and potentially ITIL Change Management: [HP SM ITIL Procs] 12 Change Management Workflows, p159f See Extended Description. **Extended Description** The objective of the Correct & Resolve Resource Trouble processes is to restore or replace resources that have failed as efficiently as possible. [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 (AM) Based on the nature of the resource failure leading to the associated resource alarm event notification, automatic restoration procedures might be triggered. Kown Error may be detected: [Exp UC RMF] L.5 Automatic Incident Resolution, step 7 (A), p44 And resolution is executed: [Exp UC RMF] L.6 Automatic Incident Resolution (A), p45 Manual restoration activity is assigned to the Correct & Resolve Resource Trouble processes from the Track & Manage Resource Trouble processes. [HP SM ITIL Procs] SO 2.4.2 Change required to resolve incident? p72 (M) [Exp TD SM] 4.6.1, "Principles" ,U.9 User processes Change, p92 (M) Depending on the nature of the specific resource failure, these processes may possibly repair or replace the failed unit or specific resource. A change will be initiated by Incident- or Problem management [HP SM ITIL Procs] section "Change Management process overview", p145 (M) See alignment for options, hpw decisions how manual resolution support is supported, with various means. These processes are also responsible for isolating a unit with a fault and managing the redundant resource units (e.g. hot standby). No specific definition in Customer Case, but generically supported within ITIL processes, e.g. [HP SM ITIL Procs] SO 2.4.1 Review incident, SO 2.4.4 Implement resolution, p72 (M); User can trigger standby swap as resolution workflow (possible, but not specified)

Level	eTOM process element	Alignment	Mapping
		[HP SM ITIL Procs] Known Error Investigation (process SO 4.5), p116 c) a request to workforce is sent out [Exp UC Assu] WF.1 Assurance sendet Auftrag an WFM bzw. NIMBUS, p100 Note: the system "Nimbus" is used to trigger workforce activities. [Exp UG SM] 2.2.1.6 Forwarding Incidents, p15 Workarounds can be applied at various stages within the *Incident* (see previous lines) or as *Problem* Resolution, e.g. : [HP SM ITIL Procs], section "Problem Detection, Logging, and Categorization (process SO 4.1)", p103f	Support for isolating units (e.g. shelf) is also supported based on inventory content, which is accessible for automation by assurance applications thru the uCMDB, as described in alignment for resolution support. For large resource failures requiring extensive repair and/or replacement activity to restore normal operation, these processes will attempt to implement work-arounds to recover the specific resource operation. Workarounds can be applied at various stages within the Incident or Change Resolution: [HP SM ITIL Procs], section "Problem Detection, Logging, and Categorization (process SO 4.1), p103f See also Service Manager coverage of the ISO 20000 Code of Practice, 8.1.2 Workarounds, referring into certain Problem Mgmt.workflows, p233. In these circumstances, recover of normal operation may require invocation of the Support Resource Trouble Management processes. They will also report successful restoration of normal operation, restoration through temporary work-arounds or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report. Note 1 , further support in OS&R process 1.1.3.1.3 Support Resource Trouble Management
3	1.1.3.3.4 Track & Manage Resource Trouble	In general the process is based on ITIL Incident, Problem and Change Management process. Each has own Assignment, Initial and Verification Tests. For simplification only references to Incident Management are provided: Initial Testing is addressed in: [HP SM ITIL Procs] section "Incident Investigation and Diagnosis (process SO 2.3)", p67 Assignment is addressed: [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64 Final testing is addressed [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 OLA Management is addressed [HP SM ITIL Procs] OLA and UC Monitoring (process SO 2.8) p79 Bigger Changes are tracked via Change Request: [HP SM ITIL Procs]) Change Management process overview, p145, or [Exp TD SM], section 2.1.3.3, Process Diagram for Change Management, p21 Incident tracking and lifecycle management is provided with [Exp TD SM] Incident Management application, 1st paragraph, p54, In general and more concrete, with the processes: [Exp TD SM] Monitor SLA (SO 2.7), p77 [Exp TD SM] OLA and UC Monitoring (SO 2.8), p97 The customer case uses the Diagnostics and Resolution Automation, based on the "Fault Tree" concept (see [HP NGOSS BP]	**Brief Description** Ensure testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open resource trouble reports in jeopardy Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 See Extended Description. **Extended Description** The objective of the Track & Manage Resource Trouble is to ensure testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open resource trouble reports in jeopardy. See next explanations. Responsibilities of these processes include, but are not limited to: · Initiating first-in testing using automated remote testing capabilities; Note 2, see 1.1.3.3.2 Localize Resource Trouble · Adding additional information to an open resource trouble report based on the first-in testing; [Exp UC RMF], 2.2.5.5 L.5 Automatic Incident Diagnostic, step 8, incident is updated, p44 (A) · Scheduling, assigning and coordinating repair and restoration activities; [Exp UC RMF], 2.2.5.6, L.6 Automatic Incident Resolution, step 2, resolution via change management initiated (A) [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64 (M) or [Exp TD SM], section 2.1.3.3, Process Diagram for Change Management, p21 (M) · Initiate any final testing to confirm clearance of the service problem; [Exp UC RMF], 2.2.5.6, L.6 Automatic Incident Resolution, step 3, verify solution, p44 (A) · Undertake necessary tracking of the execution progress; [Exp TD SM] Monitor SLA (SO 2.7), p77 (A) [Exp TD SM] OLA and UC Monitoring (SO 2.8), p97 (A) See also alignment about incident tracking. · Modifying information in an existing resource trouble report based on assignments; [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 (M) · Modifying the resource trouble report status; [Exp TD OO FB], 3.4 FB documentation, p31 (detailed description of incident

Level	eTOM process element	Alignment	Mapping
		"Automation of Problem Management"). This is described with the Use Cases: [Exp UC RMF], sections 2.2.5.5, L.5 Automatic Incident Diagnostics 2.2.5.6, L.6 Automatic Incident Resolution 2.2.5.7, L.7 Automatic Incident Documentation and Completion More details of "Fault Tree" functionality are provided in [Exp TD OO FB], chapter 3, application functions Forwarding to external "suppliers" can mean: escalation to service management or order to workforce. [Exp UC RMF], section, 2.2.2, Use case overview: p19: WF.1 Assurance sends order to WFM p15: SR.7: RMF Reports Usage Incident to SM [Exp TD SM], 3.8 Application Service ReportIncidentOut Incident closure is defined [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 And automated in [Exp UC RMF], 2.2.5.6, L.6 Automatic Incident Resolution	updates) (A) · Canceling a resource trouble report when the specific trouble was related to a false alarm event; and Fehlerbaum will not be able to diagnose the fault, and triggers manual processing. [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Alternative Courses, Step 3, p45 (AM) Manual processing will identify a false Incident, following the ITIL Incident Investigation and Diagnosis (process SO 2.3) workflows in [HP SM ITIL Procs]) (M): SO 2.3.3 Investigate and Diagnose, p69 (M) SO 2.3.4 Incident reproduced?, p69 (M) SO 2.5.5 Incident initiated by an event?, p74 (M) · Monitoring the jeopardy status of open resource trouble reports, and escalating resource trouble reports as necessary. [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time [HP SM ITIL Procs] OLA and UC Monitoring (process SO 2.8) p79 (A) and in the appropriate sequence. Either by defined resolution workflows in (A): [Exp UC RMF] 2.2.5.6, L.6 Automatic Incident Resolution, p45f (A) [Exp TD OO FB] 3.3 Execution of FB resolution, p28f, for more details Or via Change Management (M): [HP SM ITIL Procs] Coordinate Change Implementation (process ST 2.5), p171 (M) The Track & Manage Resource Trouble processes are responsible for engaging external suppliers in correction and recovery activities when higher level expertise and/or higher level support is required to resolve the resource trouble. [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) [Exp UC RMF] 2.2.3.6 SR.7 RMF Reports Usage Incident to SM, p28 (MA) Or request to workforce is sent out: [Exp UG SM] 2.2.1.6 Forwarding Incidents, p15 (AM) [Exp UG SM] 2.2.1.7 Related Records ("NGSSM Incident Partner"), p16 (A) This engagement can be linked to the priority of the resource trouble report, and could occur automatically for highest priority resource trouble reports. [HP SM ITIL Procs] SO 2.1.15 Select Category and Priority, p63 (M) [HP SM ITIL Procs] Problem Prioritization and Planning (process SO 4.2), p107 (M) Note 4, Execution of resolution workflows can read priority parameters from Incident (A). The Track & Manage Resource Trouble processes will also inform the Close Resource Trouble processes by modifying the resource trouble report status to cleared when the resource trouble has been resolved. [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 (M) [Exp UC RMF], 2.2.5.6, L.6 Automatic Incident Resolution, step 4, update incident will turn status to resolved, p46 (A)
3	1.1.3.3.5 Report Resource Trouble	Main functionality of HP SM. Users have an overview to new or assigned incidents. The customer use case applies standard GUIs: [Exp TD SM] 2.2 Supported Component Use Cases, use case U.5 User controls incidents, p29 [Exp UG SM] 2.2.5 Receiving Incidents - shows an example of Incident overview. Integrations with other assurance	**Brief Description** Monitor the status of resource trouble reports, provide notifications of any changes and provide management reports Fully supported based on ITIL Incident Management in general. See Extended Description. **Extended Description** The objective of the Report Resource Trouble processes is to monitor the status of resource trouble reports, provide notifications of any changes and provide management reports. See below for details.

Level	eTOM process element	Alignment	Mapping
		applications are described in [Exp TD SM] 4.4.3 Interfaces internal to assurance Note: performance management creates events, when thresholds are breached. Trouble reports/Incidents are associated with Events (in HP OM), not with Performance Management itself. HP SM provides a specific reporting module. This is used in the customer case: [Exp TD SM] 4.7 Reports Note, that the Incident management is also monitored by SQM to report and control efficiency and effectiveness of the Resource Trouble Management process. ITIL foresees different mechanisms to report processing of troubles. Creation of Incidents, relating them to Problems and Known Errors is already a sort of reporting. Root cause analysis is defined with problem management, and Root Causes are stored as a result in a Known Error. [HP SM ITIL Procs] Problem Investigation and Diagnosis (process SO 4.3), p109 Known Error Logging and Categorization (process SO 4.4), p113 Journal and history of activities is provided with Incidents, Problems and Changes. Example for Incident history: [Exp UG SM] Figure 1 historic activities of an event based incident, p32	These processes are responsible for continuously monitoring the status of resource trouble reports [Exp UG SM] 2.2.5 Receiving Incidents, p22 (A) and managing notifications to processes and other parties registered to receive notifications of any status changes, for example, Resource Performance Management and Service Quality Management. [Exp TD SM] 4.4.3.4 Interface Between HP Service Manager and HP Operations Manager, p76f (AM) [Exp TD SM] 4.4.3.3 Integration with HP Service Quality Manager, p76 (A) Notification lists are managed and maintained by the Support Resource Trouble Management processes. Note 1 , OS&R process not in scope not in scope of assessment, but supported by HP SM These processes record, analyze and assess the resource trouble report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Trouble Management process. These specialized summaries could be specific reports required by specific audiences. [Exp TD SM] 4.7 Reports, p88 (A) These processes will make the necessary reports about the resource trouble that occurred, the root cause and the activities carried out for restoration. [HP SM ITIL Procs] applying ITIL in general (see Alignment) and journaling configured for all workflows, example for Incident: [Exp UG SM] Figure 36 historic activities of an event based incident, p32 (A)
3	1.1.3.3.6 Close Resource Trouble Report	Incident closure is defined in [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 It can be automated based on policies about clear events: [HP CLIP] CLIP Customer Scenario, Step 15, p25 Screenshots for update and close an incident are provided: [Exp UG SM] 2.2.2 Update an Incident, p17 [Exp UG SM] 2.2.3 Resolve an Incident, p21 [Exp UG SM] 2.2.4 Close an Incident, p22 Closure codes and status for Incidents are provided in [Exp TD SM] 4.1.2 Incident Parameter, p58 & p59 In the customer case the close is part of use cases: [Exp UC RMF] 2.2.5.7 L.7 Automatic Incident Documentation and Completion, p47 - referring to [Exp UC RMF] 2.2.5.6, L.6	**Brief Description** This process monitors the status of all open resource trouble reports, and recognizes that a resource trouble report is ready to be closed when the status is changed to cleared. Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 See Extended Description. **Extended Description** The objective of the Close Resource Trouble Report processes is to close a resource trouble report when the resource trouble has been resolved. [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 (M) [HP CLIP] CLIP Customer Scenario, Step 12, p24 (M) - and subsequently [HP CLIP] CLIP Customer Scenario, Step 15, p25 (A) [Exp UC RMF] 2.2.5.6, L.6 Automatic Incident Resolution, step4, p45 – will update the status to “cleared” (A) [Exp UC RMF] 2.2.3.3 SR.4 SM Reports Production Incident to RMK , p23f (AM) – will close the incident (see also alignment description) These processes monitor the status of all open resource trouble reports, and recognize that a resource trouble report is ready to be closed when the status is changed to cleared. Standard GUI Functionality, addresses uses cases [Exp TD SM] 4.6.1, Principle, p86 (A) - about use cases for user, to be covered by standard GUI [Exp UG SM] 2.2.5 Receiving Incidents, p22 (A) - provides example of

Level	eTOM process element	Alignment	Mapping
		Automatic Incident Resolution, p45f – will update the status to "cleared" Synchronization with clear events (see above) for update to "close" I case the Incident was initiated by a customer, the use cases allows the communication about incident-updates to close it: [Exp UC RMF] 2.2.3.7 SR.8 RMF Reports Usage Incident Update to SM, p29, reports incident results with "cleared" status back to service mgmt. [Exp UC RMF] 2.2.3.4 SR.5 SM Reports Production Incident Update to RMF, p25f, updates the Incident to "closed"	Incident overview.
3	1.1.3.3.7 Create Resource Trouble Report	Resource Trouble Reports are typically created as Incidents associated with the concerned Resources (see 1.1.3.3.1 Survey & Analyze Resource Trouble). Following ITIL, the processes , realized in HP SM (see [HP SM ITIL Procs]) are: Incident Logging (process SO 2.1), p61 Incident Assignment (process SO 2.2), p64 Assignment of concerned Resource is a field in the incident: [Exp UG SM] 2.2.1.2 CFS-ID in Incidents Figure 7 Affected Items area on incident form (RMF IMS), p11 In the customer case, an Incident can be created in Resource Management Factory from Service Management Factory: [Exp UC RMF] 2.2.3.1 SR.1 SM Report Usage Incident, p22f The user sees it in the HPSM GUI: [Exp UG SM] 2.2.1 Open an Incident, p8f [Exp UG SM] 2.2.5 Receiving Incidents, p22 In case the Incident is created on a service (see 3.1 Service Problem Management (1.1.2.3) (SM Basis,), the Fault Tree may detect a problem on an underlying resources. This happens using the service hierarchy and performing dependency analysis within UCMDB: [Exp TD UCMDB] See 4.9.1 TQL Queries for 4.9.1.2 Resource Management, p31f [Exp UG SM] 2.2.1.4 uCMDB-Query (RMF IMS), p13 According to ITIL, Incidents can be related to other Incidents (relationship	**Brief Description** Create a new resource trouble report Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64f See Extended Description. **Extended Description** The objective of the Create Resource Trouble Report process is to create a new resource trouble report. Details provided with the following text. A new resource trouble report may be created as a result of resource alarm event notification analysis, and subsequent creation of new resource alarm event records, undertaken by the Survey & Analyze Resource Trouble processes, Note 2, see 1.1.3.3.1 Survey & Analyze Resource Trouble, Incident is created or at the request of analysis undertaken by other processes in the RM&O, SM&O (in particular a Service Trouble Report can generate one or more Resource Trouble Reports) or S/PRM layers which detect that some form of failure has occurred for which resource restoration activity is required to restore normal operation. The typical use case is the Incident Creation request received from Service Management Factory, forwarded to Resource Management Factory: [Exp UC RMF] 2.2.3.1 SR.1 SM Report Usage Incident, p22f, (A) [Exp UG SM] 2.2.5 Receiving Incidents, p22 (A) See also Alignment column about dependency analysis of resources to services and Incident relationships. If the resource trouble report is created as a result of a notification or request from processes other than the Survey & Analyze Resource Trouble processes, the Create Resource Trouble Report processes are responsible for converting the received information into a form suitable for the Resource Trouble Management processes, Reporting of Incidents between factories is enabled by the Adapters. [Exp TD I/F Assu] 3.2.3.1 Incident Creation from External Consumer, p28 (A) and for requesting additional information if required. Updates sent back to requestor, may request additional information, received with update to resource trouble: [Exp UC RMF] 2.2.3.7 SR.8 RMF Reports Usage Incident Update to SM, p29f (AM) [Exp UC RMF] 2.2.3.2 SR.2 SM Reports Usage Incident Update to RMF, p23f (AM) These processes will make estimates of the time to restore resource which will be included in the new resource trouble report so that other processes can gain access to this information. [HP SM ITIL Procs]) SO 2.6.6 Determine expected resolution time, p76 (M)

Level	eTOM process element	Alignment	Mapping
		master/slave) or to existing problems. Such problems may then be related with several incidents. [Exp UG SM] 2.2.7 Master/Slave, p24 [HP SM ITIL Procs] SO 2.3.9 Relate incident to problem/known error, p69 In ITIL the determination of resolution time is part of the Incident Escalation Process: [HP SM ITIL Procs] SO 2.6.6 Determine expected resolution time, p76 This is automated, as far as the resolution is known, within the UC [Exp UC RMF], 2.2.5.6, L.6 Automatic Incident Resolution [Exp UC Assu] 3.1.6 L.6 Automatisierte Störungs-Behebung, p88 *(sorry, only the german description mentions the time:)* Within the ITIL objects of Problem and KnownError the resolution time is reflected in certain fields, see [HP SM ITIL Procs] Incident Management form details, Affected Items Outage End, p88 [HP SM ITIL Procs] Problem Management form after escalation to known error, Known Error Resolution Date, p138	[Exp UC Assu] 3.1.6 L.6 Automatisierte Störungs-Behebung, p88 (A)

3.4 Resource Performance Management (1.1.3.4) (SM Basis, PI)

Table 3.4 Process Mappings – Resource Performance Management (1.1.3.4)

Level	eTOM process element	Alignment	Mapping
1	1.1.3 Resource Management & Operations		See detailed comments against Level 3 processes later
2	1.1.3.4 Resource Performance Management		See detailed comments against Level 3 processes later
3	1.1.3.4.1 Monitor Resource Performance	Resource Performance Data is collected by HP Performance Insight. It collects, monitors and reports performance data from an EMS or directly from the network. A general introduction of HP PI is provided in • [Exp TD RPM] 2.1 Logical Architecture, p13/14 HP PI as such is a platform. Specific "report packs" have to customized to have a ready to use application. There are many off-the-shelf report packs available. Note: a report pack contains not only the "reports", actually it means the full chain of necessary customizations to a) collect b) process and c) report performance data. For the customer case a new report pack has been configured for IMS. The customization of it is described in • [Exp AG RPM] 2 NGSSM Implementation, p9f, as administrators need to know about it Full design of the solutions is described in the technical design • [Exp TD RPM] in general. Concrete references are given with the mapping.	**Brief Description** Monitor received resource performance information and undertake first-in detection. Fully supported based on HP Performance Insight Solution. [Exp TD RPM] 2.1 Logical Architecture, p13/14 about functionality of HP PI (AM) [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52, about the use case of HP PI in the customer case (A) [Exp UG RPM] 2.1 The IMS RMK Performance Reports, first paragraph, p10 (AM) See Extended Description for details below. **Extended Description** The objective of the Monitor Resource Performance processes is to monitor received resource performance information and undertake first-in detection. [Exp UG RPM] 2.1 The IMS RMK Performance Reports, first and second paragraph, p10 (A) The responsibilities of the processes include, but are not limited to: · Undertaking the role of first in detection by monitoring the received specific resource performance data; Customer used IMS specific monitoring: [Exp UG RPM] 2.1 The IMS RMK Performance Reports, third paragraph, p10 (A) [Exp UG RPM] 3 Collected counters and KPIs, p28f · Comparing the received specific resource performance data to performance standards set for each specific resource (available from the Resource Inventory); Inventory is read thru UCMDB: [Exp AG RPM] 2.2.1, UCMDB interface and HP PI node management, p13 (A) · Assessing and recording received specific resource performance data which is within tolerance limits for performance standards, and for which continuous monitoring and measuring of specific resource performance is required; Done thru threshold policies: [Exp UG RPM] 2.4 Thresholds, p24f (A) · Recording the results of the continuous monitoring for reporting through the Report Resource Performance processes; Recording is the basis for Reporting. All data for reports is stored. [Exp UG RPM] 2.1 The IMS RMK Performance Reports, p10f (A) About the data flow within HP PI: [Exp AG RPM] 2.1.1.2 Data flow, p11, which is fully automated, once configured (A) · Detecting performance threshold violations which represent specific resource failures due to abnormal performance; [Exp UG RPM] 2.4 Thresholds, p24f (A) · Passing information about resource failures due to performance threshold violations to Resource Trouble Management to manage any necessary restoration activity as determined by that process; An event is created by HP PI: [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52/53, step 3 (A)

