

COBIT[®]



Process Assessment Model (PAM): Using COBIT[®] 5

COBIT[®] 5
AN ISACA[®] FRAMEWORK

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Acknowledgements (*cont.*)

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1.0 Introduction

1.1 Purpose

This publication outlines a process assessment model (PAM) based on COBIT 5 that is compliant with International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) 15504.

The model is the basis for the assessment of an enterprise's IT process capabilities against COBIT 5 and a training and certification programme for assessors. The assessment process is evidenced-based to enable a reliable, consistent and repeatable assessment process in the area of governance and management of IT.

The assessment model enables assessments by enterprises to support process improvement. Guidance is given in a separate assessor guide on a scoping approach to select the processes to be assessed, including the use of ISACA's published COBIT 5 mappings to determine the processes to be assessed. These mappings include:

- Linking enterprise goals to enterprise-related IT goals
- Linking enterprise-related IT goals to IT processes
- A diagnostic tool for selecting scoping areas

1.2 Scope

This document defines the COBIT 5 PAM that supports the performance of an assessment by providing indicators for guidance on the interpretation of the process purposes and outcomes as defined in COBIT 5 and the process attributes as defined in ISO/IEC 15504-2.

The COBIT 5 PAM is composed of 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.

1.3 Assessment Domain

The COBIT 5 process assessment covers the assessment of those processes required for governance and management of IT and related services as described in COBIT 5.

1.4 Normative References

The following documents are referenced in this publication:

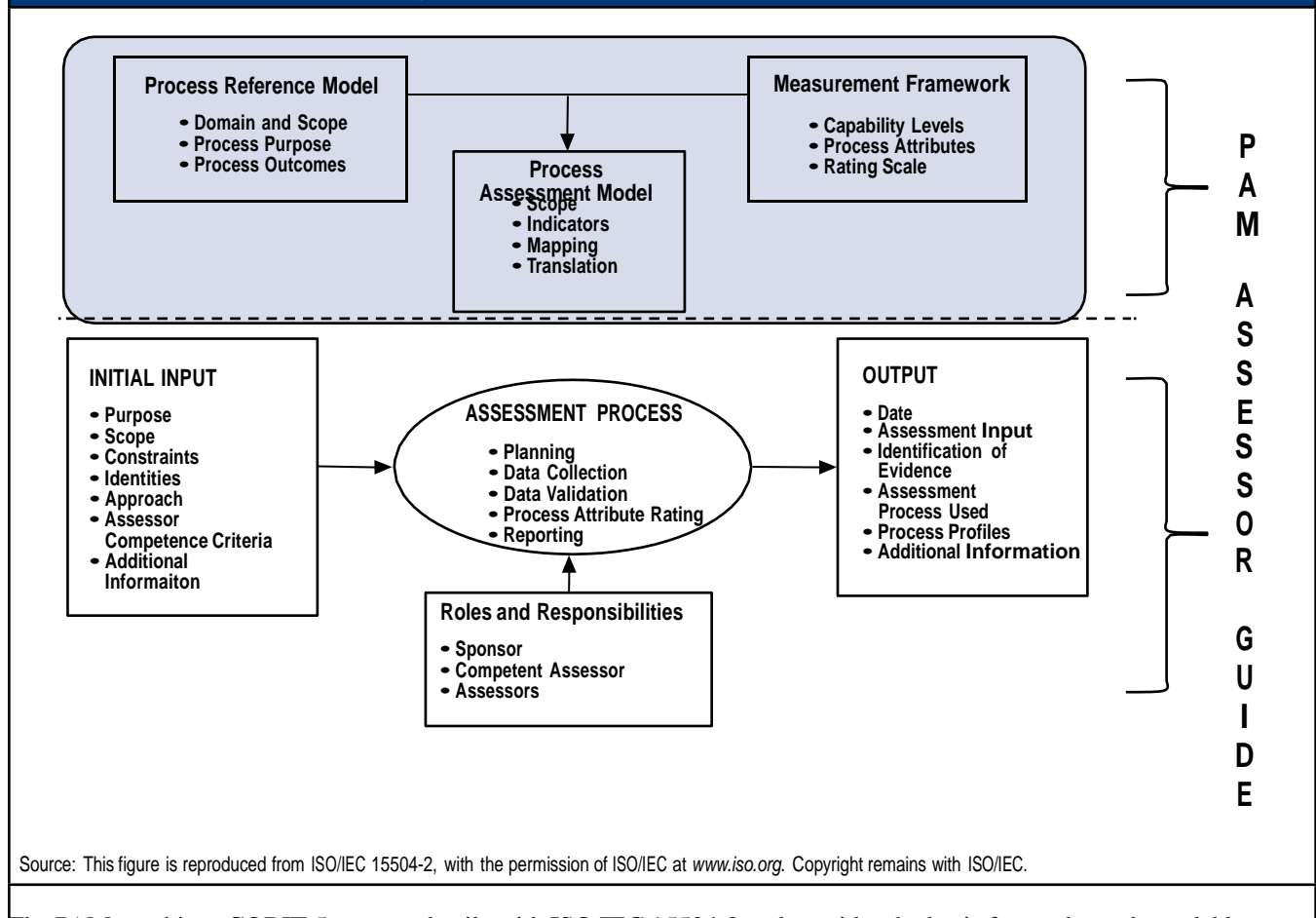
- ISACA, COBIT 5, USA, 2012
- ISO/IEC 15504-1:2004, *Information technology—Process assessment—Part 1: Concepts and vocabulary*
- ISO/IEC 15504-2:2003, *Information technology—Process assessment—Part 2: Performing an assessment*

1.5 The COBIT 5 Process Assessment Model

A crucial component of the COBIT assessment programme is the COBIT PAM, as shown in **figure 1**. It provides the basis for:

- The process reference model, which defines level 1 base requirements
- Determining the capability levels (the measurement framework)

Figure 1—The COBIT PAM and the Assessor Guide



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The PAM combines COBIT 5 process details with ISO/IEC 15504-2 and provides the basis for a robust, dependable assessment approach.

COBIT[®] Assessor Guide: Using COBIT 5 is a companion publication that describes in detail how to undertake an assessment based on ISO/IEC 15504-2.

COBIT[®] Self-assessment Guide: Using COBIT 5 is an alternative assessment guide describing a less rigorous approach, as a simpler entry point to this type of assessment activity.

1.6 Comparison of the COBIT 4.1 PAM to the COBIT 5 PAM

One of the primary differences between the COBIT 4.1 PAM and the COBIT 5 PAM concerns the distinction made between governance and management. COBIT 5 is based on a revised process reference model with a new governance domain and several new and modified processes that now cover enterprise activities end-to-end—i.e., business and IT functional areas.

In COBIT 5 every enterprise is expected to implement a number of governance processes and a number of management processes. All processes require ‘planning’, ‘building’, ‘running’ and ‘monitoring’. The COBIT 5 process reference model subdivides the IT-related practices and activities of the enterprise into two main areas—governance and management—with management further divided into domains of processes.

Adding the governance domain gives COBIT 5 one more domain than COBIT 4.1. COBIT 5 has a governance domain with five new governance processes and four management domains with thirty-two management processes.

COBIT 5 incorporates ISACA’s Val IT 2.0 and Risk IT processes into the framework, making it a more comprehensive version than COBIT 4.1. Figures 15 and 16 in *COBIT[®] 5: Enabling Processes* outline where each Val IT and Risk IT practice can be found. In addition, COBIT 5 adds the stakeholder needs concept to the goals cascade, which relates directly to a set of generic enterprise goals. The COBIT 5 goals cascade translates stakeholder needs into specific, attainable and customised goals within the context of the enterprise and IT-related goals, and an enabler model provides the framework for linking these goals to enabler goals.

There are several new and modified processes that reflect current thinking, in particular:

- APO03 Manage enterprise architecture.
- APO04 Manage innovation.
- APO05 Manage portfolio.
- APO06 Manage budget and costs.
- APO08 Manage relationships.
- APO13 Manage security.
- BAI05 Manage organisational change enablement.
- BAI08 Manage knowledge.
- BAI09 Manage assets.
- DSS05 Manage security services.
- DSS06 Manage business process controls.

COBIT 5 follows the same goal and metric concepts as COBIT 4.1, Val IT and Risk IT, but these are renamed enterprise goals, IT-related goals and process goals reflecting an enterprise-level view. COBIT 5 also provides a revised goals cascade based on enterprise goals driving IT-related goals and then being supported by critical processes. In addition, COBIT 5 provides examples of goals and metrics at the enterprise and process levels. This is a change from COBIT 4.1, Val IT and Risk IT; COBIT 5 goes one level lower to the management practice level and provides inputs and outputs. Finally, COBIT 5 provides inputs and outputs for every management practice, whereas COBIT 4.1 provided these only at the process level.

1.7 Terms and Definitions

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

- **Attribute indicator**—An assessment indicator that supports the judgement of the extent of achievement of a specific process attribute (ISO/IEC 15504:1, 3.16)
- **Base practice**—An activity that, when consistently performed, contributes to achieving a specific process purpose (ISO/IEC 15504:1, 3.17)
- **Capability dimension**—The set of elements in a process assessment model explicitly related to the Measurement Framework for Process Capability (ISO/IEC 15504:1, 3.18)
- **Capability indicator**—An assessment indicator that supports the judgement of the process capability of a specific process (ISO/IEC 15504:1, 3.19)
- **Generic practice**—An activity that, when consistently performed, contributes to the achievement of a specific process attribute (ISO/IEC 15504:1, 3.22)
- **Performance indicator**—An assessment indicator that supports the judgement of the process performance of a specific process (ISO/IEC 15504:1, 3.26)
Note: A performance indicator is an attribute indicator for Process Attribute 1.1 for a specific process. (ISO/IEC 15504:2)
- **Process assessment model**—A model suitable for the purpose of assessing process capability, based on one or more process reference models (ISO/IEC 15504:1, 3.33)
- **Process attribute**—A measurable characteristic of process capability applicable to any process (ISO/IEC 15504:1, 3.31)
- **Process attribute rating**—A judgement of the degree of achievement of the process attribute for the assessed process (ISO/IEC 15504:1, 3.32)
- **Process capability**—A characterisation of the ability of a process to meet current or projected business goals (ISO/IEC 15504:1, 3.33)
- **Process capability level**—A point on the six-point ordinal scale (of process capability) that represents the capability of the process, each level building on the capability of the level below (ISO/IEC 15504:1, 3.36)
- **Process capability level rating**—A representation of the achieved process capability level derived from the process attribute ratings for an assessed process (ISO/IEC 15504:1, 3.37)
- **Process outcome**—An observable result of a process (ISO/IEC 15504:1, 3.44)
Note: An outcome is an artefact, a significant change of state or the meeting of specified constraints.
- **Process purpose**—The high-level measurable objectives of performing the process and the likely outcomes of effective implementation of the process (ISO/IEC 15504:1, 3.47)
- **Process reference model**—A model composed of definitions of processes in a life cycle described in terms of process purpose and outcomes, together with an architecture describing the relationships amongst the processes (ISO/IEC 15504:1, 3.48)
- **Work product**—An artefact associated with the execution of a process (ISO/IEC 15504:1, 3.55)

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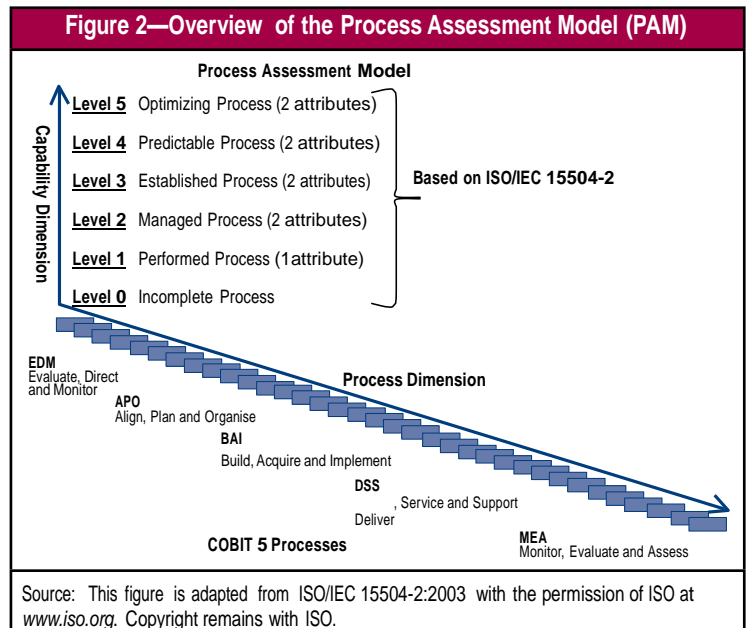
2.0 Overview of the COBIT 5 Process Assessment model

2.1 Introduction

The process assessment model is a two-dimensional model of process capability, as shown in **figure 2**. In one dimension, the process dimension, the processes are defined and classified into process categories. 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.

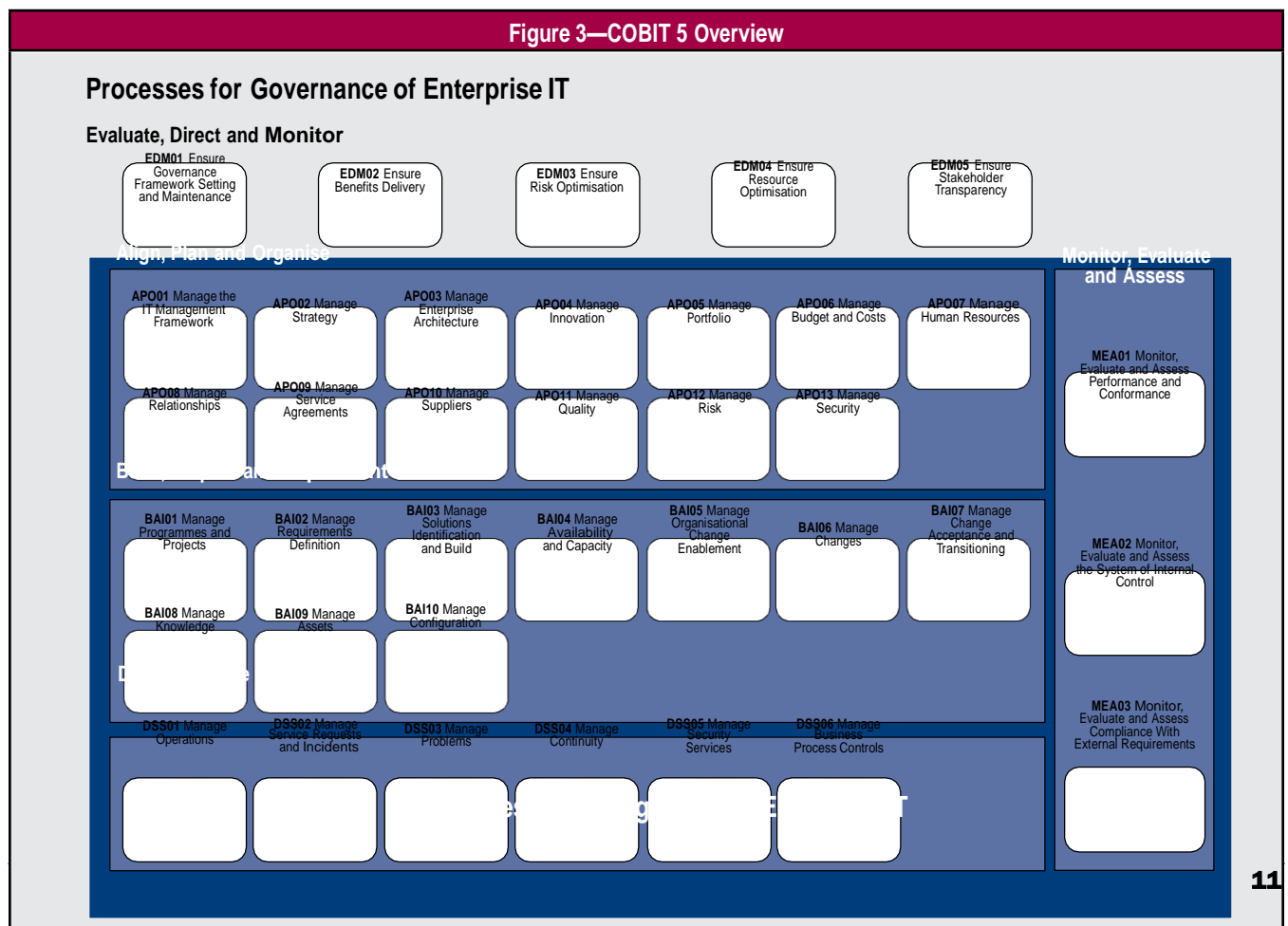
The process assessment model defined in this document conforms to ISO/IEC 15504-2 requirements for a process assessment model and can be used as the basis for conducting an assessment of the capability of each COBIT 5 process.

2.2 The Process Dimension—COBIT 5 Processes



The process dimension uses COBIT 5 as the process reference model. COBIT 5 provides definitions of processes in a life cycle (the process reference model), together with an architecture describing the relationships amongst the processes.

The COBIT 5 process reference model (PRM) is composed of 37 processes describing a life cycle for governance and management of enterprise IT, as shown in **figure 3**.



The COBIT 5 process reference model subdivides the processes of enterprise IT into two main areas of activity—governance and management—divided into domains of processes:

- **Governance**—This domain contains five governance processes; within each process, evaluate, direct and monitor (EDM) practices are defined.
- **Management**—This area contains four domains that are in line with the responsibility areas of plan, build, run and monitor (PBRM), and they provide end-to-end coverage of IT. Each domain contains a number of processes, as in COBIT 4.1 and previous versions. Although most of the processes require ‘planning’, ‘building’, ‘running’ and ‘monitoring’ activities within the process or within the specific issue being addressed—e.g., quality, security—they are placed in domains in line with what is generally the most relevant area of activity when regarding IT at the enterprise level.

The domains are:

- **Evaluate, Direct and Monitor (EDM)**—These governance processes deal with the stakeholder governance objectives—value delivery, risk optimisation and resource optimisation—and include practices and activities aimed at evaluating strategic options, providing direction to IT and monitoring the outcome.
- **Align, Plan and Organise (APO)**—Provides direction to solution delivery (BAI) and service delivery and support (DSS). This domain covers strategy and tactics, and concerns identifying the best way IT can contribute to the achievement of the business objectives. The realisation of the strategic vision needs to be planned, communicated and managed for different perspectives. A proper organisation, as well as technological infrastructure, should be put in place.
- **Build, Acquire and Implement (BAI)**—Provides the solutions and passes them on to be turned into services. To realise the IT strategy, IT solutions need to be identified, developed or acquired, as well as implemented and integrated into the business process. Changes in and maintenance of existing systems are also covered by this domain, to ensure that the solutions continue to meet business objectives.
- **Deliver, Service and Support (DSS)**—Receives the solutions and makes them usable for end users. This domain is concerned with the actual delivery and support of required services, which include service delivery, management of security and continuity, service support for users, and management of data and operational facilities.
- **Monitor, Evaluate and Assess (MEA)**—Monitors all processes to ensure that the direction provided is followed. All IT processes need to be regularly assessed over time for their quality and compliance with control requirements. This domain addresses performance management, monitoring of internal control, regulatory compliance and governance.

Across the five domains there are 37 defined IT processes. The COBIT 5 processes are as follows:

- EDM01 Ensure governance framework setting and maintenance.
- EDM02 Ensure benefits delivery.
- EDM03 Ensure risk optimisation.
- EDM04 Ensure resource optimisation.
- EDM05 Ensure stakeholder transparency.
- APO01 Manage the IT management framework.
- APO02 Manage strategy.
- APO03 Manage enterprise architecture.
- APO04 Manage innovation.
- APO05 Manage portfolio.
- APO06 Manage budget and costs.
- APO07 Manage human resources.
- APO08 Manage relationships.
- APO09 Manage service agreements.
- APO10 Manage suppliers.
- APO11 Manage quality.
- APO12 Manage risk.
- APO13 Manage security.
- BAI01 Manage programmes and projects.
- BAI02 Manage requirements definition.
- BAI03 Manage solutions identification and build.
- BAI04 Manage availability and capacity.
- BAI05 Manage organisational change enablement.
- BAI06 Manage changes.
- BAI07 Manage change acceptance and transitioning.
- BAI08 Manage knowledge.
- BAI09 Manage assets.
- BAI10 Manage configuration.

- DSS01 Manage operations.
- DSS02 Manage service requests and incidents.
- DSS03 Manage problems.
- DSS04 Manage continuity.
- DSS05 Manage security services.
- DSS06 Manage business process controls.
- MEA01 Monitor, evaluate and assess performance and conformance.
- MEA02 Monitor, evaluate and assess the system of internal control.
- MEA03 Monitor, evaluate and assess compliance with external requirements.

2.3 The Capability Dimension

The capability dimension provides a measure of a process's capability to meet an enterprise's current or projected business goals for the process.

The process capability is expressed in terms of process attributes grouped into capability levels, as shown in **figure 4**. The capability level of a process is determined on the basis of the achievement of specific process attributes according to ISO/IEC 15504-2:2003.

The rating scale involves six capability levels as follows.

- **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 (one attribute)**—The implemented process achieves its process purpose.
- **Level 2 Managed process (two attributes)**—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 (two attributes)**—The previously described managed process is now implemented using a defined process that is capable of achieving its process outcomes.
- **Level 4 Predictable process (two attributes)**—The previously described established process now operates within defined limits to achieve its process outcomes.
- **Level 5 Optimizing process (two attributes)**—The previously described predictable process is continuously improved to meet relevant current and projected business goals.

