
**Information technology — Process
assessment —**

**Part 8:
An exemplar process assessment model
for IT service management**

Technologies de l'information — Évaluation des procédés —

*Partie 8: Un modèle d'évaluation des procédés exemplaire pour le
management des services IT*





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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, the joint technical committee may decide to publish an ISO/IEC Technical Specification (ISO/IEC TS), which represents an agreement between the members of the joint technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/IEC TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/IEC TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/IEC TS 15504-8:2012 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

ISO/IEC TS 15504-8 consists of the following parts, under the general title *Information technology — Process assessment*:

- *Part 1: Concepts and vocabulary*
- *Part 2: Performing an assessment*
- *Part 3: Guidance on performing an assessment*
- *Part 4: Guidance on use for process improvement and process capability determination*
- *Part 5: An exemplar software life cycle process assessment model*
- *Part 6: An exemplar system life cycle process assessment model*
- *Part 7: Assessment of organizational maturity [Technical Report]*
- *Part 8: An exemplar process assessment model for IT service management [Technical Specification]*
- *Part 9: Target process profiles [Technical Specification]*
- *Part 10: Safety extension [Technical Specification]*

Introduction

This part of ISO/IEC 15504 provides an example of an IT Service Management Process Assessment Model (PAM) for use in performing a conformant assessment in accordance with the requirements of ISO/IEC 15504-2. It enables implemented processes of ISO/IEC 20000-4 to be assessed according to the requirements of ISO/IEC 15504-2.

An integral part of conducting an assessment is to use a Process Assessment Model (PAM) that is constructed for that purpose. A PAM is related to a Process Reference Model (PRM) and is conformant with ISO/IEC 15504-2. ISO/IEC 15504-2 sets out the minimum requirements for performing an assessment in order to ensure consistency and repeatability of the ratings. ISO/IEC 15504-2 addresses the assessment of process and the application of process assessment for improvement and capability determination. Results of conformant process assessments may be compared when the scopes of the assessments are considered to be similar. The requirements for process assessment defined in ISO/IEC 15504-2 form a structure which:

- a) facilitates self-assessment;
- b) provides a basis for use in process improvement and capability determination;
- c) takes into account the context in which the assessed process is implemented;
- d) produces a process rating;
- e) addresses the ability of the process to achieve its purpose;
- f) is applicable across all application domains and sizes of organization;
- g) may provide an objective benchmark between organizations.

The PRM defined in ISO/IEC TR 20000-4 has been used as the basis for the PAM in this part of ISO/IEC 15504. The relationship between ISO/IEC 20000-1, ISO/IEC TR 20000-4 and ISO/IEC 15504-2 is shown in Figure 1.

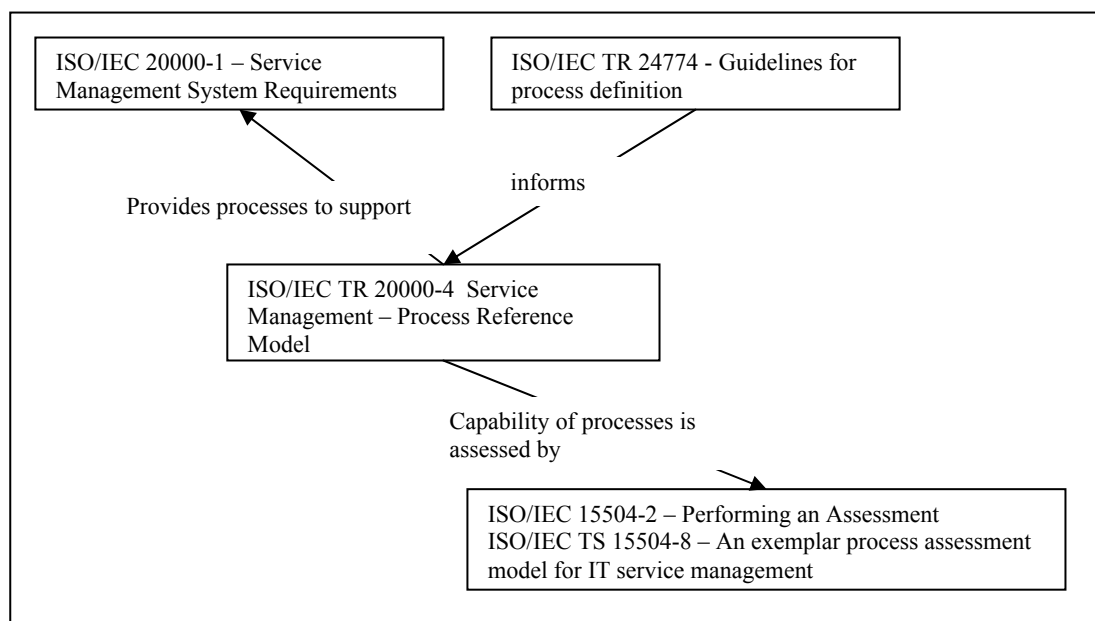


Figure 1 —Relationship between ISO/IEC 20000-1, ISO/IEC TR 20000-4 and ISO/IEC 15504-2

Any organisation may use processes with additional elements in order to suit it to the environment and circumstances. The Process Reference Model (PRM) that is the basis for this Process Assessment Model is ISO/IEC 20000-4:2010. This PRM may not be fully aligned with ISO/IEC 20000-1:2011 as it was developed to align to ISO/IEC 20000-1:2005. A revised PRM aligned to ISO/IEC 20000-1:2011 is being developed and it is expected that this revised PRM will address and resolve these identified incompatibilities. Due to the development status of this PRM, it is known to be unverified and subject to change in the future.

This PAM contains a set of indicators to be considered when interpreting the intent of its PRM. It provides greater detail to indicate process performance and capability. The indicators may also be used when implementing a process improvement program or to help evaluate and select an assessment model, method, methodology or tools.

As an exemplar, this PAM embodies the core characteristics that could be expected of any PAM consistent with ISO/IEC 15504-2. Nevertheless any other PAMs meeting the requirements of ISO/IEC 15504-2 may be used in a conformant assessment.

This Part of ISO/IEC 15504 has a similar structure to ISO/IEC 15504 Parts 5 and 6. It may be used in conjunction with them for joint assessment of service management processes and system/software life cycle processes.

Within this part of ISO/IEC 15504:

- clause 4 provides a detailed description of the structure and key components of a PAM, which includes two dimensions: a process dimension and a capability dimension. Assessment indicators are introduced in this clause;
- clause 5 addresses the process dimension. It uses process definitions from ISO/IEC TR 20000-4 to designate the PRM. The processes of the PRM are described in the PAM in terms of purpose and outcomes. The PAM expands the PRM process definitions by including a set of process performance indicators called base practices for each process. The PAM also defines a second set of indicators of process performance by associating inputs and outputs with each process. Clause 5 is also linked directly to Annex B, which defines the inputs/outputs characteristics;
- clause 6 addresses the capability dimension. It duplicates the definitions of the capability levels and process attributes from ISO/IEC 15504-2, and expands each of the nine attributes through the inclusion of a set of generic practices. These generic practices belong to a set of indicators of process capability, in association with generic resource indicators, and generic inputs/outputs indicators. Annex B is also linked directly to Clause 6 as it defines the inputs/outputs characteristics;
- Annex A provides a statement of conformance of the PAM to the requirements defined in ISO/IEC 15504-2;
- Annexes B provides selected characteristics for typical inputs/outputs to assist the assessor in evaluating the capability level of processes;
- Annex C contains a capability process profile linking the requirements of ISO/IEC 20000-1 to base practices and information items;
- the Bibliography contains a list of informative references.

Information technology — Process assessment —

Part 8:

An exemplar process assessment model for IT service management

1 Scope

This part of ISO/IEC 15504:

- defines an exemplar PAM that meets the requirements of ISO/IEC 15504-2 and that supports the performance of an assessment by providing indicators for guidance on the interpretation of the process purposes and outcomes as defined in ISO/IEC TR 20000-4 and the process attributes as defined in ISO/IEC 15504-2;
- provides guidance, by example, on the definition, selection and use of assessment indicators.

A PAM comprises a set of indicators of process performance and process capability. The indicators are used as a basis for collecting the objective evidence that enables an assessor to assign ratings. The set of indicators included in this part of ISO/IEC 15504 is not intended to be an all-inclusive set nor is it intended to be applicable in its entirety. Subsets that are appropriate to the context and scope of the assessment should be selected, and possibly augmented with additional indicators (see Annex C).

The PAM in this part of ISO/IEC 15504 is directed at assessment sponsors and competent assessors who wish to select a model, and associated documented process method, for assessment (for either capability determination or process improvement). Additionally it may be of use to developers of assessment models in the construction of their own model, by providing examples of good service management practices. It can be used by:

- a) service providers to assess and improve a Service Management System (SMS), including processes, for the design, development, transition and delivery of services that fulfil service requirements;
- b) organizations that are seeking services from service providers and requiring assurance that their service requirements will be fulfilled;
- c) service providers to demonstrate their capability for the design, development, transition and delivery of services that fulfil service requirements.

Any PAM meeting the requirements defined in ISO/IEC 15504-2 concerning models for process assessment may be used for assessment. Different models and methods may be needed to address differing business needs. The assessment model in this part of ISO/IEC 15504 is provided as an exemplar of a model meeting all the requirements expressed in ISO/IEC 15504-2.

The scope of this Part of ISO/IEC 15504 is consistent with the scope of Part 5 and 6 of ISO/IEC 15504 in order to assist situations where assessment is being made of both service management and system/software life cycle processes.

NOTE: **Copyright release for the Exemplar PAM:** Users of this part of ISO/IEC 15504 may freely reproduce the detailed descriptions contained in the exemplar assessment model as part of any tool or other material to support the performance of process assessments, so that it can be used for its intended purpose.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 15504. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 15504 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 20000-1:2011, *Information technology — Service management — Part 1: Service management system requirements*

ISO/IEC TR 20000-4:2010, *Information technology — Service management — Part 4: Process Reference Model*

ISO/IEC 15504-1:2004, *Information technology — Process assessment — Part 1: Concepts and Vocabulary*

ISO/IEC 15504-2:2003, *Information technology — Process assessment — Part 2: Performing an Assessment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 15504-1 and ISO/IEC 20000-1 apply.

4 Overview of the exemplar Process Assessment Model

4.1 Introduction to Overview

This part of ISO/IEC 15504 provides an exemplar PAM that includes examples of assessment indicators.

The PRM defined in ISO/IEC TR 20000-4, associated with the process attributes defined in ISO/IEC 15504-2, establish a PAM used as a common basis for performing assessments of service management system process capability, allowing for the reporting of results using a common rating scale.

The PAM is a two-dimensional model of process capability. In one dimension, the process dimension, the processes are defined. In the other dimension, the capability dimension, a set of process attributes grouped into capability levels is defined. The process attributes provide the measurable characteristics of process capability.

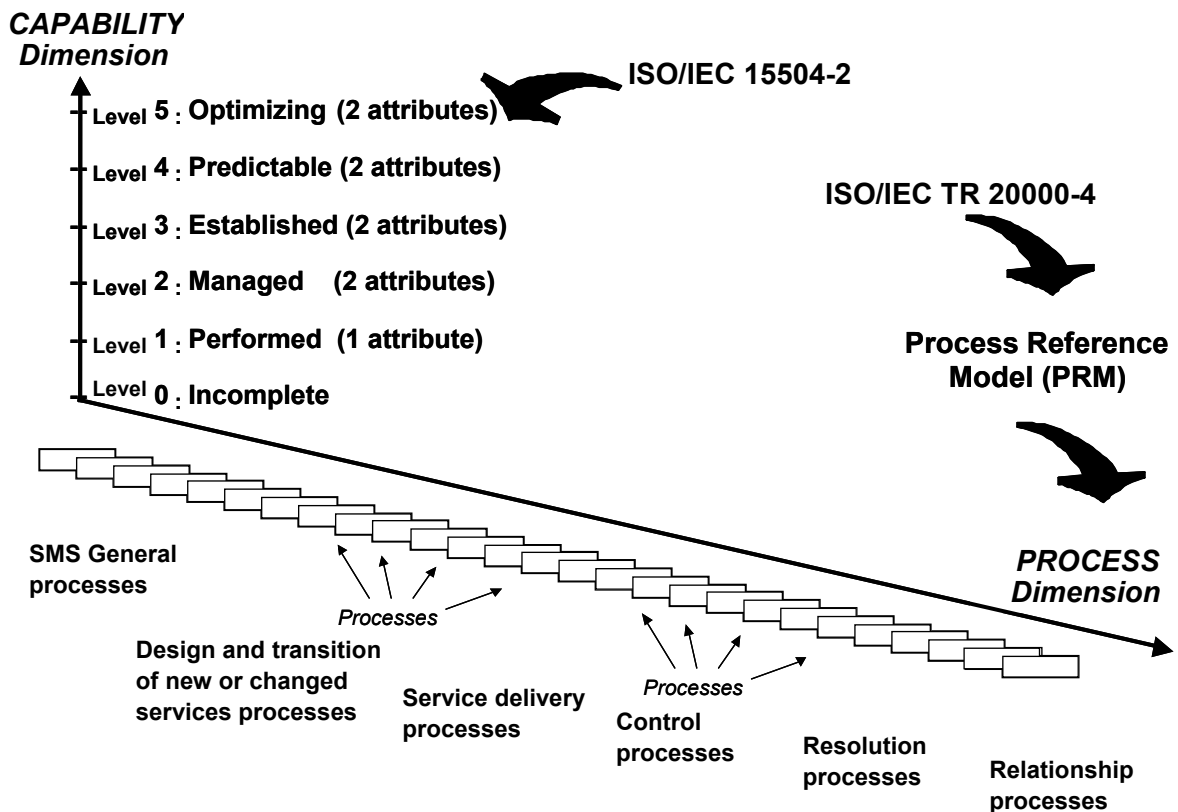


Figure 2 — Relationship between the Process Assessment Model and its inputs

Figure 2 shows the relationship between the general structure of the PAM, ISO/IEC 15504-2 and ISO/IEC TR 20000-4.