Level	eTOM process element	Alignment	Mapping
			That event will turn into an Incident as configured once by the Administrator of the Reports and follow processes as for Resource Trouble Management. · Passing information about potential specific service performance degradations arising from specific resource degradations to Service Quality Management to manage any necessary restoration activity as determined by that process; Primary source of SQM is RPM: [Exp TD RPM] 4.7.3.3 KPIs for SQM, p50 (A) · Detecting performance degradation for specific resources which provide early warning of potential issues; Thru appropriate threshold definitions. [Exp UG RPM] 2.4 Thresholds, p24f (A) · Forwarding resource performance degradation notifications to other Resource Performance Management processes, which manage activities to restore normal specific resource performance; and Note 4, no requirement, but can be done thru SNMP like to HP OM: [Exp TD RPM] 4.4.8 Alarm forwarding, p33, what allows full automation, starting from an alarm in HP Operations Manager (A) Of course any further activity is possible manually, based on the threshold event or automated incident or just on the reports (M) · Logging specific resource performance degradation and violation details within the repository in the Manage Resource Inventory processes to ensure historical records are available to support the needs of other processes. Any collected performance data is logged and stored, to be provided in reports. (A) [Exp TD RPM] 2.1.1 Performance Insight, p14, using a Central-Site Database Server Resource performance degradation and violations are created as events, which may trigger incident-creations. Events and Incidents are logged in HP OMi, and received from HP PI thru SNMP Traps: [Exp AG RPM] 2.2.2 SNMP traps, p18 (A) All logged information is stored within the applications supporting this RPM process (HP PI, HP OMi, HP UCMDB). They can be seen as logical extensions to the repository in the Manage Resource Inventory processes. They are not stored within the physical Resource Inventory. The information is accessible using Node information from the Inventory (accessed thru uCMDB), which are used to process performance data. [Exp AG RPM] 2.2.1, UCMDB interface and HP PI node management, p13 This would also allow a context sensitive launch of reports in HP PI, starting from an Inventory object..
3	1.1.3.4.2 Analyze Resource Performance	See also alignment description for 1.1.3.4.1 Monitor Resource Performance. The "Monitoring" of HP PI comprises after *collection* of KPIs also the *processing* (including calculations) of the collected data. • [Exp TD RPM] 3.1 Receive/Determine Platform KPI, p16 3.1.2 Detailed Description p17 The data collection and processing is handled in so called "data-pipes". This section list all collected data for the customer case monitoring an IMS platform: • [Exp TD RPM], 4.7.2 Data pipes, p39f Finally the analysis results in threshold violation detections, which will cause a resource event, which may trigger an Incident creation (see 1.1.3.4.5 Create Resource Performance Degradation	**Brief Description** Analyze and evaluate the performance of specific resources Fully supported based on HP Performance Insight Solution. [Exp TD RPM] 2.1 Logical Architecture, p13, paragraph under figure: "The collected data is then processed…" (A) [Exp TD RPM] 2.1.1 Performance Insight, p14, functionality provided for automated and manual analysis (AM) See Extended Description for details below. **Extended Description** The objective of the Analyze Resource Performance processes is to analyze the information received from the Monitor Resource Performance process to evaluate the performance of a specific resource. This is achieved using HP PI by processing performance data (A), in combination with further diagnostics, manually using reports (M) and using the automated or manual trouble management, based on an Incident (AM). Details provided with the following text. The responsibilities of the processes include, but are not limited to: · Undertaking analysis as required on specific resource performance information received from the Monitor Resource Performance processes; Analysis is provided by pre-processing of collected data: [Exp TD RPM] 3.1 Receive/Determine Platform KPI, 3.1.2 Detailed Description

Level	eTOM process element	Alignment	Mapping
		Report). The Incident can be handled automatically as described with a customer use case in [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, p44. Depending on the fault signature, the "fault tree" may be able to detect the root cause. If not, the alternative course ([Exp UC RMF], p45, step 3) happens, and sets the Incident to status "manual". The operator sees status of automated diagnostics in: [Exp UG SM] figure 36 historic activities of an event based incident, p32, and 2.2.6 View about Incidents with running Test & Diagnosis workflows, p23-24	p16/17, step 5 (A) 3.5 Enrich KPI (Calculation) , 3.5.2 Detailed Description p20, step 5 (A) · Initiating, modifying and cancelling continuous performance data collection schedules for specific resources required to analyze specific resource performance. These schedules are established through requests sent to the Enable Resource Data Collection & Distribution processes; [Exp TD RPM] 4.7.2 Data pipes, p39, 2nd paragraph, about PI trend timers (A) · Determining the root causes of specific resource performance degradations and violations; Realized using automated or manual analysis, based on an Incident, as for RTM: [Exp UC RMF] 2.2.5.4 L.4 Automatic Event and Performance Diagnostic, 42f [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic (A), p44 It may result in standard manual Incident handling, as for 1.1.3.3.2 Localize Resource Trouble (M). See [HP NGOSS BP] "Combining eTOM and ITIL" and also specific note in Alignment column.· Recording the results of the analysis and intermediate updates in the Resource Inventory for historical analysis and for use as required by other processes; and Note 4, no requirement yet, performance data is not stored in Inventory. It stays in the RPM tool. However, other processes can import the data (e.g. Network Traffic Analysis building block in [HP NGOSS BP] , HP NGOSS Functional Blueprint) [Exp UC RMF] 2.2.7.1 RMA.O3 Supply Measurement Point Data for OS&R, p54 · Undertaking specific detailed analysis (if the original requested came from Service Quality Management processes) to discover the root cause of service performance degradations that may be arising due to interactions between resource instances, without any specific resource instance having an unacceptable performance in its own right. Note 4, no concrete requirement, but would be realized same way as determine the root cause: using automated or manual analysis, based on an Incident, as for RTM: [Exp UC RMF] L.4 Automatic Event and Performance Diagnostic, 42f [Exp UC RMF] 2.2.6.5 L.5 Automatic Incident Diagnostic (A), p44
3	1.1.3.4.4 Report Resource Performance	This process element is about monitoring the service performance degradation reports. There are two complementary approaches to support this process: 1. Monitor *resource performance degradation reports* in form of ITIL Incidents. I.e. the standard ITIL Incidents apply. They can be automated as shown in the customer example and similar as for service problem management or resource trouble management. The main reference is to the process of SLA Monitoring: [HP SM ITIL Procs] SLA Monitoring (SO 2.7), p77, as Incident SLA monitoring assures the progress of Incidents. 2. Management reports about resource performance itself. This is provided using HP SQM directly. [Exp UG RPM] 2.1 The IMS RMK Performance Reports, p10f	**Brief Description** Monitor the status of resource performance degradation reports, provide notifications of any changes and provide management reports Reporting is supported by two approaches: a) HP PI reports on performance data: [Exp UG RPM] 2.1 The IMS RMK Performance Reports, p10f (A), and b) based on ITIL Incident Management in general. See Extended Description. Extended Description The objective of the Report Resource Performance processes is to monitor the status of resource performance degradation reports, provide notifications of any changes Resource performance degradation reports are created as Incidents (by *Create Resource Performance Degradation Report* process). They are monitored like other Incidents. [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52 [Exp UC RMF] L.4 Automatic Event and Performance Diagnostic, 42f [Exp UG SM] 2.2.5 Receiving Incidents, p22 and provide management reports. Specific reports are build by HP PI: [Exp UG RPM] 2.1.2 The IMS Resource reports, p12f, 2.1.3 The IMS Service reports, p15f (A) These processes are responsible for continuously monitoring the status of resource performance degradation reports and managing notifications to other processes in the RM&O and other layers, the status of resource performance degradation reports is monitored (like other incidents) thru [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) [HP SM ITIL Procs] SLA Monitoring (SO 2.7), p77 (A)

Level	eTOM process element	Alignment	Mapping
			[HP SM ITIL Procs] Update incident form, p85, shows screenshot of incident form with SLA details, and [HP SM ITIL Procs] Incident Management form details, p90, shows details about SLA status and alert status details and to other parties registered to receive notifications of any status changes. Notification lists are managed and maintained by the Enable Resource Performance Management processes. Resource trouble management listens to notifications, raised by threshold crossing events out of HP PI [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52, that can cause status change of associated incidents.Other processes listen to Incident changes in HP Service Manager e.g. thru the Adapter (note: this is generic and not RPM specific): [Exp UC RMF] 2.2.3.7 SR.8 RMK Reports Usage Incident Update to SM, p29f (A) These processes record, analyze and assess the resource performance degradation report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Performance Management process. These specialized summaries could be specific reports required by specific audiences. Note 4, no concrete requirement, but the effectiveness of the overall Resource Performance Management process can be justified using ITIL Incident management (as in 1.1.2.3.5 Report Service Problem): [Exp TD SM] 4.7 Reports, out of the box reports (p88), can be extended for specific resource performance degradation report incidents. (A)
3	1.1.3.4.5 Create Resource Performance Degradation Report	HP PI creates threshold events. These events are managed by resource trouble management, what allows to create and associate Incidents. See also [HP NGOSS BP] Combining eTOM and ITIL, Table 1, the ITIL means to represent a Resource Performance Degradation Report is an Incident. This is described with the bigger use cases: • [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52 and subsequently • [Exp UC RMF] 2.2.5.4 L.4 Automatic Event and Performance Diagnostic, 42f • [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic (A), p44	**Brief Description** Create a new resource performance degradation report Resource performance degradation report are created from HP PI as Events: [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52, diagram: create Event, create Incident (A) Further support based on ITIL Incident Management, here triggered by the *Monitor Resource Performance* process: [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f (A) [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64f with automated Incident Diagnostics, when possible (AM) See Extended Description. **Extended Description** The objective of the Create Resource Performance Degradation Report process is to create a new resource performance degradation report. As described with [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52, diagram: create Event, create Incident [Exp TD RPM] 3.7.2 Detailed Description of 3.7 Generate (Threshold) Event Provide preprocessed KPI, p23 (A) modify existing resource performance degradation reports, Note 4, no requirement, possible using manual processing of Incident by operator (M) and request cancellation of existing resource performance degradation reports. [Exp TD RPM] 3.7.2 Detailed Description, When a threshold condition clears…, p23 (A) The clear event will be correlated against the original event and may change the status of an associated Incident. A new resource performance degradation report may be created as a result of specific resource performance notifications undertaken by the Monitor Resource Performance processes, Report created as Incident by HP PI realizing Monitor Resource Performance: [Exp UC RMF] 2.2.6.2 N.2 Process Performance Data, p52, diagram: create Event, create Incident (A) or at the request of analysis undertaken by other RM&O, SM&O or S/PRM processes which detect that some form of deterioration or failure has occurred requires an assessment of the specific resource performance.

Level	eTOM process element	Alignment	Mapping
			Note 4, no requirement, would be possible using other applications creating Events or Incidents indicating resource performance degradations. If the resource performance degradation report is created as a result of a notification or request from processes other than Monitor Resource Performance processes, the Create Resource Performance Degradation Report processes are responsible for converting the received information into a form suitable for the Resource Performance Management processes, and for requesting additional information if required. Note 4, no requirement, could be realized using appropriate adapter (similar to the adapters build on HP adapter framework for the factory model)
3	1.1.3.4.7 Close Resource Performance Degradation Report	Incident closure is defined in • [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 It can be automated using HP OO as for the customer case • [Cust UC RMF 2.2.5.7 L.7 Automatic Incident Documentation and Completion, p47 Note the "Fehlerbaum" functionality realizing the L7 use case provides the means to update an Incident, e.g. to close it. However, the behavior finally relies on the specific faults and resolution workflows, which have to be configured for very specific fault-situations. There is never a standard fault resolution treatment. Administrators have to configure it. The concrete workflows are documented within the HP OO tool.	**Brief Description** Close a resource performance degradation report when the resource performance has been resolved Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 See Extended Description. **Extended Description** The objective of the Close Resource Performance Degradation Report processes is to close a resource performance degradation report when the resource performance has been resolved. [HP SM ITIL Procs]) Incident Closure (process SO 2.5), p72 (M) [Exp UC RMF] 2.2.5.6 L.6 Automatic Incident Resolution, p45 – will update the status to "cleared", finally close [Exp UC RMF] 2.2.5.7 L.7 Automatic Incident Documentation and Completion, p47 (A) The L.7 provides a reference to the automated "Fehlerbaum" function, to close a ticket: [Exp TD OO FB] 3.4 FB documentation, p31, "Status- and Category-Change of the incident in HP SM" allows to set the incident to close. These processes monitor the status of all open resource performance degradation reports, and recognize that a resource performance degradation report is ready to be closed when the status is changed to cleared. Standard GUI Functionality, addresses uses cases [Exp TD SM] 4.6.1, Principle - about use cases for user, p86, to be covered by standard GUI. This will provide overview to Incidents filtered or sorted by status, category etc. (M) [Exp UG SM] 2.2.5 Receiving Incidents, p22 - provides example of Incident overview. User can build the list as needed.

3.5 S/P Problem Reporting & Management (1.1.4.3) (SM Basis, AF)

Table 3.5 Process Mappings - Supplier/Partner Problem Reporting & Management (1.1.4.3)

Level	eTOM process element	Alignment	Mapping
1	1.1.4 Supplier/Partner Relationship Mgmt		See detailed comments against Level 3 processes later
2	1.1.4.3 S/P Problem Reporting & Management		See detailed comments against Level 3 processes later
3	1.1.4.3.1 Initiate S/P Problem Report	The solution to this process is delivered, as explained in [HP NGOSS BP] for the Factory Integration: the service management factory (SMF) initiates a S/P problem report (Incident) to the resource management factory (RMF). The RMF is in the role of the partner. The key use case describing this: [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident, p35 The process can be triggered manually from HP Service Manager within Service Problem Management of SMF: [Exp TD SM] 3.8 Application Service ReportIncidentOut, p46, paragraph "The service reports incident details out of a component to initiate creation of corresponding incidents in another component…" See also user guide: [Exp UG SM] 2.2.1.6 Forwarding Incidents, p15, and 2.2.1.7 Related Records ("NGSSM Incident Partner"), p16 Or automated from Fault Tree mechanism, see [HP NGOSS BP], section "Automation of Problem Management". See customer documents: [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution, p58, creating an Incident from SMF to RMF	**Brief Description** Report specific problems to the supplier / partner. Fully supported based on Factory Model (see alignment): [Exp UC SMF] 2.2.4.1 SR.1 SM Report Usage Incident, p35 (A) See Extended Description. **Extended Description** The Initiate S/P Problem Report processes are responsible for reporting specific problems to the supplier / partner. The process can be triggered manually or automated (see also alignment) [Exp UG SM] 2.2.1.6 Forwarding Incidents, p15 (M) [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution, p58 (A) These problems are passed to the S/P Problem Reporting & Management processes from either the RM&O or the SM&O Track & Manage processes. This happens in the customer case from SM&O level: 1.1.2.3.4 Track & Manage Service Problem, see mapping statement on paragraph "Note that some specific…" (AM) The S/P Problem Report contains the originating resource trouble report or service trouble report identifier to allow for appropriate linking to the processes which originally caused the S/P problem report to be initiated. The sender side keeps the identifier of the created report of the receiver (partner) side: [Exp UG SM] 2.2.1.7 Related Records ("NGSSM Incident Partner"), p16 (A)
3	1.1.4.3.2 Receive S/P Problem Report	The solution to this process is delivered, as explained in [HP NGOSS BP] for the Factory Integration: the service management factory (SMF) receives a S/P problem report (Incident) from the resource management factory (RMF). The RMF is in the role of the partner. The key use case describing this: [Exp UC SMF] 2.2.4.6 SR.7 RMK Reports Usage Incident to SM, p41 Incidents from a RMF are received automatically in SMF and indicated to the operator: [Cust UG SM] 2.2.5 Receiving Incidents, p22, shows an example of Incident overview with their source. The "Incident	**Brief Description** Receive notification of problems detected by the supplier/ partner, and notifies other processes of this. Fully supported based on Factory Model (see alignment): [Exp UC SMF] 2.2.4.6 SR.7 RMK Reports Usage Incident to SM, p41 (A) See Extended Description. **Extended Description** Receive notification of problems detected by the supplier/ partner, and notifies other processes of this. The key use case describing this: [Exp UC SMF] 2.2.4.6 SR.7 RMK Reports Usage Incident to SM, p41 (A) Indicated to in Incident Management [Cust UG SM] 2.2.5 Receiving Incidents, p22 (A) These notifications will be passed on to the appropriate Track & Manage processes in the RM&O and/or SM&O process layers depending on the nature

Level	eTOM process element	Alignment	Mapping
		source" indicates the originating partner: [Exp UG SM] 2.2.1.7 Related Records ("NGSSM Incident Partner"), p16	of the notified problem. This happens in the customer case on SM&O level: 1.1.2.3.1 Create Service Trouble Report, see mapping statement on paragraph "or at the request of analysis undertaken by other processes … or S/PRM layers…" (A)
3	1.1.4.3.3 Track & Manage S/P Problem Resolution	The process is supported like any ITIL Incident Resolution: [HP SM ITIL Procs] section "Incident Resolution and Recovery (process SO 2.4)", p70 [HP SM ITIL Procs] section "Incident Escalation (process SO 2.6)", p74 All responsibilities of the process are realized using Incident Management means. Note: a factory typically does request a resolution directly from another factory (partner) e.g. by sending a direct change request etc., as responsibility for resolving the problem e.g. by creating a change and execute it stays on partner side. The partner always expects the indication of an incident, and responses with the status of its resolution. Given the RMF (partner) provides diagnostic means, the problem diagnostics and resolution process can be as described for Automation of Trouble Management ([HP NGOSS BP], section "Automation of Problem Management") Relevant use cases are: [Exp UC SMF] L.3 Management of Incidents from Network or RMK, p55, for the case of RMF (i.e. partner), this calls: 2.2.6.5 L.5 Automatic Incident Diagnostic, p57, 2.2.6.6 L.6 Automatic Incident Resolution, p58	**Brief Description** Track progress of the problem resolution as advised by the supplier / partner. Fully supported based on ITIL Incident Management, automated in the sense, that Incidents get received automatically, manually in the sense, that feedback to supplier may be initiated by an Operator : [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (AM) See Extended Description. **Extended Description** The objective of the Track & Manage S/P Problem Resolution processes is to ensure testing, repair and restoration activities are being assigned, coordinated and tracked efficiently, and that escalation is being invoked as required for any open S/P problem reports in jeopardy. See next explanations and alignment. Responsibilities of these processes include, but are not limited to: • Managing regular interaction with the supplier/partner to establish resolution progress for S/P problem reports; Interaction between SMF and RMF is realized based on these use cases, and may comprise manual updates of Incident, when responding to Supplier: [Exp UC SMF] 2.2.4.2 SR.2 SM Reports Usage Incident Update to RMK, p37 (AM) [Exp UC SMF] 2.2.4.7 SR.8 RMK Reports Usage Incident Update to SM, p42 (A) • Modifying information in an existing S/P problem report based on feedback of progress from the supplier/partner; Same napping as for status: see next bullet. • Modifying the S/P problem report status; Automatic update is performed based on above mentioned use cases [Exp TD SM] 3.3 Application Service UpdateIncident, p40 (A) Alternatively the whole Incident is analyzed on requestor level (here SMF) thru the "Fehlerbaum". See alignment: Or any Incident can be update manually: [Exp UG SM] 2.2.2 Update an Incident, p17 (M) Cancelling a S/P problem report when the specific problem is discovered to not be related to the supplier/partner; and There can be variants of this case: 1. Automatic Diagnostics ("Fehlerbaum") will not be able to diagnose the fault, and triggers manual processing [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, Alternative Courses, Step 3, p58 (AM) 2. Problem detected in other RMF (other partner etc). Would be reported by incident update via [Exp UC SMF] 2.2.4.7 SR.8 RMK Reports Usage Incident Update to SM, p42 (A) or by correlating incidents from various RMF (planned in customer case for next versions) [Exp UC Assu] 4.1.1 SMA.S1 Störungsmeldungen von RMK ausregeln, p126. However, detection of wrong assignment my finaly need manual updates of Incident [Exp UG SM] 2.2.2 Update an Incident, p17 (M) • Monitoring the jeopardy status of open S/P problem reports. Indicated as "Alert Status" with Incident Overview:

Level	eTOM process element	Alignment	Mapping
			[Cust UG SM] 2.2.5 Receiving Incidents, p22, see screenshot (A) The "Alert Status" indicates the. timely progress of Incident due to its SLA, and automatically using the SLA target date. See also: [HP SM ITIL Procs] Incident Management Form Details, p90 about SLA Target Date and Alert Status (A) [Cust UG SM], Figure 28, p25, its explaining a different context, but showing the field in then screenshot. • and initiating escalation of S/P problem reports as necessary. [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 (M) [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 (M) The Track & Manage S/P Problem Resolution processes will also inform the Close S/P Problem Report processes by modifying the S/P problem report status to cleared when the S/P problem has been resolved. [HP SM ITIL Procs] Incident Management Form Details, status field, p86 The field will be set appropriately by process: [HP SM ITIL Procs] Incident Closure (process SO 2.5), SO 2.5.2 Verify and confirm resolution p74 (M) Or automated by **[Exp UC SMF]** 2.2.6.6 L.6 Automatic Incident Resolution, p59, steps 5-7 (A)
3	1.1.4.3.5 Close S/P Problem Report	Incident closure is defined in [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 It can be automated using HP OO as for the customer case [Exp UC SMF] 2.2.6.7 L.7 Automatic Incident Documentation and Completion , p60 – referring to [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution , p58 – will update the status to "cleared"	**Brief Description** Close a S/P problem report when the S/P problem has been resolved Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 See Extended Description. **Extended Description** The objective of the Close S/P Problem Report processes is to close a S/P problem report when the S/P problem has been resolved. [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 (M) [Exp UC SMF] 2.2.6.6 L.6 Automatic Incident Resolution, p59, steps 5-7 (A) – will update the status to "resolved" or "closed", depending on the specific case, may have to be confirmed thru BSS etc, see 1.1.2.3.6 Close Service Trouble Report. These processes monitor the status of all open S/P problem reports, and recognize that a S/P problem report is ready to be closed when the status is changed to cleared. Standard GUI Functionality, addresses uses cases [Exp TD SM] 4.6.1, Principle - about use cases for user, to be covered by standard GUI (M) [Exp UG SM] 2.2.5 Receiving Incidents - provides example of Incident overview (A). The Status is indicated. The Status field represents the incident's lifecycle status. See also [HP SM ITIL Procs] Incident Form Details, p86, about "Status". Overall the close follows the process as described in [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 (M)

3.6 S/P Interface Management (1.1.4.6) (AF)

Table 3.6 Process Mappings - Supplier/Partner Interface Management (1.1.4.6)

Level	eTOM process element	Alignment	Mapping
1	1.1.4 Supplier/Partner Relationship Mgmt		See detailed comments against Level 3 processes later
2	1.1.4.6 S/P Interface Management		See detailed comments against Level 3 processes later
3	1.1.4.6.3 Mediate & Orchestrate Supplier/Partner Interactions	The solution to this process is delivered, as explained in [HP NGOSS BP], section "Factory Integration": the service management factory (SMF) initiates a S/P problem report (Incident) to the resource management factory (RMF). The RMF is in the role of the partner. The interaction is enabled using the HP Adapter Framework (AFW), in conjunction with the Telekom own WebSphere bases communication bus. See [Exp TD I/F Assu] 1.2 Scope, p8 The AFW addresses the necessary mapping of application specific interface to the Telekom defined standards as expressed in [Exp TD I/F Assu] 2 Architecture Overview, p11f 2.1 Logical Architecture, p11 2.2 Supported IT Services, p13f	**Brief Description** Ensure that transaction message structure and interactions conform to agreed, externally defined standards used by the enterprise and its suppliers/partners Realized thru HP Adapter Framework (AFW): [HP AFW DS] Key features and benefits, p3 See alignment for customer context. **Extended Description** The purpose of the Mediate & Orchestrate Supplier/Partner Interactions is to ensure that transaction message structure and interactions conform to agreed, externally defined standards used by the enterprise and its suppliers/partners. The standards of the customer case for all IT-services for assurance to interact across factories are defined in: [Exp TD I/F Assu] 2.2 Supported IT Services, p13 More details in: [Exp TD I/F Assu] 4.8 Detailed IT Service and Data Model Mapping, p94f Increasingly transactions with external parties (e.g. suppliers using RosettaNet or ebXML standards) will need to conform to message and data formats defined by third parties or third party organizations. [Exp TD I/F Assu] 2.1 Logical Architecture, p11, confirms the functionality to support the necessary message transition. See alignment for customer example. The adapter framework is build to support accepted standards, such as OSS/J to support SID. [HP AFW TU] 5 Generate OSS/J Web Service Server-side skeleton code, p18 However, in general the AFW is generic to support various web-communication profiles [HP AFW DS] Key features and benefits, Supports multiple communication profiles, p3 Based on the specific transaction type and involved external party, this conformance will require the identification of the necessary data frmats to be sent externally, and conversion of externally received messages into the required internal enterprise formats. Note 2, this partially addressed in 1.1.4.3.1 Initiate S/P Problem Report, as the responsible "parter" (i.e. an RMF) is identified by functions in service management (part of Incident Mgmt process). Conversion of messages is realized by the AFW. In addition, interactions with external parties may require that messages and transactions need to be undertaken with defined and agreed orchestration for message exchange. Note 4 in the customer case, the technical orchestration was realized by the customer's web sphere environment and was not in HP's direct scope. The actual agreement between the parties to use specific interaction standards is part of the Support S/P Interface Management and Manage Supplier/Partner Engagement L3s. Note 1 part of the overall customer case, but not in scope of this assessment.

3.7 Process Mappings - Works Cited

3.7.1 Special notes

Note 1 This sentence is performed by another eTOM process element, which is not in scope of this assessment.

Note 2 This sentence is performed by another eTOM process element, which is in scope of this assessment. A reference is provided.

Note 3 This sentence explains a possible step, which precedes other processes. A reference is provided.

Note 4 This step can be supported, but was not requested for this customer case

3.7.2 TMF documents

[TR143] TMF/ITIL Paper "Building Bridges: ITIL and eTOM"

[GB921V] TMF eTOM, Addendum V: An Interim View of an Interpreter's Guide for eTOM AND ITIL Practitioners

3.7.3 Product documents

[HP NGOSS BP] HP NGOSS Blueprint and Solutions, Basic information for the TMF product assessments based on HP's OSS Assurance Suite V1.4, "White Paper HP NGOSS Blueprint and Solutions.pdf".
The paper is available to download from the TM Forum website at the following location: http://www.tmforum.org/HPOSSAssuranceSolution/12276/home.html.

The following documentations are available, if not mentioned otherwise, on the HP support web pages under http://support.openview.hp.com/selfsolve/manuals. You may need to register first.

[HP CLIP] HP Closed Loop Incident Process Solution (CLIP), Solution Version: 9.0, Solution Concept Guide
"CLIP9.0_SolConcept.pdf"

[HP WP eTOM ITIL] HP White Paper Incident and Problem Management in the Telecom Service Provider environment
"Telecom_Incident_Problem_Management_Whitepaper_v0.2.pdf"

[HP SM ITIL Procs] HP Service Manager, Processes and Best Practices Guide, Software Version: 7.1x
"SM7.1x_ProcessesBestPractice.pdf"

[HP SM IM Ext] HP NGOSS Software, Incident & Problem Management Extension, Incident Management Enhancement User Guide, Edition 1.0
"HP NGOSS Incident and Problem Management Extension Version 1.0.0 - Incident Management Enhancement User Guide.pdf"

[HP OMU Concepts] HP Operations Manager for UNIX, Concepts Guide, Software Version: 9.00
"OMU9_ConceptsGd.pdf"

[HP OMU Compo] HP Correlation Composer Software for the HP-UX, Linux, Solaris, and Windows operating systems, Software Version: 9.00 and higher
"OMW9.0_CorrelationComposer_User.pdf"

[HP OMi Concepts]	HP Operations Manager I for the Windows, Software Version: 8.10, Concepts Guide "OMi8.10_Concepts_Guide.pdf"
[HP OMi UG]	HP Operations Manager I for the Windows, Software Version: 8.10, Using HP Operations Manager i "OMi8.10_OLH_UserGd.pdf"
[HP SQM UG]	HP Service Quality Management Solution, User Guide, Version 1.0 "hp_sqm_solution_user_guide_v1.0.pdf"
[HP Telco Uni]	Telecom Universe, Reference Guide "hp_sqm_solution_telco_universe_reference_guide.pdf"
[HP BAC GUI]	HP Business Availability Center, Version 8.02 (no change for 8.04), Using Dashboard "hp_man_BAC8.02_Dashboard_pdf.pdf"
[HP BAC Al UG]	HP Business Availability Center, Version 8.04, Alerts "BAC8.04_Alerts.pdf"
[HP BAC SLM UG]	HP Business Availability Center, Version 8.02 (no change for 8.04), Using Service Level Management "hp_man_BAC8.02_ServiceLevelManagement_pdf.pdf"
[HP BAC SI]	HP Business Availability Center, Version 8.04, Solutions and Integrations "hp_man_BAC8.04_SolutionsAndIntegrations_pdf.pdf"
[HP SIS UG]	HP SiteScope, Version 9.5, Using SiteScope "hp_man_SIS9.5_Using_pdf.pdf"
[HP AFW DS]	HP Adapter Framework 5.0, Data sheet "AFW5 0_Datasheet.pdf"
[HP AFW TU]	HP Adapter Framework version 4.1, Tutorial: Develop TTServer-Side WS adapter with AFW "Adapter Framework Version 4.1 - Tutorial.pdf"

3.7.4 Example documents

These Documents have been available from a concrete customer case for the assessment to TMF. However, they are confidential to the case and not public.

[Exp UC Assu]	Example Use Case descriptions
[Exp UC SMF]	Example Sample Tech Design with Use Cases, Service Mgmt Component
[Exp UC RMF]	Example Sample Tech Design with Use Cases, Resource Mgmt Component
[Exp TD SM]	Example Sample Tech Design, HP Service Manager
[Exp UG SM]	Example Sample User Guide, HP Service Manager
[Exp TD RTM]	Example Sample Tech Design, HP Business Service Manager
[Exp AG SQM]	Example Sample Administration Guide SQM / BAC
[Exp UG SQM]	Example Sample User Guide SQM / BAC
[Exp TD I/F Assu]	Example Sample Tech Design, HP Assurance Adapter
[Exp TD OO T&D]	Example Sample Tech Design, HP OO specific Workflows for Test & Diagnostics and Resolution
[Exp TD OO FB]	Example Sample Tech Design, HP OO specific Workflows for Fault Tree ("Fehlerbaum")

[Exp TD UCMDB]	Example Sample Tech Design, HP uMCDB
[Exp TD RPM]	Example Sample Tech Design, Performance Management
[Exp UG RPM]	Example Sample Operators Guide, Performance Management
[Exp AG RPM]	Example Sample Administrators Guide, Performance Management”

4 Self-Assessment – Process Mappings Phase 2 (SM Basis, SM/SD, TeMIP with UCA, USLAM)

2nd phase of assessment (see section 2.3).

4.1 Problem Handling (1.1.1.6) (SM Basis, SM/SD]

Table 4.1 Process Mappings – Problem Handling (1.1.1.6)

Level	eTOM process element	Alignment	Mapping
1	1.1.1 Customer Relationship Management		See detailed comments against Level 3 processes later
2	1.1.1.6 Problem Handling		See detailed comments against Level 3 processes later
3	1.1.1.6.1 Isolate Customer Problem	[HP SM ITIL Procs] HP Service Manager, Service Desk: Interaction Handling The ITIL Interaction Management is used to isolate the root cause, in interaction with the customer from the HelDesk/ServiceDesk. Once the root cause is defined, and the call center agent is not able to fix the problem during the interaction, the Customer Problem report turns to an Incident, handled in 1.1.1.6.5 Create Customer Problem Report. **[HP SM Screen]** pages 3-22 show screenshots of Service Manager for Interaction and Incident Management.	**Brief Description** Identify the root cause of the customer problem. (AM) That is supported in interaction with the customer: [HP SM ITIL Procs] 2 User Interaction Management Overview, p. 23: "The HP Service Manager Service Desk application…supports the service desk function of … ITIL… with its User Interaction Management processes for … the customer base." [HP SM ITIL Procs] The service desk within the ITIL framework, p. 24: "The service desk's goal is to restore normal service to users as quickly as possible. Restoring normal service could involve fixing a technical fault, fulfilling a service request, or answering a query — whatever is needed to enable users to return to their work. The service desk logs and manages customer interactions and provides an interface to other service operation processes and activities." See extended description. **Extended Description** The purpose of the Isolate Customer Problem processes is to identify the root cause of the customer problem. (AM) [HP SM ITIL Procs] The service desk within the ITIL framework, p. 24: "The service desk's goal is to restore normal service to users as quickly as possible. Restoring normal service could involve fixing a technical fault, fulfilling a service request, or answering a query — whatever is needed to enable users to return to their work." [HP SM ITIL Procs] 2 User Interaction Management Overview, p. 27 To identify the root cause, the Service Desk agent performs the actions required to resolve the user request. • If the service request is resolved without escalating it to an incident, the Service Desk agent can close the interaction record. • If the service request cannot be resolved without escalating it to an incident, the Service Desk agent searches for existing incidents that affect the same component or one of the parent assets of that component. • If an existing incident is found, the Service Desk agent can associate the current interaction with the existing incident ticket. • If an existing incident ticket is not found, the Service Desk agent can register a new incident based on the Service Desk interaction. " [HP SM ITIL Procs] 2 User Interaction Management Overview, p. 28, table 2.1 It is the Service desk agent's responsibility to : • "Match user interaction to incidents, problems, known errors, or knowledge document." • "solve and close interactions" • "Validate a solution provided by a support group." • "Report and verify a solution to a user." See separate tasks or steps below. The responsibilities of these processes include, but are not limited to: · Verifying whether the customer is using the purchased product offering correctly; and · Performing diagnostics based on the customer provided information to determine

Level	eTOM process element	Alignment	Mapping
			whether the root cause of the customer problem is linked to the underlying services. (AM) The service agent can easily identify, which products have been purchased: [HP SM ITIL Procs] 2 User Interaction Management Overview, p. 44, 1st paragraph As part of the user interaction management process, the Service Desk's User Interaction Management forms have to be filled in. This is described in detail in the process steps: [HP SM ITIL Procs] Interaction Handling (process SO 0.2), p36: SO 0.2.1 Link user details to new interaction, SO 0.2.2 Determine affected service, … select the service that matches the user request. Only Services, associated with that customer can be selected. SO 0.2.4 Apply interaction model and SO 0.2.5 Follow model instructions, An Interaction model can be configured, based on affected service, to fill the right fields (e.g. category etc) or to ask the rights questions. SO 0.2.9 Match to open incident? and SO 0.2.10 Match to open problem or known error? and SO 0.2.11 Solution found in knowledgebase? Allow to find already existing Incidents or Problems, associated to similar trouble; it also supports the search in any associated knowledge DB, using full text or given keywords. Based on the product, the service agent can search for a known solution to the customer problem, or how the product is used correctly. If the Service Desk Agent is not able to solve the problem, the create incident process is started: SO 0.2.12 Service Desk Agent able to solve? If not go to the Create Incident process. The Isolate Customer Problem processes will make the results of the root cause analysis available to other processes.(AM) Interaction details are forwarded to Incident Management or other processes; Interaction will be related to their objects: [HP SM ITIL Procs] Interaction Handling (process SO 0.2), p34-37: SO 0.2.18 Relate interaction to outstanding incident SO 0.2.20 Relate interaction to problem/known error SO 0.2.21 Relate interaction to knowledge record See also [HP SM ITIL Procs] Incident Management Process Overview, p.57, table 5.2: Input and Output to Incident Management The Isolate Customer Problem processes will update open customer problem report, as required during the assessment, and when the root cause has been identified. .(AM) All result of the interaction will be stored or updated with the interaction form: [HP SM ITIL Procs] New interaction form, p42 and Interaction form after escalation, p43 The customer problem report is represented thru the Interaction form and - in case the problem cannot be resolved within the customer Interaction - the Incident form. [HP SM ITIL Procs] Incident form after escalation from Service Desk, p84 The Isolate Customer Problem processes will notify the Track & Manage Customer Problem processes when the analysis is complete. (AM) The Track & Manage Customer Problem process is triggered (in case the Interaction cannot solve the problem), when the Incident is created. See 1.1.1.6.5 Create Customer Problem Report.
3	1.1.1.6.2 Report Customer Problem	[HP SM ITIL Procs] HP Service Manager: Interaction Handling Incident Reporting **[HP SM Screen]** pages 3-22 show screenshots of Service Manager for Interaction and Incident Management.	**Brief Description** Monitor the status of customer problem reports, provide notifications of any changes and provide management reports (AM) Monitoring of Interactions and Incidents is provided by ITIL means and best oractice implementations out of the box by HP Service Manager. Reports about can be generated as needed, using all fields of Interactions or Incidents. See extended description. **Extended Description** The objective of the Report Customer Problem processes is to monitor the status of customer problem reports, provide notifications of any changes and provide management reports. (AM)

Level	eTOM process element	Alignment	Mapping
			Once the Interaction with the customer is escalated as Incident, the status of the Incident is shown and monitored with its Status field: [HP SM ITIL Procs] Table 4-1 User Interaction Management form details, p48, See Status field [HP SM ITIL Procs] Table 7-1 Incident Management form details, p86, See Status field . Key Performance Indicators provide overview on effectiveness of the processes: [HP SM ITIL Procs] Key performance indicators for User Interaction Management, p. 29. [HP SM ITIL Procs] Key performance indicators for Incident Management, p58 See details below: These processes are responsible for continuously monitoring the status of customer problem reports and managing notifications to processes and other parties registered to receive notifications of any status changes. (AM) Depending on their role, operators monitor interactions and incidents on certain fields (such as status etc) [HP SM ITIL Procs] Service Management organization, p16-17 Each process step is assigned to a dedicated role. That operator will be informed about his duty, depending on assignment fields or status: [HP SM ITIL Procs] Table 7-1 Incident Management form details, p86-87, see Assignment field , or [HP SM ITIL Procs] Figure 7-1 Incident escalated from Service Desk, p84, see Assignment fields The Operator will have views, with configurable filters, to show him e.g. Interactions or Incident e.g. assigned to him, or with status open etc: **[HP SM Screen]** Interaction Search and List, p3-4 **[HP SM Screen]** Incident Search and List, p5-6 These lists will always show the current status and raise e.g. new interactions/incidents. E.g. Incident beyond committed SLA time are red. Notification lists are managed and maintained by the Support Problem Handling processes.(AM) Note 1 , the 1.1.1.1.3 Support Problem Handling process is out of scope here, but: Notification lists are realized in form of Interaction/Incident lists, filtered by their status and assignment depending on the operators role. These processes record, analyze and assess the customer problem report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Problem Handling process. (A) Default status fields of Interaction and Incidents allow reporting for management reports. The activity history per Interaction and Incident allows detailed reporting. HP Service Desk allows to generate specific KPIs to measure efficiency and effectiveness of the overall Problem Handling process: [HP SM ITIL Procs] Key performance indicators for User Interaction Management, p. 29. [HP SM ITIL Procs] Key performance indicators for Incident Management, p58 Within the customer case, such KPIs are provided to SQM: [Exp UG SQM] 2.1.6 SMK NGSSM SQM Fulfillment & Service Management, p24: KPIs “Open Incicents” “Overdue Incidents” indicate the efficiency and effectiveness of the Incident Management (in the example for the different “Factories”) These specialized summaries could be creation of specific reports required by customers and/or other specific audiences.(A) Above mentioned KPIs or detailed activities can be used for specific customers or audience. They can be generated and collected automatically. See screenshot of report list and one example: **[HP SM Screen]** Reports and Example, p7-8 These processes will make the necessary reports about the problem that occurred, the root cause and the activities carried out for recovery of normal operation.(AM) Such information is stored in the fields of Interactions or Incidents: [HP SM ITIL Procs] Table 4-1 User Interaction Management form details, p45-49, Affected Items Affected CI, Interaction Detail Solution, Activities, Related Records, and others. [HP SM ITIL Procs] Table 7-1 Incident Management form details, p87-88, Affected Items Critical CI, Incident Details (Category, Area, Sub-Area, Solution) and others

Level	eTOM process element	Alignment	Mapping
3	1.1.1.6.3 Track & Manage Customer Problem	[HP SM ITIL Procs] HP Service Manager: Interaction Handling Incident Resolution & Recovery Incident Escalation Incident Closure **[HP SM Screen]** pages 3-22 show screenshots of Service Manager for Interaction and Incident Management.	**Brief Description** Ensure that recovery activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open customer problem reports in jeopardy. (AM) If the customer problem can be solved within the Interaction Management, the tracking is completely covered by the Interaction Handling Process: [HP SM ITIL Procs] Interaction Handling (process SO 0.2), p34-37 In case the customer problem is escalated into an Incident, the more complex Incident Management process implies the tracking and management of the customer problem: [HP SM ITIL Procs] 5 Incident Management Process Overview, p.55, first paragraph: "The Incident Management process includes all necessary steps to log and resolve an incident, including any necessary escalations or reassignments. Monitoring of Service Level Agreements (SLAs), Operation Level Agreements (OLAs), and Underpinning Contracts (UCs) are also part of the overall process." See extended description. **Extended Description** The purpose of the Track & Manage Customer Problem processes is to ensure that recovery activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open customer problem reports in jeopardy. (AM) [HP SM ITIL Procs] 3 User Interaction Management Workflows, p31, 2nd paragraph: "The process enables Service Desk agents to easily log and resolve simple user requests and to escalate others into incidents requiring further action." [HP SM ITIL Procs] 5 Incident Management Process Overview, p.55, first paragraph: "The Incident Management process includes all necessary steps to log and resolve an incident, including any necessary escalations or reassignments. Monitoring of Service Level Agreements (SLAs), Operation Level Agreements (OLAs), and Underpinning Contracts (UCs) are also part of the overall process." See details below. Various Screenshots are shown to provide a demonstration, how the Interaction and Incident Management is supported by the GUI to the operator. **[HP SM Screen]**, pages 9-22 show, how Interactions and Incidents can be searched, how fields can be filled, tests executed etc. Responsibilities of these processes include, but are not limited to · Scheduling, assigning and coordinating tracking any recovery activities, and any repair and restoration activities delegated to other processes; (AM) That will become relevant, if the Interaction is escalated as an Incident. [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Incident Coordinator: • Reviews and accepts or rejects incidents assigned to the support group. • Handles incidents escalated by an Incident Analyst of the support group. • Monitors Operational Level Agreements (OLA) and Underpinning Contracts (UC) targets of the support group." [HP SM ITIL Procs] 5 Incident Management Process Overview, p.64 -66 describes the incident assignment process. **[HP SM Screen]**, pages 9-10, 12-16, show how Interactions and Incidents wil be shown to operators, depending on their role and matter of concern. · Generating the respective service trouble report creation request(s) to Create Service Trouble Report based on specific customer problem reports; (AM) Differentiation between Customer Problem Report and Service Trouble Report is made based on fields: [HP SM ITIL Procs] Table 7-1 Incident Management form details, p87: Assignment, Assignment Group (i.e. Call Center or Service Operations Center) Affected Items, Service (Customer Facing Service or Resource Facing Service etc) The Customer Problem Report itself may become a Service Trouble Report, or And additional Incident may be created as separate Service Trouble Report, independent from the customer. Existing Service Trouble Report may be associated to the Customer Problem Report: [HP SM ITIL Procs] Interaction Handling (process SO 0.2), p36: SO 0.2.9 Match to open incident? or SO 0.2.10 Match to open problem or known error? See also: [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Operator: Registers incidents based on an event and assigns them to the correct support group."