Figure 4—Capability Levels and Process Attributes

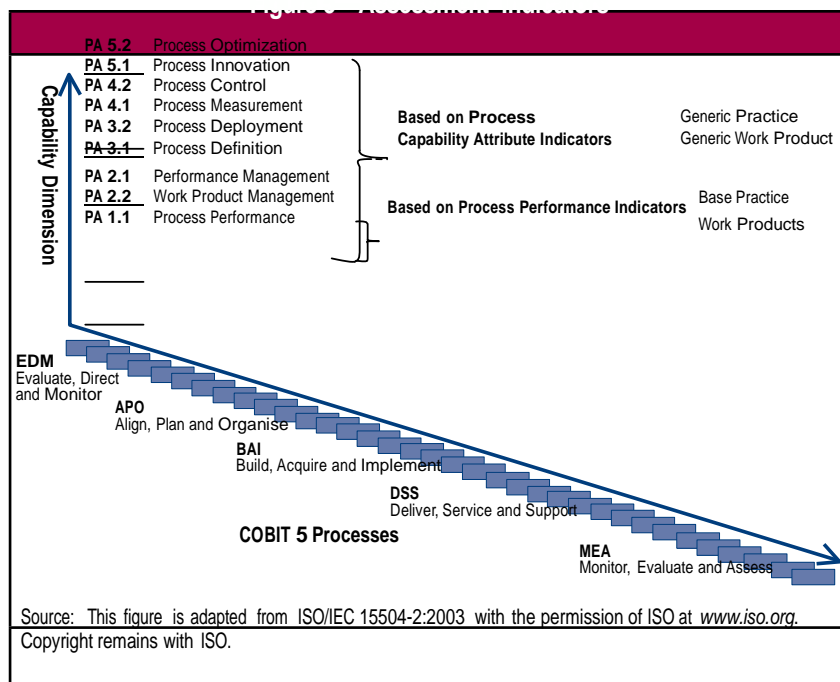
Process Attribute ID	Capability Levels and Process Attributes
	Level 0: Incomplete process
	Level 1: Performed process
PA 1.1	Process performance
	Level 2: Managed process
PA 2.1	Performance management
PA 2.2	Work product management
	Level 3: Established process
PA 3.1	Process definition
PA 3.2	Process 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	Process optimization
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2.4 Assessment Indicators

Assessment indicators, shown in **figure 5**, are used to assess whether process attributes have been achieved. There are two types of assessment indicators:

- Process capability attribute indicators, which apply to capability levels 1 to 5
- Process performance indicators, which apply exclusively to capability level 1

Process performance indicators (base practices and work products) are specific for each process and are used to determine whether a process is at capability level 1. These performance indicators consist of base practices and work products and are exclusive to level 1. The base practices and work products for each COBIT 5 process are shown in section 3.0. These are based on COBIT 5 content.



The process capability attribute indicators are generic for each process attribute for capability levels 1 to 5. Level 1, however, has only a single generic practice indicator for capability that aligns directly to the achievement of the specific performance indicators outlined in the process reference model in section 3.0.

The process capability attribute indicators used in the COBIT 5 process capability assessment are:

- Generic practice (GP)
- Generic work product (GWP)

These are shown in section 4.0.

2.5 Rating Scale

Each attribute is rated using a standard rating scale defined in the ISO/IEC 15504 standard. These ratings consist of:

- **N**—Not achieved. There is little or no evidence of achievement of the defined attribute in the assessed process.
- **P**—Partially achieved. There is some evidence of an approach to, and some achievement of, the defined attribute in the assessed process. Some aspects of achievement of the attribute may be unpredictable.
- **L**—Largely achieved. There is evidence of a systematic approach to, and significant achievement of, the defined attribute in the assessed process. Some weakness related to this attribute may exist in the assessed process.
- **F**—Fully achieved. There is evidence of a complete and systematic approach to, and full achievement of, the defined attribute in the assessed process. No significant weaknesses related to this attribute exist in the assessed process.

There is a need to ensure a consistent degree of interpretation when deciding which rating to assign. The table in **figure 6** describes the rating in terms of the percentage achieved.

Figure 6—Rating Levels		
Abbreviation	Description	% Achieved
N	Not achieved	0 to 15% achievement
P	Partially achieved	>15% to 50% achievement
L	Largely achieved	>50% to 85% achievement
F	Fully achieved	>85% to 100% achievement

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The assessor uses these scales to determine the level of capability achieved. Applied consistently, these criteria allow each assessment to be based on a structured degree of formality and enable the comparison of assessments across an organisation or even across different enterprises.

3.0 Process Dimension And Process Performance Indicators

This section defines the processes and the process performance indicators, also known as the process dimension, of the process assessment model. The processes in the process dimension can be directly mapped to the processes defined in the process reference model.

The individual processes are described in terms of process name, purpose and outcomes (Os), based on COBIT 5. In addition, the process dimension of the process assessment model provides information in the form of:

- Base practices (BPs) for the process, providing a definition of the tasks and activities needed to accomplish the process purpose and fulfil the process outcomes. Each BP is explicitly associated to a process outcome. These have been derived directly from COBIT 5 process reference guide process outcomes goals.
- Input and output work products (WPs) associated with each process and related to one or more of its outcomes
- Characteristics associated with each WP

The process purposes, Os, BPs and WPs associated with the processes are included in this section. The WPs are defined in appendix B, section B.2.

The BPs and WPs constitute the set of indicators of process performance. The associated WPs listed in this clause may be used when reviewing potential inputs and outputs of an organisation's process implementation.

The associated WPs provide objective guidance to look for potential inputs and outputs, and objective evidence to support the assessment of a particular process. A documented assessment process and the assessor judgement are needed to ensure that process context (application domain, business purpose, development methodology, size of the enterprise, etc.) is explicitly considered when using this information.

This list of WPs should not be considered a checklist of what each organisation must have, but rather as an example and starting point for considering whether, given the context, the WPs are necessary and contribute to the intended purpose of the process.

It should be noted that WPs for some processes provide higher capability requirements for other processes. This will result in a progressive implementation of processes. The initial focus on any process assessment would be the core (sometimes called primary) processes, which are primarily part of the BAI and DSS domains. Processes in the APO and MEA domains will be required to support improvement in the capability of these core processes past level 1. An example is APO01 *Manage the IT management framework*, which is required as part of establishing the IT process framework, to document roles and responsibilities required by processes at capability level 2.

The COBIT 5 inputs and outputs are the process work products/artefacts considered necessary to support operation of the process. They enable key decisions, provide a record and audit trail of process activities, and enable follow-up in the event of an incident. They are defined at the key governance/management practice level, may include some work products used only within the process, and are often essential inputs to other processes. While input and output processes are shown and are used to help ensure appropriate operation of the process, output work products can be considered the most important aspect.

The following section deals with the PRM, which is specifically developed for level 1 performance objectives. Levels 2 through 5 are less specific and are indicated as GWPs.

Inputs and Outputs

The detailed process descriptions contain—at the level of the governance and management practices—inputs and outputs. In general, each output is sent to one or a limited number of destinations, typically another COBIT process practice. That output then becomes an input to its destination. However, there are a number of outputs that have many destinations, e.g., all COBIT processes, or all processes within a domain. For readability reasons, these outputs are NOT listed as inputs in these processes. A complete list of such outputs is included in **figure 7**.

For some inputs/outputs, the destination 'internal' is mentioned. This means that the input/output is between activities within the same process.

Figure 7—Outputs

Outputs to all Processes		
From Key Practice	Output Description	Destination
APO13.02	Information security risk treatment plan	All EDM; All APO; All BAI; All DSS; All MEA
Outputs to all Governance Processes		
From Key Practice	Output Description	Destination
EDM01.01	Enterprise governance guiding principles	All EDM
EDM01.01	Decision-making model	All EDM
EDM01.01	Authority levels	All EDM
EDM01.02	Enterprise governance communications	All EDM
EDM01.03	Feedback on governance effectiveness and performance	All EDM
Outputs to all Management Processes		
From Key Practice	Output Description	Destination
APO01.01	Communication ground rules	All APO; All BAI; All DSS; All MEA
APO01.03	IT-related policies	All APO; All BAI; All DSS; All MEA
APO01.04	Communications on IT objectives	All APO; All BAI; All DSS; All MEA
APO01.07	Process improvement opportunities	All APO; All BAI; All DSS; All MEA
APO02.06	Communications package	All APO; All BAI; All DSS; All MEA
APO11.02	Quality management standards	All APO; All BAI; All DSS; All MEA
APO11.04	Process quality of service goals and metrics	All APO; All BAI; All DSS; All MEA
APO11.06	Communications on continual improvement and best practices	All APO; All BAI; All DSS; All MEA
APO11.06	Examples of good practice to be shared	All APO; All BAI; All DSS; All MEA
APO11.06	Quality review benchmark results	All APO; All BAI; All DSS; All MEA
MEA01.02	Monitoring targets	All APO; All BAI; All DSS; All MEA
MEA01.04	Performance reports	All APO; All BAI; All DSS; All MEA
MEA01.05	Remedial actions and assignments	All APO; All BAI; All DSS; All MEA
MEA02.01	Results of internal control monitoring and reviews	All APO; All BAI; All DSS; All MEA
MEA02.01	Results of benchmarking and other evaluations	All APO; All BAI; All DSS; All MEA
MEA02.03	Self-assessment plans and criteria	All APO; All BAI; All DSS; All MEA
MEA02.03	Results of reviews of self-assessments	All APO; All BAI; All DSS; All MEA
MEA02.04	Control deficiencies	All APO; All BAI; All DSS; All MEA
MEA02.04	Remedial actions	All APO; All BAI; All DSS; All MEA
MEA02.06	Assurance plans	All APO; All BAI; All DSS; All MEA
MEA02.08	Refined scope	All APO; All BAI; All DSS; All MEA
MEA02.08	Assurance review results	All APO; All BAI; All DSS; All MEA
MEA02.08	Assurance review report	All APO; All BAI; All DSS; All MEA
MEA03.02	Communications of changed compliance requirements	All APO; All BAI; All DSS; All MEA

3.1 evaluate, direct And monitor (edm)

- 01** Ensure governance framework setting and maintenance.
- 02** Ensure benefits delivery.
- 03** Ensure risk optimisation.
- 04** Ensure resource optimisation.
- 05** Ensure stakeholder transparency.

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3.0 Process Dimension and Process Performance Indicators

Process ID	EDM01	
Process Name	Ensure Governance Framework Setting and Maintenance	
Process Description	Analyse and articulate the requirements for the governance of enterprise IT, and put in place and maintain effective enabling structures, principles, processes and practices, with clarity of responsibilities and authority to achieve the enterprise's mission, goals and objectives.	
Process Purpose Statement	Provide a consistent approach integrated and aligned with the enterprise governance approach. To ensure that IT-related decisions are made in line with the enterprise's strategies and objectives, ensure that IT-related processes are overseen effectively and transparently, compliance with legal and regulatory requirements are confirmed, and the governance requirements for board members are met.	
Outcomes (Os)		
Number	Description	
EDM01-O1	Strategic decision-making model for IT is effective and aligned with the enterprise's internal and external environment and stakeholder requirements.	
EDM01-O2	The governance system for IT is implemented in the enterprise.	
EDM01-O3	Assurance is obtained that the governance system for IT is operating effectively.	
Base Practices (BPs)		
Number	Description	Supports
EDM01-BP1	Evaluate the governance system. Continually identify and engage with the enterprise's stakeholders, document an understanding of the requirements, and make judgement on the current and future design of governance of enterprise IT.	EDM01-O1
EDM01-BP2	Direct the governance system. Inform leadership and obtain their support, buy-in and commitment. Guide the structures, processes and practices for the governance of IT in line with agreed-on governance design principles, decision-making models and authority levels. Define the information required for informed decision making.	EDM01-O2
EDM01-BP3	Monitor the governance system. Monitor the effectiveness and performance of the enterprise's governance of IT. Assess whether the governance system and implemented mechanisms (including structures, principles and processes) are operating effectively and provide appropriate oversight of IT.	EDM01-O3
Work Products (WPs)		
Inputs		
Number	Description	Supports
Outside COBIT	<ul style="list-style-type: none">• Constitution/bylaws/statutes of organisation• Governance/decision-making model• Regulations• Business environment trends	EDM01-BP1 EDM01-O1
MEA03-WP4	Communications of changed compliance requirements	EDM01-BP3 EDM01-O3
Outside COBIT	<ul style="list-style-type: none">• Obligations• Audit reports	
MEA01-WP5	Performance reports	
MEA01-WP7	Status and results of actions	
MEA02-WP2	Results of internal control monitoring and reviews	
MEA02-WP3	Results of benchmarking and other evaluations	
MEA02-WP6	Results of reviews of self-assessments	
MEA02-WP7	Assurance review scope	
MEA03-WP6	Compliance confirmations	
MEA03-WP7	Compliance assurance reports	
MEA03-WP8	Reports of non-compliance issues and root causes	

Process ID	EDM01 (cont.)		
Process Name	Ensure Governance Framework Setting and Maintenance		
Outputs			
Number	Description	Input to	Supports
EDM01-WP1	Enterprise governance guiding principles	All EDM APO01.01 APO01.03	EDM01-BP1 EDM01-O1
EDM01-WP2	Decision-making model	All EDM APO01.01	
EDM01-WP3	Authority levels	All EDM APO01.02	
EDM01-WP4	Enterprise governance communications	All EDM APO01.04	EDM01-BP2 EDM01-O2
EDM01-WP5	Reward system approach	APO07.03 APO07.04	
EDM01-WP6	Feedback on governance effectiveness and performance	All EDM APO01.07	EDM01-BP3 EDM01-O3

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	EDM02		
Process Name	Ensure Benefits Delivery		
Process Description	Optimise the value contribution to the business from the business processes, IT services and IT assets resulting from investments made by IT at acceptable costs.		
Process Purpose Statement	Secure optimal value from IT-enabled initiatives, services and assets; cost-efficient delivery of solutions and services; and a reliable and accurate picture of costs and likely benefits so that business needs are supported effectively and efficiently.		
Outcomes (Os)			
Number	Description		
EDM02-O1	The enterprise is securing optimal value from its portfolio of approved IT-enabled initiatives, services and assets.		
EDM02-O2	Optimal value is derived from IT investment through effective value management practices in the enterprise.		
EDM02-O3	Individual IT-enabled investments contribute optimal value.		
Base Practices (BPs)			
Number	Description	Supports	
EDM02-BP1	Evaluate value optimisation. Continually evaluate the portfolio of IT-enabled investments, services and assets to determine the likelihood of achieving enterprise objectives and delivering value at a reasonable cost. Identify and make judgement on any changes in direction that need to be given to management to optimise value creation.	EDM02-O1	
EDM02-BP2	Direct value optimisation. Direct value management principles and practices to enable optimal value realisation from IT-enabled investments throughout their full economic life cycle.	EDM02-O2	
EDM02-BP3	Monitor value optimisation. Monitor the key goals and metrics to determine the extent to which the business is generating the expected value and benefits to the enterprise from IT-enabled investments and services. Identify significant issues and consider corrective actions.	EDM02-O3	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
APO02-WP12	Strategic road map	EDM02-BP1 EDM02-O1	
APO05-WP5	Investment return expectations		
APO05-WP8	Selected programmes with return on investment (ROI) milestones		
APO05-WP11	Benefit results and related communications		
BAI01-WP13	Stage-gate review results		
APO05-WP9	Investment portfolio performance reports	EDM02-BP3 EDM02-O3	
Outputs			
Number	Description	Input to	Supports
EDM02-WP1	Evaluation of strategic alignment	APO02.04 APO05.03	EDM02-BP1 EDM02-O1
EDM02-WP2	Evaluation of investment and services portfolios	APO05.03 APO05.04 APO06.02	
EDM02-WP3	Investment types and criteria	APO05.01 APO05.03	
EDM02-WP4	Requirements for stage-gate reviews	BAI01.01	
EDM02-WP5	Feedback on portfolio and programme performance	APO05.04 APO06.05 BAI01.06	
EDM02-WP6	Actions to improve value delivery	EDM05.01 APO05.04 APO06.02 BAI01.01	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	EDM03		
Process Name	Ensure Risk Optimisation		
Process Description	Ensure that the enterprise's risk appetite and tolerance are understood, articulated and communicated, and that risk to enterprise value related to the use of IT is identified and managed.		
Process Purpose Statement	Ensure that IT-related enterprise risk does not exceed risk appetite and risk tolerance, the impact of IT risk to enterprise value is identified and managed, and the potential for compliance failures is minimised.		
Outcomes (Os)			
Number	Description		
EDM03-O1	Risk thresholds are defined and communicated and key IT-related risk is known.		
EDM03-O2	The enterprise is managing critical IT-related enterprise risk effectively and efficiently.		
EDM03-O3	IT-related enterprise risk does not exceed risk appetite and the impact of IT risk to enterprise value is identified and managed.		
Base Practices (BPs)			
Number	Description	Supports	
EDM03-BP1	Evaluate risk management. Continually examine and make judgement on the effect of risk on the current and future use of IT in the enterprise. Consider whether the enterprise's risk appetite is appropriate and that risk to enterprise value related to the use of IT is identified and managed.	EDM03-O1/O2	
EDM03-BP2	Direct risk management. Direct the establishment of risk management practices to provide reasonable assurance that IT risk management practices are appropriate to ensure that the actual IT risk does not exceed the board's risk appetite.	EDM03-O2/O3	
EDM03-BP3	Monitor risk management. Monitor the key goals and metrics of the risk management processes and establish how deviations or problems will be identified, tracked and reported on for remediation.		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
Outside COBIT	Enterprise risk management principles	EDM03-BP1	
APO12-WP3	Emerging risk issues and factors	EDM03-O1/O2	
Outside COBIT	Enterprise risk management profiles and mitigation plans	EDM03-BP2	
APO12-WP9	Risk analysis and risk profile reports for stakeholders	EDM03-O2/O3	
APO12-WP6	Risk analysis results	EDM03-BP3	
APO12-WP9	Risk analysis and risk profile reports for stakeholders	EDM03-O2/O3	
APO12-WP10	Review results of third-party risk assessments		
APO12-WP11	Opportunities for acceptance of greater risk		
Outputs			
Number	Description	Input to	Supports
EDM03-WP1	Risk appetite guidance	APO12.03	EDM03-BP1 EDM03-O1/O2
EDM03-WP2	Approved risk tolerance levels	APO12.03	
EDM03-WP3	Evaluation of risk management activities	APO12.01	
EDM03-WP4	Risk management policies	APO12.01	EDM03-BP2 EDM03-O2/O3
EDM03-WP5	Key objectives to be monitored for risk management	APO12.01	
EDM03-WP6	Approved process for measuring risk management	APO12.01	
EDM03-WP7	Remedial actions to address risk management deviations	APO12.06	EDM03-BP3 EDM03-O2/O3
EDM03-WP8	Risk management issues for the board	EDM05.01	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	EDM04		
Process Name	Ensure Resource Optimisation		
Process Description	Ensure that adequate and sufficient IT-related capabilities (people, process and technology) are available to support enterprise objectives effectively at optimal cost.		
Process Purpose Statement	Ensure that the resource needs of the enterprise are met in the optimal manner, IT costs are optimised, and there is an increased likelihood of benefit realisation and readiness for future change.		
Outcomes (Os)			
Number	Description		
EDM04-O1	The resource needs of the enterprise are met with optimal capabilities.		
EDM04-O2	Resources are allocated to best meet enterprise priorities within budget constraints.		
EDM04-O3	Optimal use of resources is achieved throughout their full economic life cycles.		
Base Practices (BPs)			
Number	Description	Supports	
EDM04-BP1	Evaluate resource management. Continually examine and make judgement on the current and future need for IT-related resources, options for resourcing (including sourcing strategies), and allocation and management principles to meet the needs of the enterprise in the optimal manner.	EDM04-O1	
EDM04-BP2	Direct resource management. Ensure the adoption of resource management principles to enable optimal use of IT resources throughout their full economic life cycle.	EDM04-O2/O3	
EDM04-BP3	Monitor resource management. Monitor the key goals and metrics of the resource management processes and establish how deviations or problems will be identified, tracked and reported for remediation.		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
APO10-WP1	Supplier significance and evaluation criteria	EDM04-BP1	
APO07-WP5	Skills development plans	EDM04-O1	
APO02-WP8	Gaps and changes required to realise target capability		
Outputs			
Number	Description	Input to	Supports
EDM04-WP1	Guiding principles for allocation of resources and capabilities	APO02.01 APO07.01 APO09.02	EDM04-BP1 EDM04-O1
EDM04-WP2	Guiding principles for enterprise architecture	APO03.01	
EDM04-WP3	Approved resources plan	APO02.05 APO07.01 APO09.03	
EDM04-WP4	Communication of resourcing strategies	APO02.06 APO07.05 APO09.03	EDM04-BP2 EDM04-O2/O3
EDM04-WP5	Assigned responsibilities for resource management	APO01.02 DSS06.02	
EDM04-WP6	Principles for safeguarding resources	APO01.04	
EDM04-WP7	Feedback on allocation and effectiveness of resources and capabilities	EDM05.01 APO02.05 APO07.05 APO09.06	EDM04-BP3 EDM04-O2/O3
EDM04-WP8	Remedial actions to address resource management deviations	APO02.05 APO07.01 APO07.03 APO09.05	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	EDM05		
Process Name	Ensure Stakeholder Transparency		
Process Description	Ensure that enterprise IT performance and conformance measurement and reporting are transparent, with stakeholders approving the goals and metrics and the necessary remedial actions.		
Process Purpose Statement	Make sure that the communication to stakeholders is effective and timely and the basis for reporting is established to increase performance, identify areas for improvement, and confirm that IT-related objectives and strategies are in line with the enterprise's strategy.		
Outcomes (Os)			
Number	Description		
EDM05-O1	Stakeholder reporting is in line with stakeholder requirements.		
EDM05-O2	Reporting is complete, timely and accurate.		
EDM05-O3	Communication is effective and stakeholders are satisfied.		
Base Practices (BPs)			
Number	Description	Supports	
EDM05-BP1	Evaluate stakeholder reporting requirements. Continually examine and make judgement on the current and future requirements for stakeholder communication and reporting, including both mandatory reporting requirements (e.g., regulatory) and communication to other stakeholders. Establish the principles for communication.	EDM05-O1/O2	
EDM05-BP2	Direct stakeholder communication and reporting. Ensure the establishment of effective stakeholder communication and reporting, including mechanisms for ensuring the quality and completeness of information, oversight of mandatory reporting, and creating a communication strategy for stakeholders.	EDM05-O2/O3	
EDM05-BP3	Monitor stakeholder communication. Monitor the effectiveness of stakeholder communication. Assess mechanisms for ensuring accuracy, reliability, and effectiveness, and ascertain whether the requirements of different stakeholders are met.		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
EDM02-WP6	Actions to improve value delivery	EDM05-BP1	
EDM03-WP4	Risk management policies	EDM05-O1/O2	
EDM04-WP7	Feedback on allocation and effectiveness of resources and capabilities		
MEA02-WP10	Refined scope		
APO12-WP9	Risk analysis and risk profile reports for stakeholders	EDM05-BP2 EDM05-O2/O3	
MEA02-WP11	Assurance review results	EDM05-BP3	
MEA02-WP12	Assurance review report	EDM05-O2/O3	
Outputs			
Number	Description	Input to	Supports
EDM05-WP1	Evaluation of enterprise reporting requirements	MEA01.01	EDM05-BP1
EDM05-WP2	Reporting and communications principles	MEA01.01	EDM05-O1/O2
EDM05-WP3	Rules for validating and approving mandatory reports	MEA01.01 MEA03.04	EDM05-BP2 EDM05-O2/O3
EDM05-WP4	Escalation guidelines	MEA01.05	
EDM05-WP5	Assessment of reporting effectiveness	MEA01.01 MEA03.04	EDM05-BP3 EDM05-O2/O3

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.2 Align, Plan And Organise (APO)

- 01** Manage the IT management framework.
- 02** Manage strategy.
- 03** Manage enterprise architecture.
- 04** Manage innovation.
- 05** Manage portfolio.
- 06** Manage budget and costs.
- 07** Manage human resources.
- 08** Manage relationships.
- 09** Manage service agreements.
- 10** Manage suppliers.
- 11** Manage quality.
- 12** Manage risk.
- 13** Manage security.