A PRM and a capability dimension defined in ISO/IEC 15504-2 cannot be used alone as the basis for conducting reliable and consistent assessments of process capability since the level of detail provided is not sufficient. The descriptions of process purpose and outcomes in a PRM, and the process attribute definitions in ISO/IEC 15504-2, need to be supported with a comprehensive set of indicators of process performance and process capability that are used for assessment performance.

The exemplar PAM defined in this part of ISO/IEC 15504 is conformant with the ISO/IEC 15504-2 requirements for a PAM, and can be used as the basis for conducting an assessment of IT service management process capability.

In order to meet the PAM requirements of ISO/IEC 15504-2, a documented process supporting other requirements of ISO/IEC 15504-2 is also required. This need may be met, for example, by the adoption of a supporting method for conducting assessments.

4.2 Structure of the exemplar Process Assessment Model

This clause describes the detailed structure of the PAM and its key components.

This PAM expands upon the PRM by including a defined set of assessment indicators. Assessment indicators comprise indicators of process performance and process capability and are defined to support an assessor's judgment of the performance and capability of an implemented process.

Clause 5, together with its associated Annex B, describes the components of the process dimension, and clause 6 describes the components of the capability dimension. Annex A provides a statement of conformance of the PAM to the requirements defined in ISO/IEC 15504-2.

ISO/IEC 15504-2 requires that processes included in a PRM satisfy the following:

"The fundamental elements of a Process Reference Model are the set of descriptions of the processes within the scope of the model. These process descriptions shall meet the following requirements:

- a) A process shall be described in terms of its Purpose and Outcomes.*
- b) In any description the set of process outcomes shall be necessary and sufficient to achieve the purpose of the process.*
- c) Process descriptions shall be such that no aspects of the measurement framework as described in clause 5 of this International Standard beyond level 1 are contained or implied."*

As processes are derived directly from ISO/IEC TR 20000-4, these requirements are satisfied.

4.2.1 Processes

Figure 3 shows the processes from ISO/IEC TR 20000-4, which are included in the process dimension of the exemplar PAM for service management.

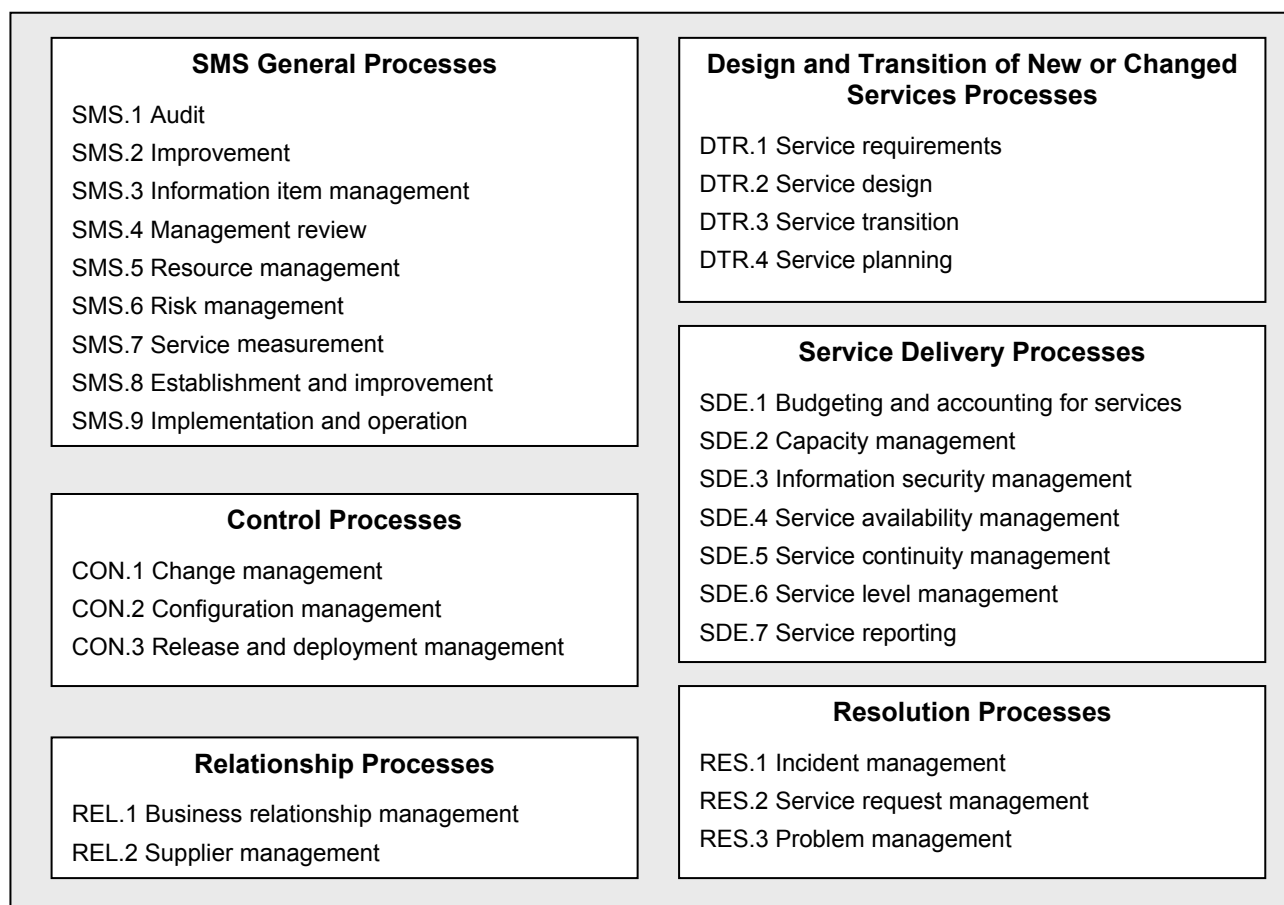


Figure 3 — Processes in the Process Reference Model

4.2.2 Process dimension

The process dimension of the PAM includes all processes from the PRM contained in ISO/IEC TR 20000-4 and shown in Figure 3. Each process in the PAM is described in terms of a purpose statement. These statements contain the unique functional objectives of the process when performed in a particular environment. A list of specific outcomes is associated with each of the process purpose statements, as a list of expected positive results of the performance of the processes.

Satisfying the purpose statements of a process represents the first step in building a level 1 process capability where the expected outcomes are observable. The processes are described in Clause 5.

4.2.3 Capability dimension

For the capability dimension, the process capability levels and process attributes are identical to those defined in ISO/IEC 15504-2.

Evolving process capability is expressed in the PAM in terms of process attributes grouped into capability levels. Process attributes are features of a process that can be evaluated on a scale of achievement, providing a measure of the capability of the process. They are applicable to all processes. Each process attribute describes a facet of the overall capability of managing and improving the effectiveness of a process in achieving its purpose and contributing to the business goals of the organization.

A capability level is a set of process attribute(s) that work together to provide a major enhancement in the capability to perform a process. The levels constitute a rational way of progressing through improvement of the capability of any process and are defined in ISO/IEC 15504-2.

There are six capability levels, incorporating nine process attributes.

Level 0: Incomplete process

The process is not implemented, or fails to achieve its process purpose.

At this level, there is little or no evidence of any systematic achievement of the process purpose.

Level 1: Performed process

The implemented process achieves its process purpose.

Level 2: Managed process

The previously described Performed process is now implemented in a managed fashion (planned, monitored and adjusted) and its work products are appropriately established, controlled and maintained.

Level 3: Established process

The previously described Managed process is now implemented using a defined process that is capable of achieving its process outcomes.

Level 4: Predictable process

The previously described Established process now operates within defined limits to achieve its process outcomes.

Level 5: Optimizing process

The previously described Predictable process is continuously improved to meet relevant current and projected business goals.

Within the PAM, the measure of capability is based upon the nine process attributes (PA) defined in ISO/IEC 15504-2. Process attributes are used to determine whether a process has reached a given capability. Each attribute measures a particular aspect of the process capability.

At each level there is no ordering between the process attributes; each attribute addresses a specific aspect of the capability level. The list of process attributes is shown in Table 1.

Table 1 — Capability levels and process attributes

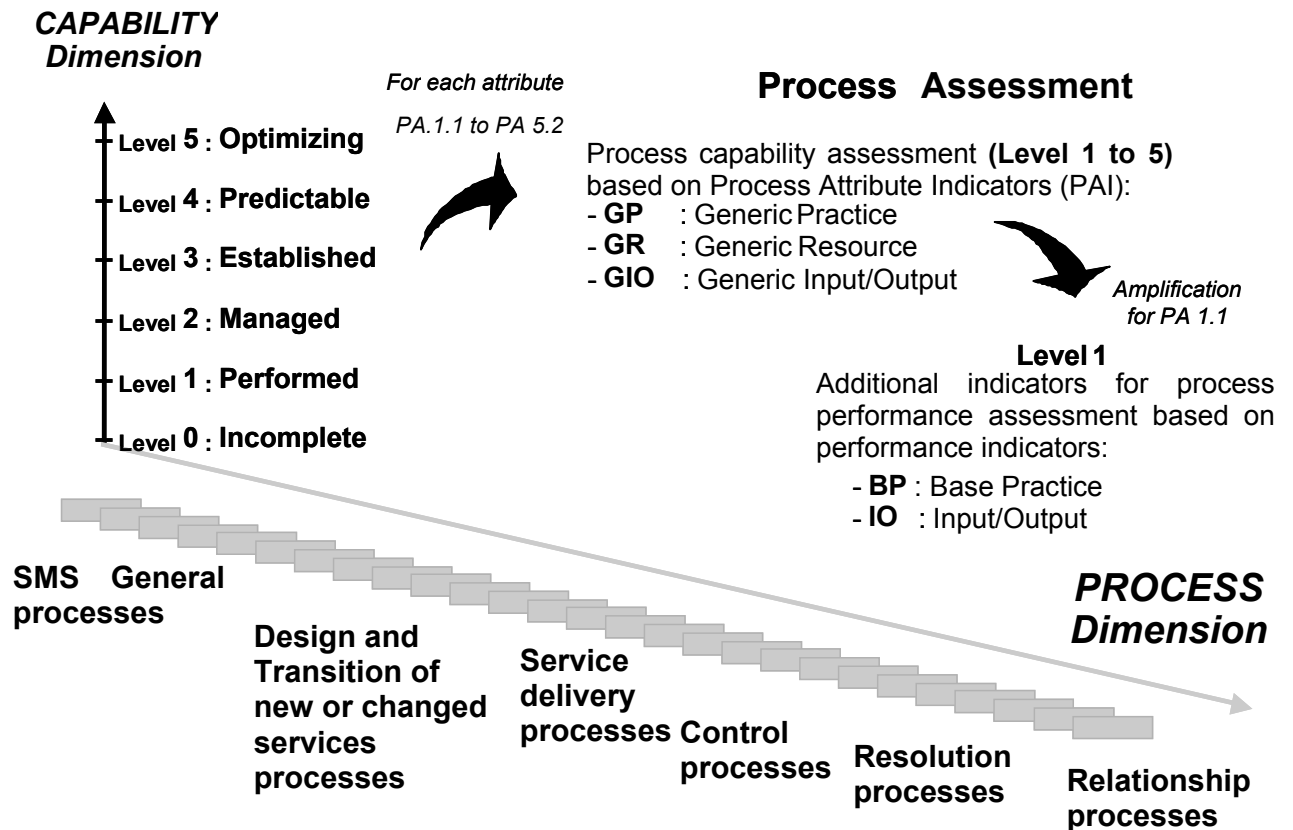
Process Attribute ID	Capability Levels and Process Attributes
	Level 0: Incomplete process
	Level 1: Performed process
PA 1.1	Process performance
	Level 2: Managed process
PA 2.1	Performance management
PA 2.2	Work Products management
	Level 3: Established process
PA 3.1	Process definition
PA 3.2	Process deployment
	Level 4: Predictable process
PA 4.1	Process measurement
PA 4.2	Process control
	Level 5: Optimizing process
PA 5.1	Process innovation
PA 5.2	Continuous optimization

The process attributes are evaluated on a four point ordinal scale of achievement, as defined in ISO/IEC 15504-2. They provide insight into the specific aspects of process capability required to support process improvement and capability determination.

4.3 Assessment Indicators

The PAM is based on the principle that the capability of a process can be assessed by demonstrating the achievement of process attributes on the basis of evidence related to assessment indicators.

There are two types of assessment indicators: process capability indicators, which apply to capability levels 1 to 5 and process performance indicators, which apply exclusively to capability level 1. These indicators are defined in Clause 4.3.2.