Level	eTOM process element	Alignment	Mapping
			(event here can also mean a customer interaction) **[HP SM Screen]**, page 10 shows, how Customer interaction may be related to existing Incident (which could be a service trouble report), **[HP SM Screen]**, pages 17-18 show for new or updated Incident, the "assignment" fields. With the assignment, the Incident may be assigned from the customer team t the service team. The Incident may also be forwarded to another system using the "Transfer to" field. o · Undertake necessary tracking of the execution progress; (A) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.55, first paragraph: "Monitoring of Service Level Agreements (SLAs), Operation Level Agreements (OLAs), and Underpinning Contracts (UCs) are also part of the overall process. [HP SM ITIL Procs] 5 Incident Management Process Overview, p.77 f. describes the SLA Monitoring [HP SM ITIL Procs] 5 Incident Management Process Overview, p.79 f. describes the OLA and UC Monitoring SLA/OLA Monitoring happens automatic, once configured. · Modifying information in an existing customer problem report based on assignments; (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Incident Analyst: • Reviews and accepts or rejects assigned incidents. • Documents incident resolutions or workarounds in the Service Management application. See also: [HP SM ITIL Procs] Update incident form, p85, shows the incident form for updates. · Modifying the customer problem report status; (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Incident Analyst: • Documents incident resolutions or workarounds in the Service Management application. The status may be changed according to the results of the different tasks. See values of status field: [HP SM ITIL Procs] Table 7-1 Incident Management form details, p86, see status field values. (AM) · Canceling a customer problem report when the specific problem was related to an incorrect customer problem report; and (M) An incorrect customer problem report / Incident, will be detected likely-wise by the Incident Investigation and Diagnosis; the operator may need to dissolve the relationships: [HP SM ITIL Procs] Table 6-3 Incident Investigation and Diagnosis process, p69: SO 2.3.3 Investigate and Diagnose Also during Incident Closure, the relationship with the customer Interaction is used and checked again: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72, "… the solution must be verified…. If necessary, the user can be contacted to verify the solution. The resolving group closes the incident and notifies the Service Desk to close the related interaction. When closing an incident, it must be checked to confirm that the initial incident categorization is correct. If the category is incorrect, the record must be updated with the correct closure category…." The analyst may also change relationships between Incident and Interactions. · Monitoring the jeopardy status of open customer problem reports, and escalating customer problem reports as necessary. (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.74 describes the Incident escalation process: When an Incident Analyst is unable to solve an assigned incident within the target time, the analyst escalates the incident to the Incident Coordinator. The Incident Coordinator determines how the incident can best be resolved by consulting the Incident Analyst and, if needed, other Incident Analysts. If an incident is severe (for example, designated as Priority 1), the appropriate IT managers must be notified so that they can anticipate and prepare for an escalation. Note that some specific product and/or service components may be owned and managed by suppliers/partners. In these cases the Track & Manage Customer Problem process is responsible for initiating requests, through S/P Problem Reporting

Level	eTOM process element	Alignment	Mapping
			& Management processes for restoration and recovery by the supplier/partner of the specific service components. (AM) Incidents may be assigned to suppliers or partners, in case product/service components are delivered by those. The Incident can have an assignment in the field: [HP SM ITIL Procs] Table 7-1 Incident Management form details, p86, Assignment, Vendor These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence. (A) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.55, first paragraph: "Monitoring of Service Level Agreements (SLAs), Operation Level Agreements (OLAs), and Underpinning Contracts (UCs) are also part of the overall process. See also in [HP SM ITIL Procs]: SLA Monitoring (process SO 2.7), p77f OLA and UC Monitoring (process SO 2.8), p79f SLA/OLA Monitoring happens automatic, once configured. The Track & Manage Customer Problem processes will also inform the Close Customer Problem processes by modifying the customer problem report status to cleared when the customer problem has been resolved. (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.72, Incident Closure After a solution is implemented for an incident, the solution must be verified, typically by the group that implemented the solution. If necessary, the user can be contacted to verify the solution. The resolving group closes the incident and notifies the Service Desk to close the related interaction. This will lead to 1.1.1.6.4 Close Customer Problem Report.
3	1.1.1.6.4 Close Customer Problem Report	[HP SM ITIL Procs] HP Service Manager: Interaction Closure Incident Closure Incident Escalation **[HP SM Screen]** pages 3-22 show screenshots of Service Manager for Interaction and Incident Management.	**Brief Description** Ensure that a problem affecting the customer is solved (AM) The interaction closure foresees different steps, to validate the solution. That includes interaction with the customer, if he accepts the solution: [HP SM ITIL Procs] Table 3-3 Interaction Closure (SO 0.3) process, p39, SO 0.3.6 Verify solution with the user In case the customer problem was escalated as an Incicent, the Incident will finish with the Interaction Closure process: [HP SM ITIL Procs] Table 6-5 Incident Closure process, p74, SO 2.5.6 Incident initiated through an interaction? …continue with the Interaction Closure process **[HP SM Screen]**, page 9 shows form of an Interaction. Setting the closure code and the solution will document the close of the Interaction. **[HP SM Screen]**, page 18 shows the form to update an Incident, setting the closure code will be reflected to the interaction as well, depending on the configurable business /workflow rules. See extended description. **Extended Description** The purpose of the Close Customer Problem Report processes is to close a customer problem report when the problem affecting the customer is solved. (AM) That is defined with the Interaction Closure process: [HP SM ITIL Procs] Table 3-3 Interaction Closure (SO 0.3) process, p39 These processes are also responsible for possibly contacting the customer to inquire about the customer's satisfaction with resolution of the problem. (AM) [HP SM ITIL Procs] Table 3-3 Interaction Closure (SO 0.3) process, p39, SO 0.3.6 Verify solution with the user Customer Satisfaction can be measured using specific KPIs: [HP SM ITIL Procs] Key performance indicators for User Interaction Management, p. 29. These processes monitor the status of all open customer problem reports and recognize that a customer problem report is ready to be closed when the status is changed to cleared.(A) HP ServiceManager provides overviews to all objects, such as Interactions, which ca be filtered as needed, e.g. by status fields. Such fields are described here: [HP SM ITIL Procs] Table 4-1 User Interaction Management form details, p48, See Status field [HP SM ITIL Procs] Table 7-1 Incident Management form details, p86, See Status field The Incident Resolution and Recovery process triggers the incident closure process: [HP SM ITIL Procs] 6 Incident Management Workflows, page 73

Level	eTOM process element	Alignment	Mapping
			If the Incident can not be resolved in the target time, the Incident Escalation Process is triggered: [HP SM ITIL Procs] 6 Incident Management Workflows, page 74-76
3	1.1.1.6.5 Create Customer Problem Report	[HP SM ITIL Procs] HP Service Manager: Interaction Handling Incident Logging **[HP SM Screen]** pages 3-22 show screenshots of Service Manager for Interaction and Incident Management.	**Brief Description** This process creates a new Customer Problem Report.(AM) The customer problem is first reported within the interaction management: [HP SM ITIL Procs] Interaction Handling (process SO 0.2), Figure 3-2 Interaction Handling (SO 0.2), p35 [HP SM ITIL Procs] New interaction form, p42 **[HP SM Screen]**, page 9 shows the form of an Interaction. Fields can be filled by the agent, also using templates. If the agent cannot solve the customer problem: [HP SM ITIL Procs] SO 0.2.12 Service Desk Agent able to solve?, p36, it is escalated into an Incident: [HP SM ITIL Procs] Incident Management Process Overview, p.57, table 5.2: Input and Output to Incident Management See extended description. **Extended Description** The objective of the Create Customer Problem Report process is to create a new customer problem report. (AM) The customer interaction will create the interaction form from the service desk: [HP SM ITIL Procs] New interaction form, p42 In case the customer problem can't be solved from the service desk, an Incident is created: [HP SM ITIL Procs] Incident Logging (process SO 2.1), p.61 "Incidents are initiated and logged as part of the Interaction Management." "If the incident is logged by the Service Desk Agent, most incident details are already provided by the interaction record." See details below. A new customer problem report may be created as a result of customer contacts indicating a problem with their purchased product offerings or, at the request of analysis undertaken by other processes in the CRM or SM&O horizontal process layers, which detect a failure or degradation which may be impacting customers. (AM) [HP SM ITIL Procs] 6 Incident Management Workflows, page 61.f. Incidents are initiated and logged as part of the Interaction Management by the Service Desk as a result of a user interaction or the Event Management process by the Operator due to a service affecting incident. See also mappings in 1.1.1.6.1 Isolate Customer Problem. These processes are responsible for capturing all the necessary customer information to be included in the new Customer Problem Report. (AM) [HP SM ITIL Procs] Incident Logging (process SO 2.1), p.61 "If the incident is logged by the Service Desk Agent, most incident details are already provided by the interaction record." [HP SM ITIL Procs] 6 Incident Management Workflows, page 61, "All relevant information relating to incidents must be logged so that a full historical record is maintained." The customer information is provided with the related customer interaction. See also mappings in 1.1.1.6.1 Isolate Customer Problem. Additional information may be gathered
3	1.1.1.6.6 Correct & Recover Customer Problem	[HP SM ITIL Procs] HP Service Manager: Interaction Handling Incident Resolution & Recovery Incident Escalation **[HP SM Screen]** pages 3-22 show screenshots of Service Manager for Interaction and Incident Management.	**Brief Description** Restore the service to a normal operational state as efficiently as possible (AM) On a first trial, within the Interaction Management, the Solution may be found in a knowledge base, the agent can try to solve the problem: [HP SM ITIL Procs] Table 3-2 Interaction Handling (SO 0.2) process , SO 0.2.12 Service Desk Agent able to solve?, p36 If this is not possible, and the Customer Problem Report is escalated as Incident, the Incident processes for Resolution and Recovery are applied: [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70f **[HP SM Screen]**, pages 18 shows an incident to be updated. See tab for Activities, i.e. resolution activities being logged, tab for Related Records, i.e. Changes executed, and finally solution can documented in field Solution. See extended description. **Extended Description** The objective of the Correct & Recover Customer Problem processes is to restore the

Level	eTOM process element	Alignment	Mapping
			purchased product offerings to a normal operational state as efficiently as possible. (AM) On a first trial, within the User Interaction Management, the Solution may be found in a knowledge base, the agent can try to solve the problem: [HP SM ITIL Procs] Table 3-2 Interaction Handling (SO 0.2) process , p36-37: SO 0.2.11 Solution found in knowledgebase?, p36 SO 0.2.12 Service Desk Agent able to solve?, p36 SO 0.2.22 Document solution in interaction, p37 SO 0.2.23 Implement solution, p37 If this is not possible, and the Customer Problem Report is escalated as Incident, the Incident processes for Resolution and Recovery are applied: [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70f See extended description. Depending on the nature of the specific reported failure, or incorrect operation, of the purchased product offering these processes may possibly lead to: · Educational interaction with the customer to ensure correct usage of the purchased facilities; (AM) [HP SM ITIL Procs] Table 3-2 Interaction Handling (SO 0.2) process p36, SO 0.2.4 Apply interaction model (when appropriate): An Interaction model can be defined to verify the product is used correctly. **[HP SM Screen]**, page 23,24 shows how workflows and rules for interaction of flow elements can be defined. As an interaction model, these can be applied, triggered by setting of defined field (e.g. using templates, as shown for Incidents on pages 18 and 19). Finally the workflow is documented with the Interaction or Incident or Change as shown on page 25. · Re-assessment of the customers needs and withdrawal, upgrade, renewal of the purchased product offerings; (AM) [HP SM ITIL Procs] Table 3-2 Interaction Handling (SO 0.2) process p36, SO 0.2.7 Service request?, If the interaction concerns a Service Request, go to the … Fulfillment process. SO 0.2.8 Request for change? If the interaction concerns a Request for Change, go to the Change process. · Requests for activities to be undertaken by other processes in the CRM process layer; or Note 1 The Service Request (withdrawal, upgrade, renewal) or the Change Request may be addressed by other CRM process, such as 1.1.1.5 Order Handling (not in scope here). · Identification that restorative activities need to be undertaken in the SM&O processes. Note 2, Restorative activities may be initiated by a Change within the process of 1.1.2.2 Service Configuration & Activation (not in scope) or the Incident may be forwarded to the 1.1.2.3 Service Problem Management, and handled as Service Problem (see 4.3 Service Problem Management [1.1.2.3] (SM Basis, TeMIP with UCA)). The interaction process may also analyze, that the customer problem is related with existing Incidents or Changes in other processes: [HP SM ITIL Procs] Table 3-2 Interaction Handling (SO 0.2) process, p36: SO 0.2.9 Match to open incident? SO 0.2.10 Match to open problem or known error? They will also report successful restoration of normal service operation, restoration through temporary work-arounds or an unsuccessful attempt at restoration to Track & Manage Customer Problem through updates to the associated customer problem report. (AM) [HP SM ITIL Procs] Table 3-2 Interaction Handling (SO 0.2) process, p36: SO 0.2.22 Document solution in interaction [HP SM ITIL Procs] Table 6-4 Incident Resolution and Recovery process, p72: SO 2.4.4 Implement resolution [HP SM ITIL Procs] Table 6-6 Incident Escalation process, p76: SO 2.6.1 Determine how to resolve incident Interaction and Incident store all activity records: [HP SM ITIL Procs] Table 4-1 User Interaction Management form details, p49, field “Activities”

4.2 Customer QoS/SLA Management [1.1.1.7] (SM Basis, USLAM)

Table 4.2 Process Mappings – Customer Qos / SLA Management (1.1.1.7)

Level	eTOM process element	Alignment	Mapping
1	1.1.1 Customer Relationship Management		See detailed comments against Level 3 processes later
2	1.1.1.7 Customer QoS/SLA Management		See detailed comments against Level 3 processes later
3	1.1.1.7.1 Assess Customer QoS/SLA Performance	HP USLAM SLA Monitoring	**Brief Description** Manage the overall assessment of the customer QoS/SLA performance (A) Covered by the HP Universal SLA Manager. [HP USLAM] 1.1 Objectives of SLA Management, p10. See extended description. **Extended Description** The purpose of the Assess Customer QoS/SLA Performance processes is to manage the overall assessment of the customer QoS/SLA performance. (A) [HP USLAM] 1.1 Objectives of SLA Management, p10, 1st paragraph and following bullet points. These processes are responsible for ensuring that the QoS received by the customer meets the contractual obligations agreed with the customer. (A) [HP USLAM] 1.1 Objectives of SLA Management, p10, 1st paragraph They check that the QoS data that they receive from other processes and entities meets the required QoS thresholds and they alert other processes and entities if this is not the case. (A) [HP USLAM] 1.1 Objectives of SLA Management, p10, bullets 5 & 6 “Monitor…”, “Produce…reports…” These processes are responsible for collecting service and resource performance information analyzed and reported by the Report Service Quality Performance and Report Resource Performance processes, and converting it into a form suitable for determining whether the contractual obligations with the customer are being met. (A) [HP USLAM] 2.3 The USLAM Workflow, p17 figure of workflow and description of workflow on p17 [HP USLAM] 2.4 Data Collection, p18, about examples of collected data The actual reporting of the results of the assessments is managed in the Report Customer QoS Performance processes. Note 2, see 1.1.1.7.3 Report Customer QoS Performance They are responsible for maintaining an overview of the quality of the customer's purchased product offering, and for carrying out QoS performance reviews with the customer, as well as for undertaking any preparatory and/or follow-up steps with other processes/entities in conjunction with such reviews (AM) [HP USLAM] 1.1 Objectives of SLA Management, p10, bullets 1 “Develop service offers…”, 6 “Produce reports for internal external use”, 7 “bill for service”, 8 “… improve service” 2.2 USLAM Operation Overview, p15, about purpose of the product
3	1.1.1.7.2 Manage QoS/SLA Violation	HP USLAM SLA Alerting HP Service Manager: Incident Assignment Incident Investigation & Diagnostics Incident Escalation Interaction Handling	**Brief Description** Ensure that the customer and the relevant internal processes are informed of service quality degradations and violations and that action is undertaken to resolve the degradation or violation (AM) HP USLAM raises SLA Alerts in case defined threshold are crossed. [HP USLAM] 3.8 SLA Alerts, p23, about action execution, **[HP USLAM AG]** 3.7 SLA alerting rule, p50-51, about alert rules for Breach or AtRisk SLAs Alerts will cause an Incident Creation, indicating a QoS Performance Degradation (see 1.1.1.7.4 Create Customer QoS Performance Degradation Report), i.e. Investigation

Level	eTOM process element	Alignment	Mapping
			and resolution will be managed using ITIL Processes (Incident, Problem, Change) [HP SM ITIL Procs] Service Manager best practice processes, p18-19 See extended description. **Extended Description** The purpose of the Manage QoS/SLA Violation processes is to ensure that the customer and the relevant internal processes are informed of service quality degradations and violations and that action is undertaken to resolve the degradation or violation. (AM) [HP USLAM] 3.8 SLA Alerts, p23, SLA alerts allow information about service quality degradations and violations and trigger actions, such as Incident Creation (see 1.1.1.7.4 Create Customer QoS Performance Degradation Report) They analyze all the information related to a QoS/SLA degradation or violation and take the appropriate actions when a soft threshold is crossed or the agreed QoS is violated. (AM) See SLA processing model: **[HP USLAM AG]** Chapter 3 SLA processing model, p28 and 3.2 Main steps of SLA items status processing, p29-p30 The information collected and reported by HP USLAM (see 1.1.1.7.3 Report Customer QoS Performance), is used for further investigation, managed by the Incident process. [HP SM ITIL Procs] SO 2.3.3 Investigate and Diagnose, p69 They follow up the actions to ensure that the customer is satisfied with the resolution of the problem. (AM) [HP SM ITIL Procs] Incident Closure (process SO 2.5), SO 2.5.2 Verify and confirm resolution, p74, "If required, the Incident Analyst is entitled to contact the User to validate the resolution", that would work thru interaction handling: [HP SM ITIL Procs] Interaction Handling (process SO 0.2) , SO 0.2.13 Provide update to user and update existing interaction, p36 They ensure that the customer is informed of any planned maintenance or other scheduled events likely to impact delivery of the customer's service. (AM) [HP USLAM] 3.11 Maintenance, p24, planned and un-planned maintenances can be is considered for SLA calculations [HP USLAM] 6.5.7 Unplanned Maintenance Management, p58f, about handling of unplanned maintenance Given the Incident of the SLA Violation results in a Change, that is also controlled thru Change Management workflows: [HP SM ITIL Procs] Change Assessment and Planning (process ST 2.3), ST 2.3.1 Assess change impact and determine risk category, p167, "consider… Impact that the change will make on the customer's business operation"
3	1.1.1.7.3 Report Customer QoS Performance	HP USLAM Reporting HP Service Manager: Incident Reporting	**Brief Description** Report on the customer's QoS/SLA performance (AM) This is realized based HP USLAM, which allows automatic creation of various SLA reports [HP USLAM] Chapter 7, USLAM Reports, p61f See extended description. **Extended Description** The objective of the Report Customer QoS Performance processes is to monitor the status of customer QoS performance degradation reports, provide notifications of any changes and provide management reports. (AM) SLA Status is monitored by the operator: [HP USLAM] 6.4.2 Viewing Agreement Details, p46 Once customer QoS performance degradation report is created in form of an Incident, the status of the Inciodent is shown and monitored with its Status field: [HP SM ITIL Procs] Incident Management form details, p86, field "Status" General tasks of SLA Management about Reporting QoS Performance is described in [HP USLAM] 1.1 Objectives of SLA Management, p10, bullets 5 & 6 "Monitor…", "Produce…" [HP USLAM] 6.4 Operator Tasks, p42f, explains Managing Agreements and Viewing Agreement Details to monitor SLA status real-time [HP USLAM] Chapter 7, USLAM Reports, p61f (A), about reports overall, and [HP USLAM] 7.2.2 Viewing the SLA Details Report, p65f about detailed reports. All reporting activity is automated. These processes are responsible for continuously monitoring the status of customer QoS performance degradation reports and managing notifications to other processes