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3.0 Process Dimension and Process Performance Indicators

Process ID	APO01	
Process Name	Manage the IT Management Framework	
Process Description	Clarify and maintain the governance of enterprise IT mission and vision. Implement and maintain mechanisms and authorities to manage information and the use of IT in the enterprise in support of governance objectives in line with guiding principles and policies.	
Process Purpose Statement	Provide a consistent management approach to enable the enterprise governance requirements to be met, covering management processes, organisational structures, roles and responsibilities, reliable and repeatable activities, and skills and competencies.	
Outcomes (Os)		
Number	Description	
APO01-O1	An effective set of policies is defined and maintained.	
APO01-O2	Everyone is aware of the policies and how they should be implemented.	
Base Practices (BPs)		
Number	Description	Supports
APO01-BP1	Define the organisational structure. Establish an internal and extended organisational structure that reflects business needs and IT priorities. Put in place the required management structures (e.g., committees) that enable management decision making to take place in the most effective and efficient manner.	APO01-O1
APO01-BP2	Establish roles and responsibilities. Establish, agree on and communicate roles and responsibilities of IT personnel, as well as other stakeholders with responsibilities for enterprise IT, that clearly reflect overall business needs and IT objectives and relevant personnel's authority, responsibilities and accountability.	APO01-O1/O2
APO01-BP3	Maintain the enablers of the management system. Maintain the enablers of the management system and control environment for enterprise IT, and ensure that they are integrated and aligned with the enterprise's governance and management philosophy and operating style. These enablers include the clear communication of expectations/requirements. The management system should encourage cross-divisional co- operation and teamwork, promote compliance and continuous improvement, and handle process deviations (including failure).	APO01-O1
APO01-BP4	Communicate management objectives and direction. Communicate awareness and understanding of IT objectives and direction to appropriate stakeholders and users throughout the enterprise.	APO01-O2
APO01-BP5	Optimise the placement of the IT function. Position the IT capability in the overall organisational structure to reflect an enterprise model relevant to the importance of IT within the enterprise, specifically its criticality to enterprise strategy and the level of operational dependence on IT. The reporting line of the CIO should be commensurate with the importance of IT within the enterprise.	APO01-O1/O2
APO01-BP6	Define information (data) and system ownership. Define and maintain responsibilities for ownership of information (data) and information systems. Ensure that owners make decisions about classifying information and systems and protecting them in line with this classification.	APO01-O2
APO01-BP7	Manage continual improvement of processes. Assess, plan and execute the continual improvement of processes and their maturity to ensure that they are capable of delivering against enterprise, governance, management and control objectives. Consider COBIT process implementation guidance, emerging standards, compliance requirements, automation opportunities, and the feedback of process users, the process team and other stakeholders. Update the process and consider impacts on process enablers.	APO01-O1
APO01-BP8	Maintain compliance with policies and procedures. Put in place procedures to maintain compliance with and performance measurement of policies and other enablers of the control framework, and enforce the consequences of non-compliance or inadequate performance. Track trends and performance and consider these in the future design and improvement of the control framework.	APO01-O1

Process ID	APO01 (cont.)	
Process Name	Manage the IT Management Framework	
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM01-WP1	Decision-making model	APO01-BP1 APO01-O1
EDM01-WP2	Enterprise governance guiding principles	
APO03-WP5	Process architecture model	
EDM01-WP3	Authority levels	APO01-BP2 APO01-O1/O2
EDM04-WP5	Assigned responsibilities for resource management	
APO07-WP4	Skills and competencies matrix	
APO07-WP5	Skills development plans	
APO11-WP1	Quality management system (QMS) roles, responsibilities and decision rights	
DSS06-WP4	Allocated roles and responsibilities	
DSS06-WP5	Allocated levels of authority	
EDM01-WP4	Enterprise governance guiding principles	
APO02-WP12	Strategic road map	APO01-BP3 APO01-O2
APO12-WP3	Emerging risk issues and factors	
APO12-WP6	Risk analysis results	
EDM01-WP4	Enterprise governance communications	APO01-BP4 APO01-O1/O2
EDM04-WP6	Principles for safeguarding resources	
APO12-WP15	Risk impact communications	
BAI08-WP7	Communications on value of knowledge	
DSS04-WP1	Policy and objectives for business continuity	
DSS05-WP1	Malicious software prevention policy	
DSS05-WP3	Connectivity security policy	
DSS05-WP5	Security policies for endpoint devices	
Outside COBIT	<ul style="list-style-type: none">Enterprise operating modelEnterprise strategy	APO01-BP5 APO01-O1
EDM01-WP6	Feedback on governance effectiveness and performance	APO01-BP7 APO01-O1
MEA03-WP3	Updated policies, principles, procedures and standards	
DSS01-WP6	Environmental policies	APO01-BP8 APO01-O1/O2

3.0 Process Dimension and Process Performance Indicators

Process ID	APO01 (cont.)		
Process Name	Manage the IT Management Framework		
Outputs			
Number	Description	Input to	Supports
APO01-WP1	IT-related policies	All APO All BAI All DSS All MEA	APO01-BP3 APO01-O1
APO01-WP2	Non-compliance remedial actions	MEA01.05	APO01-BP8 APO01-O1/O2
APO01-WP3	Evaluation of options for IT organisation	APO03.02	APO01-BP5 APO01-O1
APO01-WP4	Defined operational placement of IT function	APO03.02	
APO01-WP5	Definition of organisation structure and functions	APO03.02	APO01-BP1 APO01-O1/O2
APO01-WP6	Organisation operational guidelines	APO03.02	
APO01-WP7	Communication ground rules	All APO All BAI All DSS All MEA	
APO01-WP8	Definition of IT-related roles and responsibilities	DSS05.04	APO01-BP2 APO01-O1/O2
APO01-WP9	Definition of supervisory practices	APO07.01	
APO01-WP10	Process capability assessments	MEA01.03	APO01-BP7 APO01-O1
APO01-WP11	Process improvement opportunities	All APO All BAI All DSS All MEA	
APO01-WP12	Performance goals and metrics for process improvement tracking	MEA01.02	
APO01-WP13	Communications on IT objectives	All APO All BAI All DSS All MEA	APO01-BP4 APO01-O2
APO01-WP14	Data classification guidelines	APO03.02 BAI02.01 DSS05.02 DSS06.01	APO01-BP6 APO01-O1/O2
APO01-WP15	Data security and control guidelines	BAI02.01	
APO01-WP16	Data integrity procedures	BAI02.01 DSS06.01	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	APO02	
Process Name	Manage Strategy	
Process Description	Provide a holistic view of the current business and IT environment, the future direction, and the initiatives required to migrate to the desired future environment. Leverage enterprise architecture building blocks and components, including externally provided services and related capabilities to enable nimble, reliable and efficient response to strategic objectives.	
Process Purpose Statement	Align strategic IT plans with business objectives. Clearly communicate the objectives and associated accountabilities so they are understood by all, with the IT strategic options identified, structured and integrated with the business plans.	
Outcomes (Os)		
Number	Description	
APO02-O1	All aspects of the IT strategy are aligned with the enterprise strategy.	
APO02-O2	The IT strategy is cost-effective, appropriate, realistic, achievable, enterprise-focussed and balanced.	
APO02-O3	Clear and concrete short-term goals can be derived from, and traced back to, specific long-term initiatives, and can then be translated into operational plans.	
APO02-O4	IT is a value driver for the enterprise.	
APO02-O5	There is awareness of the IT strategy and a clear assignment of accountability for delivery.	
Base Practices (BPs)		
Number	Description	Supports
APO02-BP1	Understand enterprise direction. Consider the current enterprise environment and business processes, as well as the enterprise strategy and future objectives. Consider also the external environment of the enterprise (industry drivers, relevant regulations, basis for competition).	APO02-O1/O2
APO02-BP2	Assess the current environment, capabilities and performance. Assess the performance of current internal business and IT capabilities and external IT services, and develop an understanding of the enterprise architecture in relation to IT. Identify issues currently being experienced and develop recommendations in areas that could benefit from improvement. Consider service provider differentiators and options and the financial impact and potential costs and benefits of using external services.	
APO02-BP3	Define the target IT capabilities. Define the target business and IT capabilities and required IT services. This should be based on the understanding of the enterprise environment and requirements; the assessment of the current business process and IT environment and issues; and consideration of reference standards, best practices and validated emerging technologies or innovation proposals.	APO02-O3
APO02-BP4	Conduct a gap analysis. Identify the gaps between the current and target environments and consider the alignment of assets (the capabilities that support services) with business outcomes to optimise investment in and utilisation of the internal and external asset base. Consider the critical success factors to support strategy execution.	APO02-O4
APO02-BP5	Define the strategic plan and road map. Create a strategic plan that defines, in co-operation with relevant stakeholders, how IT-related goals will contribute to the enterprise's strategic goals. Include how IT will support IT-enabled investment programmes, business processes, IT services and IT assets. Direct IT to define the initiatives that will be required to close the gaps, the sourcing strategy, and the measurements to be used to monitor achievement of goals, then prioritise the initiatives and combine them in a high-level road map.	
APO02-BP6	Communicate the IT strategy and direction. Create awareness and understanding of the business and IT objectives and direction, as captured in the IT strategy, through communication to appropriate stakeholders and users throughout the enterprise.	APO02-O5

Process ID APO02 (cont.)		
Process Name Manage Strategy		
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM04-WP2	Guiding principles for enterprise architecture	APO02-BP1 APO02-O1/O2
APO04-WP1	Innovation opportunities linked to business drivers	
Outside COBIT	Enterprise strategy and enterprise strengths, weaknesses, opportunities, threats (SWOT) analysis	APO02-BP2 APO02-O1/O2
APO06-WP13	Cost optimisation opportunities	
APO08-WP9	Definition of potential improvement projects	
APO09-WP1	Identified gaps in IT services to the business	
APO09-WP9	Improvement action plans and remediations	
APO12-WP3	Emerging risk issues and factors	
APO12-WP6	Risk analysis results	
APO12-WP8	Aggregated risk profile, including status of risk management actions	
APO12-WP13	Project proposals for reducing risk	
BAI04-WP3	Prioritised improvements	
BAI04-WP4	Performance and capacity plans	
BAI04-WP7	Corrective actions	
BAI09-WP3	Results of fit-for-purpose reviews	
BAI09-WP9	Results of cost optimisation reviews	
BAI09-WP10	Opportunities to reduce asset costs or increase value	
EDM02-WP1	Evaluation of strategic alignment	APO02-BP3 APO02-O3
APO04-WP6	Results and recommendations from proof-of-concept initiatives	
APO04-WP7	Analysis of rejected initiatives	
APO04-WP10	Assessments of the use of innovative approaches	
APO05-WP5	Investment return expectations	
BAI01-WP11	Results of programme goal achievement monitoring	
BAI01-WP13	Stage-gate review results	
BAI01-WP30	Post-implementation review results	
APO06-WP4	IT budget and plan	APO02-BP5 APO02-O4
EDM04-WP3	Approved resources plan	
EDM04-WP7	Feedback on allocation and effectiveness of resources and capabilities	
EDM04-WP8	Remedial actions to address resource management deviations	
APO03-WP1	Defined scope of architecture	
APO03-WP3	Architecture concept business case and value proposition	
APO03-WP6	Information architecture model	
APO03-WP7	High-level implementation and migration strategy	
APO03-WP8	Transition architectures	
APO05-WP3	Feedback on strategy and goals	
APO05-WP4	Funding options	
APO06-WP5	Budget communications	
APO06-WP7	Budget allocations	
DSS04-WP6	Approved strategic options	
EDM04-WP4	Communication of resourcing strategies	APO02-BP6 APO02-O5

3.0 Process Dimension and Process Performance Indicators

Process ID	APO02 (cont.)		
Process Name	Manage Strategy		
Outputs			
Number	Description	Input to	Supports
APO02-WP1	Sources and priorities for changes	Internal	APO02-BP1 APO02-O1/O2
APO02-WP2	Baseline of current capabilities	Internal	APO02-BP2 APO02-O1/O2
APO02-WP3	Gaps and risks related to current capabilities	Internal	
APO02-WP4	Capability SWOT analysis	Internal	
APO02-WP5	High-level IT-related goals	Internal	APO02-BP3 APO02-O3
APO02-WP6	Required business and IT capabilities	Internal	
APO02-WP7	Proposed enterprise architecture changes	APO03.03	
APO02-WP8	Gaps and changes required to realise target capability	EDM04.01 APO09.02	APO02-BP4 APO02-O3
APO02-WP9	Value benefit statement for target environment	APO09.02	
APO02-WP10	Definition of strategic initiatives	APO05.01	APO02-BP5 APO02-O4
APO02-WP11	Risk assessment	APO05.01	
APO02-WP12	Strategic road map	EDM02.01 APO01.03 APO03.01 APO05.01 APO08.01	
APO02-WP13	Communication plan	Internal	APO02-BP6 APO02-O5
APO02-WP14	Communications package	All AP	
		All BAI	
		All DSS	
		All MEA	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	APO03	
Process Name	Manage Enterprise Architecture	
Process Description	Establish a common architecture consisting of business process, information, data, application and technology architecture layers for effectively and efficiently realising enterprise and IT strategies by creating key models and practices that describe the baseline and target architectures. Define requirements for taxonomy, standards, guidelines, procedures, templates and tools, and provide a linkage for these components. Improve alignment, increase agility, improve quality of information and generate potential cost savings through initiatives such as re-use of building block components.	
Process Purpose Statement	Represent the different building blocks that make up the enterprise and their inter-relationships as well as the principles guiding their design and evolution over time, enabling a standard, responsive and efficient delivery of operational and strategic objectives.	
Outcomes (Os)		
Number	Description	
APO03-O1	The architecture and standards are effective in supporting the enterprise.	
APO03-O2	A portfolio of enterprise architecture services supports agile enterprise change.	
APO03-O3	Appropriate and up-to-date domain and/or federated architectures exist that provide reliable architecture information.	
APO03-O4	A common enterprise architecture framework and methodology as well as an integrated architecture repository are used to enable re-use efficiencies across the enterprise.	
Base Practices (BPs)		
Number	Description	Supports
APO03-BP1	Develop the enterprise architecture vision. The architecture vision provides a first-cut, high-level description of the baseline and target architectures, covering the business, information, data, application and technology domains. The architecture vision provides the sponsor with a key tool to sell the benefits of the proposed capability to stakeholders within the enterprise. The architecture vision describes how the new capability will meet enterprise goals and strategic objectives and address stakeholder concerns when implemented.	APO03-O1/O3
APO03-BP2	Define reference architecture. The reference architecture describes the current and target architectures for the business, information, data, application and technology domains.	APO03-O1/O2
APO03-BP3	Select opportunities and solutions. Rationalise the gaps between baseline and target architectures, taking both business and technical perspectives, and logically group them into project work packages. Integrate the project with any related IT-enabled investment programmes to ensure that the architectural initiatives are aligned with and enable these initiatives as part of overall enterprise change. Make this a collaborative effort with key enterprise stakeholders from business and IT to assess the enterprise's transformation readiness, and identify opportunities, solutions and all implementation constraints.	
APO03-BP4	Define architecture implementation. Create a viable implementation and migration plan in alignment with the programme and project portfolios. Ensure that the plan is closely co-ordinated to ensure that value is delivered and the required resources are available to complete the necessary work.	
APO03-BP5	Provide enterprise architecture services. The provision of enterprise architecture services within the enterprise includes guidance to and monitoring of implementation projects, formalising ways of working through architecture contracts, and measuring and communicating architecture's value-add and compliance monitoring.	APO03-O4
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM04-WP2	Guiding principles for enterprise architecture	APO03-BP1 APO03-O1/O3
APO02-WP12	Strategic road map	
Outside COBIT	Enterprise strategy	
APO01-WP3	Evaluation of options for IT organisation	APO03-BP2 APO03-O1/O3
APO01-WP4	Defined operational placement of IT function	
APO01-WP5	Definition of organisation structure and functions	
APO01-WP6	Organisation operational guidelines	
APO01-WP14	Data classification guidelines	
Outside COBIT	Enterprise strategy	
APO02-WP7	Proposed enterprise architecture changes	APO03-BP3 APO03-O1/O2
Outside COBIT	<ul style="list-style-type: none">Enterprise strategiesEnterprise drivers	

Process ID APO03 (cont.)			
Process Name Manage Enterprise Architecture			
Outputs			
Number	Description	Input to	Supports
APO03-WP1	Defined scope of architecture	APO02.05	APO03-BP1 APO03-O1/O3
APO03-WP2	Architecture principles	BAI02.01 BAI03.01 BAI03.02	
APO03-WP3	Architecture concept business case and value proposition	APO02.05 APO05.03	
APO03-WP4	Baseline domain descriptions and architecture definition	BAI02.01 BAI03.01 BAI03.02	APO03-BP2 APO03-O1/O3
APO03-WP5	Process architecture model	APO01.01	
APO03-WP6	Information architecture model	APO02.05 BAI02.01 BAI03.02 DSS05.03 DSS05.04 DSS05.06 DSS05.08	
APO03-WP7	High-level implementation and migration strategy	APO02.05	APO03-BP3 APO03-O1/O2
APO03-WP8	Transition architectures	APO02.05	
APO03-WP9	Resource requirements	BAI01.02	APO03-BP4 APO03-O4
APO03-WP10	Implementation phase descriptions	BAI01.01 BAI01.02	
APO03-WP11	Architecture governance requirements	BAI01.01	
APO03-WP12	Solution development and acquisition guidance	BAI02.01 BAI02.02 BAI03.02 APO03-O5	APO03-BP5

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO04	
Process Name	Manage Innovation	
Process Description	Maintain an awareness of information technology and related service trends, identify innovation opportunities, and plan how to benefit from innovation in relation to business needs. Analyse what opportunities for business innovation or improvement can be created by emerging technologies, services or IT-enabled business innovation, as well as through existing established technologies and by business and IT process innovation. Influence strategic planning and enterprise architecture decisions.	
Process Purpose Statement	Achieve competitive advantage, business innovation, and improved operational effectiveness and efficiency by exploiting information technology developments.	
Outcomes (Os)		
Number	Description	
APO04-O1	Enterprise value is created through the qualification and staging of the most appropriate advances and innovations in technology, IT methods and solutions.	
APO04-O2	Enterprise objectives are met with improved quality benefits and/or reduced cost as a result of the identification and implementation of innovative solutions.	
APO04-O3	Innovation is promoted and enabled and forms part of the enterprise culture.	
Base Practices (BPs)		
Number	Description	Supports
APO04-BP1	Create an environment conducive to innovation. Create an environment that is conducive to innovation, considering issues such as culture, reward, collaboration, technology forums, and mechanisms to promote and capture employee ideas.	APO04-O3
APO04-BP2	Maintain an understanding of the enterprise environment. Work with relevant stakeholders to understand their challenges. Maintain an adequate understanding of enterprise strategy and the competitive environment or other constraints so that opportunities enabled by new technologies can be identified.	APO04-O2
APO04-BP3	Monitor and scan the technology environment. Perform systematic monitoring and scanning of the enterprise's external environment to identify emerging technologies that have the potential to create value (e.g., by realising the enterprise strategy, optimising costs, avoiding obsolescence and better enabling enterprise and IT processes). Monitor the marketplace, competitive landscape, industry sectors, and legal and regulatory trends to be able to analyse emerging technologies or innovation ideas in the enterprise context.	APO04-O1
APO04-BP4	Assess the potential of emerging technologies and innovation ideas. Analyse identified emerging technologies and/or other IT innovation suggestions. Work with stakeholders to validate assumptions on the potential of new technologies and innovation.	APO04-O1/O2
APO04-BP5	Recommend appropriate further initiatives. Evaluate and monitor the results of proof-of-concept initiatives and, if favourable, generate recommendations for further initiatives and gain stakeholder support.	
APO04-BP6	Monitor the implementation and use of innovation. Monitor the implementation and use of emerging technologies and innovations during integration, adoption and for the full economic life cycle to ensure that the promised benefits are realised and to identify lessons learned.	APO04-O3
Work Products (WPs)		
Inputs		
Number	Description	Supports
Outside COBIT	Enterprise strategy and enterprise SWOT analysis	APO04-BP2 APO04-O2
	Emerging technologies	APO04-BP3 APO04-O1

Process ID	APO04 (cont.)		
Process Name	Manage Innovation		
Outputs			
Number	Description	Input to	Supports
APO04-WP1	Innovation opportunities linked to business drivers	APO02.01	APO04-BP2 APO04-O2
APO04-WP2	Research analyses of innovation possibilities	BAI03.01	APO04-BP3 APO04-O1
APO04-WP3	Evaluations of ideas for innovation	BAI03.01	APO04-BP4 APO04-O1/O2
APO04-WP4	Proof of concept scope and outline business case	APO05.03 APO06.02	
APO04-WP5	Test results from proof-of-concept initiatives	Internal	
APO04-WP6	Results and recommendations from proof-of- concept initiatives	APO02.03 BAI03.09	APO04-BP5 APO04-O1/O2
APO04-WP7	Analysis of rejected initiatives	APO02.03 BAI03.08	
APO04-WP8	Innovation plan	Internal	APO04-BP1 APO04-O3
APO04-WP9	Recognition and reward programme	APO07.04	
APO04-WP10	Assessments of the use of innovative approaches	APO02.04 BAI03.02	APO04-BP6 APO04-O3
APO04-WP11	Evaluation of innovation benefits	APO05.04	
APO04-WP12	Adjusted innovation plans	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO05	
Process Name	Manage Portfolio	
Process Description	Execute the strategic direction set for investments in line with the enterprise architecture vision and the desired characteristics of the investment and related services portfolios, and consider the different categories of investments and the resources and funding constraints. Evaluate, prioritise and balance programmes and services, managing demand within resource and funding constraints, based on their alignment with strategic objectives, enterprise worth and risk. Move selected programmes into the active services portfolio for execution. Monitor the performance of the overall portfolio of services and programmes, proposing adjustments as necessary in response to programme and service performance or changing enterprise priorities.	
Process Purpose Statement	Optimise the performance of the overall portfolio of programmes in response to programme and service performance and changing enterprise priorities and demands.	
Outcomes (Os)		
Number	Description	
APO05-O1	An appropriate investment mix is defined and aligned with enterprise strategy.	
APO05-O2	Sources of investment funding are identified and available.	
APO05-O3	Programme business cases are evaluated and prioritised before funds are allocated.	
APO05-O4	A comprehensive and accurate view of the investment portfolio performance exists.	
APO05-O5	Investment programme changes are reflected in the relevant IT service, asset and resource portfolios.	
APO05-O6	Benefits have been realised due to benefit monitoring.	
Base Practices (BPs)		
Number	Description	Supports
APO05-BP1	Establish the target investment mix. Review and ensure clarity of the enterprise and IT strategies and current services. Define an appropriate investment mix based on cost, alignment with strategy, and financial measures such as cost and expected ROI over the full economic life cycle, degree of risk, and type of benefit for the programmes in the portfolio. Adjust the enterprise and IT strategies where necessary.	APO05-O1
APO05-BP2	Determine the availability and sources of funds. Determine potential sources of funds, different funding options and the implications of the funding source on the investment return expectations.	APO05-O2
APO05-BP3	Evaluate and select programmes to fund. Based on the overall investment portfolio mix requirements, evaluate and prioritise programme business cases, and decide on investment proposals. Allocate funds and initiate programmes.	APO05-O3
APO05-BP4	Monitor, optimise and report on investment portfolio performance. On a regular basis, monitor and optimise the performance of the investment portfolio and individual programmes throughout the entire investment life cycle.	APO05-O4
APO05-BP5	Maintain portfolios. Maintain portfolios of investment programmes and projects, IT services and IT assets.	APO05-O5
APO05-BP6	Manage benefits achievement. Monitor the benefits of providing and maintaining appropriate IT services and capabilities, based on the agreed-on and current business case.	APO05-O4/O6