The process attributes in the capability dimension have a set of process capability indicators that provide an indication of the extent of achievement of the attribute in the instantiated process. These indicators concern significant activities, resources or results associated with the achievement of the attribute purpose by a process.

Figure 4 — Assessment indicators

The process capability indicators are:

- Generic Practice (GP);
- Generic Resource (GR);
- Generic Input/Output (GIO).

As additional indicators for supporting the assessment of a process at Level 1, each process in the process dimension has a set of process performance indicators which is used to measure the degree of achievement of the process performance attribute for the process assessed.

The process performance indicators are:

- Base Practice (BP);
- Input/output (IO).

The performance of Base Practices (BPs) provides an indication of the extent of achievement of the process purpose and process outcomes. Input/Outputs (IOs) are either used or produced (or both), when performing the process.

The process performance and process capability indicators defined in the PAM represent types of objective evidence that might be found in an instantiation of a process and therefore could be used to judge achievement of capability.

Figure 4 shows how the assessment indicators are related to process performance and process capability.

4.3.1 Process Capability Indicators

The three types of process capability indicators related to levels 1 to 5 are identified in Figure 5. They are intended to be applicable to all processes.

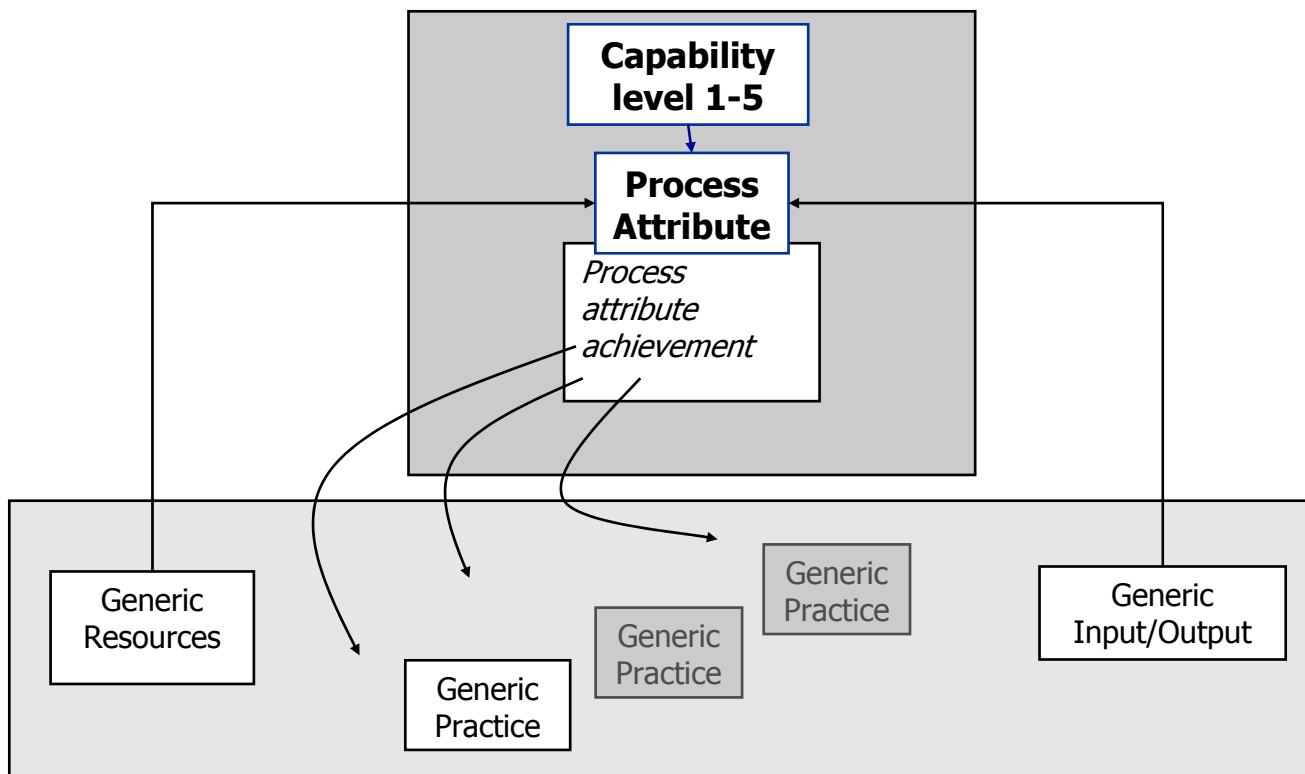


Figure 5 — Process capability indicators

All the process capability indicators relate to the process attributes defined in the capability dimension of the PAM. They represent the type of evidence that would support judgments of the extent to which the attributes are achieved. Evidence of their effective performance or existence supports the judgment of the degree of achievement of the attribute. The generic practices are the principal indicators of process capability.

The **Generic Practice (GP)** indicators are indicators of activities of a generic type and provide guidance on the implementation of the attribute's characteristics. They support the achievement of the process attribute and many of them concern management practices, i.e. practices that are established to support the process performance as it is characterized at level 1.

During the evaluation of process capability, the primary focus is on the performance of the generic practices. In general, performance of all generic practices is expected for full achievement of the process attribute.

The **Generic Resource (GR)** indicators are associated resources that may be used when performing the process in order to achieve the attribute. These resources may include human resources, tools, methods and infrastructure. The availability of a resource indicates the potential to fulfil the purpose of a specific attribute.

NOTE: The assessor should interpret the generic resources according to the process assessed; e.g. for PA2.1 resources (with identified objectives, responsibilities and authorities), an assessor would look for roles (with identified objectives, responsibilities and authorities) in primary and supporting processes, but for organizational processes would look for governance structures (e.g. mandated committees, positions) with identified objectives, responsibilities and authorities.

The **Generic Input/Output (GIO)** indicators are sets of characteristics that would be expected to be evident in inputs/outputs of generic types as a result of achievement of an attribute. The generic inputs/outputs form the basis for the classification of the inputs/outputs defined as process performance indicators; they represent basic types of inputs/outputs from all types of processes.

These three types of indicators help to establish objective evidence of the extent of achievement of the specified process attribute.

Due to the fact that Level 1 capability of a process is only characterized by the measure of the extent to which the process purpose is achieved, the process performance attribute (PA.1.1) has a single generic practice indicator (GP.1.1.1). In order to support the assessment of PA.1.1 and to amplify the process performance achievement analysis, additional process performance indicators are defined in the PAM.

4.3.2 Process Performance Indicators

There are two types of process performance indicators: **Base Practice (BP)** indicators and **Input/Output (IO)** indicators. Process performance indicators relate to individual processes defined in the process dimension of the PAM and are chosen to explicitly address the achievement of the defined process outcomes.

Evidence of performance of the base practices, and the presence of inputs/outputs with their expected characteristics, provide objective evidence of the achievement of the process outcomes.

A base practice is an activity that addresses the purpose of a particular process. Consistently performing the base practices associated with a process will help the consistent achievement of its purpose. A coherent set of base practices is associated with each process in the process dimension. The base practices are described at an abstract level, identifying "what" should be done without specifying "how". Implementing the base practices of a process should achieve the basic outcomes that reflect the process purpose. Base practices represent only the first step in building process capability, but the base practices represent the unique, functional activities of the process, even if that performance is not systematic.

In this particular PAM the base practices have been used as a vehicle to link the outcomes of each process in the PRM with the requirements defined for that process in ISO/IEC 20000-1. This has been achieved using the following strategy:

- Singular requirements from ISO/IEC 20000-1 have been identified and assigned a unique identifier (process number plus sequential numbering within the sub-clause).
- Each process outcome has been linked to a single base practice.
- Each base practice has been linked (Annex C) to one or more ISO/IEC 20000-1 singular requirements to demonstrate that it satisfies a CL1 objective.
- Where relevant, singular requirements in ISO/IEC 20000-1 that imply a level of capability higher than CL1, are indicated, together with the process that supports the intent of this higher capability level.

This approach provides insight on how the singular requirements from ISO/IEC 20000-1 contribute to the achievement of the process purpose and outcomes. The performance of a process requires inputs and produces outputs that are identifiable and usable in achieving the purpose of the process. In this assessment model, each input/output has a defined set of example characteristics that may be used when reviewing the input/output to assess the effective performance of a process. Input/output characteristics may be used to identify the corresponding input/output produced/used by the assessed organization.

Clause 5 contains a complete description of the processes, including the base practices and the associated inputs and outputs.

Annex B contains a list of generic inputs/outputs together with their characteristics.

4.4 Measuring process capability

The process performance and process capability indicators in this model give examples of evidence that an assessor might obtain, or observe, in the performance of an assessment. The evidence obtained in the assessment, through observation of the implemented process, can be mapped onto the set of indicators to enable correlation between the implemented process and the processes defined in this assessment model. These indicators provide guidance for assessors in accumulating the necessary objective evidence to support judgments of capability. They are not mandatory.

An indicator is defined as an objective characteristic of a practice or input/output that supports performing a conformant assessment in accordance with the requirements of ISO/IEC 15504-2. The assessment indicators, and their relationship to process performance and process capability, are shown in Figure 6.

Observable (objective) evidence collected during an assessment is used to confirm the indicators (e.g., practices were performed). All such evidence comes either from the examination of inputs/outputs of the processes assessed, or from statements made by the performers and managers of the processes.

The existence of base practices, inputs/outputs, and input/output characteristics, provide evidence of the performance of the processes associated with them. Similarly, the existence of process capability indicators provides evidence of process capability.

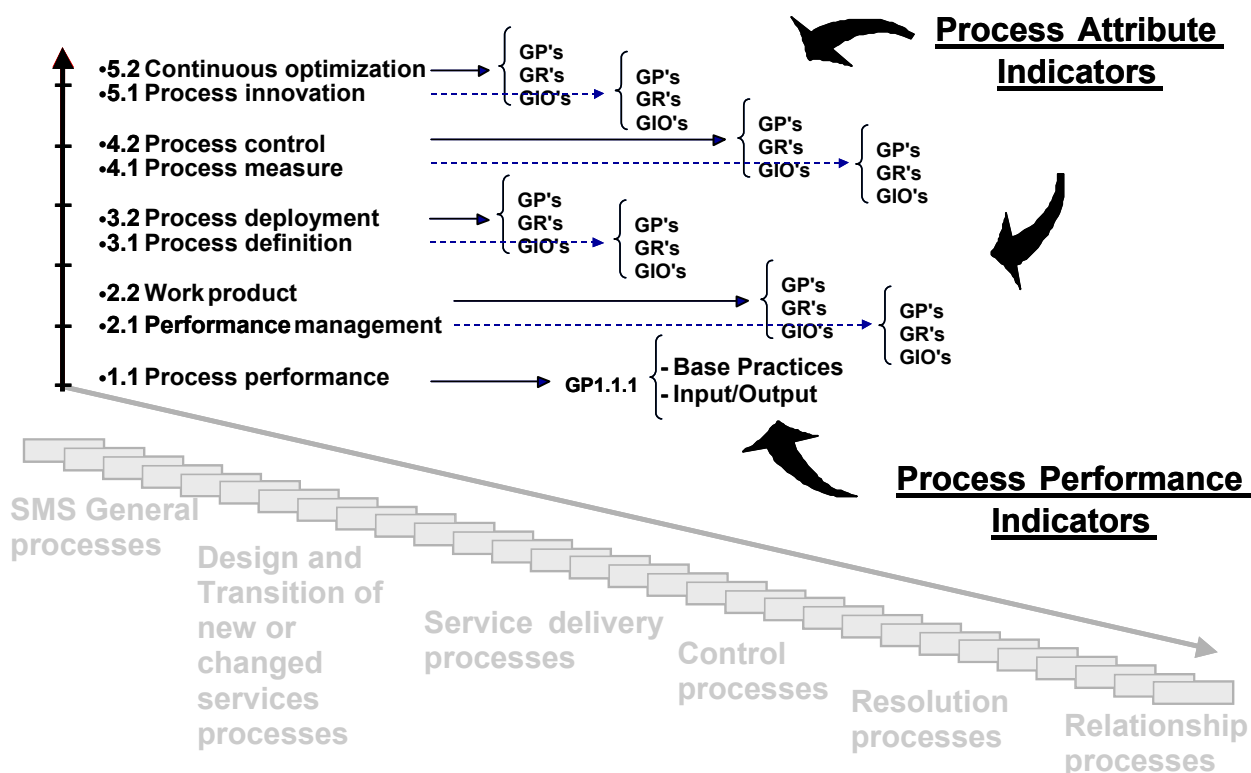


Figure 6 — Relationship between assessment indicators and process capability

The evidence obtained should be recorded in a form that clearly relates to an associated indicator, so that the support for the assessor's judgment can be readily confirmed or verified as required by ISO/IEC 15504-2.

The output from a process assessment is a set of process profiles, one for each process within the scope of the assessment. A typical process profile is illustrated in ISO/IEC 15504-4. Each process profile consists of a set of the process attribute ratings for an assessed process. Each attribute rating represents a judgment by the assessor of the extent to which the attribute is achieved. To improve the reliability and repeatability of the assessment, the judgments of the assessor are based on a coherent set of recorded objective evidences.

5 The process dimension and process performance indicators (Level 1)

5.1 General

This clause defines the processes and the process performance indicators, also known as the process dimension, of the PAM. The processes in the process dimension can be directly mapped to the processes defined in the PRM.

The processes are classified into Process Groups which are shown in Figure 3. The process purposes, outcomes, the practices, the inputs and outputs of processes are included in this clause.