Level	eTOM process element	Alignment	Mapping
			and to other parties, including customers, registered to receive notifications of any status changes.(AM) SLA Status is monitored by the operator: [HP USLAM] 6.4.2 Viewing Agreement Details, p46 Once customer QoS performance degradation report is created in form of an Incident, Incident status changes may trigger other activities of the Incident (and other ITIL) workflow, supported by various parties. [HP SM ITIL Procs] Service Management organization, p16-17 [HP SM ITIL Procs] Incident Management process overview, p55-56 Notification lists are managed and maintained by the Support Customer QoS/SLA Management processes. Note 1 the mentioned process is out of scope for this assessment, but the list of notifications is handled thru ITIL Incident- and Interaction management. These processes record, analyze and assess the customer QoS performance degradation report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Customer QoS/SLA Management process. These specialized summaries could be specific reports required by specific audiences and/or customers. (AM) [HP SM ITIL Procs] SLA Monitoring (process SO 2.7), p77f, allows to monitor handling of Incidents (as SLA Conseqence) in contracted time. (A) Specific reports about Customer QoS Performance are provided in [HP USLAM] 7.2.1 Viewing the Customer-All-SLAs Report, p63f, The CustomerAllSLAs report displays all SLAs related to a single specified customer for a specified reference period. (AM) [HP USLAM] 7.2.3 Viewing the Service-All-SLAs Report, p67f, The ServiceAllSLAs report displays all SLAs related to a single specified service definition and service property for a specified date. (AM) [HP USLAM] 7.2.4 Viewing the Country Wide Statistics Report, p68f, The CountryWideStatistics report displays country wide SLA compliance statistics during a specified quarter for a specified service offering These processes also report any identified constraints that can affect customer related quality standards to other processes. These constraints may include specific resource failures, capacity shortages due to unexpected demand peaks, etc.(A) See SLA processing model: **[HP USLAM AG]** Chapter 3 SLA processing model, p28 and 3.2 Main steps of SLA items status processing, p29-p30 Collection of KPIs may include customer relevant resource data. As shown in steps 2-4 typical data collected is tickets, metrics or events. Data sources can also mean applications of processes for service problem management, service quality management, resource trouble management or resource performance management.
3	1.1.1.7.4 Create Customer QoS Performance Degradation Report	HP Service Manager: Incident Logging	**Brief Description** Create a new customer QoS performance degradation report (AM) Customer QoS performance degradation report is created as Incident and triggered e.g. from USLAM as SLA Alert: [HP USLAM] 3.8 SLA Alerts, p23, USLAM warns or alerts about SLA violations. [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64f See Extended Description. **Extended Description** The objective of the Create Customer QoS Performance Degradation Report process is to create a new customer QoS performance degradation report, modify existing customer QoS performance degradation reports, and request cancellation of existing customer QoS performance degradation reports. (AM) This is all enabled using Incident Management wokflows: [HP SM ITIL Procs] 6 Incident Management Workflows, p61f. which provides logging, investigation, resolution, closure and escalation. A new customer QoS performance degradation report may be created as a result of specific customer initiated QoS performance degradation notifications, or at the request of analysis undertaken by other CRM, or SM&O processes which detect that some form of deterioration or failure has occurred requiring an assessment of the performance of the specific customer purchased product offering. (AM) There are variants, how the customer QoS performance degradation report is created as Incident: Automatic, by integrating USLAM with ServiceManager, what needs to be configured

Level	eTOM process element	Alignment	Mapping
			thru the Action Executor [HP USLAM] 3.8 SLA Alerts, p23, This can be done via SNMP and an Event in TeMIP, what is a typical customer case. Then the Incident is associated to the Event (see 4.4Resource Trouble Management [1.1.3.3] (SM Basis,TeMIP with , how TeMIP interacts with Incident Mgmt.) **[HP USLAM TeMIP]** HP USLAM SNMP Interface, p17, see fields uslamStateChange Trap. Such fields can also be mapped directly into an Incident, as shown in **[HP SM Screen]** QoS Degradation Report Incident, p1, fields indicating, that this is a QoS Degradation report have a red square Beside automatic detection of the degradation and creation of the Incident, the report may be may be created as Incident out of an Interaction, e.g. started from HelpDesk of Customer Problem Management in an Interaction (see also 4.1 Problem Handling (1.1.1.6) (SM Basis, SM/SD]). Any case, the report can be entered as Incident manually, using the standard HP SM GUI and the Incident fields: [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f [HP SM ITIL Procs] Incident form after escalation from Service Desk, p84 Category, Area and Sub-Area of Incident can be configured, so that the operator recognizes it as customer QoS performance degradation report: **[HP SM Telco]** Chapter 2, Telco Category Definition, p6f, see screenshot p8 for area definition; the area also comprises QoS performance, and can be adapted or refined as needed. If the customer QoS performance degradation report is created as a result of a notification from customers or as a result of a request from other processes, Note 2, Via Problem Handling, see 4.1 Problem Handling (1.1.1.6) (SM Basis, SM/SD], or from 1.1.1.7.2 Manage QoS/SLA Violation the Create Customer QoS Performance Degradation Report processes are responsible for converting the received information into a form suitable for the Customer QoS/SLA Management processes, and for requesting additional information if required.(AM) Thru Incident Management as shown in [HP SM ITIL Procs] Incident Logging (process SO 2.1), p61f Additional Information will be requested, (e.g. potentially thru the interaction) SO 2.1.10 Gather required information, p63. See also screenshot: **[HP SM Screen]** QoS Degradation Report Incident, p1, fields indicating, that this is a QoS Degradation report have a red square
3	1.1.1.7.5 Track & Manage Customer QoS Performance Resolution	HP Service Manager: Incident Resolution & Recovery Incident Escalation	**Brief Description** Efficiently assign, coordinate and track specific customer purchased product offering related performance analysis, restoration and improvement activities, and escalate any open customer QoS performance degradation reports in jeopardy. (AM) Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), p70 [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 See Extended Description. **Extended Description** The objective of the Track & Manage Customer QoS Performance Resolution processes is to efficiently assign, coordinate and track specific customer purchased product offering related performance analysis, restoration and improvement activities, and escalate any open customer QoS performance degradation reports in jeopardy. (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.55, first paragraph: “The Incident Management process includes all necessary steps to log and resolve an incident, including any necessary escalations or reassignments. Monitoring of Service Level Agreements (SLAs), Operation Level Agreements (OLAs), and Underpinning Contracts (UCs) are also part of the overall process.” See next explanations. Responsibilities of these processes include, but are not limited to: · Adding additional information to an open customer QoS performance degradation report based on the first-in and on-going analysis; (AM) [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67, allows to add additional information Which may use information from Agreement details

Level	eTOM process element	Alignment	Mapping
			[HP USLAM] 6.4.2 Viewing Agreement Details, p46 Or from HP USLAM Reporting (see also 1.1.1.7.3 Report Customer QoS Performance). · Scheduling, assigning and coordinating analysis and specific customer QoS performance restoration activities and/or repair activities delegated to other processes; (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Incident Coordinator: • Reviews and accepts or rejects incidents assigned to the support group. • Handles incidents escalated by an Incident Analyst of the support group. • Monitors Operational Level Agreements (OLA) and Underpinning Contracts (UC) targets of the support group." HP SM ITIL Procs] 5 Incident Management Process Overview, p.64 -66 describes the incident assignment process. Process details are described in [HP SM ITIL Procs] Incident Assignment (process SO 2.2), p64 or [HP SM ITIL Procs] Incident Resolution and Recovery (process SO 2.4), SO 2.4.3 Analyst entitled, p72 · Generating the respective service trouble report creation request(s) to Create Service Trouble Report based on specific customer QoS performance degradation reports where analysis the root cause is related to services; (AM) In case the investigation results in a root cause, originating in service troubles, the same Incident may be assigned to service trouble management group: [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Operator • Registers incidents based on an event and assigns them to the correct support group." Alternatively, the customer QoS performance degradation report Incident is associated with an existing or creating a new service trouble report incident (see also 4.3 Service Problem Management [1.1.2.3] (SM Basis, TeMIP with UCA)). Incidents can be related to each other; the Incident SLA management monitors such relationships: [HP SM ITIL Procs] SLA Monitoring (process SO 2.7), SO 2.7.5 Communicate related incident status to all affected Users, p78 · Modifying information in an existing customer QoS performance degradation report based on assignments; (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Incident Analyst: • Reviews and accepts or rejects assigned incidents. • Documents incident resolutions or workarounds in the Service Management application. In more detail: either this happens, when reviewing the incident, if it is not solved: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 Or it is a planned assignment to different operators, so the Incident review is started again: [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3) · Modifying the customer QoS performance degradation report status; (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.57, table 5.1: "The Incident Analyst: • Documents incident resolutions or workarounds in the Service Management application. · Canceling a customer QoS performance degradation report when the specific request was related to a false performance event; and (M) Manual processing will identify a false Incident, following the ITIL Incident Investigation and Diagnosis (process SO 2.3) workflows in [HP SM ITIL Procs]) (M): SO 2.3.3 Investigate and Diagnose, p69 SO 2.3.4 Incident reproduced?, p69 SO 2.5.5 Incident initiated by an event?, p74 · Monitoring the jeopardy status of open customer QoS performance degradation reports, and escalating customer QoS performance degradation reports as necessary. (AM) HP SM ITIL Procs] 5 Incident Management Process Overview, p.74 describes the Incident escalation process: When an Incident Analyst is unable to solve an assigned incident within the target time, the analyst escalates the incident to the Incident Coordinator. The Incident

Level	eTOM process element	Alignment	Mapping
			Coordinator determines how the incident can best be resolved by consulting the Incident Analyst and, if needed, other Incident Analysts. If an incident is severe (for example, designated as Priority 1), the appropriate IT managers must be notified so that they can anticipate and prepare for an escalation. In more detail, monitoring is using SLA management and escalation of Incident Management: [HP SM ITIL Procs] Incident Escalation (process SO 2.6), p74 [HP SM ITIL Procs] SLA Monitoring (process SO 2.7), SLA are monitored automaticaly Note that some specific product and/or service components may be owned and managed by suppliers/partners. In these cases the Track & Manage Customer QoS Performance Resolution process is responsible for initiating requests, through S/P Performance Management for resolution by the supplier/partner of the specific service components. This will be coordinated by assignment to responsible group (see above) and as shown in 3.5 S/P Problem Reporting & Management (1.1.4.3) (SM Basis, . These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.55, first paragraph: “Monitoring of Service Level Agreements (SLAs), Operation Level Agreements (OLAs), and Underpinning Contracts (UCs) are also part of the overall process. See also [HP SM ITIL Procs] OLA and UC Monitoring (process SO 2.8) p79 and in the appropriate sequence.(M) Beside the defined workflows of Incident Management, this is typical task of Change management, when resolving the trouble [HP SM ITIL Procs] Coordinate Change Implementation (process ST 2.5), p171 The Track & Manage Customer QoS Performance Resolution processes will also inform the Close Customer QoS Performance Degradation Report processes by modifying the customer QoS performance degradation report status to cleared when the specific customer purchased product offering performance quality issues have been resolved. (AM) [HP SM ITIL Procs] 5 Incident Management Process Overview, p.72, Incident Closure: “After a solution is implemented for an incident, the solution must be verified, typically by the group that implemented the solution. If necessary, the user can be contacted to verify the solution. The resolving group closes the incident and notifies the Service Desk to close the related interaction.” In more detail: The status field of the incident provides the information about the close of the Customer QoS Performance Degradation Report: [HP SM ITIL Procs] Incident Management Form Details, status field, p86 The field will be set appropriately by process: [HP SM ITIL Procs] Incident Closure (process SO 2.5), SO 2.5.2 Verify and confirm resolution p74
3	1.1.1.7.6 Close Customer QoS Performance Degradation Report	HP Service Manager: Incident Closure Incident Escalation	**Brief Description** Close a customer QoS performance degradation report when the performance of the customer purchased product offerings has been resolved (AM) Fully supported based on ITIL Incident Management: [HP SM ITIL Procs] Incident Closure (process SO 2.5), p72 See Extended Description. **Extended Description** The objective of the Close Customer QoS Performance Degradation Report processes is to close a customer QoS performance degradation report when the performance of the customer purchased product offerings has been resolved. (AM) [HP SM ITIL Procs] 6 Incident Management Overview, p.72-74 “The Incident Closure process includes many steps to verify the success of implemented solutions and to verify that incident tickets are accurate and complete.” These processes monitor the status of all open customer QoS performance degradation reports, and recognize that a customer QoS performance degradation report is ready to be closed when the status is changed to cleared. (AM) The Incident Resolution and Recovery process triggers the incident closure process. [HP SM ITIL Procs] 6 Incident Management Workflows and process, page 73-74

4.3 Service Problem Management [1.1.2.3] (SM Basis, TeMIP with UCA)

Table 4.3 Process Mappings – Service Problem Management (1.1.2.3)

Level	eTOM process element	Alignment	Mapping
1	1.1.2 Service Management & Operations		See detailed comments against Level 3 processes later
2	1.1.2.3 Service Problem Management		See detailed comments against Level 3 processes later
3	1.1.2.3.1 Create Service Trouble Report	HP Service Manager: Incident Logging	See 1.1.2.3.1 Create Service Trouble Report of phase 1
3	1.1.2.3.2 Diagnose Service Problem	Diagnose the Service Problem can happen a) at event level with service impact management, i.e. see also 1.1.2.3.7 Survey & Analyze Service Problem, or b) Starting from an Service Problem Report, i.e. an Incident. To realize a) HP applies HP UCA, integrated with TeMIP, as shown in 1.1.2.3.7 Survey & Analyze Service Problem. More details are provided here within the Extended Description. To realize b) HP applies HP Service Manager for the ITIL processes: • Incident Assignment • Incident Investigation & Diagnostics • Incident Resolution & Recovery • Incident Escalation with HP Operations Orchestrations (HP OO) to automate tests. This is already described in 3.1 Service Problem Management (1.1.2.3) (SM Basis, and copied here for some parts, such as specific examples of Tests mentioned from the customer case and implemented using HP OO.	**Brief Description** Identify the root cause of the specific service problem(AM) A Service Problem is analyzed typical by a Service Impact Analysis within 1.1.3.3.1 Survey & Analyze Resource Trouble (see also 4.4 Resource Trouble Management [1.1.3.3] (SM Basis,TeMIP with), hence the same correlation can be done to diagnose the service problem: [HP UCA UG] Chapter 1 Introduction, p13, paragraph 4: "… the underlying root cause of the problem can be investigated and resolved and the impact on managed services … determined through correlation." Once the root cause is identified thru alarms correlations, further investigations can be done by ITIL Incident Management: [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67 See Extended Description. **Extended Description** The objective of the Diagnose Service Problem processes is to identify the root cause of the specific service problem.(AM) Root cause is done first in event correlation, using HP UCA: [HP UCA UG] Chapter 1 Introduction, p13, paragraph 3,4: "… the underlying root cause of the problem can be investigated and resolved and the impact on managed services … determined through correlation." Once the root cause is identified thru alarms correlations, further investigations can be done by ITIL Incident Management: [HP SM ITIL Procs] Incident Investigation and Diagnosis, process SO 2.3, p67f Automated Incident Diagnostics can be applied as described in 3.1 Service Problem Management (1.1.2.3) (SM Basis, , based on HP Operations Orchestrations [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p57f (A) These processes are invoked by the Track & Manage Service Problem processes.(AM) Note 2, see 1.1.2.3.4 Track & Manage Service Problem as described in 3.1 Service Problem Management (1.1.2.3) (SM Basis, . First root cause event correlation is already done in 1.1.2.3.7 Survey & Analyze Service Problem. Hence HP UCA may also trigger specific Tests and Diagnostics. This would be realized by triggering HP OO thru the HP UCA "Remote Handler": [HP UCA UG] 3.10 Notification Manager and Remote Handler, p29: "It is the responsibility of the UCA Notification Manager to handle any interactions between UCA and external systems", i.e. HP OO (Examples are only given with TeMIP). This integration allows using HP OO for Tests & Diagnostics, as described with the customer case in 3.1 Service Problem Management (1.1.2.3) (SM Basis, . The responsibilities of these processes include, but are not limited to: · Verifying whether the service configuration matches the appropriate product features; (AM) As already shown in 3.1 Service Problem Management (1.1.2.3) (SM Basis, , below tasks are all possible started from HP SM, according to [HP SM ITIL Procs], processes SO 2.3, specific step SO 2.3.3 Investigate and Diagnose, p69 (M) automated using the "Fault Tree" with HP OO, see [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p57 (A)

Level	eTOM process element	Alignment	Mapping
			Manually from Incident GUI, [Exp TD SM] 4.6.1, "Principles" , U.11 User Starts Test or Diagnostic Manually, p92 · Performing diagnostics against the specific services;(AM) · Running tests against the specific services;(A) As in 3.1 Service Problem Management (1.1.2.3) (SM Basis, , See Example Tests, executed by HP OO: Example Test: [Exp TD OO T&D] 4.4.1.2.2 Diagnose configuration of VOIP (UC RMA.T2), p63 · Starting and stopping audits against specific services; and (AM) Audits are created like reports or tests. They can be triggered manually, using means as explained before, or Automatic, using scheduling as explained next. · Scheduling routine testing of the specific services.(A) See 3.1 Service Problem Management (1.1.2.3) (SM Basis, : [Exp TD OO T&D] 5.2.4 Scheduler, p79 – HP OO allows to schedule workflows. The customer case shows examples. Within HP UCA t is also possible to schedule countdown timers to trigger rules which can trigger scripts/actions: [HP UCA UG] 13.2 Countdown Timers, p151 The Diagnose Service Problem processes will make the results of the root cause analysis available to other processes. The Diagnose Service Problem processes will update the open service trouble report, as required during the assessment, and when the root cause has been identified.(AM) As all results will be documented (update) with the Incident (Automated or Manual), the Incident is the means to forward the results to other processes. [HP SM ITIL Procs] Update incident form, p85, the operator may use the Incident for manual updates. Various fields (category, area, sub-area, description etc) are used to describe the root cause). Automation can be done as described in 3.1 Service Problem Management (1.1.2.3) (SM Basis, [Exp UC SMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, Step 8, p57 (A) As alternative, if the root cause analysis is done based on events using HP UCA, the UCA "Remote Handler" allows updating objects of other applications. The documentation explains, how this could work for TeMIP alarms: [HP UCA TeMIP] 7.4.3 Update Root Cause Alarm, p29. it can be handled similar for Incidents in HP SM. When the process is complete the Diagnose Service Problem processes will notify the Track & Manage Service Problem processes.(AM) This is a native process, when Incident Investigation and Diagnosis hands over to Incident Resolution & Recovery, after the Resolution or Workaround is identified. [HP SM ITIL Procs] Figure 6-3 Incident Investigation and Diagnosis workflow, p68
	1.1.2.3.3 Correct & Resolve Service Problem	HP Service Manager: Incident Resolution & Recovery Change & Config Mgmt	See 1.1.2.3.3 Correct & Resolve Service Problem of phase 1
	1.1.2.3.4 Track & Manage Service Problem	HP Service Manager: Incident Resolution & Recovery Incident Escalation	See 1.1.2.3.4 Track & Manage Service Problem of phase 1
	1.1.2.3.5 Report Service Problem	HP Service Manager: Incident Reporting	See 1.1.2.3.5 Report Service Problem of phase 1
	1.1.2.3.6 Close Service Trouble Report	HP Service Manager: Incident Closure Incident Escalation	See1.1.2.3.6 Close Service Trouble Report of phase 1
	1.1.2.3.7 Survey & Analyze Service	HP TeMIP HP TeMIP Service Console HP UCA	**Brief Description** Monitor service alarm event notifications and manage service alarm event records in real-time (A)