Process ID APO05 (cont.)		
Process Name Manage Portfolio		
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM02-WP3	Investment types and criteria	APO05-BP1 APO05-O1
APO02-WP10	Definition of strategic initiatives	
APO02-WP11	Risk assessment	
APO02-WP12	Strategic road map	
APO06-WP6	Prioritisation and ranking of IT initiatives	
APO09-WP2	Definitions of standard services	
APO09-WP3	Service definitions	
EDM02-WP1	Evaluation of strategic alignment	APO05-BP3 APO05-O3
EDM02-WP2	Evaluation of investment and services portfolios	
EDM02-WP3	Investment types and criteria	
APO03-WP3	Architecture concept business case and value proposition	
APO04-WP4	Proof of concept scope and outline business case	
APO06-WP4	IT budget and plan	
APO06-WP5	Budget communications	
APO06-WP7	Budget allocations	
APO09-WP1	Identified gaps in IT services to the business	
APO09-WP6	Service level agreements (SLAs)	
BAI01-WP4	Programme concept business case	
BAI01-WP5	Programme mandate and brief	
BAI01-WP6	Programme benefit realisation plan	
EDM02-WP2	Evaluation of investment and services portfolios	APO05-BP4 APO05-O4
EDM02-WP5	Feedback on portfolio and programme performance	
EDM02-WP6	Actions to improve value delivery	
APO04-WP11	Evaluation of innovation benefits	
BAI01-WP13	Stage-gate review results	
APO09-WP4	Updated service portfolio	APO05-BP5 APO05-O5
BAI01-WP33	Communication of programme retirement and ongoing accountabilities	
BAI01-WP8	Programme budget and benefits register	APO05-BP6 APO05-O4/O6
BAI01-WP10	Results of benefit realisation monitoring	

3.0 Process Dimension and Process Performance Indicators

Process ID	APO05 (cont.)		
Process Name	Manage Portfolio		
Outputs			
Number	Description	Input to	Supports
APO05-WP1	Defined investment mix	Internal	APO05-BP1 APO05-O1
APO05-WP2	Identified resources and capabilities required to support strategy	Internal	
APO05-WP3	Feedback on strategy and goals	APO02.05	
APO05-WP4	Funding options	APO02.05	APO05-BP2 APO05-O2
APO05-WP5	Investment return expectations	EDM02.01 APO02.04 APO06.02 BAI01.06	
APO05-WP6	Programme business case	APO06.02 BAI01.02	APO05-BP3 APO05-O3
APO05-WP7	Business case assessments	APO06.02 BAI01.06	
APO05-WP8	Selected programmes with ROI milestones	EDM02.01 BAI01.04	
APO05-WP9	Investment portfolio performance reports	EDM02.03 APO09.05 BAI01.06 MEA01.03	APO05-BP4 APO05-O4
APO05-WP10	Updated portfolios of programmes, services and assets	APO09.03 BAI01.01	APO05-BP5 APO05-O5
APO05-WP11	Benefit results and related communications	EDM02.01 APO09.05 BAI01.06	APO05-BP6 APO05-O4/O6
APO05-WP12	Corrective actions to improve benefit realisation	APO09.05 BAI01.06	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	APO06	
Process Name	Manage Budget and Costs	
Process Description	Manage the IT-related financial activities in both the business and IT functions, covering budgeting, cost and benefit management, and prioritisation of spending through the use of formal budgeting practices and a fair and equitable system of allocating costs to the enterprise. Consult stakeholders to identify and control the total costs and benefits within the context of the IT strategic and tactical plans, and initiate corrective action where needed.	
Process Purpose Statement	Foster partnership between IT and enterprise stakeholders to enable the effective and efficient use of IT-related resources and provide transparency and accountability of the cost and business value of solutions and services. Enable the enterprise to make informed decisions regarding the use of IT solutions and services.	
Outcomes (Os)		
Number	Description	
APO06-O1	A transparent and complete budget for IT accurately reflects planned expenditures.	
APO06-O2	The allocation of IT resources for IT initiatives is prioritised based on enterprise needs.	
APO06-O3	Costs for services are allocated in an equitable way.	
APO06-O4	Budgets can be accurately compared to actual costs.	
Base Practices (BPs)		
Number	Description	Supports
APO06-BP1	Manage finance and accounting. Establish and maintain a method to account for all IT-related costs, investments and depreciation as an integral part of the enterprise financial systems and chart of accounts to manage the investments and costs of IT. Capture and allocate actual costs, analyse variances between forecasts and actual costs, and report using the enterprise's financial measurement systems.	APO06-O1
APO06-BP2	Prioritise resource allocation. Implement a decision-making process to prioritise the allocation of resources and rules for discretionary investments by individual business units. Include the potential use of external service providers and consider the buy, develop and rent options.	APO06-O2
APO06-BP3	Create and maintain budgets. Prepare a budget reflecting the investment priorities supporting strategic objectives based on the portfolio of IT-enabled programmes and IT services.	APO06-O1/O4
APO06-BP4	Model and allocate costs. Establish and use an IT costing model based on the service definition, ensuring that allocation of costs for services is identifiable, measurable and predictable, to encourage the responsible use of resources including those provided by service providers. Regularly review and benchmark the appropriateness of the cost/chargeback model to maintain its relevance and appropriateness to the evolving business and IT activities.	APO06-O3
APO06-BP5	Manage costs. Implement a cost management process comparing actual costs to budgets. Costs should be monitored and reported and, in the case of deviations, identified in a timely manner and their impact on enterprise processes and services assessed.	APO06-O4

Process ID	APO06 (cont.)		
Process Name	Manage Budget and Costs		
Work Products (WPs)			
Inputs			
Number	Description		Supports
BAI09-WP1	Asset register		APO06-BP1 APO06-O1
APO04-WP4	Proof of concept scope and outline business case		APO06-BP2 APO06-O2
APO05-WP5	Investment return expectations		
APO05-WP7	Business case assessments		
EDM02-WP2	Evaluation of investment and services portfolios		
EDM02-WP6	Actions to improve value delivery		
APO05-WP6	Programme business case		
BAI01-WP6	Programme benefit realisation plan		
EDM02-WP5	Feedback on portfolio and programme performance		APO06-BP5 APO06-O4
BAI01-WP8	Programme budget and benefits register		
BAI01-WP10	Results of benefit realisation monitoring		
Outputs			
Number	Description	Input to	Supports
APO06-WP1	Accounting processes	Internal	APO06-BP1 APO06-O1
APO06-WP2	IT cost classification scheme	Internal	
APO06-WP3	Financial planning practices	Internal	
APO06-WP4	IT budget and plan	APO02.05 APO05.03 APO07.01 APO09.02	APO06-BP3 APO06-O1/O4
APO06-WP5	Budget communications	APO02.05 APO05.03 APO07.01 APO09.02	
APO06-WP6	Prioritisation and ranking of IT initiatives	APO05.01	APO06-BP2 APO06-O2
APO06-WP7	Budget allocations	APO02.05 APO05.03 APO07.05 APO09.02	
APO06-WP8	Categorised IT costs	Internal	APO06-BP4 APO06-O3
APO06-WP9	Cost allocation model	Internal	
APO06-WP10	Cost allocation communications	Internal	
APO06-WP11	Cost data collection method	Internal	APO06-BP5 APO06-O1/O2/O3/O4
APO06-WP12	Cost consolidation method	Internal	
APO06-WP13	Cost optimisation opportunities	APO02.02	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO07	
Process Name	Manage Human Resources	
Process Description	Provide a structured approach to ensure optimal structuring, placement, decision rights and skills of human resources. This includes communicating the defined roles and responsibilities, learning and growth plans, and performance expectations, supported with competent and motivated people.	
Process Purpose Statement	Optimise human resources capabilities to meet enterprise objectives.	
Outcomes (Os)		
Number	Description	
APO07-O1	The IT organisational structure and relationships are flexible and responsive.	
APO07-O2	Human resources are effectively and efficiently managed.	
Base Practices (BPs)		
Number	Description	Supports
APO07-BP1	Maintain adequate and appropriate staffing. Evaluate staffing requirements on a regular basis or on major changes to the enterprise or operational or IT environments to ensure that the enterprise has sufficient human resources to support enterprise goals and objectives. Staffing includes both internal and external resources.	APO07-O1/O2
APO07-BP2	Identify key IT personnel. Identify key IT personnel while minimising reliance on a single individual performing a critical job function through knowledge capture (documentation), knowledge sharing, succession planning and staff backup.	APO07-O1
APO07-BP3	Maintain the skills and competencies of personnel. Define and manage the skills and competencies required of personnel. Regularly verify that personnel have the competencies to fulfil their roles on the basis of their education, training and/or experience, and verify that these competencies are being maintained, using qualification and certification programmes where appropriate. Provide employees with ongoing learning and opportunities to maintain their knowledge, skills and competencies at a level required to achieve enterprise goals.	APO07-O2
APO07-BP4	Evaluate employee job performance. Perform timely performance evaluations on a regular basis against individual objectives derived from the enterprise's goals, established standards, specific job responsibilities, and the skills and competency framework. Employees should receive coaching on performance and conduct whenever appropriate.	APO07-O2
APO07-BP5	Plan and track the usage of IT and business human resources. Understand and track the current and future demand for business and IT human resources with responsibilities for enterprise IT. Identify shortfalls and provide input into sourcing plans, enterprise and IT recruitment processes sourcing plans, and business and IT recruitment processes.	APO07-O1/O2
APO07-BP6	Manage contract staff. Ensure that consultants and contract personnel who support the enterprise with IT skills know and comply with the organisation's policies and meet agreed-on contractual requirements.	APO07-O2

Process ID	APO07 (cont.)	
Process Name	Manage Human Resources	
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM04-WP1	Guiding principles for allocation of resources and capabilities	APO07-BP1 APO07-O1/O2
EDM04-WP3	Approved resources plan	
EDM04-WP8	Remedial actions to address resource management deviations	
APO01-WP9	Definition of supervisory practices	
APO06-WP4	IT budget and plan	
APO06-WP5	Budget communications	
Outside COBIT	<ul style="list-style-type: none">Enterprise human resources (HR) policies and proceduresEnterprise goals and objectives	
Outside COBIT	Enterprise goals and objectives	APO07-BP3 APO0-O1/O2
EDM01-WP5	Reward system approach	
EDM04-WP8	Remedial actions to address resource management deviations	
BAI08-WP2	Published knowledge repositories	
BAI08-WP4	Knowledge awareness and training schemes	
DSS04-WP14	Training requirements	
DSS04-WP15	Monitoring results of skills and competencies	
EDM01-WP5	Reward system approach	APO07-BP4 APO07-O2
APO04-WP9	Recognition and reward programme	
BAI05-WP14	HR performance review results	
BAI05-WP7	Aligned HR performance objectives	
DSS06-WP6	Allocated access rights	
Outside COBIT	Enterprise goals and objectives	
EDM04-WP4	Communication of resourcing strategies	
EDM04-WP7	Feedback on allocation and effectiveness of resources and capabilities	APO07-BP5 APO07-O1/O2
APO06-WP7	Budget allocations	
BAI01-WP9	Resource requirements and roles	
BAI01-WP27	Project resource requirements	
BAI01-WP9	Resource requirements and roles	
BAI01-WP33	Communication of programme retirement and ongoing accountabilities	
Outside COBIT	<ul style="list-style-type: none">Current and future portfoliosEnterprise organisation structure	

3.0 Process Dimension and Process Performance Indicators

Process ID	APO07 (cont.)		
Process Name	Manage Human Resources		
Outputs			
Number	Description	Input to	Supports
APO07-WP1	Staffing requirement evaluations	Internal	APO07-BP1 APO07-O1/O2
APO07-WP2	Competency and career development plans	Internal	
APO07-WP3	Personnel sourcing plans	Internal	
APO07-WP4	Skills and competencies matrix	APO01.02 BAI01.02 BAI01.04	APO07-BP3 APO07-O2
APO07-WP5	Skills development plans	EDM04.01 APO01.02	
APO07-WP6	Review reports	Internal	
APO07-WP7	Personnel goals	Internal	APO07-BP4 APO07-O2
APO07-WP8	Performance evaluations	Internal	
APO07-WP9	Improvement plans	Internal	
APO07-WP10	Inventory of business and IT human resources	BAI01.04	APO07-BP5 APO07-O1/O2
APO07-WP11	Resourcing shortfall analyses	BAI01.06	APO07-BP5 APO07-O1/O2
APO07-WP12	Resource utilisation records	BAI01.06	
APO07-WP13	Contract staff policies	Internal	APO07-BP6 APO07-O2
APO07-WP14	Contract agreements	Internal	
APO07-WP15	Contract agreement reviews	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	APO08	
Process Name	Manage Relationships	
Process Description	Manage the relationship between the business and IT in a formalised and transparent way that ensures a focus on achieving a common and shared goal of successful enterprise outcomes in support of strategic goals and within the constraint of budgets and risk tolerance. Base the relationship on mutual trust, using open and understandable terms and common language and a willingness to take ownership and accountability for key decisions.	
Process Purpose Statement	Create improved outcomes, increased confidence, and trust in IT and effective use of resources.	
Outcomes (Os)		
Number	Description	
APO08-O1	Business strategies, plans and requirements are understood, documented and approved.	
APO08-O2	Good relationships exist between the enterprise and IT.	
APO08-O3	Business stakeholders are aware of technology-enabled opportunities.	
Base Practices (BPs)		
Number	Description	Supports
APO08-BP1	Understand business expectations. Understand current business issues and objectives and business expectations for IT. Ensure that requirements are understood, managed and communicated, and their status agreed on and approved.	APO08-O1
APO08-BP2	Identify opportunities, risk and constraints for IT to enhance the business. Identify potential opportunities for IT to be an enabler of enhanced enterprise performance.	APO08-O2
APO08-BP3	Manage business relationship. Manage the relationship with customers (business representatives). Ensure that relationship roles and responsibilities are defined and assigned, and communication is facilitated.	APO08-O3
APO08-BP4	Co-ordinate and communicate. Work with stakeholders and coordinate the end-to-end delivery of IT services and solutions provided to the business.	APO08-O2/O3
APO08-BP5	Provide input to the continual improvement of services. Continually improve and evolve IT-enabled services and service delivery to the enterprise to align with changing enterprise and technology requirements.	
Work Products (WPs)		
Inputs		
Number	Description	Supports
APO02-WP12	Strategic road map	APO08-BP1 APO08-O1
APO09-WP1	Identified gaps in IT services to the business	APO08-BP2 APO08-O2
APO09-WP8	Service level performance reports	
APO09-WP9	Improvement action plans and remediations	
APO11-WP11	Root causes of quality delivery failures	
BAI05-WP10	Operation and use plan	APO08-BP3 APO08-O3
BAI07-WP11	Supplemental support plan	
DSS02-WP5	Classified and prioritised incidents and service requests	
DSS02-WP11	Closed service requests and incidents	
DSS02-WP12	User confirmation of satisfactory fulfilment or resolution	
DSS02-WP13	Incident status and trends report	
DSS02-WP14	Request fulfilment status and trends report	
APO09-WP5	Service catalogues	APO08-BP4 APO08-O2/O3
APO09-WP6	SLAs	
APO11-WP7	Review results of quality of service, including customer feedback	
APO12-WP15	Risk impact communications	
BAI09-WP4	Communications of planned maintenance downtime	
DSS03-WP9	Communication of knowledge learned	

Process ID	APO08 (cont.)		
Process Name	Manage Relationships		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
APO11-WP5	Customer requirements for quality management	APO08-BP5 APO08-O2/O3	
APO11-WP8	Results of quality reviews and audits		
APO11-WP10	Results of solution and service delivery quality monitoring		
BAI03-WP14	Maintenance plan		
BAI05-WP11	Success measures and results		
BAI07-WP11	Supplemental support plan		
Outputs			
Number	Description	Input to	Supports
APO08-WP1	Clarified and agreed-on business expectations	Internal	APO08-BP1 APO08-O1
APO08-WP2	Agreed-on next steps and action plans	Internal	APO08-BP2 APO08-O2
APO08-WP3	Agreed-on key decisions	Internal	APO08-BP3 APO08-O3
APO08-WP4	Complaint and escalation status	Internal	
APO08-WP5	Communication plan	Internal	APO08-BP4 APO08-O2/O3
APO08-WP6	Communication packages	Internal	
APO08-WP7	Customer responses	Internal	
APO08-WP8	Satisfaction analyses	Internal	APO08-BP5 APO08-O2/O3
APO08-WP9	Definition of potential improvement projects	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO09	
Process Name	Manage Service Agreements	
Process Description	Align IT-enabled services and service levels with enterprise needs and expectations, including identification, specification, design, publishing, agreement, and monitoring of IT services, service levels and performance indicators.	
Process Purpose Statement	Ensure that IT services and service levels meet current and future enterprise needs.	
Outcomes (Os)		
Number	Description	
APO09-O1	The enterprise can effectively utilise IT services as defined in a catalogue.	
APO09-O2	Service agreements reflect enterprise needs and the capabilities of IT.	
APO09-O3	IT services perform as stipulated in service agreements.	
Base Practices (BPs)		
Number	Description	Supports
APO09-BP1	Identify IT services. Analyse business requirements and the way in which IT-enabled services and service levels support business processes. Discuss and agree on potential services and service levels with the business, and compare them with the current service portfolio to identify new or changed services or service level options.	APO09-O1
APO09-BP2	Catalogue IT-enabled services. Define and maintain one or more service catalogues for relevant target groups. Publish and maintain live IT-enabled services in the service catalogues.	APO09-O1
APO09-BP3	Define and prepare service agreements. Define and prepare service agreements based on the options in the service catalogues. Include internal operational agreements.	APO09-O1/O2
APO09-BP4	Monitor and report service levels. Monitor service levels, report on achievements and identify trends. Provide the appropriate management information to aid performance management.	APO09-O3
APO09-BP5	Review service agreements and contracts. Conduct periodic reviews of the service agreements and revise when needed.	APO09-O3
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM04-WP1	Guiding principles for allocation of resources and capabilities	APO09-BP2 APO09-O1
EDM04-WP3	Approved resources plan	
EDM04-WP4	Communication of resourcing strategies	
APO02-WP8	Gaps and changes required to realise target capability	
APO02-WP9	Value benefit statement for target environment	
APO05-WP10	Updated portfolios of programmes, services and assets	
APO06-WP4	IT budget and plan	
APO06-WP5	Budget communications	
APO06-WP7	Budget allocations	
APO08-WP9	Definition of potential improvement projects	
BAI10-WP4	Configuration baseline	
BAI10-WP6	Approved changes to baseline	
BAI10-WP7	Configuration status reports	
APO11-WP5	Customer requirements for quality management	APO09-BP3 APO09-O1/O2

Process ID	APO09 (cont.)		
Process Name	Manage Service Agreements		
Work Products (WPs) (cont.)			
Inputs			
Number	Description	Supports	
EDM04-WP8	Remedial actions to address resource management deviations	APO09-BP4 APO09-O3	
APO05-WP9	Investment portfolio performance reports		
APO05-WP11	Benefit results and related communications		
APO05-WP12	Corrective actions to improve benefit realisation		
APO08-WP8	Satisfaction analyses		
APO11-WP8	Results of quality reviews and audits		
APO11-WP11	Root causes of quality delivery failures		
APO11-WP10	Results of solution and service delivery quality monitoring		
EDM04-WP7	Feedback on allocation and effectiveness of resources and capabilities	APO09-BP5 APO09-O3	
APO11-WP7	Review results of quality of service, including customer feedback		
APO11-WP8	Results of quality reviews and audits		
BAI04-WP2	Evaluations against SLAs		
Outputs			
Number	Description	Input to	Supports
APO09-WP1	Identified gaps in IT services to the business	APO02.02 APO05.03 APO08.02	APO09-BP1 APO09-O1
APO09-WP2	Definitions of standard services	APO02.02 APO05.03 APO08.02	
APO09-WP3	Service definitions	APO05.01	
APO09-WP4	Updated service portfolio	APO05.01 DSS01.03	APO09-BP2 APO09-O2
APO09-WP5	Service catalogues	APO05.05	
APO09-WP6	SLAs	APO08.05	APO09-BP3 APO09-O1
APO09-WP7	Operational level agreements (OLAs)	APO05.03 APO08.04 DSS04.01 DSS04.02 DSS05.02 DSS05.03 DSS06.01 DSS06.04	APO09-BP4 APO09-O1/O2
APO09-WP8	Service level performance reports	DSS01.02 DSS04.07 DSS05.03 DSS06.03	
APO09-WP9	Improvement action plans and remediations	APO08.02 MEA01.03	
APO09-WP10	Updated SLAs	APO02.02 APO08.02	APO09-BP5 APO09-O3