The individual processes are described in terms of process name, process purpose, and process outcomes as defined in ISO/IEC TR 20000-4:

- a) name: a short noun phrase that summarizes the scope of the process, identifying the principle concern of the process, and distinguishes it from other processes within the scope of the PRM;
- b) purpose: describes at a high level the overall objectives of performing the process;
- c) outcomes: an outcome is an observable result of the successful achievement of the process purpose. Outcomes are measurable, tangible, technical or business results that are achieved by a process. Outcomes are observable and assessable.

In addition, the process dimension of the PAM provides information in the form of:

- a) a set of base practices for the process needed to accomplish the process outcomes; a single base practice is explicitly associated with a process outcome;
- b) a number of inputs/outputs associated with each process and their relationship to one or more of its outcomes by numbers in square brackets, (i.e. [n]);
- c) characteristics associated with each input/output.

The input/output identifiers and characteristics are contained in Annex B.

The base practices and the inputs/outputs constitute the set of indicators of process performance. The associated inputs/outputs listed in this clause may be used when reviewing potential inputs and outputs of an organization's process implementation. They provide objective guidance for potential inputs and outputs to look for, and objective evidence supporting the assessment of a particular process. A documented assessment process and assessor judgment is needed to ensure that process context (application domain, business purpose, development methodology, size of the organization, etc.) is explicitly considered when using this information. This list should not be considered as a checklist of what each organization must have but rather as an example and starting point for considering whether, given the context, the inputs/outputs are necessary and contributing to the intended purpose of the process.

NOTE Some outcomes are not linked to specific requirements of ISO/IEC 20000-1. These additional outcomes have been included in order to present a complete process so that the process purpose can be achieved. The complete list of affected base practices is shown in Annex C, Table C.3.

5.2 CON.1 Change management

Process ID	CON.1
Name	Change management
Purpose	The purpose of the change management process is to ensure all changes are assessed, approved, implemented and reviewed in a controlled manner.
Outcomes	As a result of successful implementation of this process: 1. change requests are recorded and classified; 2. change requests are assessed using defined criteria; 3. change requests are approved before changes are developed and deployed; 4. an implementation schedule of changes and releases is established; 5. an implementation schedule of changes and releases is communicated to interested parties; 6. approved changes are developed and tested; 7. unsuccessful changes are reversed or remedied.
Base Practices	CON.1.1 Record change requests. Changes to the services, service components, service requirements, catalogue of services, service level agreements and other documented agreements are recorded and classified. [Outcome 1] CON.1.2 Assess change requests. Requests for change are assessed to identify: a) new or changed information security risks; b) potential impact on the existing information security policy and controls, and the impact of requests for change on releases and plans for deployment. [Outcome 2] CON.1.3 Make decisions on change requests. The service provider and interested parties make decisions on the acceptance of requests for change. Decision-making takes into consideration the risks, the potential impacts to services and the customer, service requirements, business benefits, technical feasibility and financial impact. [Outcome 3] CON.1.4 Establish an implementation schedule of changes and releases. Establish a schedule of change containing details of the approved changes and their proposed deployment dates. Planning is coordinated with the change management process and includes references to the related requests for change, known errors and problems which are being closed through this release. [Outcome 4] CON.1.5 Communicate an implementation schedule of changes and releases. Communicate a schedule containing details of the approved changes and their proposed deployment dates to interested parties. [Outcome 5] CON.1.6 Develop and test approved changes. Approved changes are developed and tested. [Outcome 6] CON.1.7 Reverse or remedy unsuccessful changes. The change is reversed or remedied if unsuccessful. [Outcome 7]
Inputs	
04-06	Change of services provision cost estimates [Outcome 2]
11-01	Change request [Outcome 1,2]
03-03	Change request classification criteria [Outcome 1]
03-04	Change request evaluation criteria [Outcome 2]
04-07	Change schedule [Outcome 5,6]
02-10	Change schedule communication list [Outcome 5]
09-08	Configuration item status report [Outcome 2]
03-14	Information security change request evaluation criteria [Outcome 2]
02-29	Release log [Outcome 2]
09-00	Report [Outcome 3]
04-20	Reversing unsuccessful changes plan [Outcome 7]
04-26	Services provision budget [Outcome 2]

Process ID	CON.1
Name	Change management
Outputs	
08-02	Approval record [Outcome 3]
08-11	Change request record [Outcome 1]
04-07	Change schedule [Outcome 4]
08-13	Communication record [Outcome 5]
02-15	Implemented changes log [Outcome 6]
11-07	New or changed service request [Outcome 6]
04-18	Release schedule [Outcome 4]
09-00	Report [Outcome 2]

5.3 CON.2 Configuration management

Process ID	CON.2
Name	Configuration management
Purpose	The purpose of the configuration management process is to establish and maintain the integrity of all identified service components.
Outcomes	As a result of successful implementation of this process: 1. items requiring configuration management are identified; 2. the status of configuration items and modifications are recorded and reported; 3. changes to items under configuration management are controlled; 4. the integrity of systems, services and service components is assured; 5. the configuration of released items is controlled.
Base Practices	CON.2.1 Identify configuration items. Configuration items are uniquely identified. [Outcome 1] CON.2.2 Record configuration item status. The information recorded for each configuration item (CI) ensures effective control and includes at least: a) description of the CI; b) relationship(s) between the CI and other CIs; c) relationship(s) between the CI and service components; d) status; e) version; f) location; g) associated requests for change; h) associated problems and known errors. [Outcome 2] CON.2.3 Changes to configuration items are controlled. All requests for change to configuration items defined in the change management policy are managed using the change management process. The configuration management database records are updated following the successful deployment of changes. [Outcome 3] CON.2.4 Assure the integrity of systems, services and service components. Configuration control procedures ensure that the integrity of services and service components is maintained. The service provider audits the records stored in the configuration management database. Changes to configuration items are traceable and auditable to ensure integrity of the configuration items and the data in the configuration management database. [Outcome 4] CON.2.5 Control the configuration of released items. A configuration baseline of the affected configuration items is taken before deployment of a release into the live environment. Master copies of the configuration items recorded in the configuration management database are stored in secure physical or electronic libraries referenced by the configuration records. This includes at least documentation, licence information, software and, where available, images of the hardware configuration. [Outcome 5]

Process ID	CON.2
Name	Configuration management
Inputs	
08-11	Change request record [Outcome 3]
04-08	Configuration item audit schedule [Outcome 4]
02-11	Configuration item change log [Outcome 2,4]
08-15	Configuration item record [Outcome 2,3,4]
02-12	Configuration item report user communication list [Outcome 2]
09-08	Configuration item status report [Outcome 2,3]
03-32	Release notes [Outcome 5]
01-01	Service level agreement [Outcome 1]
01-02	Supplier agreement [Outcome 1]
Outputs	
08-13	Communication record [Outcome 2]
08-14	Configuration item archive [Outcome 5]
09-07	Configuration item audit report [Outcome 4]
02-11	Configuration item change log [Outcome 3]
08-15	Configuration item record [Outcome 1]
09-08	Configuration item status report [Outcome 2]

5.4 CON.3 Release and deployment management

Process ID	CON.3
Name	Release and deployment management
Purpose	The purpose of the release and deployment management process is to deploy releases into the live environment in a controlled manner.
Outcomes	As a result of successful implementation of this process: - requirements for releases are established and agreed with interested parties; - releases of services and service components are planned; - releases are designed; - releases are tested prior to deployment; - approved releases are deployed; - integrity of hardware, software, and other service components is assured during deployment of the release. - unsuccessfully deployed releases are reversed or remedied; - release information is communicated to interested parties.
Base Practices	CON.3.1 Establish requirements for releases. Requirements for releases are established and agreed with interested parties. [Outcome 1] CON.3.2 Plan releases of services or service components. Plan releases of services and service components. [Outcome 2] CON.3.3 Design releases. Releases are designed. [Outcome 3] CON.3.4 Test releases. Releases are tested prior to deployment. [Outcome 4] CON.3.5 Deploy releases. Approved releases are deployed. [Outcome 5] CON.3.6 Assure integrity of hardware, software, and other service components during deployment of the release. The release is deployed into the live environment so that the integrity of hardware, software and other service components is maintained during deployment of the release. [Outcome 6] CON.3.7 Reverse or remedy unsuccessful releases. Unsuccessfully deployed releases are reversed or remedied. [Outcome 7] CON.3.8 Communicate release information to interested parties. Communicate release information to interested parties. [Outcome 8]

Process ID	CON.3
Name	Release and deployment management
Inputs	
04-01	Acceptance test environment plan [Outcome 4]
04-07	Change schedule [Outcome 2]
12-06	Release acceptance test case [Outcome 4]
03-31	Release acceptance test criteria [Outcome 3,4]
02-29	Release log [Outcome 8]
04-16	Release plan [Outcome 3,5,6]
04-17	Release reversal arrangements plan [Outcome 7]
04-18	Release schedule [Outcome 8]
02-31	Release stakeholder communication list [Outcome 8]
04-20	Reversing unsuccessful changes plan [Outcome 6]
Outputs	
04-01	Acceptance test environment plan [Outcome 2]
08-02	Approval record [Outcome 4,5]
08-13	Communication record [Outcome 8]
12-06	Release acceptance test case [Outcome 3]
03-31	Release acceptance test criteria [Outcome 1]
09-27	Release acceptance test report [Outcome 4]
02-29	Release log [Outcome 5,6,7]
04-16	Release plan [Outcome 2]
04-17	Release reversal arrangements plan [Outcome 2]
04-18	Release schedule [Outcome 2]
04-19	Removal of services plan [Outcome 2]
04-20	Reversing unsuccessful changes plan [Outcome 2]
08-52	Review record [Outcome 4]

5.5 DTR.1 Service requirements

Process ID	DTR.1
Name	Service requirements
Purpose	The purpose of the service requirements process is to establish and agree the service requirements.
Outcomes	As a result of successful implementation of this process: 1. the required characteristics and context of use of new or changed services are identified; 2. the constraints for a service solution are defined; 3. the requirements for the new or changed service are defined; 4. the requirements for validating the new or changed service are defined; 5. requirements for the new or changed service that are to be implemented are negotiated;
Base Practices	DTR.1.1 Identify the required characteristics and contexts of use. The required characteristics and context of use of new or changed services are identified. [Outcome 1] DTR.1.2 Identify the constraints for a service solution. The constraints for a service solution are defined. [Outcome 2] DTR.1.3 Define the requirements for the new or changed service. The requirements for the new or changed service are defined. [Outcome 3] DTR.1.4 Define the validation requirements for the new or changed service. The requirements for validating the new or changed service are defined. [Outcome 4] DTR.1.5 Negotiate the acceptance of the requirements for the new or changed service. Requirements for the new or changed service that are to be implemented are negotiated. [Outcome 5]

Process ID	DTR.1
Name	Service requirements
Inputs	
11-07	New or changed service request [Outcome 1]
08-41	New or changed service request record [Outcome 2]
12-04	New or changed service requirements [Outcome 5]
Outputs	
09-21	New or changed service evaluation report [Outcome 2]
08-41	New or changed service request record [Outcome 1]
12-04	New or changed service requirements [Outcome 3]

5.6 DTR.2 Service design

Process ID	DTR.2
Name	Service design
Purpose	The purpose of the service design process is to design and develop new or changed services.
Outcomes	As a result of successful implementation of this process: 1. new or changed services are designed to meet agreed business needs and customer requirements; 2. a service specification is prepared that defines the attributes of the new or changed service; 3. infrastructure and service components to support the designed service are specified; 4. new or changed services are developed that satisfy the criteria identified in the service specification.
Base Practices	DTR.2.1 Design new or changed service. New or changed services are designed to meet agreed business needs and customer requirements. [Outcome 1] DTR.2.2 Prepare a service specification. A service specification is prepared that defines the attributes of the new or changed service. [Outcome 2] DTR.2.3 Specify infrastructure and support components. Infrastructure and service components to support the designed service are specified. [Outcome 3] DTR.2.4 Develop new or changed service. New or changed services are developed that satisfy the criteria identified in the service specification. [Outcome 4]
Inputs	
03-26	New or changed service design [Outcome 2,3]
04-15	New or changed service plan [Outcome 2,3]
12-04	New or changed service requirements [Outcome 1]
12-05	New or changed service specification [Outcome 4]
04-19	Removal of services plan [Outcome 2]
12-11	Service requirements [Outcome 1]
Outputs	
03-26	New or changed service design [Outcome 1]
07-02	New or changed service realisation [Outcome 4]
12-05	New or changed service specification [Outcome 2,3]

5.7 DTR.3 Service transition

Process ID	DTR.3
Name	Service transition
Purpose	The purpose of the service transition process is to make the new or changed services operational and includes the build, test and acceptance of the new or changed services.