Level	eTOM process element	Alignment	Mapping
	Problem		Service Monitoring is covered thru TeMIP Service Console with integrated UCA as Correlation Manager. See extended description. **Extended Description** The objective of the Survey & Analyze Service Problem processes is to monitor service alarm event notifications and manage service alarm event records in real-time. (A) [HP TeMIP Fam] 3.2 TeMIP Alarm Handling, p38f Services are modeled in TeMIP as Managed Objects. The alarms look the same as for Resources. Service alarms are typically of Alarm Type “Quality of Service”. See also: [HP TeMIP AH] 4.3.6 Quality Of Service Alarm Event Arguments, p63 An example of models is shown for a Service Impact Analysis with UCA: [HP UCA TeMIP] Chapter 10 Service impact and RCA example, 10.1 Model, p72 Responsibilities of the Survey & Analyze Service Problem processes include, but are not limited to: · Detecting and collecting service alarm event notifications; (A) Events are detected from resources thru TeMIP Access modules, as shown in 1.1.3.3.1 Survey & Analyze Resource Trouble”. If received alarms do not refer to Services as Managed Objects directly, resource alarms may result in synthetic service alarms as shown in this Service Impact Analysis example: [HP UCA TeMIP] Chapter 10 Service Impact and RCA example, p72 10.3 Radio problem detection and Service Impact, p64 · Initiating and managing service alarm event records; (A) Alarms are created as “Alarm Objects” record, collected by an “Operations Context” [HP TeMIP AH] 1.1 Alarm Handling, p13, for the overall concept see also [HP TeMIP Fam] 5.1.2.1 Collection, p74-75 · Performing service alarm event notification localization analysis; (A) This will work thur a Root Cause Analysis, identifying the root cause resource alarm; this will itdenify the originating resource, which is part of a model, what can be shown with local or geographic localization information. TeMIP provides a GIS Map to localize the managed elements: [HP TeMIP GIS] 1.7 Big GIS Map, p14-15 · Correlating and filtering service alarm event records; (A) Alarms can be filtered for the Alarm Type “Quality of Service Alarm” by the operator, using the Alarm Filter features: [HP TeMIP Client] 11.3.1 Alarm Filtering, p168 For correlation, TeMIP applies the Universal Correlation Analyzer (UCA): [HP TeMIP Client] 11.3.21 Unified Correlation Analyzer Integration, p196f [HP UCA TeMIP] Chapter 2 Main features, p11 · Reporting service alarm event record status changes to other processes; (AM) Alarm Objects have a lifecycle, which is attended by events, used to inform other components (i.e. processes): [HP TeMIP Fam] 5.1.2.12 Notifying Client Applications, p77 Further details and concrete integrations e.g. with trouble ticket systems are mentioned in: [HP TeMIP Fam] 5.7 Trouble Management, p99 Alarms can be associated with Trouble Ticket (i.e. Incidents) automated (using event rules) or manually (using alarm object directives). · Managing service alarm event record jeopardy conditions.(A) Alarms are escalated by raising their severity, in case it is not acknowledged by an operator within a configurable time: [HP TeMIP AH] 1.8 Alarm Escalation, p19f Service alarm event notification analysis encompasses the identification of the service alarm event in terms of reporting entity and nature of the service alarm event.(A) The identification as described is performed within the TeMIP access module. The resulting attributes are provided with the alarm object: [HP TeMIP AH] 5.2 Alarm Object Attributes, p65f (A)

Level	eTOM process element	Alignment	Mapping
			It will then analyze the service alarm events based on a number of criteria and then suppress redundant, transient or implied service alarm events by means of filtering and correlation. Comprehensive Filter Mechanisms are available within TeMIP: [HP TeMIP Fam] 2.2.3 Event Flow and Low Level Filtering, p15-17 As well as complex correlations thru TeMIP Expert or UCA [HP UCA UG]Chapter 2 Main features, p11 It includes the notification of new service alarm event records, or status changes of previously reported service alarm event records, (A) As mentioned, alarm object indicate their creation or state changes: [HP TeMIP Fam] 5.1.2.12 Notifying Client Applications, p77 e.g. for use by the correlation engine: [HP UCA UG] Chapter 3 Global picture, p12 With features to update or create new alarms (master, root-cause) in [HP UCA UG] 7.4 Call-outs, p29-30 as well as abatement messages when service alarm event records have been cleared. (A) Standard clearance correlation within TeMIP Alarm Handling: [HP TeMIP AH] 1.5 Alarm Correlation on Clearance, p15-16 The analysis will correlate service alarm event notifications to planned outage notifications to remove false service alarm event notifications arising as a result of the planned outage activity.(A) TeMIP provides outage management off the shelf: [HP TeMIP Fam] 5.2 Outage Management, p87 As far as outage management concerns resources, synthetic service impact events won't consequently be generated neither. These processes may determine that a service alarm event notification may represent a customer impacting condition. In these circumstances this process is responsible for indicating a potential customer problem to the Problem Handling processes. (AM) With TeMIP Service Console it is possible to recognize service and customer impact, given the customer is modeled and associated to the service. [HP TeMIP SC] TeMIP Service Console , Key features and benefits, pA5 TeMIP service console allows to define SLAs [HP TeMIP SC] 7.6.3 Define a TeMIP Service SLA,p75 Based on HP BAC, which may associate customers with an SLA. Correlation rules for those services, which have customer impact, can generate a Trouble ticket / Incident, which can be propagated to Problem Handling (as shown for the customer case). This can be configured for full automatic processing, but sure, the operator may create the customer problem report manually, out of the service problem. As a part of this indication this process is responsible for identifying the impacted deployed product instances associated with the service instances presenting alarm event notifications and passing this information to the Problem Handling processes. Note 2, See Problem Handling (planned) for more. Service alarm event record correlation and filtering encompasses the correlation of redundant, transient (A) Comprehensive Filter Mechanisms are available within TeMIP: [HP TeMIP Fam] 2.2.3 Event Flow and Low Level Filtering, p15-17 or implied service alarm event notifications with a specific "root cause" service alarm event notification and associated service alarm event record. (A) See correlation example [HP UCA TeMIP] 10.5 Final picture, p66 Alarm navigation allows to differentiate categories of alarms, to recognize root cause, service impact etc, to filter and navigate alarms: [HP TeMIP Client] 2.9 Unified Correlation Analyzer Integration, 2.9.1 Overview, p70 The Survey & Analyze Service Problem processes might trigger a well-defined action based on specific service alarm event notification information as well as

Level	eTOM process element	Alignment	Mapping
			the non-arrival of service alarm event notification information after a specific time interval has elapsed. (A) This can be thru UCA, e.g. creating trouble tickets in HP SM: [HP UCA TeMIP] 8.3 UCA Trouble Ticket Actions, p38 Or thru TeMIP directly: [HP TeMIP Client] Chapter 14, TeMIP Alarm Forwarding, figure 175, p244 These processes are also responsible for monitoring and triggering the appropriate action when a service alarm event record is not cleared within a pre-defined period of time. (A) There are three alternatives: A specific low level filter, avoiding an alarm comes thru at all, if a clear event is received within a certain time: [HP TeMIP Fam] 5.1.1 Low Level Filters, about Toggling Filter, p73 Second, the alarm escalation. Alarms are escalated by raising their severity, in case it is not acknowledged by an operator within a configurable time: [HP TeMIP AH] 1.8 Alarm Escalation, p19f Third, with a specific rule in TeMIP expert (later UCA), this allows to set timers. An example is given with a demo file, showing how a timer depended rule can be done to control certain alarm clearance: [HP TeMIP Exp] 8.9 Transient Filter Demo, p50 [HP UCA UG] Chapter 13 Time Dependent Event Correlation, p150f

4.4 Resource Trouble Management [1.1.3.3] (SM Basis,TeMIP with UCA)

Table 4.4 Process Mappings - Resource Trouble Management (1.1.3.3)

Level	eTOM process element	Alignment	Mapping
1	1.1.3 Resource Management & Operations		See detailed comments against Level 3 processes later
2	1.1.3.3 Resource Trouble Management		See detailed comments against Level 3 processes later
3	1.1.3.3.1 Survey & Analyze Resource Trouble	HP TeMIP is used to monitor and managed Resource Troubles. For overview of the TeMIP Product Family, see [HP TeMIP Fam] Chapter 1 Introduction, 1.1 HP TeMIP Product Family, p9 HP Universal Correlation Analyzer, integrated with TeMIP, is used for advanced event correlations, automation and Root Cause Analysis. For an overview see main features in [HP UCA UG] Chapter 2 Main features, p11	**Brief Description** Monitor resource alarm event notifications and manage resource alarm event records in real-time (A) Covered by TeMIP Alarm Handling with integrated UCA as Correlation Manager. See extended description. **Extended Description** The objective of the Survey & Analyze Resource Trouble processes is to monitor resource alarm event notifications and manage resource alarm event records in real-time. (A) [HP TeMIP Fam] 3.2 TeMIP Alarm Handling, p38f Responsibilities of the Survey & Analyze Resource Trouble processes include, but are not limited to: · Detecting and collecting resource alarm event notifications; (A) Events are detected from resources thru TeMIP Access modules: [HP TeMIP Fam] 4.1 Southbound Connectivity, p54 They are collected and managed by TeMIP's comprehensive Fault Management: [HP TeMIP Fam] 5.1 Fault Management, p71f · Initiating and managing resource alarm event records; (A) Alarms are created as "Alarm Objects" record, collected by an "Operations Context" [HP TeMIP AH] 1.1 Alarm Handling, p13, for the overall concept see also [HP TeMIP Fam] 5.1.2.1 Collection, p74-75 · Performing resource alarm event notification localization analysis; (A) Alarms are associated to Managed Elements, which are part of a model, which can be shown with local or geographic localization information. TeMIP provides a GIS Map to localize the managed elements: [HP TeMIP GIS] 1.7 Big GIS Map, p14-15 · Correlating and filtering resource alarm event records; (A) For this purpose, TeMIP applies the Universal Correlation Analyzer (UCA): [HP TeMIP Client] 11.3.21 Unified Correlation Analyzer Integration, p196f [HP UCA TeMIP] Chapter 2 Main features, p11 · Reporting resource alarm event record status changes to other processes; (AM) Alarm Objects have a lifecycle, which is attended by events, used to inform other components (i.e. processes): [HP TeMIP Fam] 5.1.2.12 Notifying Client Applications, p77 Further details and concrete integrations e.g. with trouble ticket systems are mentioned in: [HP TeMIP Fam] 5.7 Trouble Management, p99 Alarms can be associated with Trouble Ticket (i.e. Incidents) automated (using event rules) or manually (using alarm object directives). and · Managing resource alarm event record jeopardy conditions. (A) Alarms are escalated by raising their severity, in case it is not acknowledged by an operator within a configurable time:

Level	eTOM process element	Alignment	Mapping
			[HP TeMIP AH] 1.8 Alarm Escalation, p19f Resource alarm event notification analysis encompasses the identification of the resource alarm event in terms of reporting entity and nature of the resource alarm event. (A) The identification as described is performed within the TeMIP access module. The resulting attributes are provided with the alarm object: [HP TeMIP AH] 5.2 Alarm Object Attributes, p65f It will then analyze the resource alarm events based on a number of criteria and then suppress redundant, transient or implied resource alarm events by means of filtering and correlation. (A) Comprehensive Filter Mechanisms are available within TeMIP: [HP TeMIP Fam] 2.2.3 Event Flow and Low Level Filtering, p15-17 As well as complex correlations thru TeMIP Expert or UCA [HP UCA UG] Chapter 2 Main features, p11 It includes the notification of new resource alarm event records, or status changes of previously reported resource alarm event records, (A) As mentioned, alarm object indicate their creation or state changes: [HP TeMIP Fam] 5.1.2.12 Notifying Client Applications, p77 e.g. for use by the correlation engine: [HP UCA UG] Chapter 3 Global picture, p12 With features to update or create new alarms (master, root-cause) in [HP UCA UG] 7.4 Call-outs, p29-30 as well as abatement messages when resource alarm event records have been cleared. (A) Standard clearance correlation within TeMIP Alarm Handling: [HP TeMIP AH] 1.5 Alarm Correlation on Clearance, p15-16 The analysis will correlate resource alarm event notifications to planned outage notifications to remove false resource alarm event notifications arising as a result of the planned outage activity. (A) TeMIP provides outage management off the shelf: [HP TeMIP Fam] 5.2 Outage Management, p87 These processes may determine that a resource alarm event notification may represent a service impacting condition. In these circumstances this process is responsible for indicating a potential service problem to the Service Problem Management processes. (A) TeMIP provide Service Impact Analysis [HP TeMIP Fam] 5.6 Service Impact Analysis, p93 (note: the chapter refer to older products TeMIP Service Monitor and TeMIP expert) This is also shown with the Client documentation in [HP TeMIP Client] 2.9.3 What is Alarm Navigation?, see figure 30, p74 The impact analysis is realized with (today's) UCA [HP UCA UG] Chapter 10 Service impact and RCA Example, p72 As a part of this indication this process is responsible for identifying the impacted service instances associated with the resource instances presenting alarm event notifications and passing this information to the Service Problem Management processes. Note 2, TeMIP Service Console extends TeMIP for Resource Trouble Management into Service Problem Management: [HP TeMIP SC] Chapter 1, Overview, p12 See 3.1 Service Problem Management (1.1.2.3) (SM Basis, for more. Resource alarm event record correlation and filtering encompasses the correlation of redundant, transient (A) Comprehensive Filter Mechanisms are available within TeMIP: [HP TeMIP Fam] 2.2.3 Event Flow and Low Level Filtering, p15-17 or implied resource alarm event notifications with a specific "root cause" resource alarm event notification and associated resource alarm event record. (A) Complex correlations thru UCA [HP UCA UG] Chapter 2 Main features, p11

Level	eTOM process element	Alignment	Mapping
			This is also shown with the Client documentation in [HP TeMIP Client] 2.9.3 What is Alarm Navigation?, see figure 30, p74 The Survey & Analyze Resource Trouble processes might trigger a well-defined action based on specific resource alarm event notification information (A) This can be thru UCA, e.g. creating trouble tickets in HP SM: [HP UCA TeMIP] 8.3 UCA Trouble Ticket Actions, p38 Or thru TeMIP directly: [HP TeMIP Client] Chapter 14, TeMIP Alarm Forwarding, figure 175, p244 as well as the non-arrival of resource alarm event notification information after a specific time interval has elapsed. (A) This is detected and managed by the Access Modules, as it depends on the protocols used. E.g. the ASCII AM supports heartbeat detection or keep alive functionality: [HP TeMIP GAT] 1.3 GAT Access Module Features, p7 These processes are also responsible for monitoring and triggering the appropriate action when a resource alarm event record is not cleared within a pre-defined period of time. (A) There are three alternatives: A specific low level filter, avoiding an alarm comes thru at all, if a clear event is received within a certain time: [HP TeMIP Fam] 5.1.1 Low Level Filters, about Toggling Filter, p73 Second, the alarm escalation. Alarms are escalated by raising their severity, in case it is not acknowledged by an operator within a configurable time: [HP TeMIP AH] 1.8 Alarm Escalation, p19f Third, with a specific rule in TeMIP expert (later UCA), this allows to set timers. An example is given with a demo file, showing how a timer depended rule can be done to control certain alarm clearance: [HP TeMIP Exp] 8.9 Transient Filter Demo, p50 [HP UCA UG] Chapter 13 Time Dependent Event Correlation, p150f
3	1.1.3.3.2 Localize Resource Trouble	Localization of Resource Trouble can happen c) at event management level, i.e. see also 1.1.3.3.1 Survey & Analyze Resource Trouble, or d) Starting from an resource trouble report, i.e. an Incident. To realize a) HP applies HP UCA, integrated with TeMIP, as shown in 1.1.3.3.1 Survey & Analyze Resource Trouble. More details are provided here within the Extended Description. To realize b) HP applies HP Service Manager for the ITIL processes: • Incident Assignment • Incident Investigation & Diagnostics • Incident Resolution & Recovery • Incident Escalation with HP Operations Orchestrations (HP OO) to automate tests. This is already described in 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, and copied here for some parts, such as specific	**Brief Description** Identify the root cause of the specific resource trouble (AM) Root cause is done first in event correlation, using HP UCA: [HP UCA UG] Chapter 1 Introduction, p13, paragraph 3,4: “The design of UCA takes…a conceptual model of the managed network and analyzing … to work out what the problem with the network is. Once this has been done, the underlying root cause of the problem can be investigated and resolved.” Once the root cause is identified thru alarms correlations, further investigations can be done by ITIL Incident Management: [HP SM ITIL Procs] Incident Investigation and Diagnosis (process SO 2.3), p67 See Extended Description. **Extended Description** The objective of the Localize Resource Trouble processes is to identify the root cause of the specific resource trouble.(AM) Root cause is done first in event correlation, using HP UCA: [HP UCA UG] Chapter 1 Introduction, p13, paragraph 3,4: “The design of UCA takes…a conceptual model of the managed network and analyzing … to work out what the problem with the network is. Once this has been done, the underlying root cause of the problem can be investigated and resolved.” Once the root cause is identified thru alarms correlations, further investigations can be done by ITIL Incident Management: [HP SM ITIL Procs] Incident Investigation and Diagnosis, process SO 2.3, p67f Automated Incident Diagnostics can be applied as described in 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, , based on HP Operations Orchestrations [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Step 8, p44 These processes are invoked by the Track & Manage Resource Trouble processes. (AM) Note 2, see 1.1.3.3.4 Track & Manage Resource Trouble.

Level	eTOM process element	Alignment	Mapping
		examples of Tests mentioned from the customer case and implemented using HP OO.	First root cause event correlation is already done in 1.1.3.3.1 Survey & Analyze Resource Trouble. Hence HP UCA may also trigger specific Tests and Diagnostics. This would be realized by triggering HP OO thru the HP UCA "Remote Handler": [HP UCA UG] 3.10 Notification Manager and Remote Handler, p29: "It is the responsibility of the UCA Notification Manager to handle any interactions between UCA and external systems", i.e. HP OO (Examples are only given with TeMIP). This integration allows to use HP OO for Tests&Diagnostics, as described with the customer case in 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, . The responsibilities of these processes include, but are not limited to: · Verifying whether the resource configuration matches the appropriate service features; (AM) As already shown in 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, , below tasks are all possible started from HP SM, according to [HP SM ITIL Procs], processes SO 2.3, specific step SO 2.3.3 Investigate and Diagnose, p69 (M) automated using the "Fault Tree" with HP OO, see [Exp UC RMF] 2.2.6.5 L.5 Automatic Incident Diagnostic, p44 Manually from Incident GUI, [Exp TD SM] 4.6.1, "Principles" , U.11 User Starts Test or Diagnostic Manually, p86 (M) · Performing diagnostics against the specific resources; · Running tests against the specific resources; (AM) As in 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, , See Example Tests, executed by HP OO: [Exp UC RMF] 2.2.6.3 N.3 / N.5 Send Test Command to Probe / to NE , p53 (AM) · Starting and stopping audits against specific resources; and · Scheduling routine testing of the specific resources. (A) See 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, : [Exp TD OO T&D] 5.2.4 Scheduler, p79 – HP OO allows to schedule workflows. The customer case shows examples. Within HP UCA t is also possible to schedule countdown timers to trigger rules which can trigger scripts/actions: [HP UCA UG] 13.2 Countdown Timers, p151 The Localize Resource Trouble processes will make the results of the root cause analysis available to other processes. The Localize Resource Trouble processes will update the open resource trouble report, as required during the assessment, and when the root cause has been identified. (AM) As all results will be documented (update) with the Incident (Automated or Manual), the Incident is the means to forward the results to other processes. [HP SM ITIL Procs] Update incident form, p85, the operator may use the Incident for manual updates. Various fields (category, area, sub-area, description etc) are used to describe the root cause). Automation can be done as described in 3.3 Resource Trouble Management (1.1.3.3) (SM Basis, : [Exp UC RMF] 2.2.5.5 L.5 Automatic Incident Diagnostic, Step 8, p44 As alternative, if the root cause analysis is done based on events using HP UCA, the UCA "Remote Handler" allows updating objects of other applications. The documentation explains, how this could work for TeMIP alarms: [HP UCA TeMIP] 7.4.3 Update Root Cause Alarm, p29. it can be handled similar for Incidents in HP SM. When the process is complete the Localize Resource Trouble processes will notify the Track & Manage Resource Trouble processes. (A) This is a native process, when Incident Investigation and Diagnosis hands over to Incident Resolution & Recovery, after the Resolution or Workaround is identified. [HP SM ITIL Procs] Figure 6-3 Incident Investigation and Diagnosis workflow, p68
3	1.1.3.3.3 Correct &	HP Service Manager: Incident Resolution & Recovery	See 1.1.3.3.3 Correct & Resolve Resource Trouble of phase 1

Level	eTOM process element	Alignment	Mapping
	Resolve Resource Trouble	Change & Config Mgmt	
3	1.1.3.3.4 Track & Manage Resource Trouble	HP Service Manager: Incident Resolution & Recovery, Incident Escalation	See 1.1.3.3.4 Track & Manage Resource Trouble of phase 1
3	1.1.3.3.5 Report Resource Trouble	HP Service Manager: Incident Reporting	See 1.1.3.3.5 Report Resource Trouble of phase 1
3	1.1.3.3.6 Close Resource Trouble Report	HP Service Manager: Incident Closure Incident Escalation	See 1.1.3.3.6 Close Resource Trouble Report of phase 1
3	1.1.3.3.7 Create Resource Trouble Report	HP Service Manager: Incident Logging	See 1.1.3.3.7 Create Resource Trouble Report of phase 1

4.5 Works Cited

4.5.1 Special notes

Note 1 This sentence is performed by another eTOM process element, which is not in scope of this assessment.

Note 2 This sentence is performed by another eTOM process element, which is in scope of this assessment. A reference is provided.

Note 3 This sentence explains a possible step, which precedes other processes. A reference is provided.

Note 4 This step can be supported, but was not requested for this customer case

4.5.2 Product documents

[HP NGOSS BP] HP NGOSS Blueprint and Solutions, Basic information for the TMF product assessments based on HP's OSS Assurance Suite V1.4, "White Paper HP NGOSS Blueprint and Solutions.pdf".
The paper is available to download from the TM Forum website at the following location: http://www.tmforum.org/HPOSSAssuranceSolution/12276/home.html.