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO10		
Process Name	Manage Suppliers		
Process Description	Manage IT-related services provided by all types of suppliers to meet enterprise requirements, including the selection of suppliers, management of relationships, management of contracts, and reviewing and monitoring of supplier performance for effectiveness and compliance.		
Process Purpose Statement	Minimise the risk associated with non-performing suppliers and ensure competitive pricing.		
Outcomes (Os)			
Number	Description		
APO10-O1	Suppliers perform as agreed.		
APO10-O2	Supplier risk is assessed and properly addressed.		
APO10-O3	Supplier relationships are working effectively.		
Base Practices (BPs)			
Number	Description	Supports	
APO10-BP1	Identify and evaluate supplier relationships and contracts. Identify suppliers and associated contracts and categorise them into type, significance and criticality. Establish supplier and contract evaluation criteria and evaluate the overall portfolio of existing and alternative suppliers and contracts.	APO10-O3	
APO10-BP2	Select suppliers. Select suppliers according to a fair and formal practice to ensure a viable best fit based on specified requirements. Requirements should be optimised with input from potential suppliers.	APO10-O1/O3	
APO10-BP3	Manage supplier relationships and contracts. Formalise and manage the supplier relationship for each supplier. Manage, maintain and monitor contracts and service delivery. Ensure that new or changed contracts conform to enterprise standards and legal and regulatory requirements. Deal with contractual disputes.	APO10-O3	
APO10-BP4	Manage supplier risk. Identify and manage risk relating to suppliers' ability to continually provide secure, efficient and effective service delivery.	APO10-O2	
APO10-BP5	Monitor supplier performance and compliance. Periodically review the overall performance of suppliers, compliance to contract requirements, and value for money, and address identified issues.	APO10-O1/O3	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
Outside COBIT	Supplier contracts	APO10-BP1 APO10-O3	
BAI03-WP4	Approved acquisition plans	APO10-BP3 APO10-O1/O3	
Outputs			
Number	Description	Input to	Supports
APO10-WP1	Supplier significance and evaluation criteria	Internal	APO10-BP1 APO10-O3
APO10-WP2	Supplier catalogue	BAI02.02	
APO10-WP3	Potential revisions to supplier contracts	Internal	APO10-BP3 APO10-O1/O3
APO10-WP4	Supplier roles and responsibilities	Internal	
APO10-WP5	Communication and review process	Internal	
APO10-WP6	Review results and suggested improvements	Internal	
APO10-WP7	Identified supplier delivery risk	APO12.03 BAI01.01	APO10-BP4 APO10-O2
APO10-WP8	Identified contract requirements to minimise risk	Internal	
APO10-WP9	Supplier compliance monitoring criteria	Internal	APO10-BP5 APO10-O1
APO10-WP10	Supplier compliance monitoring review results	MEA01.03	
APO10-WP11	Supplier requests for information (RFIs) and requests for proposals (RFPs)	BAI02.01	APO10-BP2 APO10-O1/O3
		BAI02.02	
APO10-WP12	RFI and RFP evaluations	BAI02.02	APO10-BP2 APO10-O1/O3
APO10-WP13	Decision results of supplier evaluations	EDM04.01 BAI02.02	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	APO11	
Process Name	Manage Quality	
Process Description	Define and communicate quality requirements in all processes, procedures and the related enterprise outcomes, including controls, ongoing monitoring, and the use of proven practices and standards in continuous improvement and efficiency efforts.	
Process Purpose Statement	Ensure the consistent delivery of solutions and services to meet the quality requirements of the enterprise and satisfy stakeholder needs.	
Outcomes (Os)		
Number	Description	
APO11-O1	Stakeholders are satisfied with the quality of solutions and services.	
APO11-O2	Project and service delivery results are predictable.	
APO11-O3	Quality requirements are implemented in all processes.	
Base Practices (BPs)		
Number	Description	Supports
APO11-BP1	Establish a quality management system (QMS). Establish and maintain a QMS that provides a standard, formal and continuous approach to quality management for information, enabling technology and business processes that are aligned with business requirements and enterprise quality management.	APO11-O3
APO11-BP2	Define and manage quality standards, practices and procedures. Identify and maintain requirements, standards, procedures and practices for key processes to guide the enterprise in meeting the intent of the agreed-on QMS. This should be in line with the IT control framework requirements. Consider certification for key processes, organisation units, products or services.	
APO11-BP3	Focus quality management on customers. Focus quality management on customers by determining their requirements and ensuring alignment with the quality management practices.	APO11-O1/O2
APO11-BP4	Perform quality monitoring, control and reviews. Monitor the quality of processes and services on an ongoing basis as defined by the QMS. Define, plan and implement measurements to monitor customer satisfaction with quality as well as the value the QMS provides. The information gathered should be used by the process owner to improve quality.	APO11-O2/O3
APO11-BP5	Integrate quality management into solutions for development and service delivery. Incorporate relevant quality management practices into the definition, monitoring, reporting and ongoing management of solutions development and service offerings.	APO11-O1/O3
APO11-BP6	Maintain continuous improvement. Maintain and regularly communicate an overall quality plan that promotes continuous improvement. This should include the need for, and benefits of, continuous improvement. Collect and analyse data about the QMS, and improve its effectiveness. Correct non-conformities to prevent recurrence. Promote a culture of quality and continual improvement.	
Work Products (WPs)		
Inputs		
Number	Description	Supports
Outside COBIT	Enterprisewide quality system	APO11-BP1 APO11-O3
Outside COBIT	<ul style="list-style-type: none">• Industry good practices• Available quality certifications	APO11-BP2 APO11-O3
BAI02-WP9	Approved quality reviews	APO11-BP4 APO11-O2/O3
BAI03-WP7	Quality assurance plan	
BAI03-WP8	Quality review results, exceptions and corrections	

Process ID APO11 (cont.)			
Process Name Manage Quality			
Outputs			
Number	Description	Input to	Supports
APO11-WP1	QMS roles, responsibilities and decision rights	APO01.02 DSS06.02	APO11-BP1 APO11-O3
APO11-WP2	Quality management plans	BAI01.09	
APO11-WP3	Results of QMS effectiveness reviews	BAI03.06	
APO11-WP4	Quality management standards	All APO All BAI All DSS All MEA	APO11-BP2 APO11-O3
APO11-WP5	Customer requirements for quality management	APO08.05 APO09.04 BAI01.09	APO11-BP3 APO11-O1/O2
APO11-WP6	Acceptance criteria	BAI02.01 BAI02.02	
APO11-WP7	Review results of quality of service, including customer feedback	APO08.05 APO09.06 BAI05.01 BAI07.07	
APO11-WP8	Results of quality reviews and audits	APO08.05 APO09.05 APO09.06 BAI07.08	APO11-BP4 APO11-O2/O3
APO11-WP9	Process quality of service goals and metrics	All APO All BAI All DSS All MEA	
APO11-WP10	Results of solution and service delivery quality monitoring	APO08.05 APO09.05 BAI07.08	APO11-BP5 APO11-O1/O3
APO11-WP11	Root causes of quality delivery failures	APO08.02 APO09.05 BAI07.08	
APO11-WP12	Communications on continual improvement and best practices	All APO All BAI All DSS All MEA	APO11-BP6 APO11-O1/O3
APO11-WP13	Examples of good practice to be shared	All APO All BAI All DSS All MEA	
APO11-WP14	Quality review benchmark results	All APO All BAI All DSS All MEA	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO12	
Process Name	Manage Risk	
Process Description	Continually identify, assess and reduce IT-related risk within levels of tolerance set by enterprise executive management.	
Process Purpose Statement	Integrate the management of IT-related enterprise risk with overall ERM, and balance the costs and benefits of managing IT-related enterprise risk.	
Outcomes (Os)		
Number	Description	
APO12-O1	IT-related risk is identified, analysed, managed and reported.	
APO12-O2	A current and complete risk profile exists.	
APO12-O3	All significant risk management actions are managed and under control.	
APO12-O4	Risk management actions are implemented effectively	
Base Practices (BPs)		
Number	Description	Supports
APO12-BP1	Collect data. Identify and collect relevant data to enable effective IT-related risk identification, analysis and reporting.	APO12-O1
APO12-BP2	Analyse risk. Develop useful information to support risk decisions that take into account the business relevance of risk factors.	APO12-O1/O4
APO12-BP3	Maintain a risk profile. Maintain an inventory of known risk and risk attributes (including expected frequency, potential impact, and responses) and of related resources, capabilities, and current control activities.	APO12-O2
APO12-BP4	Articulate risk. Provide information on the current state of IT-related exposures and opportunities in a timely manner to all required stakeholders for appropriate response.	APO12-O3/O4
APO12-BP5	Define a risk management action portfolio. Manage opportunities to reduce risk to an acceptable level as a portfolio.	
APO12-BP6	Respond to risk. Respond in a timely manner with effective measures to limit the magnitude of loss from IT-related events.	APO12-O3
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM03-WP3	Evaluation of risk management activities	APO12-BP1 APO12-O1
EDM03-WP4	Risk management policies	
EDM03-WP5	Key objectives to be monitored for risk management	
EDM03-WP6	Approved process for measuring risk management	
DSS02-WP13	Incident status and trends report	
Outside COBIT	Threat advisories	APO12-BP2 APO12-O1/O4
DSS04-WP4	Business impact analyses	
DSS05-WP2	Evaluations of potential threats	
EDM03-WP1	Risk appetite guidance	APO12-BP3 APO12-O2
EDM03-WP2	Approved risk tolerance levels	
APO10-WP7	Identified supplier delivery risk	
DSS05-WP2	Evaluations of potential threats	APO12-BP6 APO12-O3
EDM03-WP7	Remedial actions to address risk management deviations	

Process ID APO12 (cont.)			
Process Name Manage Risk			
Outputs			
Number	Description	Input to	Supports
APO12-WP1	Data on the operating environment relating to risk	Internal	APO12-BP1 APO12-O1
APO12-WP2	Data on risk events and contributing factors	Internal	
APO12-WP3	Emerging risk issues and factors	EDM03.01 APO01.03 APO02.02	
APO12-WP4	Scope of risk analysis efforts	Internal	APO12-BP2 APO12-O1/O4
APO12-WP5	IT risk scenarios	Internal	
APO12-WP6	Risk analysis results	EDM03.03 APO01.03 APO02.02 BAI01.10	
APO12-WP7	Documented risk scenarios by line of business and function	Internal	APO12-BP3 APO12-O2
APO12-WP8	Aggregated risk profile, including status of risk management actions	APO02.02	
APO12-WP9	Risk analysis and risk profile reports for stakeholders	EDM03.03 EDM05.02 MEA02.08	APO12-BP4 APO12-O3/O4
APO12-WP10	Review results of third-party risk assessments	EDM03.03 MEA02.01	
APO12-WP11	Opportunities for acceptance of greater risk	EDM03.03	
APO12-WP12	Project proposals for reducing risk	APO02.02	APO12-BP5 APO12-O3/O4
APO12-WP13	Risk-related incident response plans	DSS04.05	APO12-BP6 APO12-O3
APO12-WP14	Risk impact communications	APO01.04 APO08.04 DSS05.07 DSS06.02	
APO12-WP15	Risk-related root causes	DSS04.03 DSS05.01 DSS05.02 DSS05.07 DSS06.02	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	APO13		
Process Name	Manage Security		
Process Description	Define operate and monitor a system for information security management.		
Process Purpose Statement	Keep the impact and occurrence of information security incidents within the enterprise's risk appetite levels.		
Outcomes (Os)			
Number	Description		
APO13-O1	A system is in place that considers and effectively addresses enterprise information security requirements.		
APO13-O2	A security plan has been established, accepted and communicated throughout the enterprise.		
APO13-O3	Information security solutions are implemented and operated consistently throughout the enterprise.		
Base Practices (BPs)			
Number	Description	Supports	
APO13-BP1	Establish and maintain an information security management system (ISMS). Establish and maintain an ISMS that provides a standard, formal and continuous approach to security management for information, enabling secure technology and business processes that are aligned with business requirements and enterprise security management.	APO13-O1	
APO13-BP2	Define and manage an information security risk treatment plan. Maintain an information security plan that describes how information security risk is to be managed and aligned with the enterprise strategy and enterprise architecture. Ensure that recommendations for implementing security improvements are based on approved business cases and implemented as an integral part of services and solutions development, then operated as an integral part of business operation	APO13-O2	
APO13-BP3	Monitor and review the ISMS. Maintain and regularly communicate the need for, and benefits of, continuous information security improvement. Collect and analyse data about the ISMS, and improve the effectiveness of the ISMS. Correct non-conformities to prevent recurrence. Promote a culture of security and continual improvement.	APO13-O1/O3	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
Outside COBIT	Enterprise security approach	APO13-BP1 APO13-O1	
APO02-WP8	Gaps and changes required to realise target capability	APO13-BP2 APO13-O2	
APO03-WP4	Baseline domain descriptions and architecture definition		
APO12-WP13	Project proposals for reducing risk		
DSS02-WP5	Classified and prioritised incidents and service requests	APO13-BP3 APO13-O1/O3	
Outputs			
Number	Description	Input to	Supports
APO13-WP1	ISMS policy	Internal	APO13-BP1 APO13-O1
APO13-WP2	ISMS scope statement	APO01.02 DSS06.03	
APO13-WP3	Information security risk treatment plan	All EDM All APO All BAI All DSS All MEA	APO13-BP2 APO13-O2
APO13-WP4	Information security business cases	APO02.05	
APO13-WP5	ISMS audit reports	MEA02.01	APO13-BP3 APO13-O1/O3
APO13-WP6	Recommendations for improving the ISMS	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.3 build, Acquire And Implement (bAI)

- 01** Manage programmes and projects.
- 02** Manage requirements definition.
- 03** Manage solutions identification and build.
- 04** Manage availability and capacity.
- 05** Manage organisational change enablement.
- 06** Manage changes.
- 07** Manage change acceptance and transitioning.
- 08** Manage knowledge.
- 09** Manage assets.
- 10** Manage configuration.

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3.0 Process Dimension and Process Performance Indicators

Process ID	BAI01	
Process Name	Manage Programmes and Projects	
Process Description	Manage all programmes and projects from the investment portfolio in alignment with enterprise strategy and in a co-ordinated way. Initiate, plan, control, and execute programmes and projects, and close with a post-implementation review.	
Process Purpose Statement	Realise business benefits and reduce the risk of unexpected delays, costs and value erosion by improving communication to and involvement of business and end users, ensuring the value and quality of project deliverables, and maximising their contribution to the investment and services portfolio.	
Outcomes (Os)		
Number	Description	
BAI01-O1	Relevant stakeholders are engaged in the programmes and projects.	
BAI01-O2	The scope and outcomes of programmes and projects are viable and aligned with objectives.	
BAI01-O3	Programme and project plans are likely to achieve the expected outcomes.	
BAI01-O4	The programme and project activities are executed according to the plans.	
BAI01-O5	There are sufficient programme and project resources to perform activities according to the plans.	
BAI01-O6	The programme and project expected benefits are achieved and accepted.	
Base Practices (BPs)		
Number	Description	Supports
BAI01-BP1	Maintain a standard approach for programme and project management. Maintain a standard approach for programme and project management that enables governance and management review and decision making and delivery management activities focussed on achieving value and goals (requirements, risk, costs, schedule, quality) for the business in a consistent manner.	BAI01-O2
BAI01-BP2	Initiate a programme. Initiate a programme to confirm the expected benefits and obtain authorisation to proceed. This includes agreeing on programme sponsorship, confirming the programme mandate through approval of the conceptual business case, appointing programme board or committee members, producing the programme brief, reviewing and updating the business case, developing a benefits realisation plan, and obtaining approval from sponsors to proceed.	BAI01-O1
BAI01-BP3	Manage stakeholder engagement. Manage stakeholder engagement to ensure an active exchange of accurate, consistent and timely information that reaches all relevant stakeholders. This includes planning, identifying and engaging stakeholders and managing their expectations.	
BAI01-BP4	Develop and maintain the programme plan. Formulate a programme to lay the initial groundwork and to position it for successful execution by formalising the scope of the work to be accomplished and identifying the deliverables that will satisfy its goals and deliver value. Maintain and update the programme plan and business case throughout the full economic life cycle of the programme, ensuring alignment with strategic objectives and reflecting the current status and updated insights gained to date.	BAI01-O3
BAI01-BP5	Launch and execute the programme. Launch and execute the programme to acquire and direct the resources needed to accomplish the goals and benefits of the programme as defined in the programme plan. In accordance with stage-gate or review criteria, prepare for stage-gate, iteration or release reviews to report on the progress of the programme and to be able to make the case for funding up to the following stage-gate or release review.	BAI01-O4
BAI01-BP6	Monitor, control and report on the programme outcomes. Monitor and control programme (solution delivery) and enterprise (value/outcome) performance against plan throughout the full economic life cycle of the investment. Report this performance to the programme steering committee and the sponsors.	BAI01-O6
BAI01-BP7	Start up and initiate projects within a programme. Define and document the nature and scope of the project to confirm and develop amongst stakeholders a common understanding of project scope and how it relates to other projects within the overall IT-enabled investment programme. The definition should be formally approved by the programme and project sponsors.	BAI01-O2
BAI01-BP8	Plan projects. Establish and maintain a formal, approved integrated project plan (covering business and IT resources) to guide project execution and control throughout the life of the project. The scope of projects should be clearly defined and tied to building or enhancing business capability.	BAI01-O3

Process ID	BAI01 (cont.)	
Process Name	Manage Programmes and Projects	
Base Practices (BPs) (cont.)		
Number	Description	Supports
BAI01-BP9	Manage programme and project quality. Prepare and execute a quality management plan, processes and practices, aligned with the QMS that describes the programme and project quality approach and how it will be implemented. The plan should be formally reviewed and agreed on by all parties concerned and then incorporated into the integrated programme and project plans.	BAI01-O4/O5
BAI01-BP10	Manage programme and project risk. Eliminate or minimise specific risk associated with programmes and projects through a systematic process of planning, identifying, analysing, responding to, and monitoring and controlling the areas or events that have the potential to cause unwanted change. Risk faced by programme and project management should be established and centrally recorded.	BAI01-O5
BAI01-BP11	Monitor and control projects. Measure project performance against key project performance criteria such as schedule, quality, cost and risk. Identify any deviations from the expected. Assess the impact of deviations on the project and overall programme, and report results to key stakeholders.	BAI01-O4/O6
BAI01-BP12	Manage project resources and work packages. Manage project by work packages by placing formal requirements on authorising and accepting work packages, and assigning and co-ordinating appropriate business and IT resources.	BAI01-O4
BAI01-BP13	Close a project or iteration. At the end of each project, release or iteration, require the project stakeholders to ascertain whether the project, release or iteration delivered the planned results and value. Identify and communicate any outstanding activities required to achieve the planned results of the project and the benefits of the programme, and identify and document lessons learned for use on future projects, releases, iterations and programmes.	BAI01-O4/O6
BAI01-BP14	Close a programme. Remove the programme from the active investment portfolio when there is agreement that the desired value has been achieved or when it is clear it will not be achieved within the value criteria set for the programme.	
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM02-WP4	Requirements for stage-gate reviews	BAI01-BP1 BAI01-O2
EDM02-WP6	Actions to improve value delivery	
APO03-WP10	Implementation phase descriptions	
APO03-WP11	Architecture governance requirements	
APO05-WP10	Updated portfolios of programmes, services and assets	
APO10-WP7	Identified supplier delivery risk	
APO03-WP9	Resource requirements	
APO03-WP10	Implementation phase descriptions	BAI01-BP2 BAI01-O1
APO05-WP6	Programme business case	
APO07-WP4	Skills and competencies matrix	
BAI05-WP4	Common vision and goals	
APO05-WP8	Selected programmes with ROI milestones	
APO07-WP10	Inventory of business and IT human resources	BAI01-BP4 BAI01-O3
BAI05-WP3	Implementation team and roles	
BAI05-WP5	Vision communication plan	
BAI05-WP8	Identified quick wins	
BAI07-WP4	Approved acceptance test plan	
BAI07-WP8	Approved acceptance and release for production	BAI01-BP5 BAI01-O4
BAI05-BP3	Communicate desired vision	

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI01 (cont.)		
Process Name	Manage Programmes and Projects		
Work Products (WPs) (cont.)			
Inputs			
Number	Description	Supports	
EDM02-WP5	Feedback on portfolio and programme performance	BAI01-BP6 BAI01-O6	
APO05-WP5	Investment return expectations		
APO05-WP7	Business case assessments		
APO05-WP9	Investment portfolio performance reports		
APO05-WP11	Benefit results and related communications		
APO05-WP12	Corrective actions to improve benefit realisation		
APO07-WP11	Resourcing shortfall analyses		
APO07-WP12	Resource utilisation records		
BAI05-WP9	Communication of benefits		
BAI06-WP5	Change request status reports		
BAI07-WP7	Evaluation of results		
BAI07-WP4	Approved acceptance test plan		
APO11-WP2	Quality management plans	BAI01-BP9 BAI01-O4/O5	
APO11-WP5	Customer requirements for quality management	BAI01-BP10 BAI01-O5	
APO12-WP6	Risk analysis results		
BAI02-WP6	Requirements risk register		
BAI02-WP7	Risk mitigation actions		
Outside COBIT	Enterprise risk management framework	BAI01-BP13 BAI01-O4/O6	
BAI07-WP12	Post-implementation review		
BAI07-WP13	Remedial action plan		
Outputs			
Number	Description	Input to	Supports
BAI01-WP1	Updated programme and project management approaches	Internal	BAI01-BP1 BAI01-O2
BAI01-WP2	Stakeholder engagement plan	Internal	BAI01-BP3
BAI01-WP3	Results of stakeholder engagement effectiveness assessments	Internal	BAI01-O1
BAI01-WP4	Programme concept business case	APO05.03	BAI01-BP2 BAI01-O1
BAI01-WP5	Programme mandate and brief	APO05.03	
BAI01-WP6	Programme benefit realisation plan	APO05.03 APO06.05	
BAI01-WP7	Programme plan	Internal	BAI01-BP4 BAI01-O3
BAI01-WP8	Programme budget and benefits register	APO05.06 APO06.05	
BAI01-WP9	Resource requirements and roles	APO07.05 APO07.06	
BAI01-WP10	Results of benefit realisation monitoring	APO05.06 APO06.05	BAI01-BP5 BAI01-O4
BAI01-WP11	Results of programme goal achievement monitoring	APO02.04	
BAI01-WP12	Results of programme performance reviews	MEA01.03	BAI01-BP6 BAI01-O6
BAI01-WP13	Stage-gate review results	EDM02.01 APO02.04 APO05.04	