Process ID	DTR.3
Name	Service transition
Outcomes	As a result of successful implementation of this process: 1. requirements for service transition are identified; 2. the new or changed service is deployed and tested according to the service specification; 3. the new or changed service is accepted in accordance with the service acceptance criteria; 4. information regarding the outcome of the transitioning of new or changed service is communicated to interested parties.
Base Practices	DTR.3.1 Identify service transition requirements. Requirements for service transition are identified. [Outcome 1] DTR.3.2 Deploy new or changed service. The new or changed service is deployed and tested according to the service specification. [Outcome 2] DTR.3.3 Accept new or changed service. The new or changed service is accepted in accordance with the service acceptance criteria. [Outcome 3] DTR.3.4 Communicate outcomes of transitioning of new or changed service. Communicate information regarding the outcome of the transitioning of new or changed service to interested parties. [Outcome 4]
Inputs	
11-07	New or changed service request [Outcome 1]
08-42	New or changed services acceptance record [Outcome 4]
03-28	New or changed services test criteria [Outcome 2]
09-23	New or changed services test report [Outcome 3]
02-42	Services stakeholder communication list [Outcome 4]
Outputs	
08-13	Communication record [Outcome 4]
12-04	New or changed service requirements [Outcome 1]
08-42	New or changed services acceptance record [Outcome 3]
09-23	New or changed services test report [Outcome 2]
08-43	New or changed services test verification record [Outcome 2]
12-11	Service requirements [Outcome 1]

5.8 DTR.4 Service planning

Process ID	DTR.4
Name	Service planning
Purpose	The purpose of the service planning process is to plan the provision of a new or changed service.
Outcomes	As a result of successful implementation of this process: 1. the scope of the work for provision of new or changed services is defined; 2. the feasibility of achieving the requirements of the new or changed service with available resources and constraints is assessed; 3. the tasks and resources necessary to complete the work are estimated; 4. interfaces between organizational units and external parties are identified; 5. plans for the provision of the new or changed service are developed.

Process ID	DTR.4
Name	Service planning
Base Practices	DTR.4.1 Define the scope of the work for provision of new or changed services. The scope of the work for provision of new or changed services is defined. [Outcome 1] DTR.4.2 Assess the feasibility of achieving the requirements of the new or changed service. The feasibility of achieving the requirements of the new or changed service with available resources and constraints is assessed. [Outcome 2] DTR.4.3 Estimate the tasks and resources. The tasks and resources necessary to complete the work are sized and estimated. [Outcome 3] DTR.4.4 Identify the interfaces between organizational units and external parties. Interfaces between organizational units and external parties are identified. [Outcome 4] DTR.4.5 Develop plans for the provision of the new or changed services. Plans for the provision of the new or changed service are developed. [Outcome 5]
Inputs	
04-07	Change schedule [Outcome 5]
11-07	New or changed service request [Outcome 1]
03-27	New or changed services impact evaluation criteria [Outcome 2]
04-18	Release schedule [Outcome 5]
12-11	Service requirements [Outcome 2,3,4,5]
02-41	Service stakeholder list [Outcome 4]
04-26	Services provision budget [Outcome 3,5]
02-45	Supplier role assignments list [Outcome 4]
Outputs	
04-15	New or changed service plan [Outcome 4,5]
09-22	New or changed services impact evaluation report [Outcome 2]
03-43	Service management resource needs [Outcome 3]
12-11	Service requirements [Outcome 1]

5.9 REL.1 Business relationship management

Process ID	REL.1
Name	Business relationship management
Purpose	The purpose of the business relationship management process is to identify and manage customer needs and expectations.
Outcomes	As a result of successful implementation of this process: 1. customers and interested parties are identified; 2. the needs and expectations of customers are identified and monitored; 3. communication with the customer is planned and implemented; 4. service performance is monitored; 5. changes to the scope of the services, service level agreements and contracts are identified; 6. service complaints are recorded and managed through their life cycle to closure; 7. service complaints which are not resolved through normal channels are escalated; 8. customer satisfaction is measured and analysed; 9. customer satisfaction analysis results are communicated to interested parties.

Process ID	REL.1
Name	Business relationship management
Base Practices	REL.1.1 Identify customers and interested parties. The service provider identifies the customer, users and interested parties of the services. [Outcome 1] REL.1.2 Identify and monitor the needs and expectations of customers. Promote the understanding of the business environment in which the services operate and requirements for new or changed services by establishing a communication mechanism. This information enables the service provider to prepare to respond to these requirements. [Outcome 2] REL.1.3 Plan and implement communication with the customer. For each customer, the service provider has a designated individual who is responsible for managing the customer relationship and customer satisfaction. [Outcome 3] REL.1.4 Monitor service performance. The service provider monitors performance of the service against agreed service targets and other agreed commitments. [Outcome 4] REL.1.5 Identify changes to the scope of the services, service level agreements and contracts. Identify changes to the scope of services, service level agreements and contracts. [Outcome 5] REL.1.6 Record and manage service complaints through their life cycle to closure. The service provider records, investigates, acts upon, reports and closes service complaints. [Outcome 6] REL.1.7 Escalate service complaints which are not resolved through normal channels. Where a service complaint is not resolved through the normal channels, escalation is provided to the customer. [Outcome 7] REL.1.8 Measure and analyse customer satisfaction. The service provider measures customer satisfaction based on a representative sample from the customer and users of the services. [Outcome 8] REL.1.9 Communicate customer satisfaction analysis results to interested parties. Customer satisfaction analysis results are communicated to interested parties. [Outcome 9]
Inputs	
08-11	Change request record [Outcome 5]
03-06	Customer satisfaction assessment instrument [Outcome 8]
08-17	Customer satisfaction review record [Outcome 9]
04-09	Customer satisfaction sampling schedule [Outcome 8]
03-43	Service management resource needs [Outcome 7]
03-44	Service management roles and responsibilities [Outcome 7]
02-37	Service provider role assignments list [Outcome 7]
02-38	Service provision complaint log [Outcome 7]
08-75	Service provision complaint record [Outcome 6,7]
04-25	Service provision review schedule [Outcome 4]
12-11	Service requirements [Outcome 1,2,5]
02-41	Service stakeholder list [Outcome 2,3]
Outputs	
11-01	Change request [Outcome 5]
08-13	Communication record [Outcome 9]
03-05	Customer needs and expectations [Outcome 2]
08-17	Customer satisfaction review record [Outcome 4,8]
03-11	Improvement opportunity [Outcome 4]
08-52	Review record [Outcome 4]
02-37	Service provider role assignments list [Outcome 3]
09-39	Service provision complaint disposition report [Outcome 6,7]
02-38	Service provision complaint log [Outcome 6]
02-41	Service stakeholder list [Outcome 1]

5.10 REL.2 Supplier management

Process ID	REL.2
Name	Supplier management
Purpose	The purpose of the supplier management process is to ensure supplier services are integrated into service delivery to meet the agreed requirements.
Outcomes	As a result of successful implementation of this process: - relationships between the service provider and suppliers are managed; - services to be provided are negotiated with each supplier; - roles and relationships between suppliers are determined; - the capability of subcontracted suppliers to meet obligations is confirmed; - supplier obligations to meet service requirements are monitored; - supplier performance against agreed criteria is monitored.
Base Practices	REL.2.1 Identify contributors to service provision. The service provider identifies other parties who will contribute to the provision of service components for the new or changed services. [Outcome 1] REL.2.2 Negotiate services with each supplier. Services to be provided are negotiated with each supplier. [Outcome 2] REL.2.3 Determine roles and relationships. Roles and relationships between suppliers are determined. [Outcome 3] REL.2.4 Confirm capability of subcontracted suppliers. The capability of subcontracted suppliers to meet obligations is confirmed. [Outcome 4] REL.2.5 Monitor supplier obligations to meet service requirements. Supplier obligations to meet service requirements are monitored. [Outcome 5] REL.2.6 Monitor supplier performance. Supplier performance against agreed criteria is monitored. [Outcome 6]
Inputs	
08-11	Change request record [Outcome 5,6]
03-43	Service management resource needs [Outcome 1,2]
02-37	Service provider role assignments list [Outcome 1]
01-02	Supplier agreement [Outcome 4,5,6]
04-28	Supplier agreement review schedule [Outcome 5]
02-43	Supplier performance data [Outcome 6]
03-53	Supplier performance evaluation criteria [Outcome 6]
02-45	Supplier role assignments list [Outcome 3]
Outputs	
11-01	Change request [Outcome 6]
09-00	Report [Outcome 6]
08-52	Review record [Outcome 5]
03-51	Sub-contracted supplier roles and responsibilities [Outcome 3]
01-02	Supplier agreement [Outcome 2]
08-88	Supplier capability assessment record [Outcome 4]
02-45	Supplier role assignments list [Outcome 1]

5.11 RES.1 Incident management

Process ID	RES.1
Name	Incident management
Purpose	The purpose of the incident management process is to restore agreed service within agreed service levels.
Outcomes	As a result of successful implementation of this process: 1. incidents are recorded and classified; 2. incidents are prioritised and analysed; 3. incidents are resolved and closed; 4. incidents which are not progressed according to agreed service levels are escalated; 5. information regarding the status and progress of reported incidents is communicated to interested parties.
Base Practices	RES.1.1 Record and classify incidents. Incidents are recorded and classified with an appropriate priority. Major incidents are distinguished from other types of incidents by the appropriate assignment of status. [Outcome 1] RES.1.2 Prioritize and analyse incidents. Incidents are prioritised and analysed, taking into account the impact and urgency of the incident or service request. [Outcome 2] RES.1.3 Resolve and close incidents. Incidents are resolved and closed. [Outcome 3] RES.1.4 Escalate incidents as appropriate. Escalate incidents which are not progressed according to agreed service levels. [Outcome 4] RES.1.5 Report incident status and progress. Communicate information regarding the status and progress of incidents to interested parties. [Outcome 5]
Inputs	
08-22	Incident [Outcome 1]
08-23	Incident disposition record [Outcome 2,3,4,5]
11-06	Information security incident request [Outcome 1]
02-29	Release log [Outcome 2]
Outputs	
08-13	Communication record [Outcome 5]
08-23	Incident disposition record [Outcome 1,2,3,4]
08-24	Incident record [Outcome 1]

5.12 RES.2 Service request management

Process ID	RES.2
Name	Service request management
Purpose	The purpose of the service request management process is to fulfil service requests within agreed service levels.
Outcomes	As a result of successful implementation of this process: 1. service requests are recorded and classified; 2. service requests are prioritised and analysed; 3. service requests are resolved and closed; 4. service requests which are not progressed according to agreed service levels are escalated; 5. information regarding the status and progress of service requests is communicated to interested parties.

Process ID	RES.2
Name	Service request management
Base Practices	RES.2.1 Record and classify service requests. Service requests are recorded and classified with an appropriate priority. [Outcome 1] RES.2.2 Prioritize and analyse service requests. Service requests are prioritised and analysed, taking into account the impact and urgency of the service request. [Outcome 2] RES.2.3 Resolve and close service requests. Service requests are resolved and closed. [Outcome 3] RES.2.4 Escalate service requests as appropriate. Escalate service requests which are not progressed according to agreed service levels. [Outcome 4] RES.2.5 Report service request status and progress. Communicate information regarding the status and progress of service requests to interested parties. [Outcome 5]
Inputs	
11-15	Service request [Outcome 1]
08-80	Service request disposition record [Outcome 2,3,4,5]
Outputs	
08-13	Communication record [Outcome 5]
08-80	Service request disposition record [Outcome 1,2,3,4]
08-81	Service request record [Outcome 1]

5.13 RES.3 Problem management

Process ID	RES.3
Name	Problem management
Purpose	The purpose of the problem management process is to minimise service disruption.
Outcomes	As a result of successful implementation of this process: 1. problems are identified, recorded, and classified; 2. problems are prioritised and analysed; 3. problems are resolved and closed; 4. problems which are not progressed according to defined service levels are escalated; 5. the effect of unresolved problems is minimised; 6. the status and progress of the resolution of problems are communicated to interested parties.
Base Practices	RES.3.1 Identify problems. Problems are identified, recorded and classified. [Outcome 1] RES.3.2 Prioritize and analyse problems. Problems are prioritised and analysed. [Outcome 2] RES.3.3 Resolve and close problems. Problems are resolved and closed. [Outcome 3] RES.3.4 Escalate unresolved problems. Problems which are not progressed according to agreed service levels are escalated. [Outcome 4] RES.3.5 Minimise the effects of unresolved problems. The effect of unresolved problems is minimised. [Outcome 5] RES.3.6 Communicate problem status to interested parties. Communicate the status and progress of the resolution of problems to interested parties [Outcome 6]
Inputs	
03-30	Problem classification scheme [Outcome 1]
09-25	Problem disposition report [Outcome 2,3,4,5,6]
02-27	Problem management known error log [Outcome 3]
09-26	Problem mitigation report [Outcome 6]
08-44	Problem record [Outcome 1]
02-28	Problem report user communication list [Outcome 6]

Process ID	RES.3
Name	Problem management
Outputs	
08-13	Communication record [Outcome 6]
09-25	Problem disposition report [Outcome 1,2,3,4]
02-27	Problem management known error log [Outcome 5]
09-26	Problem mitigation report [Outcome 5]