Most of the following documentations are available, on the HP support web pages under http://support.openview.hp.com/selfsolve/manuals. You may need to register first.

Some are available under www.hp.com/cms, look for OSS-Transformation and OSS-Assurance.

General Information about HP SW for IT Operations is available under www.hp.com/software, look for IT Performance Suite.

[HP TeMIP Fam] HP TeMIP Software Product and Technical Solutions Overview, Edition: 6.1
"hp_man_temip6.1_ProductTechSolution_pdf.pdf"

[HP TeMIP AH] HP TeMIP Software Alarm Handling User's Guide, Edition: 6.1
"hp_man_temip6.1_AlarmHandling_user_pdf.pdf"

[HP TeMIP Client] HP TeMIP Software Client Overview, Edition: 6.3
"TeMIP_client6.3_overview.pdf"

[HP TeMIP GIS] HP TeMIP SoftwareClient GIS Map Viewer Guide, Edition: 6.3
"TeMIP_client6.3_gisguide.pdf"

[HP TeMIP SC] HP TeMIP Software, HP TeMIP Service Console, Installation & Configuration Guide, Edition: 1.2
"TeMIP_ServiceConsole6.1_InstallConfig.pdf"

[HP TeMIP GAT] HP TeMIP Software Graphical ASCII Toolkit Overview, Edition: 6.1
"hp_man_temip6.1_GraphASCIIToolkit_overview_pdf.pdf"

[HP TeMIP Exp] HP TeMIP HP TeMIP Software Expert Development Guide, Edition: 6.1
"hp_man_temip6.1_ExpertDev_pdf.pdf"

[HP UCA TeMIP] HP Software Unified Correlation Analyzer for Topology Based Correlation V1.2, TeMIP Integration Documentation, Edition: 1.0
"hp_man_NGOSS_UCA_TopoBasedCorrel1.20_Integration_pdf.pdf"

[HP UCA UG]	HP Software Unified Correlation Analyzer for Topology Based Correlation V1.2, User Guide, Edition: 1.0 "hp_man_NGOSS_UCA_TopoBasedCorrel1.20_User_pdf.pdf"
[HP USLAM]	HP Universal Service Level Agreement Manager, User Guide, Edition: 1.0, "HP USLAM User Guide 1.0.0-MR.pdf"
[HP USLAM AG]	HP Universal Service Level Agreement Manager SLA Modeling & Integration guide, Edition: 1.0, "HP USLAM SLA Modeling and Integration guide.pdf"
[HP USLAM TeMIP]	HP TeMIP - HP USLAM SNMP Access Module, Functional Specifications and Installation Guide, Version 1.1 "HP_USLAM_AM_FS_INST.pdf"
[HP SM ITIL Procs]	HP Service Manager, Processes and Best Practices Guide, Software Version: 7.1x "SM7.1x_ProcessesBestPractice.pdf"
[HP SM Screen]	HP Service Manager Screenshots (made for this assessment) "HP SM 7.1 Screenshots.pdf"
[HP SM Telco]	HP NGOSS Software, Incident & Problem Management Extension, Incident Management Enhancement User Guide, Edition: 1.0, "HP NGOSS Incident and Problem Management Extension Version 1.0.0 - Incident Management Enhancement User Guide"

4.5.3 Customer documents

[Cust UC Assu]	Customer Use Case descriptions in local language (german) "NGSSM_FKUC_SM_IMS_Assurance V1.4.4_Review_abgestimmt v2.pdf"
[Cust UC SMF]	Customer Sample Tech Design with Use Cases, Service Mgmt Component "TechnicalDesign-SM_Assurance_V09.pdf"
[Cust UC RMF]	Customer Sample Tech Design with Use Cases, Resource Mgmt Component "Technical Design RMF IMS_v0.9.pdf"
[Cust TD OO T&D]	Customer Sample Tech Design, HP OO specific Workflows for Test & Diagnostics and Resolution "TechnicalDesign_Test+Diagnostics _HPOO_V0.9.pdf"
[Cust TD OO FB]	Customer Sample Tech Design, HP OO specific Workflows for Fault Tree ("Fehlerbaum") "TechnicalDesign_Fehlerbaum_Analysis _HPOO__0.9.pdf"
[Cust TD SM]	Customer Sample Tech Design, HP Service Manager "Technical Design-Service_Manager_0.9.pdf"

5 Process Conformance

The chapter combines the results of 1st and 2nd phase of the assessment (see section 2.3).

5.1 Business Process Framework – Process Conformance Summary

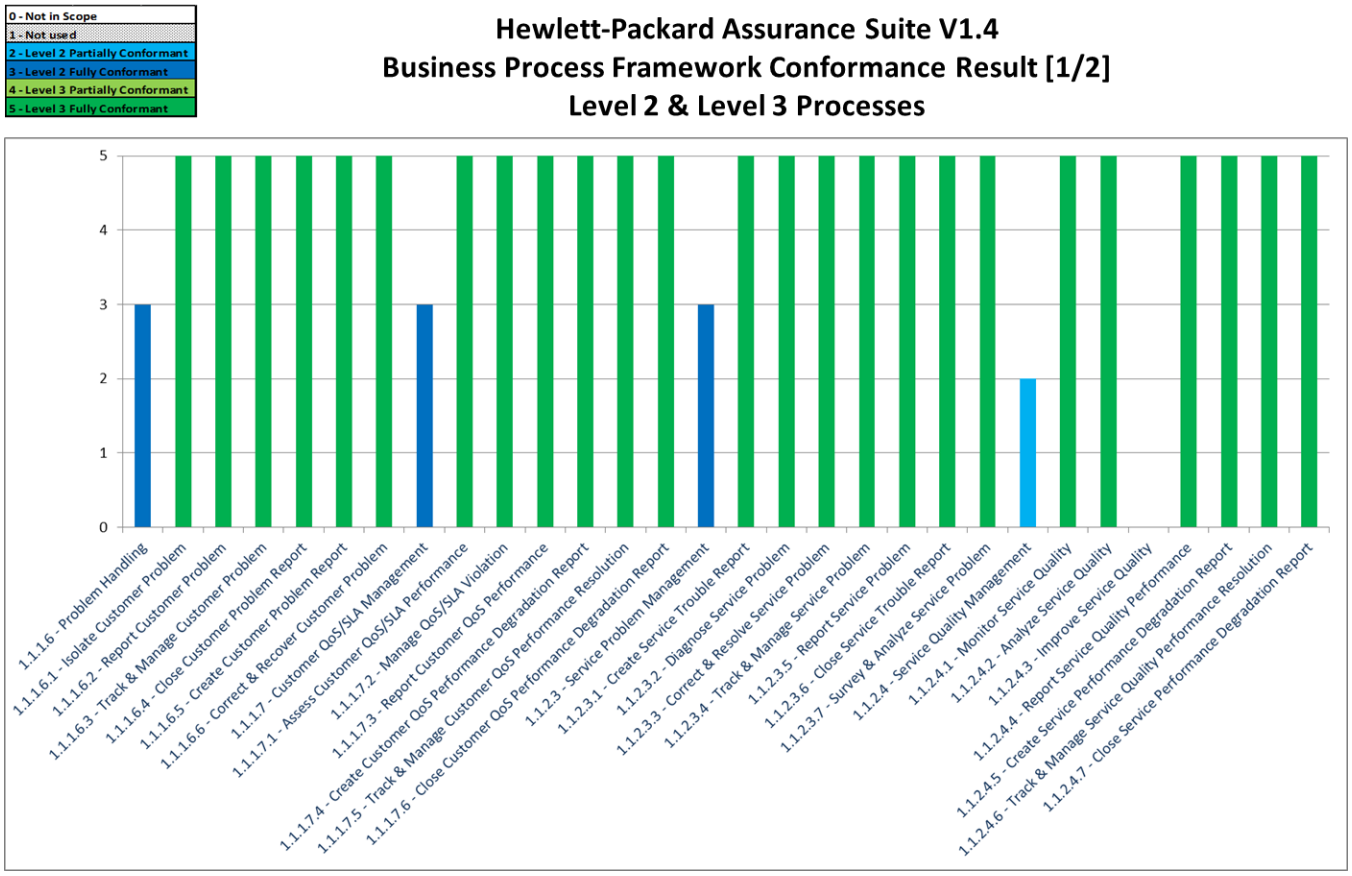

Figure 5.1 Hewlett-Packard OSS Assurance Suite – Conformance Result [1/2]

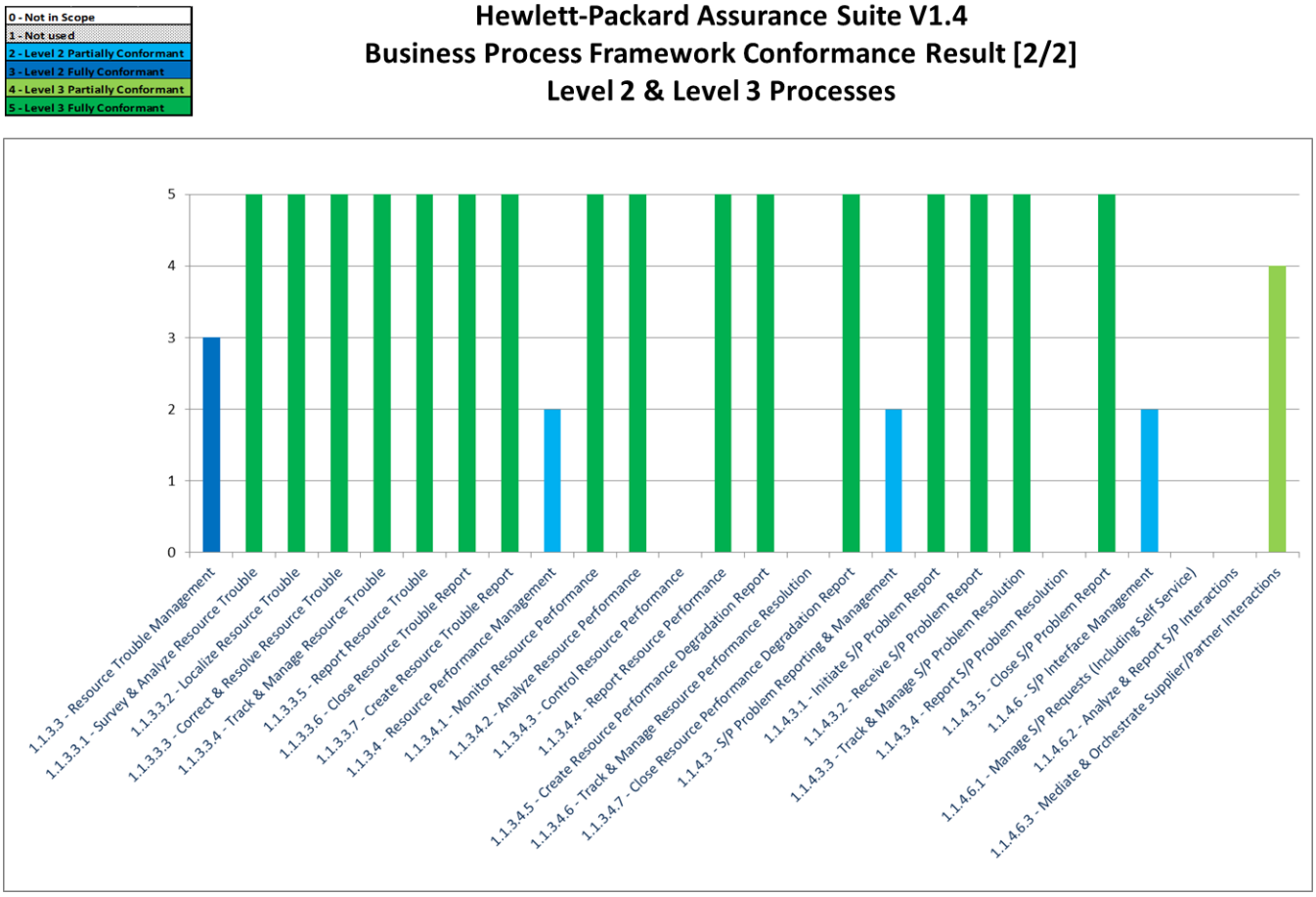

Figure 5.2 Hewlett-Packard OSS Assurance Suite – Conformance Result [2/2]

5.2 Business Process Framework – Process Conformance Detailed

1.1.1 SM&O: Service Problem Management (1.1.2.3) (SM Basis, OMi)

Table 5.1 Conformance Scores – Service Problem Management (1.1.2.3) [OMi)

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
Within Level 1: 1.1.2 – Service Management & Operations	*Not Applicable for Level 1 process*	*TM Forum does not assess process Level 1 elements. Hence Conformance score is not awarded at this level*
Within Level 2: 1.1.2.3 Service Problem Management	Scope Fully Conformant (3)	Seven Level 3 eTOM processes have been assessed here for conformance, these are: 1.1.2.3.1 Create Service Trouble Report 1.1.2.3.2 Diagnose Service Problem 1.1.2.3.3 Correct & Resolve Service Problem 1.1.2.3.4 Track & Manage Service Problem 1.1.2.3.5 Report Service Problem 1.1.2.3.6 Close Service Trouble Report 1.1.2.3.7 Survey & Analyze Service Problem These 7 processes cover the entire lifecycle of the Service Problem Management core process as defined in the Business Process Framework (eTOM) with no deviations.
1.1.2.3.1 Create Service Trouble Report	Scope Fully Conformant (5)	**Conformant** In HP SM, a Service Trouble is typically created as an incident (as defined in ITIL) associated with the involved service objects. The creation of a service trouble report is then achieved through partially automated ITIL/eTOM conformant capabilities. The support provided for this L3 process by the HP SM solution fulfills conformance criteria satisfactorily.
1.1.2.3.2 Diagnose Service Problem	Scope Fully Conformant (5)	**Conformant** This process is fully supported by a blend of both ITIL (Incident Management) and eTOM aligned capabilities. Most automated diagnosis is realized in the HP SM using the “Fault Tree” concept. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.2.3.3 Correct & Resolve Service Problem	Scope Fully Conformant (5)	**Conformant** This process is also supported through a combination of ITIL (Incident Management) and eTOM requirements.

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
		Parts of this process are fully automated using the "Fault Tree" concept, while some other parts are supported through partial automation. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.2.3.4 Track & Manage Service Problem	Scope Fully Conformant (5)	**Conformant** In general this process is supported in line with eTOM defined requirements and according to ITIL Incident, Problem and Change Management processes. Supporting documentation provided for this process reveals in general a partially automated support provided by HP SM but fully satisfies criteria for conformance with the Business Process Framework (eTOM).
1.1.2.3.5 Report Service Problem	Scope Fully Conformant (5)	**Conformant** This process represents the core functionality of HP SM; it is fully supported based on ITIL Incident Management and in alignment with the Business Process Framework (eTOM). HP SM provides a specific reporting module and users have a complete overview of new or assigned incidents. The customer use case applies standard GUIs. This process is supported by fully automated capabilities with a few partially automated features too, but there are no tasks left for manual-only processing. The supporting documentation provided has passed conformance criteria successfully and satisfactorily.
1.1.2.3.6 Close Service Trouble Report	Scope Fully Conformant (5)	**Conformant** Incident Closure is handled to a certain extent manually based on ITIL Incident Management workflow, but monitoring the status of all open service trouble reports, as well as updating their status to "cleared" is supported by automated capability in HP SM. The supporting documentation and evidence provided for this process has demonstrated conformance to the Business Process Framework (eTOM)
1.1.2.3.7 Survey & Analyze Service Problem	Scope Fully Conformant (5)	**Conformant** Support for this process is for the most part achieved through fully automated capabilities coupled with a few limited manual tasks; such support is based on Fault Management and Event Management functionality provided by the HP SM solution. Documentation and supporting evidence provided is fully conformant in the scope of this assessment.

1.1.2 SM&O: Service Problem Management (1.1.2.3) (SM Basis, TeMIP with UCA)

Table 5.2 Conformance Scores - Service Problem Management (1.1.2.3) [TeMIP and UCA)

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
Within Level 1: **1.1.2 – Service Management & Operations**	*N/A* *(Level 1 Processes are not assessed)*	The following Level 2 process elements were submitted in scope for this Level 1 process: **1.1.2.3 Service Problem Management**
Within Level 2: **1.1.2.3 Service Problem Management**	Scope Fully Conformant (3)	**Fully Conformant*** The following Level 3 processes were assessed for conformance: **1.1.2.3.2 Diagnose Service Problem** **1.1.2.3.7 Survey & Analyze Service Problem** These 2 processes cover one third of the entire lifecycle of the Service Problem Management core (level2) process in the Business Process Framework (eTOM) with no deviations. ** Note: The other five processes: 1.1.2.3.1 Create Service Trouble Report, 1.1.2.3.3 Correct & Resolve Service Problem, 1.1.2.3.4 Track & Manage Service Problem, 1.1.2.3.5 Report Service Problem, and 1.1.2.3.6 Close Service Trouble Report were assessed for conformance as part of the first phase earlier this year and resulted in full conformance scores; therefore the score for the L2 parent process assessed here will not be penalized.*
1.1.2.3.2 Diagnose Service Problem	Scope Fully Conformant (5)	**Conformant** A Service Problem is analyzed typically by a Service Impact Analysis (within 1.1.3.3.1 - Survey & Analyze Resource Trouble), hence the same correlation can be done to diagnose the service problem through HP Universal Correlation Analyzer; the underlying root cause of the problem can be investigated and resolved and the impact on managed services is determined through correlation. Once the root cause is identified through alarms correlations, further investigations can be done according to ITIL Incident Management in line

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
		with eTOM conformant functional capabilities as described in support of the processes along this document. This process is supported through a combination of automated capabilities and manual support. Most automated diagnosis is realized using the “Fault Tree” concept. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.2.3.7 Survey & Analyze Service Problem	Scope Fully Conformant (5)	**Conformant** Service Monitoring is covered thru TeMIP Service Console with integrated UCA as Correlation Manager. Services are modeled in TeMIP as Managed Objects. The alarms look the same as those for Resources but Service alarms are typically of Alarm Type “Quality of Service". Detecting and collecting service alarm event notifications from resources is achieved via TeMIP Access modules, which will work through Root Cause Analysis to identify the originating resource, which is part of a model displayed by means of a local or geographic localization information. TeMIP provides a GIS Map to localize the managed elements. This process is mostly supported through automated capabilities including some limited manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).

1.1.3 SM&O: Service Quality Management (1.1.2.4) (SM Basis, SQM)

Table 5.3 Conformance Scores – Service Quality Management (1.1.2.4)

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
Within Level 1: 1.1.2 – Service Management & Operations	*Not Applicable for Level 1 process*	*TM Forum does not assess process Level 1 elements. Hence Conformance score is not awarded at this level*
Within Level 2: 1.1.2.4 Service Quality Management	Scope Partially Conformant (2)	Six Level 3 eTOM processes have been assessed here for conformance, these are: 1.1.2.4.1 Monitor Service Quality 1.1.2.4.2 Analyze Service Quality 1.1.2.4.4 Report Service Quality Performance 1.1.2.4.5 Create Service Performance Degradation Report 1.1.2.4.6 Track & Manage Service Quality Performance Resolution 1.1.2.4.7 Close Service Performance Degradation Report These 6 processes cover over 85% of the lifecycle of the Service Quality Management core process as defined in the Business Process Framework (eTOM) with no deviations. Only the process 1.1.2.4.3 – Improve Service Quality was excluded from the scope of this assessment.
1.1.2.4.1 Monitor Service Quality	Scope Fully Conformant (5)	**Conformant** This process is supported through a fully automated set of capabilities provided by the HP SQM Solution which comprises primarily: • Metrics Collection • Service Monitoring • Service Level Monitoring There appears to be very little manual interaction involved in the support of this process by the HP SQM solution. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.2.4.2 Analyze Service Quality	Scope Fully Conformant (5)	**Conformant** The Monitoring process provided by the SQM solution comprises the analysis of service quality by calculating secondary KPIs about Service Quality, using collected KPIs from the monitoring process. This process is supported through a fully automated set of capabilities with very little manual interaction involved.