Process ID	BAI01 (cont.)		
Process Name	Manage Programmes and Projects		
Outputs (cont.)			
Number	Description	Input to	Supports
BAI01-WP14	Project plans	Internal	BAI01-BP8 BAI01-O3
BAI01-WP15	Project baseline	Internal	
BAI01-WP16	Project reports and communications	Internal	
BAI01-WP17	Quality management plan	BAI02.04 BAI03.06 BAI07.01	BAI01-BP9 BAI01-O4/O5
BAI01-WP18	Requirements for independent verification of deliverables	BAI07.03	
BAI01-WP19	Project scope statements	Internal	BAI01-BP7 BAI01-O2
BAI01-WP20	Project definitions	Internal	
BAI01-WP21	Project risk management plan	Internal	BAI01-BP10 BAI01-O5
BAI01-WP22	Project risk assessment results	Internal	
BAI01-WP23	Project risk register	Internal	
BAI01-WP24	Project performance criteria	Internal	BAI01-BP11 BAI01-O4/O6
BAI01-WP25	Project progress reports	Internal	
BAI01-WP26	Agreed-on changes to project plan	Internal	
BAI01-WP27	Project resource requirements	APO07.05 APO07.06	BAI01-BP12 BAI01-O4
BAI01-WP28	Project roles and responsibilities	Internal	
BAI01-WP29	Gaps in project planning	Internal	
BAI01-WP30	Post-implementation review results	APO02.04	BAI01-BP13 BAI01-O4/O6
BAI01-WP31	Project lessons learned	Internal	
BAI01-WP32	Stakeholder project acceptance confirmations	Internal	
BAI01-WP33	Communication of programme retirement and ongoing accountabilities	APO05.05 APO07.06	BAI01-BP14 BAI01-O4/O6

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI02	
Process Name	Manage Requirements Definition	
Process Description	Identify solutions and analyse requirements before acquisition or creation to ensure that they are in line with enterprise strategic requirements covering business processes, applications, information/data, infrastructure and services. Co-ordinate with affected stakeholders the review of feasible options including relative costs and benefits, risk analysis, and approval of requirements and proposed solutions.	
Process Purpose Statement	Create feasible optimal solutions that meet enterprise needs while minimising risk.	
Outcomes (Os)		
Number	Description	
BAI02-O1	Business functional and technical requirements reflect enterprise needs and expectations.	
BAI02-O2	The proposed solution satisfies business functional, technical and compliance requirements.	
BAI02-O3	Risk associated with the requirements has been addressed in the proposed solution.	
BAI02-O4	Requirements and proposed solutions meet business case objectives (value expected and likely costs).	
Base Practices (BPs)		
Number	Description	Supports
BAI02-BP1	Define and maintain business functional and technical requirements. Based on the business case, identify, prioritise, specify and agree on business information, functional, technical and control requirements covering the scope/understanding of all initiatives required to achieve the expected outcomes of the proposed IT-enabled business solution.	BAI02-O1
BAI02-BP2	Perform a feasibility study and formulate alternative solutions. Perform a feasibility study of potential alternative solutions, assess their viability and select the preferred option. If appropriate, implement the selected option as a pilot to determine possible improvements.	BAI02-O2/O4
BAI02-BP3	Manage requirements risk. Identify, document, prioritise and mitigate functional, technical and information processing-related risks associated with the enterprise requirements and proposed solution.	BAI02-O3
BAI02-BP4	Obtain approval of requirements and solutions. Co-ordinate feedback from affected stakeholders and, at predetermined key stages, obtain business sponsor or product owner approval and sign-off on functional and technical requirements, feasibility studies, risk analyses and recommended solutions.	BAI02-O1
Work Products (WPs)		
Inputs		
Number	Description	Supports
APO01-WP14	Data classification guidelines	BAI02-BP1 BAI02-O1
APO01-WP15	Data security and control guidelines	
APO01-WP16	Data integrity procedures	
APO03-WP2	Architecture principles	
APO03-WP4	Baseline domain descriptions and architecture definition	
APO03-WP6	Information architecture model	
APO03-WP12	Solution development guidance	
APO10-WP11	Supplier RFIs and RFPs	
APO11-WP6	Acceptance criteria	
APO03-WP12	Solution development guidance	
APO10-WP2	Supplier catalogue	BAI02-BP2 BAI02-O2/O4
APO10-WP12	RFI and RFP evaluations	
APO10-WP13	Decision results of supplier evaluations	
APO11-WP6	Acceptance criteria	
BAI01-WP17	Quality management plan	BAI02-BP4 BAI02-O1

Process ID	BAI02 (cont.)		
Process Name	Manage Requirements Definition		
Outputs			
Number	Description	Input to	Supports
BAI02-WP1	Requirements definition repository	BAI03.01 BAI03.02 BAI04.01 BAI05.01	BAI02-BP1 BAI02-O1
BAI02-WP2	Confirmed acceptance of requirements from stakeholders	BAI03.01 BAI03.02 BAI04.03 BAI05.01 BAI05.02	
BAI02-WP3	Record of requirement change requests	BAI03.09	
BAI02-WP4	Feasibility study report	BAI03.02 BAI03.03	BAI02-BP2 BAI02-O2/O4
BAI02-WP5	High-level acquisition/development plan	BAI03.01	
BAI02-WP6	Requirements risk register	BAI01.10 BAI03.02 BAI04.01 BAI05.01 BAI02-O3	BAI02-BP3
BAI02-WP7	Risk mitigation actions	BAI01.10 BAI03.02 BAI05.01	
BAI02-WP8	Sponsor approvals of requirements and proposed solutions	BAI03.02 BAI03.03 BAI03.04 BAI02-01	BAI02-BP4
BAI02-WP9	Approved quality reviews	AP011.02	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI03	
Process Name	Manage Solutions Identification and Build	
Process Description	Establish and maintain identified solutions in line with enterprise requirements covering design, development, procurement/sourcing and partnering with suppliers/vendors. Manage configuration, test preparation, testing, requirements management and maintenance of business processes, applications, information/data, infrastructure and services.	
Process Purpose Statement	Establish timely and cost-effective solutions capable of supporting enterprise strategic and operational objectives.	
Outcomes (Os)		
Number	Description	
BAI03-O1	The solution design, including relevant components, meets enterprise needs, aligns with standards and addresses all identified risk.	
BAI03-O2	The solution conforms to the design, is in accordance with organisational standards, and has appropriate control, security and auditability.	
BAI03-O3	The solution is of acceptable quality and has been successfully tested.	
BAI03-O4	Approved changes to requirements are correctly incorporated into the solution.	
BAI03-O5	Maintenance activities successfully address business and technological needs.	
Base Practices (BPs)		
Number	Description	Supports
BAI03-BP1	Design high-level solutions. Develop and document high-level designs using agreed-on and appropriate phased or rapid agile development techniques. Ensure alignment with the IT strategy and enterprise architecture. Reassess and update the designs when significant issues occur during detailed design or building phases or as the solution evolves. Ensure that stakeholders actively participate in the design and approve each version.	BAI03-O1/O2
BAI03-BP2	Design detailed solution components. Develop, document and elaborate detailed designs progressively using agreed-on and appropriate phased or rapid agile development techniques, addressing all components (business processes and related automated and manual controls, supporting IT applications, infrastructure services and technology products, and partners/suppliers). Ensure that the detailed design includes internal and external SLAs and OLAs.	
BAI03-BP3	Develop solution components. Develop solution components progressively in accordance with detailed designs following development methods and documentation standards, quality assurance (QA) requirements, and approval standards. Ensure that all control requirements in the business processes, supporting IT applications and infrastructure services, services and technology products, and partners/suppliers are addressed.	BAI03-O2/O3
BAI03-BP4	Procure solution components. Procure solution components based on the acquisition plan in accordance with requirements and detailed designs, architecture principles and standards, and the enterprise's overall procurement and contract procedures, QA requirements, and approval standards. Ensure that all legal and contractual requirements are identified and addressed by the supplier.	BAI03-O1/O2
BAI03-BP5	Build solutions. Install and configure solutions and integrate with business process activities. Implement control, security and audit ability measures during configuration, and during integration of hardware and infrastructural software, to protect resources and ensure availability and data integrity. Update the services catalogue to reflect the new solutions.	BAI03-O1
BAI03-BP6	Perform quality assurance (QA). Develop, resource and execute a QA plan aligned with the QMS to obtain the quality specified in the requirements definition and the enterprise's quality policies and procedures.	BAI03-O3
BAI03-BP7	Prepare for solution testing. Establish a test plan and required environments to test the individual and integrated solution components, including the business processes and supporting services, applications and infrastructure.	
BAI03-BP8	Execute solution testing. Execute testing continually during development, including control testing, in accordance with the defined test plan and development practices in the appropriate environment. Engage business process owners and end users in the test team. Identify, log and prioritise errors and issues identified during testing.	BAI03-O4
BAI03-BP9	Manage changes to requirements. Track the status of individual requirements (including all rejected requirements) throughout the product life cycle and manage the approval of changes to requirements.	

Process ID	BAI03 (cont.)	
Process Name	Manage Solutions Identification and Build	
Base Practices (BPs) (cont.)		
Number	Description	Supports
BAI03-BP10	Maintain solutions. Develop and execute a plan for the maintenance of solution and infrastructure components. Include periodic reviews against business needs and operational requirements	BAI03-O5
BAI03-BP11	Define IT services and maintain the service portfolio. Define and agree on new or changed IT services and service level options. Document new or changed service definitions and service level options to be updated in the services portfolio.	BAI03-O1/O2
Work Products (WPs)		
Inputs		
Number	Description	Supports
APO03-WP2	Architecture principles	BAI03-BP1 BAI03-O1/O2
APO03-WP4	Baseline domain descriptions and architecture definition	
APO04-WP2	Research analyses of innovation possibilities	
APO04-WP3	Evaluations of ideas for innovation	
BAI02-WP1	Requirements definition repository	
BAI02-WP2	Confirmed acceptance of requirements from stakeholders	
BAI02-WP5	High-level acquisition/development plan	
APO03-WP6	Information architecture model	BAI03-BP2 BAI03-O1/O2
APO03-WP12	Solution development guidance	
APO04-WP10	Assessments of the use of innovative approaches	
BAI02-WP1	Requirements definition repository	
BAI02-WP2	Confirmed acceptance of requirements from stakeholders	
BAI02-WP6	Requirements risk register	
BAI02-WP7	Risk mitigation actions	
BAI02-WP8	Sponsor approvals of requirements and proposed solutions	BAI03-BP3 BAI03-O2/O3
BAI02-WP4	Feasibility study report	
APO11-WP3	Results of QMS effectiveness reviews	BAI03-BP6 BAI03-O3
BAI01-WP17	Quality management plan	
APO04-WP7	Analysis of rejected initiatives	BAI03-BP8 BAI03-O3
APO04-WP6	Results and recommendations from proof-of-concept initiatives	
BAI02-WP3	Record of requirement change requests	BAI03-BP9 BAI03-O4
EDM04-WP1	Guiding principles for allocation of resources and capabilities	
APO02-WP9	Value benefit statement for target environment	BAI03-BP11 BAI03-O1/O2
APO06-WP5	Budget communications	
APO06-WP7	Budget allocations	
APO08-WP9	Definition of potential improvement projects	
BAI10-WP4	Configuration baseline	
BAI10-WP6	Approved changes to baseline	
BAI10-WP7	Configuration status reports	

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI03 (cont.)		
Process Name	Manage Solutions Identification and Build		
Outputs			
Number	Description	Input to	Supports
BAI03-WP1	Approved high-level design specification	BAI04.03 BAI05.01	BAI03-BP1 BAI03-O1/O2
BAI03-WP2	Approved detailed design specification	BAI04.03 BAI05.01	BAI03-BP2 BAI03-O1/O2
BAI03-WP3	Documented solution components	BAI04.03 BAI05.05 BAI08.03 BAI08.04	BAI03-BP3 BAI03-O2/O3
BAI03-WP4	Approved acquisition plans	APO10.03	BAI03-BP4 BAI03-O1/O2
BAI03-WP5	Updates to asset inventory	DSS02.01	
BAI03-WP6	Integrated and configured solution components	BAI06.01	BAI03-BP5 BAI03-O1
BAI03-WP7	Quality assurance plan	APO11.04	BAI03-BP6 BAI03-O3
BAI03-WP8	Quality review results, exceptions and corrections	APO11.04	
BAI03-WP9	Test plan	BAI07.03	BAI03-BP7 BAI03-O3
BAI03-WP10	Test procedures	BAI07.03	
BAI03-WP11	Test result logs and audit trails	BAI07.03	BAI03-BP8 BAI03-O3
BAI03-WP12	Test result communications	BAI07.03	
BAI03-WP13	Record of all approved and applied change requests	BAI06.03	BAI03-BP9 BAI03-O4
BAI03-WP14	Maintenance plan	APO08.05	BAI03-BP10 BAI03-O5
BAI03-WP15	Updated solution components and related documentation	BAI05.05	
BAI03-WP16	Periodic maintenance analyses	Internal	
BAI03-WP17	Service definitions	APO05.1 DSS01.03	
BAI03-WP18	Updated service portfolio	APO05.05	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	BAI04	
Process Name	Manage Availability and Capacity	
Process Description	Balance current and future needs for availability, performance and capacity with cost-effective service provision. Include assessment of current capabilities, forecasting of future needs based on business requirements, analysis of business impacts, and assessment of risk to plan and implement actions to meet the identified requirements.	
Process Purpose Statement	Maintain service availability, efficient management of resources, and optimisation of system performance through prediction of future performance and capacity requirements.	
Outcomes (Os)		
Number	Description	
BAI04-O1	The availability plan anticipates the business expectation of critical capacity requirements.	
BAI04-O2	Capacity, performance and availability meet requirements.	
BAI04-O3	Availability, performance and capacity issues are identified and routinely resolved.	
Base Practices (BPs)		
Number	Description	Supports
BAI04-BP1	Assess current availability, performance and capacity and create a baseline. Assess availability, performance and capacity of services and resources to ensure that cost-justifiable capacity and performance are available to support business needs and deliver against SLAs. Create availability, performance and capacity baselines for future comparison.	BAI04-O1/O2/O3
BAI04-BP2	Assess business impact. Identify important services to the enterprise, map services and resources to business processes, and identify business dependencies. Ensure that the impact of unavailable resources is fully agreed on and accepted by the customer. Ensure that, for vital business functions, the SLA availability requirements can be satisfied.	BAI04-O1
BAI04-BP3	Plan for new or changed service requirements. Plan and prioritise availability, performance and capacity implications of changing business needs and service requirements.	
BAI04-BP4	Monitor and review availability and capacity. Monitor, measure, analyse, report and review availability, performance and capacity. Identify deviations from established baselines. Review trend analysis reports identifying any significant issues and variances, initiating actions where necessary and ensuring that all outstanding issues are followed up.	BAI04-O2/O3
BAI04-BP5	Investigate and address availability, performance and capacity issues. Address deviations by investigating and resolving identified availability, performance and capacity issues.	
Work Products (WPs)		
Inputs		
Number	Description	Supports
BAI02-WP1	Requirements definition repository	BAI04-BP1 and all outcomes
BAI02-WP6	Requirements risk register	
BAI02-WP2	Confirmed acceptance of requirements from stakeholders	BAI04-BP3 BAI04-O1
BAI03-WP1	Approved high-level design specification	
BAI03-WP2	Approved detailed design specification	
BAI03-WP3	Documented solution components	

Process ID	BAI04 (cont.)		
Process Name	Manage Availability and Capacity		
Outputs			
Number	Description	Input to	Supports
BAI04-WP1	Availability, performance and capacity baselines	Internal	BAI04-BP1 and all outcomes
BAI04-WP2	Evaluations against SLAs	APO09.06	
BAI04-WP3	Prioritised improvements	APO02.02	BAI04-BP3 BAI04-O1
BAI04-WP4	Performance and capacity plans	APO02.02	
BAI04-WP5	Availability, performance and capacity monitoring review reports	MEA01.03	BAI04-BP4 BAI04-O2/O3
BAI04-WP6	Performance and capacity gaps	Internal	BAI04-BP5 BAI04-O2/O3
BAI04-WP7	Corrective actions	APO02.02	
BAI04-WP8	Emergency escalation procedure	DSS04.02	
BAI04-WP9	Availability, performance and capacity scenarios	Internal	BAI04-BP2 BAI04-O1
BAI04-WP10	Availability, performance and capacity business impact assessments	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI05	
Process Name	Manage Organisational Change Enablement	
Process Description	Maximise the likelihood of successfully implementing sustainable enterprisewide organisational change quickly and with reduced risk, covering the complete life cycle of the change and all affected stakeholders in the business and IT.	
Process Purpose Statement	Prepare and commit stakeholders for business change and reduce the risk of failure.	
Outcomes (Os)		
Number	Description	
BAI05-O1	Stakeholder desire for the change has been understood.	
BAI05-O2	Implementation team is competent and able to drive the change.	
BAI05-O3	Desired change is understood and accepted by stakeholders.	
BAI05-O4	Role players are empowered to deliver the change.	
BAI05-O5	Role players are enabled to operate, use and maintain the change.	
BAI05-O6	The change is embedded and sustained.	
Base Practices (BPs)		
Number	Description	Supports
BAI05-BP1	Establish the desire to change. Understand the scope and impact of the envisioned change and stakeholder readiness/willingness to change. Identify actions to motivate stakeholders to accept and want to make the change work successfully.	BAI05-O1
BAI05-BP2	Form an effective implementation team. Establish an effective implementation team by assembling appropriate members, creating trust, and establishing common goals and effectiveness measures.	BAI05-O2
BAI05-BP3	Communicate desired vision. Communicate the desired vision for the change in the language of those affected by it. The communication should be made by senior management and include the rationale for, and benefits of, the change, the impacts of not making the change; and, the vision, the road map and the involvement required of the various stakeholders.	BAI05-O3
BAI05-BP4	Empower role players and identify short-term wins. Empower those with implementation roles by ensuring that accountabilities are assigned, providing training, and aligning organisational structures and HR processes. Identify and communicate short-term wins that can be realised and are important from a change enablement perspective.	BAI05-O4
BAI05-BP5	Enable operation and use. Plan and implement all technical, operational and usage aspects such that all those who are involved in the future state environment can exercise their responsibility.	BAI05-O5
BAI05-BP6	Embed new approaches. Embed the new approaches by tracking implemented changes, assessing the effectiveness of the operation and use plan, and sustaining ongoing awareness through regular communication. Take corrective measures as appropriate, which may include enforcing compliance.	BAI05-O6
BAI05-BP7	Sustain changes. Sustain changes through effective training of new staff, ongoing communication campaigns, continued top management commitment, adoption monitoring and sharing of lessons learned across the enterprise.	

Process ID	BAI05 (cont.)		
Process Name	Manage Organisational Change Enablement		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
APO11-WP7	Review results of quality of service, including customer feedback	BAI05-BP1 BAI05-O1	
BAI02-WP1	Requirements definition repository		
BAI02-WP2	Confirmed acceptance of requirements from stakeholders		
BAI02-WP6	Requirements risk register		
BAI02-WP7	Risk mitigation actions		
BAI03-WP1	Approved high-level design specification		
BAI03-WP2	Approved detailed design specification		
Outside COBIT	Enterprise organisation structure		
BAI03-WP3	Documented solution components		
BAI03-WP15	Updated solution components and related documentation	BAI05-BP5 BAI05-O5	
Outputs			
Number	Description	Input to	Supports
BAI05-WP1	Communications of drivers for change	Internal	BAI05-BP1 BAI05-O1
BAI05-WP2	Communications from executive management committing to change	Internal	
BAI05-WP3	Implementation team and roles	BAI01.04	BAI05-BP2 BAI05-O2
BAI05-WP4	Common vision and goals	BAI01.02	
BAI05-WP5	Vision communication plan	BAI01.04	BAI05-BP3 BAI05-O3
BAI05-WP6	Vision communications	BAI01.05	
BAI05-WP7	Aligned HR performance objectives	APO07.04	BAI05-BP4 BAI05-O4
BAI05-WP8	Identified quick wins	BAI01.04	
BAI05-WP9	Communications of benefits	BAI01.06	
BAI05-WP10	Operation and use plan	APO08.04 BAI08.04 DSS01.01 DSS01.02 DSS06.01	BAI05-BP5 BAI05-O5
BAI05-WP11	Success measures and results	APO08.05 BAI07.07 BAI07.08 MEA01.03	
BAI05-WP12	Compliance audit results	MEA02.02 MEA03.03	BAI05-BP6 BAI05-O6
BAI05-WP13	Awareness communications	Internal	
BAI05-WP14	HR performance review results	APO07.04	
BAI05-WP15	Knowledge transfer plans	BAI08.03 BAI08.04	BAI05-BP7 BAI05-O6
BAI05-WP16	Communications of management's commitment	Internal	
BAI05-WP17	Reviews of operational use	MEA02.02	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI06		
Process Name	Manage Changes		
Process Description	Manage all changes in a controlled manner, including standard changes and emergency maintenance relating to business processes, applications and infrastructure. This includes change standards and procedures, impact assessment, prioritisation and authorisation, emergency changes, tracking, reporting, closure and documentation.		
Process Purpose Statement	Enable fast and reliable delivery of change to the business and mitigation of the risks of negatively impacting the stability or integrity of the changed environment.		
Outcomes (Os)			
Number	Description		
BAI06-O1	Authorised changes are made in a timely manner and with minimal errors.		
BAI06-O2	Impact assessments reveal the effect of the change on all affected components.		
BAI06-O3	All emergency changes are reviewed and authorised after the change.		
BAI06-O4	Key stakeholders are kept informed of all aspects of the change.		
Base Practices (BPs)			
Number	Description	Supports	
BAI06-BP1	Evaluate, prioritise and authorise change requests. Evaluate all requests for change to determine the impact on business processes and IT services, and to assess whether change will adversely affect the operational environment and introduce unacceptable risk. Ensure that changes are logged, prioritised, categorised, assessed, authorised, planned and scheduled.	BAI06-O2	
BAI06-BP2	Manage emergency changes. Carefully manage emergency changes to minimise further incidents and make sure the change is controlled and takes place securely. Verify that emergency changes are appropriately assessed and authorised after the change.	BAI06-O3	
BAI06-BP3	Track and report change status. Maintain a tracking and reporting system to document rejected changes, communicate the status of approved and in-process changes, and complete changes. Make certain that approved changes are implemented as planned.	BAI06-O1/O4	
BAI06-BP4	Close and document the changes. Whenever changes are implemented, update accordingly the solution and user documentation and the procedures affected by the change.	BAI06-O1/O4	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
BAI03-WP6	Integrated and configured solution components	BAI06-BP1 BAI06-O2	
DSS03-WP7	Proposed solutions to known errors		
DSS03-WP11	Identified sustainable solutions		
DSS04-WP19	Approved changes to the plans		
DSS06-WP2	Root cause analyses and recommendations		
BAI03-WP13	Record of all approved and applied change requests	BAI06-BP3 BAI06-O1/O4	
Outputs			
Number	Description	Input to	Supports
BAI06-WP1	Impact assessments	Internal	BAI06-BP1 BAI06-O2
BAI06-WP2	Approved requests for change	BAI07.01	
BAI06-WP3	Change plan and schedule	BAI07.01	
BAI06-WP4	Post-implementation review of emergency changes	Internal	BAI06-BP2 BAI06-O3
BAI06-WP5	Change request status reports	BAI01.06 DSS03.03	BAI06-BP3 BAI06-O1/O4
BAI06-WP6	Change documentation	Internal	BAI06-BP4 BAI06-O1/O4