5.14 SDE.1 Budgeting and accounting for IT services

Process ID	SDE.1
Name	Budgeting and accounting for IT services
Purpose	The purpose of the budgeting and accounting for IT services process is to budget and account for service provision.
Outcomes	As a result of successful implementation of this process: 1. costs of service provision are estimated; 2. budgets are produced using cost estimates; 3. deviations from the budget and costs are controlled; 4. deviations from the budget are resolved; 5. deviations from the budget and costs are communicated to interested parties.
Base Practices	SDE.1.1 Estimate costs of service provision. Information is provided to support the costing of service provision. [Outcome 1] SDE.1.2 Produce budgets using cost estimates. Costs are budgeted to enable effective financial control and decision-making for services delivered. [Outcome 2] SDE.1.3 Control costs and deviations from the budget. The service provider monitors costs against the budget and reviews the financial forecasts. [Outcome 3] SDE.1.4 Resolve deviations from the budget. The service provider manages costs. [Outcome 4] SDE.1.5 Communicate to interested parties deviations from the budget and costs. The service provider reports costs against the budget. [Outcome 5]
Inputs	
02-08	Budgeting and accounting communication list [Outcome 5]
09-03	Capacity future needs assessment report [Outcome 1]
04-06	Change of services provision cost estimates [Outcome 2]
03-37	Service catalogue [Outcome 1]
12-11	Service requirements [Outcome 1]
04-26	Services provision budget [Outcome 3]
04-27	Services provision costs [Outcome 3]
09-40	Services provision costs against budget variance report [Outcome 4,5]
Outputs	
04-06	Change of services provision cost estimates [Outcome 1]
08-13	Communication record [Outcome 5]
04-26	Services provision budget [Outcome 2]
09-40	Services provision costs against budget variance report [Outcome 3,4]

5.15 SDE.2 Capacity management

Process ID	SDE.2
Name	Capacity management
Purpose	The purpose of the capacity management process is to ensure that the service provider has service capacity to meet current and future agreed requirements.
Outcomes	As a result of successful implementation of this process: 1. current and future capacity and performance requirements are identified; 2. capacity is provided to meet current capacity and performance requirements; 3. capacity usage is monitored, analysed and performance is tuned; 4. capacity is prepared to meet future capacity and performance needs.
Base Practices	SDE.2.1 Identify current and future capacity and performance requirements. The service provider identifies the current and future capacity and performance requirements with the customer and interested parties. [Outcome 1] SDE.2.2 Provide capacity. The service provider provides capacity to meet current capacity and performance requirements. [Outcome 2] SDE.2.3 Monitor capacity usage. The service provider monitors capacity usage, analyses capacity data and tunes performance. [Outcome 3] SDE.2.4 Prepare capacity to meet future capacity needs. The service provider provides sufficient capacity to fulfil agreed capacity and performance requirements. [Outcome 4]
Inputs	
09-03	Capacity future needs assessment report [Outcome 4]
04-05	Capacity plan [Outcome 2,3,4]
08-08	Capacity plan status record [Outcome 2]
09-04	Capacity usage analysis report [Outcome 2,4]
02-09	Capacity usage data [Outcome 3]
08-11	Change request record [Outcome 4]
03-07	Customer technology roadmap [Outcome 1]
12-04	New or changed service requirements [Outcome 1]
12-11	Service requirements [Outcome 1]
Outputs	
09-03	Capacity future needs assessment report [Outcome 3,4]
04-05	Capacity plan [Outcome 2,3]
11-02	Capacity plan change request [Outcome 4]
12-02	Capacity requirements [Outcome 1]
09-04	Capacity usage analysis report [Outcome 3]
02-09	Capacity usage data [Outcome 2]

5.16 SDE.3 Information security management

Process ID	SDE.3
Name	Information security management
Purpose	The purpose of the information security management process is to manage information security at an agreed level of security within all service management activities.
Outcomes	As a result of successful implementation of this process: 1. information security requirements are identified; 2. criteria for the assessment of information security risks and the acceptable level of risk are identified; 3. information security risks are identified; 4. information security risk is assessed; 5. information security risk measures and controls are defined; 6. information security risk measures and controls are implemented; 7. security incidents are quantified and recorded; 8. information security concerns are communicated to interested parties; 9. the impact of changes on information security is analysed and reported.
Base Practices	SDE.3.1 Identify information security requirements. The service provider identifies all parties that have a need to access, use or manage the service provider's information or services. [Outcome 1] SDE.3.2 Identify criteria for the assessment of information security risks. Criteria for the assessment of information security risks and the acceptable level of risk are identified. [Outcome 2] SDE.3.3 Identify information security risks. Information security risks are identified. [Outcome 3] SDE.3.4 Assess information security risk. Management ensures that information security risk assessments are conducted at planned intervals. [Outcome 4] SDE.3.5 Define information security risk measures and controls. The information security controls describe the risks to which the controls relate, their operation and maintenance. [Outcome 5] SDE.3.6 Implement information security risk measures and controls. The service provider operates appropriate information security controls to: a) fulfil the requirements of the information security policy; b) achieve information security management objectives; c) manage risks related to information security. The service provider also implements information security controls with external organizations. [Outcome 6] SDE.3.7 Record security incidents. Security incidents are quantified and recorded. [Outcome 7] SDE.3.8 Communicate information security concerns. Communicate information security concerns to interested parties. [Outcome 8] SDE.3.9 Analyse the impact of changes on information security. The impact of changes on information security is analysed and reported. [Outcome 9]
Inputs	
08-23	Incident disposition record [Outcome 7]
04-12	Information security audit schedule [Outcome 6]
02-20	Information security communication list [Outcome 8]
09-16	Information security controls report [Outcome 6]
12-03	Information security requirements [Outcome 5,6]
09-18	Information security risk analysis report [Outcome 5]
03-17	Information security risk assessment criteria [Outcome 4]
09-19	Information security risk assessment report [Outcome 6]
04-13	Information security risk assessment schedule [Outcome 4]
02-23	Information security risk data [Outcome 4]
03-18	Information security risk measure [Outcome 4]
08-80	Service request disposition record [Outcome 7]

Process ID	SDE.3
Name	Information security management
Outputs	
02-01	Access rights list [Outcome 6]
08-13	Communication record [Outcome 8]
09-16	Information security controls report [Outcome 5]
08-29	Information security incident record [Outcome 7]
12-03	Information security requirements [Outcome 1]
09-18	Information security risk analysis report [Outcome 4]
03-17	Information security risk assessment criteria [Outcome 2]
09-19	Information security risk assessment report [Outcome 4]
02-23	Information security risk data [Outcome 3,6]
03-18	Information security risk measure [Outcome 2]

5.17 SDE.4 Service availability management

Process ID	SDE.4
Name	Service availability management
Purpose	The purpose of the service availability management process is to ensure that agreed service levels will be met in foreseeable circumstances.
Outcomes	As a result of successful implementation of this process: 1. service availability requirements are identified; 2. a service availability plan is developed using the service availability requirements; 3. service availability is tested against the service availability requirements to validate the plan. 4. service availability is monitored; 5. underlying causes of unplanned service non-availability are identified and analysed; 6. corrective actions are taken to address identified underlying causes; 7. changes to service availability requirements are reflected in the service availability plan.
Base Practices	SDE.4.1 Identify service availability requirements. The service provider identifies with the customer and interested parties service availability requirements. The agreed requirements take into consideration applicable business plans, service requirements, service level agreements and risks. [Outcome 1] SDE.4.2 Develop a service availability plan. The service provider creates and implements a service availability plan. [Outcome 2] SDE.4.3 Test service availability. Service availability is tested against the service availability requirements to validate the plan. [Outcome 3] SDE.4.4 Monitor service availability. Service availability is monitored. [Outcome 4] SDE.4.5 Identify underlying causes of service non-availability. Underlying causes of unplanned service non-availability are identified and analysed. [Outcome 5] SDE.4.6 Take action to address underlying causes. Take corrective actions to address identified underlying causes for unplanned non-availability. [Outcome 6] SDE.4.7 Reflect changes in requirements in the service availability plan. Changes to service availability requirements are reflected in the service availability plan. [Outcome 7]
Inputs	
08-11	Change request record [Outcome 7]
09-30	Service availability analysis report [Outcome 6]
02-33	Service availability log [Outcome 5]
04-22	Service availability plan [Outcome 3,7]
08-53	Service availability plan amendment record [Outcome 7]
12-07	Service availability requirements [Outcome 2]
08-83	Service unplanned non-availability corrective action disposition record [Outcome 6]

Process ID	SDE.4
Name	Service availability management
Outputs	
11-01	Change request [Outcome 7]
03-11	Improvement opportunity [Outcome 6]
09-30	Service availability analysis report [Outcome 5]
02-33	Service availability log [Outcome 4]
04-22	Service availability plan [Outcome 2]
09-31	Service availability plan test report [Outcome 3]
12-07	Service availability requirements [Outcome 1]

5.18 SDE.5 Service continuity management

Process ID	SDE.5
Name	Service continuity management
Purpose	The purpose of the service continuity management process is to ensure that agreed service levels will be met in foreseeable circumstances.
Outcomes	As a result of successful implementation of this process: 1. service continuity requirements are identified; 2. a service continuity plan is developed using the service continuity requirements; 3. service continuity is tested against the service continuity requirements to validate the plan; 4. changes to service continuity requirements are reflected in the service continuity plan.
Base Practices	SDE.5.1 Identify service continuity requirements. The service provider identifies with the customer and interested parties service continuity requirements. The agreed requirements take into consideration applicable business plans, service requirements, service level agreements and risks. [Outcome 1] SDE.5.2 Develop a service continuity plan. The service provider creates and implements a service continuity plan. [Outcome 2] SDE.5.3 Test service continuity. Service continuity is tested against the service continuity requirements to validate the plan. [Outcome 3] SDE.5.4 Reflect changes in requirements in the service continuity plan. Changes to service continuity requirements are reflected in the service continuity plan. [Outcome 4]
Inputs	
08-11	Change request record [Outcome 4]
04-23	Service continuity plan [Outcome 3,4]
08-61	Service continuity plan amendment record [Outcome 4]
12-08	Service continuity requirements [Outcome 2]
Outputs	
08-01	Amendment record [Outcome 4]
11-01	Change request [Outcome 4]
08-52	Review record [Outcome 3]
04-23	Service continuity plan [Outcome 2]
09-33	Service continuity plan test report [Outcome 3]
12-08	Service continuity requirements [Outcome 1]

5.19 SDE.6 Service level management

Process ID	SDE.6
Name	Service level management
Purpose	The purpose of the service level management process is to ensure that agreed service level targets for each customer are met.
Outcomes	As a result of successful implementation of this process: 1. services and dependencies are identified; 2. service level targets and workload characteristics for services are defined in service level agreements; 3. services are monitored against service level agreements; 4. service level performance against service level targets is communicated to interested parties; 5. changes to service requirements are reflected in the service level agreements.
Base Practices	SDE.6.1 Identify services and dependencies. Services and dependencies are identified. [Outcome 1] SDE.6.2 Define service level agreements. Service level targets and workload characteristics for services are defined in service level agreements established with internal group or the customer. [Outcome 2] SDE.6.3 Monitor services against service level agreements. Services are monitored against service level agreements. [Outcome 3] SDE.6.4 Communicate service level performance. Communicate service level performance against service level targets to interested parties. [Outcome 4] SDE.6.5 Manage changes to service level agreements. Changes to service requirements are reflected in the service level agreements. [Outcome 5]
Inputs	
08-11	Change request record [Outcome 5]
03-37	Service catalogue [Outcome 2,5]
02-34	Service data [Outcome 3]
01-01	Service level agreement [Outcome 3,5]
02-35	Service level management stakeholder communication list [Outcome 4]
12-11	Service requirements [Outcome 2]
Outputs	
08-01	Amendment record [Outcome 5]
11-01	Change request [Outcome 5]
08-13	Communication record [Outcome 4]
03-37	Service catalogue [Outcome 1]
01-01	Service level agreement [Outcome 2]

5.20 SDE.7 Service reporting

Process ID	SDE.7
Name	Service reporting
Purpose	The purpose of the service reporting process is to produce timely and accurate service reports to support effective communication and decision making.
Outcomes	As a result of successful implementation of this process: 1. the service reporting needs are identified; 2. service report content is defined in terms of identified service reporting needs and requirements; 3. service reports are produced according to the service report requirements; 4. service reports are communicated to interested parties.

Process ID	SDE.7
Name	Service reporting
Base Practices	SDE.7.1 Identify service reporting needs. The service reporting needs and requirements are identified. [Outcome 1] SDE.7.2 Define service report content. Service report content is defined in terms of identified service reporting needs and requirements. [Outcome 2] SDE.7.3 Produce service reports. Service reports are produced according to the service report requirements. [Outcome 3] SDE.7.4 Communicate service reports. Communicate service reports to interested parties. [Outcome 4]
Inputs	
09-10	Implemented improvement evaluation report [Outcome 3]
09-00	Report [Outcome 3]
02-34	Service data [Outcome 3]
09-40	Service report [Outcome 4]
02-40	Service report communication list [Outcome 1,4]
03-48	Service report content definition [Outcome 3]
03-49	Service reporting needs definition [Outcome 2]
Outputs	
08-13	Communication record [Outcome 4]
09-40	Service report [Outcome 3]
03-48	Service report content definition [Outcome 2]
03-49	Service reporting needs definition [Outcome 1]

5.21 SMS.1 Audit

Process ID	SMS.1
Name	Audit
Purpose	The purpose of the audit process is to independently determine conformity of selected services, products and processes to the requirements, plans and agreements, as appropriate.
Outcomes	As a result of successful implementation of this process: 1. the scope and purpose of each audit is defined; 2. the objectivity and impartiality of the conduct of audits and selection of auditors are assured; 3. conformity of selected services, products and processes with requirements, plans and agreements is determined; 4. nonconformities are recorded; 5. nonconformities are communicated to those responsible for corrective action and resolution; 6. corrective actions for nonconformities are verified.