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
		Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.2.4.4 Report Service Quality Performance	Scope Fully Conformant (5)	**Conformant** This process is supported by monitoring service performance degradation reports in the form of ITIL incidents; the approach is articulated according to the ITIL Incident Management process in line with requirements stated in the eTOM process. Service Quality performance reporting is provided using HP SQM directly. Support for this process is achieved through automated capabilities including some manual steps depending on some conditions. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.2.4.5 Create Service Performance Degradation Report	Scope Fully Conformant (5)	**Conformant** This process is supported by monitoring service performance degradation reports according to the ITIL Incident Management process. Performance degradations in general are treated as incidents (as defined in ITIL) and are managed by leveraging ITIL methods in line with eTOM process requirements. Supporting documentation provided for this process reveals in general a blend of automated and manual capabilities provided by HP SM but fully satisfies criteria for conformance with the Business Process Framework (eTOM).
1.1.2.4.6 Track & Manage Service Quality Performance Resolution	Scope Fully Conformant (5)	**Conformant** This process is also fully supported in line with ITIL Incident Management workflows. Automation is achieved using the Fault Tree concept which is a widely used HP SM feature across most of the SQM process. This process is supported through a combination of manual and automated capabilities. The supporting documentation provided has passed conformance criteria successfully and satisfactorily.
1.1.2.4.7 Close Service Performance Degradation Report	Scope Fully Conformant (5)	**Conformant** Support for this process is also articulated on ITIL Incident Management. Incident closure is partly automated using HP OO (HP Operations Orchestration) module (workflow scheduling), especially for the incident documentation and completion part of the process, but there are some core activities handled manually as they require human decision making before the incident can be closed. The supporting documentation and evidence provided for this process has

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
		demonstrated conformance to the Business Process Framework (eTOM)

1.1.4 RM&O: Resource Trouble Management (1.1.3.3) (SM Basis, OMi)

Table 5.4 Conformance Scores – Resource Trouble Management (1.1.3.3) [OMi)

AAssessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
Within Level 1: 1.1.3 – Resource Management & Operations	*Not Applicable for Level 1 process*	*TM Forum does not assess process Level 1 elements. Hence Conformance score is not awarded at this level*
Within Level 2: 1.1.3.3 Resource Trouble Management	Scope Fully Conformant (3)	Seven Level 3 eTOM processes have been assessed here for conformance, these are: 1.1.3.3.1 Survey & Analyze Resource Trouble 1.1.3.3.2 Localize Resource Trouble 1.1.3.3.3 Correct & Resolve Resource Trouble 1.1.3.3.4 Track & Manage Resource Trouble 1.1.3.3.5 Report Resource Trouble 1.1.3.3.6 Close Resource Trouble Report 1.1.3.3.7 Create Resource Trouble Report These 7 processes provide support for the entire set of core processes within the SM&O layer in the Operations area of the Business Process Framework (eTOM) with no deviations.
1.1.3.3.1 Survey & Analyze Resource Trouble	Scope Fully Conformant (5)	**Conformant** Support for this process is for the most part achieved through fully automated capabilities and a few partially automated tasks; The process is fully supported in HP SM based on both Event Management and Fault Management. Service impact, starting from resource events, is a standard feature in the HP solution. Services are represented as CIs (as defined in ITIL), the dependency of services to resources is shown in CI Tree Views. The supporting documentation provided has demonstrated alignment and conformance with the Business Process Framework (eTOM) with no deviations.
1.1.3.3.2 Localize Resource Trouble	Scope Fully Conformant (5)	**Conformant** Support for this process is for the most part achieved through automated capabilities coupled with a few partially automated and very little but existing manual support (mostly user's interaction with the GUI). The automation is realized in the customer case, using the "Fault Tree" provided with HP OO which is the HP

AAssessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
		module allowing to schedule workflows. This process passed conformance criteria with no deviations.
1.1.3.3.3 Correct & Resolve Resource Trouble	Scope Fully Conformant (5)	**Conformant** This process is supported through a blend of automated (using the Fault Tree concept), partially automated and manual tasks. The support is based on ITIL Incident Management. Restoration activities require manual tasks under specific circumstances. This process passed conformance criteria with no deviations.
1.1.3.3.4 Track & Manage Resource Trouble	Scope Fully Conformant (5)	**Conformant** In general this process is based on ITIL Incident, Problem and Change Management processes. It is supported via a mixture of automated and manual capabilities; for instance scheduling, assigning and coordinating repair and restoration activities are manual tasks for the most part. Some partially automated support was also identified in this process. The process passed (eTOM) conformance criteria successfully with no deviations.
1.1.3.3.5 Report Resource Trouble	Scope Fully Conformant (5)	**Conformant** This process is fully supported based on ITIL Incident Management but in alignment with the specific requirements outlined in the Business Process Framework (eTOM). HP SM provides a specific reporting module which provides mostly automated capabilities in support of this process with a few partially automated features, but no manual support or manual tasks are needed. The supporting documentation provided has passed conformance criteria successfully and satisfactorily.
1.1.3.3.6 Close Resource Trouble Report	Scope Fully Conformant (5)	**Conformant** This process is supported according to ITIL Incident Management best practices and in line with the Business Process Framework (eTOM) requirements. Support for this process is mostly achieved by a set of fully automated capabilities with some manual tasks. The process has passed conformance criteria with no deviations found.
1.1.3.3.7 Create Resource Trouble Report	Scope Fully Conformant (5)	**Conformant** Resource Trouble Reports are typically created as Incidents associated with the concerned Resources. Support for this process is realized in HP based on ITIL Incident Management and in line with eTOM defined

AAssessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
		requirements for this process. This process is supported mostly with automated or partially automated capabilities by HP SM, with sparsely manual support for the estimation of time needed in the restoration of resource troubles. Supporting documentation provided has passed conformance criteria successfully and satisfactorily.

1.1.5 RM&O: Resource Trouble Management (1.1.3.3) (SM Basis, TeMIP with UCA)

Table 5.5 Conformance Scores – Resource Trouble Management (1.1.3.3) [TeMIP and UCA)

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
Within Level 1: **1.1.3 – Resource Management & Operations**	*N/A* *(Level 1 Processes are not assessed)*	The following Level 2 process elements were submitted in scope for this Level 1 process: **1.1.3.3 – Resource Trouble Management**
Within Level 2: **1.1.3.3 – Resource Trouble Management**	Scope Fully Conformant (3)	**Fully Conformant*** The following Level 3 processes were assessed for conformance: **1.1.3.3.1 - Survey & Analyze Resource Trouble** **1.1.3.3.2 - Localize Resource Trouble** These 2 processes cover one third of the entire lifecycle of the Resource Trouble Management core (level2) process in the Business Process Framework (eTOM) with no deviations. ** Note: The other five processes: 1.1.3.3.3 Correct & Resolve Resource Trouble, 1.1.3.3.4 Track & Manage Resource Trouble, 1.1.3.3.5 Report Resource Trouble, 1.1.3.3.6 Close Resource Trouble Report, and 1.1.3.3.7 Create Resource Trouble Report were assessed for conformance as part of the first phase earlier this year and resulted in full conformance scores; therefore the L2 parent process assessed here will not be penalized.*
1.1.3.3.1 - Survey & Analyze Resource Trouble	Scope Fully Conformant (5)	**Conformant** HP TeMIP is used to monitor and manage resource troubles. This process is fully supported through HP Universal Correlation Analyzer, integrated with TeMIP and performs advanced event correlations, automation and Root Cause Analysis. This process is mostly supported through automated capabilities including some limited manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
1.1.3.3.2 - Localize Resource Trouble	Scope Fully Conformant (5)	**Conformant** Root cause is done first in event correlation, using HP UCA; once the root cause is identified, further investigation can be done in line with ITIL Incident Management (through HP Service Manager) in combination with eTOM aligned supporting functional capabilities provided by HP UCA and HP TEMIP. This process is supported through a set of automated capabilities including some manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).

1.1.6 RM&O: Resource Performance Management (1.1.3.4) (SM Basis, PI)

Table 5.6 Conformance Scores – Resource Performance Management (1.1.3.4)

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
Within Level 1: 1.1.3 – Resource Management & Operations	*Not Applicable for Level 1 process*	*TM Forum does not assess process Level 1 elements. Hence Conformance score is not awarded at this level*
Within Level 2: 1.1.3.4 Resource Performance Management	Scope Partially Conformant (2)	Five Level 3 eTOM processes have been assessed here for conformance, these are: 1.1.3.4.1 Monitor Resource Performance 1.1.3.4.2 Analyze Resource Performance 1.1.3.4.4 Report Resource Performance 1.1.3.4.5 Create Resource Performance Degradation Report 1.1.3.4.7 Close Resource Performance Degradation Report These 5 processes cover over 3/4 of the lifecycle of the Resource Performance Management core process as defined in the Business Process Framework (eTOM) with no deviations. Only the two processes 1.1.3.4.3 – Control Resource Performance and 1.1.3.4.6 - Track & Manage Resource Performance Resolution were excluded from the scope of this assessment.
1.1.3.4.1 Monitor Resource Performance	Scope Fully Conformant (5)	**Conformant** Resource Performance Data is collected by HP PI (HP Performance Insight). It collects, monitors and reports performance data from an EMS or directly from the network and produces customized reports to fulfill specific functional requirements for performance monitoring. Support for this process is achieved through automated capabilities with very limited manual support involved. The supporting documentation provided has demonstrated alignment and conformance with the Business Process Framework (eTOM) with no deviations.
1.1.3.4.2 Analyze Resource Performance	Scope Fully Conformant (5)	**Conformant** Automated support for this process consists of performing data analysis for KPIs (via the HP PI module) collected through the Monitor Resource Performance process. The data collection and processing is handled in so called “data-pipes”; analysis may result in threshold violation detections, which are as resource events, which in turn may trigger the creation of one or more incidents. This process passed conformance criteria for the Business Process Framework (eTOM) with no deviations.

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
1.1.3.4.4 Report Resource Performance	Scope Fully Conformant (5)	**Conformant** This process is supported through two complementary approaches: 1) Monitoring resource performance degradation reports handled in the form of ITIL Incidents, and 2) Generating reports about resource performance itself. The overall resource performance management and reporting process is supported through a set of capabilities by the HP solution in line with the specific eTOM process requirements relayed by (automated) ITIL workflows. The process passed (eTOM) conformance criteria successfully with no deviations.
1.1.3.4.5 Create Resource Performance Degradation Report	Scope Fully Conformant (5)	**Conformant** The process passed (eTOM) conformance criteria successfully with no deviations.
1.1.3.4.7 Close Resource Performance Degradation Report	Scope Fully Conformant (5)	**Conformant** The supporting documentation provided has passed conformance criteria successfully and satisfactorily.

1.1.7 S/P Relationship Mgt: Problem Reporting & Management (1.1.4.3) (SM Basis, AF)

Table 5.7 Conformance Scores – Problem Reporting & Management (1.1.4.3)

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
Within Level 1: 1.1.4 – Supplier / Partner Relationship Management	*Not Applicable for Level 1 process*	*TM Forum does not assess process Level 1 elements. Hence Conformance score is not awarded at this level*
Within Level 2: 1.1.4.3 S/P Problem Reporting & Management	Scope Partially Conformant (2)	Four Level 3 eTOM processes have been assessed here for conformance, these are: 1.1.4.3.1 Initiate S/P Problem Report 1.1.4.3.2 Receive S/P Problem Report 1.1.4.3.3 Track & Manage S/P Problem Resolution 1.1.4.3.5 Close S/P Problem Report These 4 processes cover over 80% of the lifecycle of the S/P Problem Reporting & Management core process as defined in the Business Process Framework (eTOM) with no deviations. Only the process 1.1.4.3.4 – Report S/P Problem Resolution was excluded from the scope of this assessment.
1.1.4.3.1 Initiate S/P Problem Report	Scope Fully Conformant (5)	**Conformant** The solution to this process is delivered through the Factory Model. The Service Management Factory (SMF) initiates and issues a S/P problem report (Incident) to the Resource Management Factory (RMF). The RMF is in the role of the partner. There appears to be very little manual interaction involved in the support of this process by both the service and resource factories. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.4.3.2 Receive S/P Problem Report	Scope Fully Conformant (5)	**Conformant** This process is supported in a similar way as the process (Initiate S/P Problem Report) above. Incidents from a RMF are received automatically in SMF and indicated to the monitoring system. This process is supported through a fully automated set of capabilities. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.4.3.3 Track & Manage S/P Problem Resolution	Scope Fully Conformant (5)	**Conformant** This process is fully supported based on ITIL Incident Management, it is automated in the sense that Incidents are received automatically; but manually in the sense that feedback to supplier and action requested from it may be initiated by an Operator. The approach here is also articulated in line with the ITIL Incident Management process in support of requirements stated in the eTOM process. Support for this process is achieved through a combination of manual and automated capabilities depending on a number

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
		of possible conditions. Supporting evidence provided for this process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.4.3.5 Close S/P Problem Report	Scope Fully Conformant (5)	**Conformant** This process is fully supported in accordance with the Incident Closure process as defined in ITIL Incident Management. The process will update the status to “resolved” or “closed”, depending on the specific case. Supporting documentation provided for this process reveals in general a blend of automated and manual capabilities provided by HP SM but fully satisfies criteria for conformance with the Business Process Framework (eTOM).

1.1.8 S/P Relationship Management: S/P Interface Management (1.1.4.6) [AF)

Table 5.8 Conformance Scores - Supplier/Partner Interface Management (1.1.4.6)

Assessed eTOM Conformance		
eTOM process element	**Conformance Level**	**Comment**
Within Level 1: 1.1.4 – Supplier / Partner Relationship Management	*Not Applicable for Level 1 process*	*TM Forum does not assess process Level 1 elements. Hence Conformance score is not awarded at this level*
Within Level 2: 1.1.4.6 S/P Interface Management	Scope Partially Conformant (2)	One Level 3 eTOM process has been assessed here for conformance, this is: 1.1.4.6.3 Mediate & Orchestrate Supplier/Partner Interactions This process covers about 35% of the lifecycle of the S/P Interface Management core process as defined in the Business Process Framework (eTOM) with some deviations. The other two processes under S/P Interface Management were excluded from this assessment; these are: 1.1.4.6.1 – Manage S/P Requests (Including Self Service) 1.1.4.6.2 - Analyze & Report S/P Interactions
1.1.4.6.3 Mediate & Orchestrate Supplier/Partner Interactions	Scope Partially Conformant (4)	**Partially Conformant** Support to this process is also delivered through the Factory Model as described in 1.1.4.3 above. The interaction is enabled using the HP Adapter Framework (AFW), in conjunction with Telekom's own communication and service bus or ESB. The adapter framework is built to support accepted standards, such as OSS/J to support the SID and generate OSS/J Web Service server-side skeleton code; however, in general the AFW is generic as it supports various web-communication profiles. In the customer case, the technical orchestration was realized by the customer's websphere environment and was not in HP's direct scope. The actual agreement between the parties to use specific interaction standards is part of the overall customer case, but it's not in scope of this assessment. Supporting evidence provided for this process provides a partial coverage of conformance criteria for the Business Process Framework (eTOM).

1.1.9 CRM: Problem Handling (1.1.1.6) (SM Basis, SM]

Table 5.9 Conformance Scores –Problem Handling (1.1.1.6)

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
Within Level 1: **1.1.1 – Customer Relationship Management**	*N/A* *(Level 1 Processes are not assessed)*	The following Level 2 process elements were submitted in scope for this Level 1 process: **1.1.1.6 Problem Handling**
Within Level 2: **1.1.1.6 Problem Handling**	Scope Fully Conformant (3)	**Fully Conformant** The following Level 3 processes were assessed for conformance: **1.1.1.6.1 - Isolate Customer Problem** **1.1.1.6.2 - Report Customer Problem** **1.1.1.6.3 - Track & Manage Customer Problem** **1.1.1.6.4 - Close Customer Problem Report** **1.1.1.6.5 - Create Customer Problem Report** **1.1.1.6.6 - Correct & Recover Customer Problem** These 6 processes provide full support and cover the entire lifecycle of the Problem Handling L2 core process within the Customer Relationship Management process grouping as defined in the Business Process Framework (eTOM) with no deviations.
1.1.1.6.1 - Isolate Customer Problem	Scope Fully Conformant (5)	**Conformant** This process is supported by a combination of ITIL Incident Management supporting capabilities and a set of functional capabilities and interactions provided by HP Service Manager in particular. This process is supported through automated capabilities with some partial manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.6.2 - Report	Scope Fully	**Conformant**

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
Customer Problem	Conformant (5)	Monitoring of Interactions and Incidents is provided in line with ITIL Incident Management process, whilst HP Service Manager provides a best practice out-of-the box implementation. Reports can be generated as needed, using all fields of Interactions or Incidents. This process is supported through automated capabilities with some partial manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.6.3 - Track & Manage Customer Problem	Scope Fully Conformant (5)	**Conformant** The Incident Management process includes all necessary steps to log and resolve an incident, including any necessary escalations or reassignments. Monitoring of SLAs, OLAs and Underpinning Contracts are also part of the overall process. Support provided by HP Service Manager for this process is achieved through a combination of ITIL and eTOM integrated functional capabilities. This process is supported through automated capabilities with some partial manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.6.4 – Close Customer Problem Report	Scope Fully Conformant (5)	**Conformant** The interaction closure foresees different steps to validate the proposed solution with the customer such as updating an Incident, setting the incident closure code and managing customer interaction along these steps depending on the configurable business /workflow rules. This process is fully supported with HP Service Manager in line with ITIL Incident Management best practices. This process is supported through automated capabilities with some partial manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.6.5 – Create Customer Problem	Scope Fully	**Conformant**

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
Report	Conformant (5)	The customer problem is first reported within the interaction management module in HP Service Manager (HP-SM), which creates the interaction form from the service desk. This process is fully supported with HP Service Manager in line with ITIL Incident Management best practices. This process is supported through automated capabilities with some partial manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.6.6 – Correct & Recover Customer Problem	Scope Fully Conformant (5)	**Conformant** In the first step of the Interaction Management, the agent will try to find an existing solution in the knowledge base; otherwise the Customer Problem Report is escalated as an Incident, and the Incident processes for Resolution and Recovery are applied. This process is fully supported with HP Service Manager in line with ITIL Incident Management best practices. This process is supported through automated capabilities with some partial manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).

1.1.10 CRM: Customer QoS/SLA Management (1.1.1.7) (SM Basis, USLAM)

Table 5.10 Conformance Scores – Customer QoS/SLA Management (1.1.1.7)

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
Within Level 1: **1.1.1 - Customer Relationship Management**	*N/A* *(Level 1 Processes are not assessed)*	The following Level 2 process elements were submitted in scope for this Level 1 process: **1.1.1.7 - Customer QoS/SLA Management**
Within Level 2: **1.1.1.7 - Customer QoS/SLA Management**	Scope Fully Conformant (3)	**Fully Conformant** The following Level 3 processes were assessed for conformance: **1.1.1.7.1 - Assess Customer QoS/SLA Performance** **1.1.1.7.2 - Manage QoS/SLA Violation** **1.1.1.7.3 - Report Customer QoS Performance** **1.1.1.7.4 - Create Customer QoS Performance Degradation Report** **1.1.1.7.5 - Track & Manage Customer QoS Performance Resolution** **1.1.1.7.6 - Close Customer QoS Performance Degradation Report** These 6 processes cover the full life cycle of the Customer QoS/SLA Management (level 2) core process in the Business Process Framework (eTOM) with no deviations.
1.1.1.7.1 - Assess Customer QoS/SLA Performance	Scope Fully Conformant (5)	**Conformant** The overall assessment of the customer QoS/SLA performance is covered by the HP Universal SLA Manager, which provides SLA management capabilities for SLA design and creation, SLA instantiations resulting from service orders, SLA near real time monitoring and alerting and SLA reporting. This process is mostly supported through automated capabilities including some limited manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
1.1.1.7.2 - Manage QoS/SLA Violation	Scope Fully Conformant (5)	**Conformant** SLA alerts will cause an Incident Creation, indicating a QoS Performance Degradation ; investigation and resolution will be managed using ITIL Processes (Incident, Problem and Change Management) in support of eTOM aligned functional capabilities provided by the HP Universal Service Level Agreement Manager. This process is supported through automated capabilities in combination with some manual or manually supported tasks. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.7.3 - Report Customer QoS Performance	Scope Fully Conformant (5)	**Conformant** This process is also supported based on HP Universal Service Level Agreement Manager. QoS status is monitored by the operator. Once a customer QoS performance degradation report is created in the form of an Incident, the status of the Incident is shown and monitored with its status field. Incident status changes may trigger other activities of the Incident and other workflows supported by various parties. This process is supported through automated capabilities in combination with some manual or manually supported tasks. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.7.4 - Create Customer QoS Performance Degradation Report	Scope Fully Conformant (5)	**Conformant** Customer QoS performance degradation reports are created as incidents and triggered e.g. from USLAM as SLA Alerts. USLAM warns or alerts about SLA violations; this is encompassed along with (ITIL) Incident Management workflows. Beside automatic detection of the degradation and creation of incidents, the report may be created as an incident out of an Interaction, e.g. started from Help-Desk of Customer Problem Management. In any case, the report can also be entered as Incident manually, using the standard HP Service Manager GUI. This process is supported through automated capabilities in combination with some manual support as well. Supporting evidence provided for this

Assessed eTOM Conformance		
eTOM process element	**Conformance Score**	**Comment**
		level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.7.5 - Track & Manage Customer QoS Performance Resolution	Scope Fully Conformant (5)	**Conformant** This process is fully supported in alignment with (ITIL) Incident Management. The Incident Management process includes all necessary steps to log and resolve an incident, including any necessary escalations or reassignments. Monitoring of SLAs, OLAs and Underpinning Contracts (UCs) are also part of the overall process. This process is supported through automated capabilities in combination with some manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).
1.1.1.7.6 - Close Customer QoS Performance Degradation Report	Scope Fully Conformant (5)	**Conformant** This process is also fully supported in alignment with (ITIL) Incident Management. The Incident Closure process includes many steps to verify the success of implemented solutions and to verify that incident tickets are accurate and complete. This process is supported through automated capabilities in combination with some manual support as well. Supporting evidence provided for this level 3 process fully satisfies conformance criteria for the Business Process Framework (eTOM).