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	BAI07	
Process Name	Manage Change Acceptance and Transitioning	
Process Description	Formally accept and make operational new solutions, including implementation planning, system and data conversion, acceptance testing, communication, release preparation, promotion to production of new or changed business processes and IT services, early production support, and a post-implementation review.	
Process Purpose Statement	Implement solutions safely and in line with the agreed-on expectations and outcomes.	
Outcomes (Os)		
Number	Description	
BAI07-O1	Acceptance testing meets stakeholder approval and takes into account all aspects of the implementation and conversion plans.	
BAI07-O2	Releases are ready for promotion into production with stakeholder readiness and support.	
BAI07-O3	Releases are promoted successfully, are stable and meet expectations.	
BAI07-O4	Lessons learned contribute to future releases.	
Base Practices (BPs)		
Number	Description	Supports
BAI07-BP1	Establish an implementation plan. Establish an implementation plan that covers system and data conversion, acceptance testing criteria, communication, training, release preparation, promotion to production, early production support, a fallback/backout plan, and a post-implementation review. Obtain approval from relevant parties.	BAI07-O1
BAI07-BP2	Plan business process, system and data conversion. Prepare for business process, IT service data and infrastructure migration as part of the enterprise's development methods, including audit trails and a recovery plan should the migration fail.	
BAI07-BP3	Plan acceptance tests. Establish a test plan based on enterprisewide standards that define roles, responsibilities, and entry and exit criteria. Ensure that the plan is approved by relevant parties.	
BAI07-BP4	Establish a test environment. Define and establish a secure test environment representative of the planned business process and IT operations environment, performance and capacity, security, internal controls, operational practices, data quality and privacy requirements, and workloads.	
BAI07-BP5	Perform acceptance tests. Test changes independently in accordance with the defined test plan prior to migration to the live operational environment.	
BAI07-BP6	Promote to production and manage releases. Promote the accepted solution to the business and operations. Where appropriate, run the solution as a pilot implementation or in parallel with the old solution for a defined period and compare behaviour and results. If significant problems occur, revert back to the original environment based on the fallback/backout plan. Manage releases of solution components.	BAI07-O2/O3
BAI07-BP7	Provide early production support. Provide early support to the users and IT operations for an agreed period of time to deal with issues and help stabilise the new solution.	BAI07-O2/O3
BAI07-BP8	Perform a post-implementation review. Conduct a post-implementation review to confirm outcome and results, identify lessons learned, and develop an action plan. Evaluate and check the actual performance and outcomes of the new or changed service against the predicted performance and outcomes (i.e., the service expected by the user or customer).	BAI07-O4

Process ID	BAI07 (cont.)		
Process Name	Manage Change Acceptance and Transitioning		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
BAI01-WP17	Quality management plan	BAI07-BP1 BAI07-O1	
BAI06-WP2	Approved requests for change		
BAI06-WP3	Change plan and schedule		
BAI01-WP18	Requirements for independent verification of deliverables	BAI07-BP3 BAI07-O1	
BAI03-WP9	Test plan		
BAI03-WP10	Test procedures		
BAI03-WP11	Test result logs and audit trails		
BAI03-WP12	Test result communications	BAI07-BP7 BAI07-O2/O3	
AP011-WP7	Review results of quality of service, including customer feedback		
BAI05-WP11	Success measures and results		
AP011-WP8	Results of quality reviews and audits		
AP011-WP10	Results of solution and service delivery quality monitoring		
AP011-WP11	Root causes of quality delivery failures	BAI07-BP8 BAI07-O4	
Outputs			
Number	Description	Input to	Supports
BAI07-WP1	Approved implementation plan	Internal	BAI07-BP1 BAI07-O1
BAI07-WP2	Implementation fallback and recovery process	Internal	
BAI07-WP3	Migration plan	DSS06.01	BAI07-BP2 BAI07-O1
BAI07-WP4	Approved acceptance test plan	BAI01.04 BAI01.08	BAI07-BP3 BAI07-O1
BAI07-WP5	Test data	Internal	BAI07-BP4 BAI07-O1
BAI07-WP6	Test results log	Internal	BAI07-BP5 BAI07-O1
BAI07-WP7	Evaluation of results	BAI01.06	
BAI07-WP8	Approved acceptance and release to production	BAI01.04	
BAI07-WP9	Release plan	DSS03.01	BAI07-BP6 BAI07-O2/O3
BAI07-WP10	Release log	Internal	
BAI07-WP11	Supplemental support plan	AP008.04 AP008.05 DSS02.04	BAI07-BP7 BAI07-O2/O3
BAI07-WP12	Post-implementation review	BAI01.13 BAI01.14	BAI07-BP8 BAI07-O4
BAI07-WP13	Remedial action plan	BAI01.13 BAI01.14	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	BAI08		
Process Name	Manage Knowledge		
Process Description	Maintain the availability of relevant, current, validated and reliable knowledge to support all process activities and to facilitate decision making. Plan for the identification, gathering, organising, maintaining, use and retirement of knowledge.		
Process Purpose Statement	Provide the knowledge required to support all staff in their work activities and for informed decision making and enhanced productivity.		
Outcomes (Os)			
Number	Description		
BAI08-O1	Sources of information are identified and classified.		
BAI08-O2	Knowledge is used and shared.		
BAI08-O3	Knowledge sharing is embedded in the culture of the enterprise.		
BAI08-O4	Knowledge is updated and improved to support requirements.		
Base Practices (BPs)			
Number	Description	Supports	
BAI08-BP1	Nurture and facilitate a knowledge-sharing culture. Devise and implement a scheme to nurture and facilitate a knowledge-sharing culture.	BAI08-O3	
BAI08-BP2	Identify and classify sources of information. Identify, validate and classify diverse sources of internal and external information required to enable effective use and operation of business processes and IT services.	BAI08-O1	
BAI08-BP3	Organise and contextualise information into knowledge. Organise information based on classification criteria. Identify and create meaningful relationships between information elements and enable use of information. Identify owners and define and implement levels of access to knowledge resources.	BAI08-O3	
BAI08-BP4	Use and share knowledge. Propagate available knowledge resources to relevant stakeholders and communicate how these resources can be used to address different needs (e.g., problem solving, learning, strategic planning and decision making).	BAI08-O2	
BAI08-BP5	Evaluate and retire information. Measure the use and evaluate the currency and relevance of information. Retire obsolete information.	BAI08-O4	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
Outside COBIT	Knowledge requirements and sources	BAI08-BP2 BAI08-O1	
BAI03-WP3	Documented solution components	BAI08-BP3 BAI08-O3	
BAI05-WP15	Knowledge transfer plans		
BAI05-WP10	Operation and use plan	BAI08-BP4 BAI08-O2	
Outputs			
Number	Description	Input to	Supports
BAI08-WP1	Classification of information sources	Internal	BAI08-BP2 BAI08-O1
BAI08-WP2	Published knowledge repositories	APO07.03	BAI08-BP3 BAI08-O3
BAI08-WP3	Knowledge user database	Internal	BAI08-BP4 BAI08-O2
BAI08-WP4	Knowledge awareness and training schemes	APO07.03	
BAI08-WP5	Knowledge use evaluation results	Internal	BAI08-BP5 BAI08-O4
BAI08-WP6	Rules for knowledge retirement	Internal	
BAI08-WP7	Communications on value of knowledge	APO01.04	BAI08-BP1 BAI08-O3

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	BAI09		
Process Name	Manage Assets		
Process Description	Manage IT assets through their life cycle to make sure that their use delivers value at optimal cost, they remain operational (fit for purpose), they are accounted for and physically protected, and those assets that are critical to support service capability are reliable and available. Manage software licences to ensure that the optimal number are acquired, retained and deployed in relation to required business usage, and the software installed is in compliance with licence agreements.		
Process Purpose Statement	Account for all IT assets and optimise the value provided by these assets.		
Outcomes (Os)			
Number	Description		
BAI09-O1	Licences are compliant and aligned with business need.		
BAI09-O2	Assets are maintained at optimal levels.		
Base Practices (BPs)			
Number	Description	Supports	
BAI09-BP1	Identify and record current assets. Maintain an up-to-date and accurate record of all IT assets required to deliver services and ensure alignment with configuration management and financial management.	BAI09-O2	
BAI09-BP2	Manage critical assets. Identify assets that are critical in providing service capability and take steps to maximise their reliability and availability to support business needs.	BAI09-O2	
BAI09-BP3	Manage the asset life cycle. Manage assets from procurement to disposal to ensure that assets are utilised as effectively and efficiently as possible and are accounted for and physically protected.	BAI09-O2	
BAI09-BP4	Optimise asset costs. Regularly review the overall asset base to identify ways to optimise costs and maintain alignment with business needs.	BAI09-O2	
BAI09-BP5	Manage licences. Manage software licences so that the optimal number of licences is maintained to support business requirements and the number of licences owned is sufficient to cover the installed software in use.	BAI09-O1	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
BAI03-WP5	Updates to asset inventory	BAI09-BP1	
BAI10-WP3	Configuration repository	BAI09-O2	
Outputs			
Number	Description	Input to	Supports
BAI09-WP1	Asset register	APO06.01 BAI10.03	BAI09-BP1 BAI09-O2
BAI09-WP2	Results of physical inventory checks	BAI10.03 BAI10.04 DSS05.03	
BAI09-WP3	Results of fit-for-purpose reviews	APO02.02	
BAI09-WP4	Communication of planned maintenance downtime	APO08.04	BAI09-BP2 BAI09-O2
BAI09-WP5	Maintenance agreements	Internal	
BAI09-WP6	Approved asset procurement requests	Internal	BAI09-BP3 BAI09-O2
BAI09-WP7	Updated asset register	BAI10.03	
BAI09-WP8	Authorised asset retirements	BAI10.03	
BAI09-WP9	Results of cost optimisation reviews	APO02.02	BAI09-BP4 BAI09-O2
BAI09-WP10	Opportunities to reduce asset costs or increase value	APO02.02	
BAI09-WP11	Register of software licences	BAI10.02	BAI09-BP5 BAI09-O1
BAI09-WP12	Results of installed licence audits	MEA03.03	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	BAI10		
Process Name	Manage Configuration		
Process Description	Define and maintain descriptions and relationships between key resources and capabilities required to deliver IT-enabled services, including collecting configuration information, establishing baselines, verifying and auditing configuration information, and updating the configuration repository.		
Process Purpose Statement	Provide sufficient information about service assets to enable the service to be effectively managed, assess the impact of changes and deal with service incidents.		
Outcomes (Os)			
Number	Description		
BAI10-O1	Configuration repository is accurate, complete and up to date.		
Base Practices (BPs)			
Number	Description	Supports	
BAI10-BP1	Establish and maintain a configuration model. Establish and maintain a logical model of the services, assets and infrastructure and how to record configuration items (CIs) and the relationships amongst them. Include the CIs considered necessary to manage services effectively and to provide a single reliable description of the assets in a service.	BAI10-O1	
BAI10-BP2	Establish and maintain a configuration repository and baseline. Establish and maintain a configuration management repository and create controlled configuration baselines.	BAI10-O1	
BAI10-BP3	Maintain and control configuration items. Maintain an up-to-date repository of configuration items by populating with changes.	BAI10-O1	
BAI10-BP4	Produce status and configuration reports. Define and produce configuration reports on status changes of configuration items.	BAI10-O1	
BAI10-BP5	Verify and review integrity of the configuration repository. Periodically review the configuration repository and verify completeness and correctness against the desired target.	BAI10-O1	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
BAI07-WP9	Release plan	BAI10-BP1 BAI10-O1	
BAI09-WP11	Register of software licences	BAI10-BP2 BAI10-O1	
BAI06-WP5	Change request status reports	BAI10-BP3 BAI10-O1	
BAI09-WP2	Results of physical inventory checks		
BAI09-WP8	Authorised asset retirements		
BAI09-WP2	Results of physical inventory checks	BAI10-BP4 BAI10-O1	
Outputs			
Number	Description	Input to	Supports
BAI10-WP1	Scope of configuration management model	Internal	BAI10-BP1 BAI10-O1
BAI10-WP2	Logical configuration model	Internal	
BAI10-WP3	Configuration repository	BAI09.01 DSS02.01	BAI10-BP2 BAI10-O1
BAI10-WP4	Configuration baseline	BAI03.11	
BAI10-WP5	Updated repository with configuration items	DSS02.01	BAI10-BP3 BAI10-O1
BAI10-WP6	Approved changes to baseline	BAI03.11	
BAI10-WP7	Configuration status reports	BAI03.11 DSS02.01	BAI10-BP4 BAI10-O1
BAI10-WP8	Results of physical verification of configuration items	Internal	BAI10-BP5 BAI10-O1
BAI10-WP9	Licence deviations	MEA03.03	
BAI10-WP10	Results of repository completeness reviews	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.4 deliver, Service And SuPPort (dss)

- 01** Manage operations.
- 02** Manage service requests and incidents.
- 03** Manage problems.
- 04** Manage continuity.
- 05** Manage security services.
- 06** Manage business process controls.

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3.0 Process Dimension and Process Performance Indicators

Process ID	DSS01		
Process Name	Manage Operations		
Process Description	Co-ordinate and execute the activities and operational procedures required to deliver internal and outsourced IT services, including the execution of pre-defined standard operating procedures and the required monitoring activities.		
Process Purpose Statement	Deliver IT operational service outcomes as planned.		
Outcomes (Os)			
Number	Description		
DSS01-O1	Operational activities are performed as required and scheduled.		
DSS01-O2	Operations are monitored, measured, reported and remediated.		
Base Practices (BPs)			
Number	Description	Supports	
DSS01-BP1	Perform operational procedures. Maintain and perform operational procedures and operational tasks reliably and consistently.	DSS01-O1	
DSS01-BP2			
DSS01-BP3	Monitor IT infrastructure. Monitor the IT infrastructure and related events. Store sufficient chronological information in operations logs to enable the reconstruction, review and examination of the time sequences of operations and the other activities surrounding or supporting operations.	DSS01-O2	
DSS01-BP4	Manage the environment. Maintain measures for protection against environmental factors. Install specialised equipment and devices to monitor and control the environment.	DSS01-O2	
DSS01-BP5	Manage facilities. Manage facilities, including power and communications equipment, in line with laws and regulations, technical and business requirements, vendor specifications, and health and safety guidelines.	DSS01-O2	
Work Products (WPs)			
Inputs			
Number	Description	Supports	
BAI05-WP10	Operation and use plan	DSS01-BP1 DSS01-O1	
APO09-WP6	SLAs	DSS01-BP2	
APO09-WP7	OLAs	DSS01-O1	
APO09-WP3	Service definitions	DSS01-BP3 DSS01-O2	
Outputs			
Number	Description	Input to	Supports
DSS01-WP1	Operational schedule	Internal	DSS01-BP1
DSS01-WP2	Backup log	Internal	DSS01-O1
DSS01-WP3	Asset monitoring rules and event conditions	DSS04.01 DSS04.02	DSS01-BP3 DSS01-O2
DSS01-WP4	Event logs	Internal	
DSS01-WP5	Incident tickets	DSS04.02	DSS01-BP4 DSS01-O2
DSS01-WP6	Environmental policies	APO01.08	
DSS01-WP7	Insurance policy reports	MEA03.03	DSS01-BP5 DSS01-O2
DSS01-WP8	Facilities assessment reports	MEA01.03	
DSS01-WP9	Health and safety awareness	Internal	DSS01-BP2 DSS01-O1
DSS01-WP10	Independent assurance plans	MEA02.01	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	DSS02	
Process Name	Manage Service Requests and Incidents	
Process Description	Provide timely and effective response to user requests and resolution of all types of incidents. Restore normal service; record and fulfil user requests; and record, investigate, diagnose, escalate and resolve incidents.	
Process Purpose Statement	Achieve increased productivity and minimise disruptions through quick resolution of user queries and incidents.	
Outcomes (Os)		
Number	Description	
DSS02-O1	IT-related services are available for use.	
DSS02-O2	Incidents are resolved according to agreed-on service levels.	
DSS02-O3	Service requests are dealt with according to agreed-on service levels and to the satisfaction of users.	
Base Practices (BPs)		
Number	Description	Supports
DSS02-BP1	Define incident and service request classification schemes. Define incident and service request classification schemes and models.	DSS02-O1
DSS02-BP2	Record, classify and prioritise requests and incidents. Identify, record and classify service requests and incidents, and assign a priority according to business criticality and service agreements.	DSS02-O1/O2
DSS02-BP3	Verify, approve and fulfil service requests. Select the appropriate request procedures and verify that the service requests fulfil defined request criteria. Obtain approval, if required, and fulfil the requests.	DSS02-O3
DSS02-BP4	Investigate, diagnose and allocate incidents. Identify and record incident symptoms, determine possible causes, and allocate for resolution.	
DSS02-BP5	Resolve and recover from incidents. Document, apply and test the identified solutions or workarounds and perform recovery actions to restore the IT-related service.	DSS02-O2
DSS02-BP6	Close service requests and incidents. Verify satisfactory incident resolution and/or request fulfilment, and close.	DSS02-O3
DSS02-BP7	Track status and produce reports. Regularly track, analyse and report incident and request fulfilment trends to provide information for continual improvement.	
Work Products (WPs)		
Inputs		
Number	Description	Supports
APO09-WP6	SLAs	DSS02-BP1/2 DSS02-O1
BAI10-WP3	Configuration repository	DSS02-BP1 DSS02-O1
BAI10-WP5	Updated repository with configuration items	
BAI10-WP7	Configuration status reports	
DSS01-WP3	Asset monitoring rules and event conditions	
DSS03-WP1	Problem classification scheme	
DSS04-WP7	Incident response actions and communications	
BAI10-WP3	Configuration repository	DSS02-BP2 DSS02-O1/O2
DSS05-WP12	Security Incident tickets	
APO12-WP16	Risk-related root cause	DSS02-BP3 DSS02-O3
BAI10-WP3	Configuration repository	DSS02-BP4 DSS02-O3
APO12-WP14	Risk-related incident response plans	DSS02-BP5 DSS02-O2
DSS03-WP6	Known-error records	
DSS03-WP9	Communication of knowledge learned	
DSS03-WP8	Closed problem records	DSS02-BP6 DSS02-O3
APO09-WP7	OLAs	DSS02-BP7 DSS02-O3
DSS03-WP2	Problem status reports	
DSS03-WP5	Problem resolution reports	
DSS03-WP10	Problem resolution monitoring reports	

Process ID	DSS02 (cont.)		
Process Name	Manage Service Requests and Incidents		
Outputs			
Number	Description	Input to	Supports
DSS02-WP1	Incident and service request classification schemes and models	Internal	DSS02-BP1 DSS02-O1
DSS02-WP2	Rules for incident and request escalation	Internal	
DSS02-WP3	Criteria for problem registration	DSS03.01	
DSS02-WP4	Incident and service request log	Internal	DSS02-BP2 DSS02-O1/O2
DSS02-WP5	Classified and prioritised incidents and service requests	APO08.03 APO09.04 APO13.03	
DSS02-WP6	Approved service requests	BAI06.01	DSS02-BP3 DSS02-O3
DSS02-WP7	Fulfilled service requests	Internal	
DSS02-WP8	Incident symptoms	Internal	DSS02-BP4 DSS02-O3
DSS02-WP9	Problem log	DSS03.01	
DSS02-WP10	Incident resolutions	DSS03.04	DSS02-BP5 DSS02-O2
DSS02-WP11	Closed service requests and incidents	APO08.03 APO09.04 DSS03.04	DSS02-BP6 DSS02-O3
DSS02-WP12	User confirmation of satisfactory fulfilment or resolution	APO08.03	
DSS02-WP13	Incident status and trends report	APO08.03 APO09.04 APO11.04 APO12.01 MEA01.03	DSS02-BP7 DSS02-O3
DSS02-WP14	Request fulfilment status and trends report	APO08.03 APO09.04 APO11.04 MEA01.03	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	DSS03		
Process Name	Manage Problems		
Process Description	Identify and classify problems and their root causes and provide timely resolution to prevent recurring incidents. Provide recommendations for improvements		
Process Purpose Statement	Increase availability, improve service levels, reduce costs, and improve customer convenience and satisfaction by reducing the number of operational problems.		
Outcomes (Os)			
Number	Description		
DSS03-O1	IT-related problems are resolved so that they do not reoccur.		
Base Practices (BPs)			
Number	Description	Supports	
DSS03-BP1	Identify and classify problems. Define and implement criteria and procedures to report problems identified, including problem classification, categorisation and prioritisation. Investigate and diagnose problems. Investigate and diagnose problems using relevant subject management experts to assess and analyse root causes. Raise known errors. As soon as the root causes of problems are identified, create known-error records and an appropriate workaround, and identify potential solutions. Resolve and close problems. Identify and initiate sustainable solutions addressing the root cause, raising change requests via the established change management process if required to resolve errors. Ensure that the personnel affected are aware of the actions taken and the plans developed to prevent future incidents from occurring.	DSS03-O1	
DSS03-BP2		DSS03-O1	
DSS03-BP3			
DSS03-BP4		DSS03-O1	
DSS03-BP5	Perform proactive problem management. Collect and analyse operation data (especially incident and change records) to identify emerging trends that may indicate problems. Log problem records to enable assessment.		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
AP012-WP16	Risk-related root causes	DSS03-BP1	
DSS02-WP3	Criteria for problem registration	DSS03-O1	
DSS02-WP9	Problem log		
DSS02-WP10	Incident resolutions	DSS03-BP4	
DSS02-WP11	Closed service requests and incidents	DSS03-O1	
Outputs			
Number	Description	Input to	Supports
DSS03-WP1	Problem classification scheme	DSS02.01	DSS03-BP1 DSS03-O1
DSS03-WP2	Problem status reports	DSS02.07	
DSS03-WP3	Problem register	Internal	
DSS03-WP4	Root causes of problems	Internal	DSS03-BP2 DSS03-O1
DSS03-WP5	Problem resolution reports	DSS02.07	
DSS03-WP6	Known-error records	DSS02.05	DSS03-BP3 DSS03-O1
DSS03-WP7	Proposed solutions to known errors	BAI06.01	
DSS03-WP8	Closed problem records	DSS02.06	DSS03-BP4 DSS03-O1
DSS03-WP9	Communication of knowledge learned	AP008.04 DSS02.05	
DSS03-WP10	Problem resolution monitoring reports	DSS02.07	DSS03-BP5 DSS03-O1
DSS03-WP11	Identified sustainable solutions	BAI06.01	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	DSS04	
Process Name	Manage Continuity	
Process Description	Establish and maintain a plan to enable the business and IT to respond to incidents and disruptions in order to continue operation of critical business processes and required IT services and maintain availability of information at a level acceptable to the enterprise.	
Process Purpose Statement	Continue critical business operations and maintain availability of information at a level acceptable to the enterprise in the event of a significant disruption.	
Outcomes (Os)		
Number	Description	
DSS04-O1	Business-critical information is available to the business in line with minimum required service levels.	
DSS04-O2	Sufficient resilience is in place for critical services.	
DSS04-O3	Service continuity tests have verified the effectiveness of the plan.	
DSS04-O4	An up-to-date continuity plan reflects current business requirements.	
DSS04-O5	Internal and external parties have been trained in the continuity plan.	
Base Practices (BPs)		
Number	Description	Supports
DSS04-BP1	Define the business continuity policy, objectives and scope. Define business continuity policy and scope aligned with enterprise and stakeholder objectives.	DSS04-O1/O4
DSS04-BP2	Maintain a continuity strategy. Evaluate business continuity management options and choose a cost-effective and viable continuity strategy that will ensure enterprise recovery and continuity in the face of a disaster or other major incident or disruption.	DSS04-O4
DSS04-BP3	Develop and implement a business continuity response. Develop a business continuity plan (BCP) based on the strategy that documents the procedures and information in readiness for use in an incident to enable the enterprise to continue its critical activities.	DSS04-O2/O3
DSS04-BP4	Exercise, test and review the BCP. Test the continuity arrangements on a regular basis to exercise the recovery plans against predetermined outcomes and to allow innovative solutions to be developed and help to verify over time that the plan will work as anticipated.	DSS04-O3/O4
DSS04-BP5	Review, maintain and improve the continuity plan. Conduct a management review of the continuity capability at regular intervals to ensure its continued suitability, adequacy and effectiveness. Manage changes to the plan in accordance with the change control process to ensure the continuity plan is kept up to date and continually reflects actual business requirements.	DSS04-O4
DSS04-BP6	Conduct continuity plan training. Provide all concerned internal and external parties with regular training sessions regarding the procedures and their roles and responsibilities in case of disruption.	DSS04-O5
DSS04-BP7	Manage backup arrangements. Maintain availability of business-critical information.	DSS04-O1
DSS04-BP8	Conduct post-resumption review. Assess the adequacy of the BCP following the successful resumption of business processes and services after a disruption.	DSS04-O4
Work Products (WPs)		
Inputs		
Number	Description	Supports
APO09-WP6	SLAs	DSS04-BP1 DSS04-O1/O4
APO12-WP15	Risk impact communications	DSS04-BP2 DSS04-O4
APO12-WP16	Risk-related root causes	DSS04-BP3 DSS04-O2/O3
APO09-WP7	OLAs	DSS04-BP3 DSS04-O2/O3