Process ID	SMS.1
Name	Audit
Base Practices	SMS.1.1 Define the audit scope and purpose. The scope of each audit is defined taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. [Outcome 1] SMS.1.2 Assure the objectivity and impartiality of audit conduct. The selection of auditors and conduct of audits ensures objectivity and impartiality of the audit. Auditors do not audit their own work. [Outcome 2] SMS.1.3 Conduct audits. Audits are conducted to determine the conformity of selected services, products and processes with requirements, plans and agreements. [Outcome 3] SMS.1.4 Record nonconformities. Nonconformities are identified against the management system requirements, the requirements identified by the service provider or the service requirements. The results of internal audits including nonconformities, concerns and actions identified, are recorded. [Outcome 4] SMS.1.5 Communicate nonconformities to those responsible for corrective action and resolution. Results and actions are prioritized and responsibility allocated for actions, and communicated to interested parties. [Outcome 5] SMS.1.6 Verify corrective actions for nonconformities. Management responsible for the area being audited ensures that any corrections and corrective actions are taken without undue delay to eliminate nonconformities and their causes. Follow-up activities include the verification of the actions taken. [Outcome 6]
Inputs	
08-05	Audit nonconformity record [Outcome 5,6]
04-02	Audit plan [Outcome 2,3]
08-06	Audit result [Outcome 4]
02-06	Audit results communication list [Outcome 5]
04-03	Audit schedule [Outcome 1,3]
02-07	Auditor list [Outcome 3]
04-08	Configuration item audit schedule [Outcome 1]
04-12	Information security audit schedule [Outcome 1]
Outputs	
08-04	Audit nonconformity disposition record [Outcome 6]
08-05	Audit nonconformity record [Outcome 4]
04-02	Audit plan [Outcome 1]
08-06	Audit result [Outcome 3]
02-07	Auditor list [Outcome 2]
08-13	Communication record [Outcome 5]

5.22 SMS.2 Improvement

Process ID	SMS.2
Name	Improvement
Purpose	The purpose of the improvement process is to continually improve the SMS, services and processes.
Outcomes	As a result of successful implementation of this process: - opportunities for improvement are identified and recorded; - opportunities for improvement are evaluated against agreed criteria for approval; - approved improvements are prioritised and actions planned; - approved improvements are implemented and confirmed; - the results of improvement actions are reported and communicated to interested parties.

Process ID	SMS.2
Name	Improvement
Base Practices	SMS.2.1 Identify opportunities for improvement. Opportunities for improvement, including corrective and preventive actions, are documented. [Outcome 1] SMS.2.2 Evaluate opportunities for improvement. The service provider uses the evaluation criteria in the policy on continual improvement, when making decisions on opportunities for improvement. [Outcome 2] SMS.2.3 Plan approved improvements. Opportunities for improvement are prioritized. Approved improvements are planned. The service provider manages improvement activities including setting targets for improvements in one or more of quality, value, capability, cost, productivity, resource utilization and risk reduction. [Outcome 3] SMS.2.4 Implement approved improvements. The service provider manages improvement activities including ensuring that approved improvements are implemented. [Outcome 4] SMS.2.5 Communicate results of improvement actions. The service provider reports on implemented improvements. [Outcome 5]
Inputs	
09-10	Implemented improvement evaluation report [Outcome 4,5]
02-16	Improvement communication list [Outcome 5]
04-10	Improvement implementation schedule [Outcome 4]
03-11	Improvement opportunity [Outcome 1]
11-04	Improvement opportunity approved request [Outcome 4]
03-12	Improvement opportunity evaluation criteria [Outcome 2]
09-11	Improvement opportunity evaluation report [Outcome 2,3]
08-21	Improvement opportunity record [Outcome 2]
04-11	Improvement plan [Outcome 4]
03-13	Improvement target [Outcome 4]
08-29	Information security incident record [Outcome 1]
04-20	Reversing unsuccessful changes plan [Outcome 2]
Outputs	
08-13	Communication record [Outcome 5]
09-10	Implemented improvement evaluation report [Outcome 4]
04-10	Improvement implementation schedule [Outcome 3]
11-04	Improvement opportunity approved request [Outcome 3]
09-11	Improvement opportunity evaluation report [Outcome 2]
02-18	Improvement opportunity implementation log [Outcome 4]
08-21	Improvement opportunity record [Outcome 1]
04-11	Improvement plan [Outcome 3]
03-13	Improvement target [Outcome 3]

5.23 SMS.3 Information item management

Process ID	SMS.3
Name	Information item management
Purpose	The purpose of the information item management process is to identify the items to be produced, and to maintain the recorded information produced by a process.
Outcomes	As a result of successful implementation of this process: 1. information items are identified in accordance with defined criteria; 2. Information items are controlled and issued according to defined criteria; 3. information items are communicated to interested parties; 4. information items are maintained in accordance with planned arrangements; 5. the integrity of information items is assured.

Process ID	SMS.3
Name	Information item management
Base Practices	SMS.3.1 Identify information items. Information items are identified in accordance with defined criteria. Note: This practice identifies every instance in ISO/IEC 20000-1 where the verb 'document' or 'record' is used. [Outcome 1] SMS.3.2 Control and issue information items. Information items are controlled and issued according to defined criteria. Note: The evidence in ISO/IEC 20000-1 is the verb 'approve' and 'agree'. [Outcome 2] SMS.3.3 Communicate information items. Communicate information items to interested parties. Note: The keyword in ISO/IEC 20000-1 is 'communicate'. [Outcome 3] SMS.3.4 Maintain information items. information items are maintained in accordance with planned arrangements. Note: The keyword in ISO/IEC 20000-1 is 'maintain'. [Outcome 4] SMS.3.5 Assure the integrity of information items. Documents required by the SMS are controlled. Records are legible, readily identifiable and retrievable. [Outcome 5]
Inputs	
07-01	Information item [Outcome 3]
10-02	Information item repository [Outcome 1,2,4,5]
03-42	Service management objectives [Outcome 1]
04-24	Service management plan [Outcome 1]
Outputs	
08-01	Amendment record [Outcome 4]
08-02	Approval record [Outcome 2]
08-13	Communication record [Outcome 3]
07-01	Information item [Outcome 1]
08-85	Status record [Outcome 5]

5.24 SMS.4 Management review

Process ID	SMS.4
Name	Management review
Purpose	The purpose of the management review process is to assess the performance of the SMS and to identify potential improvements.
Outcomes	As a result of successful implementation of this process: 1. the objectives of the review are established; 2. the status and performance of an activity or process are assessed; 3. risks, problems and opportunities for improvement are identified and recorded; 4. review results are communicated to interested parties; 5. action items resulting from reviews are tracked to closure.

Process ID	SMS.4
Name	Management review
Base Practices	SMS.4.1 Establish review objectives. The management reviews demonstrate the ability of the SMS and the services to achieve service management objectives and fulfil service requirements. This review includes assessing opportunities for improvement and the need for changes to the SMS, including the policy and objectives for service management. [Outcome 1] SMS.4.2 Assess the status and performance of an activity or process. Top management reviews the SMS and the services to ensure their continued suitability and effectiveness. The input to management reviews includes at least information on: a) customer feedback; b) service and process performance and conformity; c) current and forecast human, technical, information and financial resource levels; d) current and forecast human and technical capabilities; e) risks; f) results and follow-up actions from audits; g) results and follow-up actions from previous management reviews; h) status of preventive and corrective actions; i) changes that could affect the SMS and the services; j) opportunities for improvement. [Outcome 2] SMS.4.3 Identify risks, problems and opportunities for improvement. The results of management reviews, concerns and actions identified, are recorded. [Outcome 3] SMS.4.4 Communicate review results to interested parties. Communicate the results and actions to interested parties. [Outcome 4] SMS.4.5 Track action items resulting from reviews to closure. The records from the management review include at least decisions and actions related to resources, improvement of the effectiveness of the SMS and improvement of the services. [Outcome 5]
Inputs	
08-17	Customer satisfaction review record [Outcome 2]
02-17	Improvement opportunity disposition log [Outcome 5]
09-12	Information security audit report [Outcome 2]
02-24	Management review communication list [Outcome 4]
02-25	Management review issue log [Outcome 3,5]
03-23	Management review objectives [Outcome 2]
09-20	Management review process assessment report [Outcome 2]
03-24	Management review resource forecast [Outcome 2]
09-00	Report [Outcome 2]
09-31	Service availability plan test report [Outcome 2]
03-37	Service catalogue [Outcome 2]
09-33	Service continuity plan test report [Outcome 2]
09-34	Service continuity plan test result finding report [Outcome 2]
01-01	Service level agreement [Outcome 2]
08-74	Service performance record [Outcome 2]
Outputs	
08-13	Communication record [Outcome 4]
03-11	Improvement opportunity [Outcome 3]
02-18	Improvement opportunity implementation log [Outcome 5]
02-25	Management review issue log [Outcome 2,5]
03-23	Management review objectives [Outcome 1]
08-44	Problem record [Outcome 3]
08-52	Review record [Outcome 2]
02-32	Risk log [Outcome 3]

5.25 SMS.5 Resource management

Process ID	SMS.5
Name	Resource management
Purpose	The purpose of the resource management process is to provide the organization with necessary infrastructure, work environment, and human resources, consistent with business needs and service requirements.
Outcomes	As a result of successful implementation of this process: - resources and infrastructure are determined and provided; - roles, responsibilities and competencies needed to support SMS processes are defined; - individuals with the necessary competencies are appointed to the roles needed to perform service management activities; - identified competency gaps are filled through training or recruitment.
Base Practices	SMS.5.1 Determine and provide resources and infrastructure. Determine and provide resources and infrastructure to support SMS processes and service provision. [Outcome 1] SMS.5.2 Define roles, responsibilities and competencies. Define the roles, responsibilities and competencies needed to support SMS processes. [Outcome 2] SMS.5.3 Appoint individuals with the necessary competencies. Individuals with the necessary competencies are appointed to the roles needed to perform service management activities. [Outcome 3] SMS.5.4 Fill competency gaps through training or recruitment. The service provider where applicable, provides training or takes other actions to achieve the necessary competence. [Outcome 4]
Inputs	
12-09	Service management competency requirements [Outcome 4]
03-44	Service management roles and responsibilities [Outcome 3]
Outputs	
12-09	Service management competency requirements [Outcome 2]
03-43	Service management resource needs [Outcome 1]
03-44	Service management roles and responsibilities [Outcome 2]
08-73	Service management training record [Outcome 4]
03-46	Service provider roles and responsibilities [Outcome 3]
03-51	Sub-contracted supplier roles and responsibilities [Outcome 2]
02-45	Supplier role assignments list [Outcome 2]

5.26 SMS.6 Risk management

Process ID	SMS.6
Name	Risk management
Purpose	The purpose of the risk management process is to identify, analyse, evaluate, treat and monitor the risks continually.
Outcomes	As a result of successful implementation of this process: - risks are identified; - identified risks are categorised, assessed and the priority in which to apply resources to treatment of these risks is determined; - risks and their proposed treatment are communicated to interested parties; - assessed risks are monitored; - appropriate treatment is taken to correct or avoid unacceptable assessed risks.

Process ID	SMS.6
Name	Risk management
Base Practices	SMS.6.1 Identify risks. Identify risks during the establishment of a process or a service. [Outcome 1] SMS.6.2 Categorise and assess risks. Identified risks are categorised, assessed and the priority in which to apply resources to treatment of these risks is determined. [Outcome 2] SMS.6.3 Communicate risks and proposed treatment to interested parties. Communicate risks and their proposed treatment to interested parties. [Outcome 3] SMS.6.4 Monitor risks. Assessed risks are monitored. [Outcome 4] SMS.6.5 Take appropriate treatment to avoid unacceptable risks. Appropriate treatment is taken to correct or avoid unacceptable assessed risks. [Outcome 5]
Inputs	
03-04	Change request evaluation criteria [Outcome 1]
03-14	Information security change request evaluation criteria [Outcome 4]
09-19	Information security risk assessment report [Outcome 4]
04-15	New or changed service plan [Outcome 2]
09-00	Report [Outcome 2]
02-32	Risk log [Outcome 2,3,4,5]
03-36	Service availability risk evaluation criteria [Outcome 1]
03-39	Service continuity risk evaluation criteria [Outcome 1]
03-50	Service risk evaluation criteria [Outcome 1]
Outputs	
08-13	Communication record [Outcome 3]
09-14	Information security change request evaluation report [Outcome 4]
09-00	Report [Outcome 1,4]
02-32	Risk log [Outcome 2]
04-21	Risk treatment strategy [Outcome 5]
09-41	Service risk assessment report [Outcome 1]

5.27 SMS.7 Service measurement

Process ID	SMS.7
Name	Service measurement
Purpose	The purpose of the service measurement process is to identify, collect, analyse, and report data relating to the services provided and processes implemented to support effective management of the processes, and to objectively demonstrate the quality of the services provided.
Outcomes	As a result of successful implementation of this process: 1. the prioritised information needs related to provided services and implemented processes are identified; 2. an appropriate set of measures, driven by the information needs are identified and/or developed; 3. the required data are collected, and verified; 4. the required data are analysed and the results interpreted; 5. measurement information is used to support decisions and provide an objective basis for communication.

Process ID	SMS.7
Name	Service measurement
Base Practices	SMS.7.1 Identify the prioritised information needs related to provided services. Identify the prioritised information needs related to provided services and implemented processes. [Outcome 1] SMS.7.2 Identify an appropriate set of measures. An appropriate set of measures, driven by the information needs are identified and/or developed. [Outcome 2] SMS.7.3 Collect and verify the required data. The success or failure of releases is monitored. Measurements include incidents related to a release in the period following deployment of a release. [Outcome 3] SMS.7.4 Analyse the required data. The service provider analyses the types, volumes and impacts of information security incidents. The service provider analyses data and trends on incidents and problems. Requests for change are analysed at to detect trends. The success or failure of releases is analysed. Analysis includes assessment of the impact of the release on the customer. [Outcome 4] SMS.7.5 Support decisions and communication. Support decisions and provide an objective basis for communication with measurement information. [Outcome 5]
Inputs	
09-01	Analysis report [Outcome 5]
03-25	Measurement objectives [Outcome 2,3]
03-29	Performance criteria [Outcome 3]
02-03	Performance data [Outcome 4]
01-01	Service level agreement [Outcome 1]
Outputs	
09-01	Analysis report [Outcome 4]
03-25	Measurement objectives [Outcome 1]
03-29	Performance criteria [Outcome 2]
02-03	Performance data [Outcome 3]

5.28 SMS.8 SMS Establishment and improvement

Process ID	SMS.8
Name	SMS Establishment and improvement
Purpose	The purpose of the SMS establishment and improvement process is to identify the scope of, and provide the service management processes that enable the effective implementation and improvement of all IT services.
Outcomes	As a result of successful implementation of this process: 1. service requirements are established in response to business needs, customer requirements and customer requests; 2. the objectives and requirements for service management are identified and established to satisfy business needs, the service provider's financial processes, regulatory, contractual and statutory requirements; 3. SMS processes are established to support service management objectives; 4. action is taken to improve the effectiveness and efficiency of the SMS to meet the service management objectives and requirements.

Process ID	SMS.8
Name	SMS Establishment and improvement
Base Practices	SMS.8.1 Establish service requirements in response to business needs, customer requirements and customer requests. The service provider identifies the service requirements for the new or changed services. [Outcome 1] SMS.8.2 Identify the objectives and requirements for service management. The objectives and requirements for service management are identified and established to satisfy business needs, the service provider's financial processes, regulatory, contractual and statutory requirements. [Outcome 2] SMS.8.3 Establish SMS processes. SMS processes are established to support service management objectives. [Outcome 3] SMS.8.4 Improve effectiveness and efficiency. Take action to improve the effectiveness and efficiency of the SMS to meet the service management objectives and requirements. [Outcome 4]
Inputs	
03-42	Service management objectives [Outcome 3]
12-10	Service management process interface requirements [Outcome 3]
Outputs	
12-01	Alternative party process requirements [Outcome 2]
02-17	Improvement opportunity disposition log [Outcome 4]
03-17	Information security risk assessment criteria [Outcome 3]
05-00	Policy [Outcome 3]
06-00	Procedure [Outcome 3]
03-42	Service management objectives [Outcome 2]
05-09	Service management policy [Outcome 2]
12-10	Service management process interface requirements [Outcome 2]
09-37	Service management system performance analysis report [Outcome 4]
03-45	Service management system scope definition [Outcome 2]
12-11	Service requirements [Outcome 1]

5.29 SMS.9 SMS Implementation and operation

Process ID	SMS.9
Name	SMS Implementation and operation
Purpose	The purpose of the SMS implementation and operation process is to plan, manage and monitor the performance of IT service provision, in order to satisfy the requirements of customers and interested parties.
Outcomes	As a result of successful implementation of this process: 1. service management is planned and implemented with the intent of achieving the service management objectives and satisfying customers; 2. services supplied by other parties are managed to meet the service requirements; 3. performance and progress against the planned arrangements is monitored; 4. actions to correct deviations from planned arrangements are taken when targets are not achieved; 5. organizational risks are continually identified, analysed, treated and monitored.

Process ID	SMS.9
Name	SMS Implementation and operation
Base Practices	SMS.9.1 Service management is planned and implemented. Service management is planned and implemented with the intent of achieving the service management objectives and satisfying customers. [Outcome 1] SMS.9.2 Manage services provided by other suppliers. Services supplied by other parties are managed to meet the service requirements. [Outcome 2] SMS.9.3 Monitor service delivery against planned arrangements. Performance and progress against the planned arrangements is monitored. [Outcome 3] SMS.9.4 Take action to correct deviations from planned arrangements when targets are not achieved. Take action to correct deviations from planned arrangements when targets are not achieved. [Outcome 4] SMS.9.5 Manage organisational risks. Organizational risks are continually identified, analysed, treated and monitored. [Outcome 5]
Inputs	
12-01	Alternative party process requirements [Outcome 2]
04-02	Audit plan [Outcome 1]
08-06	Audit result [Outcome 3]
04-03	Audit schedule [Outcome 3]
12-02	Capacity requirements [Outcome 1]
02-02	Issue log [Outcome 4,5]
02-25	Management review issue log [Outcome 5]
03-23	Management review objectives [Outcome 5]
09-00	Report [Outcome 3]
05-09	Service management policy [Outcome 1]
04-26	Services provision budget [Outcome 1]
02-42	Services stakeholder communication list [Outcome 4]
Outputs	
04-03	Audit schedule [Outcome 1]
04-05	Capacity plan [Outcome 1]
08-13	Communication record [Outcome 4]
04-08	Configuration item audit schedule [Outcome 1]
04-09	Customer satisfaction sampling schedule [Outcome 1]
03-11	Improvement opportunity [Outcome 4]
04-12	Information security audit schedule [Outcome 1]
04-13	Information security risk assessment schedule [Outcome 1]
02-02	Issue log [Outcome 3,4]
04-14	Management review schedule [Outcome 1]
09-00	Report [Outcome 2]
08-52	Review record [Outcome 3]
04-21	Risk treatment strategy [Outcome 5]
04-24	Service management plan [Outcome 1]
04-25	Service provision review schedule [Outcome 1]
04-28	Supplier agreement review schedule [Outcome 1]

6 Process capability indicators (Level 1 to 5)

This clause presents the process capability indicators related to the process attributes associated with capability levels 1 to 5 defined in the capability dimension of the PAM. Process capability indicators are the means of achieving the capabilities addressed by the considered process attributes. Evidence of process capability indicators support the judgment of the degree of achievement of the process attribute.

The capability dimension of the PAM consists of six capability levels matching the capability levels defined in Part 2 of this International Standard. This clause describes the process capability indicators for the nine

process attributes included in the capability dimension for levels 1 to 5. Clause 5 describes the assessment indicators for process performance which is characterized by Level 1 process capability.

Level 0 does not include any type of indicators. Level 0 reflects a non-implemented process or a process which fails to partially achieve its outcomes.

NOTE 1: In the next paragraphs, ISO/IEC 15504-2 process attribute definitions and attribute achievements are identified with italic font.

NOTE 2: Following each generic resource and generic input/output is '[PA x.y Achievement 1]'. This refers to process attribute x.y achievement 1 which is satisfied by this indicator.

6.1 Level 1: Performed process

6.1.1 PA 1.1 Process performance attribute

The process performance attribute is a measure of the extent to which the process purpose is achieved. As a result of full achievement of this attribute:

- the process achieves its defined outcomes.

6.1.1.1 Generic Practices for PA 1.1

GP 1.1.1 Achieve the process outcomes

Perform the intent of the practices.

Use inputs and produce outputs that evidence the process outcomes.

NOTE: The assessment of a performed process is based on process performance indicators, which are defined in Clause 5 of this document.

6.1.1.2 Generic Resources for PA 1.1

Resources are used to perform the intent of process specific practices. [PA 1.1 Achievement a]

6.1.1.3 Generic Inputs/Outputs for PA 1.1

7.0 Product [PA 1.1 Achievement a]

— Inputs/Outputs exist that provide evidence of the achievement of the process outcomes.

6.2 Level 2: Managed process

The previously described *Performed process* is now implemented in a managed fashion (planned, monitored and adjusted) and its work products are appropriately established, controlled and maintained.

The following attributes of the process, together with the previously defined attributes, demonstrate the achievement of this level:

6.2.1 PA 2.1 Performance management attribute

The performance management attribute is a measure of the extent to which the performance of the process is managed. As a result of full achievement of this attribute:

- objectives for the performance of the process are identified;*

- b) *performance of the process is planned and monitored;*
- c) *performance of the process is adjusted to meet plans;*
- d) *responsibilities and authorities for performing the process are defined, assigned and communicated;*
- e) *resources and information necessary for performing the process are identified, made available, allocated and used;*
- f) *interfaces between the involved parties are managed to ensure both effective communication and also clear assignment of responsibility.*

6.2.1.1 Generic Practices for PA 2.1

GP 2.1.1 Identify the objectives for the performance of the process.

NOTE: Performance objectives may include – (1) quality of the outputs produced, (2) process cycle time or frequency and (3) resource usage.

Performance objectives are identified based on process requirements and customer requirements.

The scope and boundaries of the process performance is defined.

Assumptions and constraints are considered when identifying the performance objectives.

GP 2.1.2 Plan and monitor the performance of the process to fulfill the identified objectives.

Plan(s) for the performance of the process are developed. The process performance cycle is defined.

Key milestones for the performance of the process are established.

Estimates for process performance attributes are determined and maintained.

Process activities and tasks are defined.

Schedule is defined and aligned with the approach to performing the process.

Process inputs/outputs reviews are planned.

The process is performed according to the plan(s).

Process performance is monitored to ensure planned results are achieved.

GP 2.1.3 Adjust the performance of the process.

Process performance issues are identified.

Appropriate actions are taken when planned results and objectives are not achieved.

The plan(s) are adjusted, as necessary.

Rescheduling is performed as necessary.

GP 2.1.4 Define responsibilities and authorities for performing the process.

Responsibilities, commitments and authorities to perform the process are defined, assigned and communicated.

Responsibilities and authorities to verify process inputs/outputs are defined and assigned.

The needs for process performance experience, knowledge and skills are defined.

GP 2.1.5 Identify and make available resources to perform the process according to plan.

The human and infrastructure resources necessary for performing the process are identified, made available, allocated and used.

The information necessary to perform the process is identified and made available.

GP 2.1.6 Manage the interfaces between involved parties.

The individuals and groups involved in the process performance are determined.

Responsibilities of the involved parties are assigned.

Interfaces between the involved parties are managed.

Communication is assured between the involved parties.

Communication between the involved parties is effective.

6.2.1.2 Generic Resources for PA 2.1

Human resources with identified objectives, responsibilities and authorities; [PA 2.1 Achievement a, d, e, f]

Facilities and infrastructure resources; [PA 2.1 Achievement a, d, e, f]

- Service planning, management and control tools, including time and cost reporting, and feedback; [PA 2.1 Achievement b, c]
- Workflow management system; [PA 2.1 Achievement d, f]
- Email and/or other communication mechanisms; [PA 2.1 Achievement d, f]
- Information and/or experience repository; [PA 2.1 Achievement b, e]
- Problem and issue management mechanisms. [PA 2.1 Achievement c]

6.2.1.3 Generic Inputs/Outputs for PA 2.1

4.0 Plan [PA 2.1 Achievement a, b, c, d, e, f]

- Defines objectives to perform the process.
- Describes assumptions and constraints considered in defining the objectives.
- Includes milestones and timetable to produce the outputs of the process.
- Identifies tasks, resources, responsibilities and infrastructure needed to perform the process.
- Considers risks related to fulfill defined objectives.
- Identifies stakeholders and communication mechanisms to be used.
- Describes how the plan is controlled and adjusted when needed.

8.0 Record [PA 2.1 Achievement c, d, e, f]

- States results achieved or provides evidence of activities performed in a process.
- Provides evidence of communication, meetings, reviews and corrective actions.
- Contains status information about corrective actions; schedule and work breakdown structure.
- Monitors identified risks.

8.0 Report [PA 2.1 Achievement b, c]

- Monitors process performance against defined objectives and plans.
- Identifies deviations in process performance.
- Describes results and status of the process.
- Provides evidence of management activities.

6.2.2 PA 2.2 Work product management attribute

The work product management attribute is a measure of the extent to which the work products produced by the process are appropriately managed. As a result of full achievement of this attribute:

- a) requirements for the work products of the process are defined;*
- b) requirements for documentation and control of the work products are defined;*
- c) work products are appropriately identified, documented, and controlled;*
- d) work products are reviewed in accordance with planned arrangements and adjusted as necessary to meet requirements.*

NOTE 1: Requirements for documentation and control of work products may include requirements for the identification of changes and revision status, approval and re-approval of work products, and the creation of relevant versions of applicable work products available at points of use.

NOTE 2: The work products referred to in this clause are those that result from the achievement of the process outcomes.

6.2.2.1 Generic Practices for PA 2.2

GP 2.2.1 Define the requirements for the work products.

The requirements for the outputs to be produced are defined. Requirements may include defining contents and structure.

Quality criteria of the outputs are identified.

Appropriate review and approval criteria for the outputs are defined.

GP 2.2.2 Define the requirements for documentation and control of the outputs.

Requirements for the documentation and control of the outputs are defined. Such requirements may include requirements for (1) distribution, (2) identification of outputs and their components (3) traceability.

Dependencies between outputs are identified and understood.

Requirements for the approval of outputs to be controlled are defined.