Process ID	DSS04 (cont.)		
Process Name	Manage Continuity		
Outputs			
Number	Description	Input to	Supports
DSS04-WP1	Policy and objectives for business continuity	APO01.04	DSS04-BP1 DSS04-O1/O4
DSS04-WP2	Disruptive incident scenarios	Internal	
DSS04-WP3	Assessments of current continuity capabilities and gaps	Internal	
DSS04-WP4	Business impact analyses	APO12.02	DSS04-BP2 DSS04-O4
DSS04-WP5	Continuity requirements	Internal	
DSS04-WP6	Approved strategic options	APO02.05	
DSS04-WP7	Incident response actions and communications	DSS04.01	DSS04-BP3 DSS04-O2/O3
DSS04-WP8	Business continuity plan	Internal	
DSS04-WP9	Test objectives	Internal	DSS04-BP4 DSS04-O3/O4
DSS04-WP10	Test exercises	Internal	
DSS04-WP11	Test results and recommendations	Internal	
DSS04-WP12	Results of reviews of plans	Internal	DSS04-BP5 DSS04-O4
DSS04-WP13	Recommended changes to plans	Internal	
DSS04-WP14	Training requirements	APO07.03	DSS04-BP6 DSS04-O4
DSS04-WP15	Monitoring results of skills and competencies	APO07.03	
DSS04-WP17	Test results of backup data	Internal	DSS04-BP7 DSS04-O1
DSS04-WP18	Post-resumption review report	Internal	DSS04-BP8
DSS04-WP19	Approved changes to the plans	BAI06.01	DSS04-O4

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	DSS05	
Process Name	Manage Security Services	
Process Description	Protect enterprise information to maintain the level of information security risk acceptable to the enterprise in accordance with the security policy. Establish and maintain information security roles and access privileges and perform security monitoring.	
Process Purpose Statement	Minimise the business impact of operational information security vulnerabilities and incidents.	
Outcomes (Os)		
Number	Description	
DSS05-O1	Network and communications security meet business needs.	
DSS05-O2	Information processed on, stored on and transmitted by endpoint devices is protected.	
DSS05-O3	All users are uniquely identifiable and have access rights in accordance with their business role.	
DSS05-O4	Physical measures have been implemented to protect information from unauthorised access, damage and interference when being processed, stored or transmitted.	
DSS05-O5	Electronic information is properly secured when stored, transmitted or destroyed.	
Base Practices (BPs)		
Number	Description	Supports
DSS05-BP1	Protect against malware. Implement and maintain preventive, detective and corrective measures in place (especially up-to-date security patches and virus control) across the enterprise to protect information systems and technology from malware (e.g., viruses, worms, spyware, spam).	DSS05-O1/O2
DSS05-BP2	Manage network and connectivity security. Use security measures and related management procedures to protect information over all methods of connectivity.	DSS05-O1
DSS05-BP3	Manage endpoint security. Ensure that endpoints (e.g., laptop, desktop, server and other mobile and network devices or software) are secured at a level that is equal to or greater than the defined security requirements of the information processed, stored or transmitted.	DSS05-O2
DSS05-BP4	Manage user identity and logical access. Ensure that all users have information access rights in accordance with their business requirements and co-ordinate with business units that manage their own access rights within business processes.	DSS05-O3
DSS05-BP5	Manage physical access to IT assets. Define and implement procedures to grant, limit and revoke access to premises, buildings and areas according to business needs, including emergencies. Access to premises, buildings and areas should be justified, authorised, logged and monitored. This should apply to all persons entering the premises, including staff, temporary staff, clients, vendors, visitors or any other third party.	DSS05-O4
DSS05-BP6	Manage sensitive documents and output devices. Establish appropriate physical safeguards, accounting practices and inventory management over sensitive IT assets, such as special forms, negotiable instruments, special-purpose printers or security tokens.	DSS05-O5
DSS05-BP7	Monitor the infrastructure for security-related events Using intrusion detection tools, monitor the infrastructure for unauthorised access and ensure that any events are integrated with general event monitoring and incident management.	DSS05-O1

Process ID	DSS05 (cont.)		
Process Name	Manage Security Services		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
APO09-WP6	SLAs	DSS05-BP2/3 DSS05-O1/O2	
APO01-WP14	Data classification guidelines	DSS05-BP2 DSS05-O2	
APO03-WP6	Information architecture model	DSS05-BP3 DSS05-O2	
APO09-WP7	OLAs		
BAI09-WP2	Results of physical inventory checks		
DSS06-WP10	Records of transactions		
APO01-WP8	Definition of IT-related roles and responsibilities	DSS05-BP4 DSS05-O3	
APO03-WP6	Information architecture model	DSS05-BP6 DSS05-O1	
Outputs			
Number	Description	Input to	Supports
DSS05-WP1	Malicious software prevention policy	APO01.04	DSS05-BP1 DSS05-O1/O2
DSS05-WP2	Evaluations of potential threats	APO12.02 APO12.03	
DSS05-WP3	Connectivity security policy	APO01.04	DSS05-BP2 DSS05-O2
DSS05-WP4	Results of penetration tests	MEA02.08	
DSS05-WP5	Security policies for endpoint devices	APO01.04	DSS05-BP3 DSS05-O2
DSS05-WP6	Approved user access rights	Internal	DSS0-BP4 DSS0-O3
DSS05-WP7	Results of reviews of user accounts and privileges	Internal	
DSS05-WP8	Approved access requests	Internal	DSS05-BP5 DSS05-O4
DSS05-WP9	Access logs	DSS06.03	
DSS05-WP10	Security incident characteristics	Internal	DSS05-BP7 DSS05-O1
DSS05-WP11	Security event logs	Internal	
DSS05-WP12	Security incident tickets	DSS02.02	
DSS05-WP13	Inventory of sensitive documents and devices	Internal	DSS05-BP6 DSS05-O1
DSS05-WP14	Access privileges	Internal	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	DSS06	
Process Name	Manage Business Process Controls	
Process Description	Define and maintain appropriate business process controls to ensure that information related to and processed by in-house or outsourced business processes satisfies all relevant information control requirements. Identify the relevant information control requirements and manage and operate adequate controls to ensure that information and information processing satisfy these requirements.	
Process Purpose Statement	Maintain information integrity and the security of information assets handled within business processes in the enterprise or outsourced.	
Outcomes (Os)		
Number	Description	
DSS06-O1	Coverage and effectiveness of key controls to meet business requirements for processing information are complete.	
DSS06-O2	The inventory of roles, responsibilities and access rights is aligned with authorised business needs.	
DSS06-O3	Business transactions are retained completely and as required in logs.	
Base Practices (BPs)		
Number	Description	Supports
DSS06-BP1	Align control activities embedded in business processes with enterprise objectives. Continually assess and monitor the execution of the business process activities and related controls, based on enterprise risk, to ensure that the processing controls are aligned with business needs.	DSS06-O1
DSS06-BP2	Control the processing of information. Operate the execution of the business process activities and related controls, based on enterprise risk, to ensure that information processing is valid, complete, accurate, timely, and secure (i.e., reflects legitimate and authorised business use).	
DSS06-BP3	Manage roles, responsibilities, access privileges and levels of authority. Manage the business roles, responsibilities, levels of authority and segregation of duties needed to support the business process objectives. Authorise access to any information assets related to business information processes, including those under the custody of the business, IT and third parties. This ensures that the business knows where the data are and who is handling data on its behalf.	DSS06-O2
DSS06-BP4	Manage errors and exceptions. Manage business process exceptions and errors and facilitate their correction. Include escalation of business process errors and exceptions and the execution of defined corrective actions. This provides assurance of the accuracy and integrity of the business information process.	DSS06-O1/O3
DSS06-BP5	Ensure traceability of Information events and accountabilities. Ensure that business information can be traced to the originating business event and accountable parties. This enables traceability of the information through its life cycle and related processes. This provides assurance that information that drives the business is reliable and has been processed in accordance with defined objectives.	DSS06-O3
DSS06-BP6	Secure information assets. Secure information assets accessible by the business through approved methods, including information in electronic form (such as methods that create new assets in any form, portable media devices, user applications and storage devices), information in physical form (such as source documents or output reports) and information during transit. This benefits the business by providing end-to-end safeguarding of information.	DSS06-O2
Work Products (WPs)		
Inputs		
Number	Description	Supports
APO01-WP14	Data classification guidelines	DSS06-BP1
APO01-WP16	Data integrity procedures	DSS06-O1
BAI05-WP10	Operation and use plan	DSS06-BP2
BAI07-WP3	Migration plan	DSS06-O1
EDM04-WP5	Assigned responsibilities for resource management	DSS06-BP3
APO11-WP1	QMS roles, responsibilities and decision rights	DSS06-O2
APO13-WP2	ISMS scope statement	
DSS05-WP9	Access logs	

Process ID	DSS06 (cont.)		
Process Name	Manage Business Process Controls		
Outputs			
Number	Description	Input to	Supports
DSS06-WP1	Results of processing effectiveness reviews	MEA02.04	DSS06-BP1 DSS06-O1
DSS06-WP2	Root cause analyses and recommendations	BAI06.01 MEA02.04 MEA02.07 MEA02.08	
DSS06-WP3	Processing control reports	Internal	DSS06-BP2 DSS06-O1
DSS06-WP4	Allocated roles and responsibilities	APO01.02	DSS06-BP3 DSS06-O2
DSS06-WP5	Allocated levels of authority	APO01.02	
DSS06-WP6	Allocated access rights	DSS05.04	
DSS06-WP7	Evidence of error correction and remediation	MEA02.04	DSS06-BP4 DSS06-O1/O3
DSS06-WP8	Error reports and root cause analysis	Internal	
DSS06-WP9	Retention requirements	Internal	DSS06-BP5 DSS06-O3
DSS06-WP10	Record of transactions	Internal	
DSS06-WP11	Reports of violations	DSS05.03 DSS05.07	DSS06-BP6 DSS06-O2

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.5 monitor, evaluate And Assess (meA)

- 01** Monitor, evaluate and assess performance and conformance.
- 02** Monitor, evaluate and assess the system of internal control.
- 03** Monitor, evaluate and assess compliance with external requirements.

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3.0 Process Dimension and Process Performance Indicators

Process ID	MEA01	
Process Name	Monitor, Evaluate and Assess Performance and Conformance	
Process Description	Collect, validate and evaluate business, IT and process goals and metrics. Monitor that processes are performing against agreed-on performance and conformance goals and metrics and provide reporting that is systematic and timely.	
Process Purpose Statement	Provide transparency of performance and conformance and drive achievement of goals.	
Outcomes (Os)		
Number	Description	
MEA01-O1	Goals and metrics are approved by the stakeholders.	
MEA01-O2	Processes are measured against agreed-on goals and metrics.	
MEA01-O3	The enterprise monitoring, assessing and informing approach is effective and operational.	
MEA01-O4	Goals and metrics are integrated within enterprise monitoring systems.	
MEA01-O5	Process reporting on performance and conformance is useful and timely.	
Base Practices (BPs)		
Number	Description	Supports
MEA01-BP1	Establish a monitoring approach. Engage with stakeholders to establish and maintain a monitoring approach to define the objectives, scope and method for measuring business solution and service delivery and contribution to enterprise objectives. Integrate this approach with the corporate performance management system.	MEA01-O1/O4
MEA01-BP2	Set performance and conformance targets. Work with the stakeholders to define, periodically review, update and approve performance and conformance targets within the performance measurement system.	MEA01-O1/O2
MEA01-BP3	Collect and process performance and conformance data. Collect and process timely and accurate data aligned with enterprise approaches.	MEA01-O3
MEA01-BP4	Analyse and report performance. Periodically review and report performance against targets, using a method that provides a succinct all-around view of IT performance and fits within the enterprise monitoring system.	MEA01-O5
MEA01-BP5	Ensure the implementation of corrective actions. Assist stakeholders in identifying, initiating and tracking corrective actions to address anomalies	MEA01-O4
Work Products (WPs)		
Inputs		
Number	Description	Supports
EDM05-WP1	Evaluation of enterprise reporting requirements	MEA01-BP1 MEA01-O1/O4
EDM05-WP2	Reporting and communications principles	
EDM05-WP3	Rules for validating and approving mandatory reports	
EDM05-WP5	Assessment of reporting effectiveness	
APO01-WP12	Performance goals and metrics for process improvement tracking	MEA01-BP2 MEA01-O1/O2
APO05-WP9	Investment portfolio performance reports	MEA01-BP3 MEA01-O3
APO09-WP8	Service level performance reports	
APO10-WP10	Supplier compliance monitoring review results	
BAI01-WP12	Results of programme performance reviews	
BAI04-WP5	Availability, performance and capacity monitoring review reports	
BAI05-WP11	Success measures and results	
DSS01-WP8	Facilities assessment reports	
DSS02-WP13	Incident status and trends report	
EDM05-WP4	Escalation guidelines	
APO01-WP2	Non-compliance remedial actions	MEA01-BP5 MEA01-O4

Process ID	MEA01 (cont.)		
Process Name	Monitor, Evaluate and Assess Performance and Conformance		
Outputs			
Number	Description	Input to	Supports
MEA01-WP1	Monitoring requirements	Internal	MEA01-BP1 MEA01-O1/O4
MEA01-WP2	Approved monitoring goals and metrics	Internal	
MEA01-WP3	Monitoring targets	All APO All BAI All DSS All MEA	MEA01-BP2 MEA01-O1/O2
MEA01-WP4	Processed monitoring data	Internal	MEA01-BP3 MEA01-O3
MEA01-WP5	Performance reports	EDM01.03 All APO All BAI All DSS All MEA MEA01-O5	MEA01-BP4
MEA01-WP6	Remedial actions and assignments	All APO All BAI All DSS All MEA	MEA01-BP5 MEA01-O4
MEA01-WP7	Status and results of actions	EDM01.03	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

3.0 Process Dimension and Process Performance Indicators

Process ID	MEA02	
Process Name	Monitor, Evaluate and Assess the System of Internal Control	
Process Description	Continuously monitor and evaluate the control environment, including self-assessments and independent assurance reviews. Enable management to identify control deficiencies and inefficiencies and to initiate improvement actions. Plan, organise and maintain standards for internal control assessment and assurance activities.	
Process Purpose Statement	Obtain transparency for key stakeholders on the adequacy of the system of internal controls and thus provide trust in operations, confidence in the achievement of enterprise objectives and an adequate understanding of residual risk.	
Outcomes (Os)		
Number	Description	
MEA02-O1	Processes, resources and information meet enterprise internal control system requirements.	
MEA02-O2	All assurance initiatives are planned and executed effectively.	
MEA02-O3	Independent assurance that the system of internal control is operational and effective is provided.	
MEA02-O4	Internal control is established and deficiencies are identified and reported.	
Base Practices (BPs)		
Number	Description	Supports
MEA02-BP1	Monitor internal controls. Continuously monitor, benchmark and improve the IT control environment and control framework to meet organisational objectives.	MEA02-O1
MEA02-BP2	Review business process controls effectiveness. Review the operation of controls, including a review of monitoring and test evidence, to ensure that controls within business processes operate effectively. Include activities to maintain evidence of the effective operation of controls through mechanisms such as periodic testing of controls, continuous controls monitoring, independent assessments, command and control centres, and network operations centres. This provides the business with the assurance of control effectiveness to meet requirements related to business, regulatory and social responsibilities.	MEA02-O3
MEA02-BP3	Perform control self-assessments. Encourage management and process owners to take positive ownership of control improvement through a continuing programme of self-assessment to evaluate the completeness and effectiveness of management's control over processes, policies and contracts.	MEA02-O2/O3
MEA02-BP4	Identify and report control deficiencies. Identify control deficiencies and analyse and identify their underlying root causes. Escalate control deficiencies and report to stakeholders.	MEA02-O4
MEA02-BP5	Ensure that assurance providers are independent and qualified. Ensure that the entities performing assurance are independent from the function, groups or organisations in scope. The entities performing assurance should demonstrate an appropriate attitude and appearance, competence in the skills and knowledge necessary to perform assurance, and adherence to codes of ethics and professional standards.	MEA02-O3
MEA02-BP6	Plan assurance initiatives. Plan assurance initiatives based on enterprise objectives and strategic priorities, inherent risk, resource constraints, and sufficient knowledge of the enterprise.	MEA02-O2
MEA02-BP7	Scope assurance initiatives. Define and agree with management on the scope of the assurance initiative, based on the assurance objectives.	
MEA02-BP8	Execute assurance initiatives. Execute the planned assurance initiative. Report on identified findings. Provide positive assurance opinions, where appropriate, and recommendations for improvement relating to identified operational performance, external compliance and internal control system residual risk.	MEA02-O2/O4

Process ID	MEA02 (cont.)		
Process Name	Monitor, Evaluate and Assess the System of Internal Control		
Work Products (WPs)			
Inputs			
Number	Description	Supports	
Outside COBIT	Industry standards and good practices Review results of third-party risk assessments ISMS audit reports Compliance audit results Reviews of operational use Root cause of quality delivery failures Risk-related root causes Results of processing effectiveness reviews Root cause analyses and recommendations Evidence of error correction and remediation Programme plans Independent assurance plans Root causes of quality delivery failures Risk-related root causes Root cause analyses and recommendations Reports of non-compliance issues and root causes Risk analysis and risk profile reports for stakeholders Results of penetration tests Identified compliance gaps	MEA02-BP1 MEA02-O1	
APO12-WP10		MEA02-BP2 MEA02-O3	
APO13-WP5			
BAI05-WP12		MEA02-BP4 MEA02-O4	
BAI05-WP17			
APO11-WP11			
APO12-WP16			
DSS06-WP1		MEA02-BP6 MEA02-O2	
DSS06-WP2			
DSS06-WP7			
BAI01-WP7			
DSS01-WP10		MEA02-BP7 MEA02-O2	
APO11-WP11			
APO12-WP16			
DSS06-WP2			
MEA03-WP8		MEA02-BP8 MEA02-O2/O4	
APO12-WP9			
DSS05-WP4			
MEA03-WP5			
Outputs			
Number	Description	Input to	Supports
MEA02-WP1	Evidence of control effectiveness	Internal	MEA02-BP2 MEA02-O1
MEA02-WP2	Results of internal control monitoring and reviews	EDM01.03 All APO All BAI All DSS All MEA MEA02-O1	MEA02-BP1
MEA02-WP3	Results of benchmarking and other evaluations	EDM01.03 All APO All BAI All DSS All MEA	
MEA02-WP4	Self-assessment plans and criteria	All APO All BAI All DSS All MEA	MEA02-BP3 MEA02-O2/O3
MEA02-WP5	Results of self-assessments	Internal	
MEA02-WP6	Results of reviews of self-assessments	EDM01.03 All APO All BAI All DSS All MEA	
MEA02-WP7	Assurance review scope	Internal	MEA02-BP7 MEA02-O2
MEA02-WP8	Engagement plan	Internal	
MEA02-WP9	Assurance review practices	Internal	

3.0 Process Dimension and Process Performance Indicators

Process ID	MEA02 (cont.)		
Process Name	Monitor, Evaluate and Assess the System of Internal Control		
Outputs (cont.)			
Number	Description	Input to	Supports
MEA02-WP10	Refined scope	EDM05.01 All APO All BAI All DSS All MEA	MEA02-BP8 MEA02-O2/O4
MEA02-WP11	Assurance review results	EDM05.03 All APO All BAI All DSS All MEA	
MEA02-WP12	Assurance review report	EDM05.03 All APO All BAI All DSS All MEA	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

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3.0 Process Dimension and Process Performance Indicators

Process ID	MEA03	
Process Name	Monitor, Evaluate and Assess Compliance With External Requirements	
Process Description	Evaluate that IT processes and IT-supported business processes are compliant with laws, regulations and contractual requirements. Obtain assurance that the requirements have been identified and complied with, and integrate IT compliance with overall enterprise compliance.	
Process Purpose Statement	Ensure that the enterprise is compliant with all applicable external requirements.	
Outcomes (Os)		
Number	Description	
MEA03-O1	All external compliance requirements are identified.	
MEA03-O2	External compliance requirements are adequately addressed.	
Base Practices (BPs)		
Number	Description	Supports
MEA03-BP1	Identify external compliance requirements. On a continuous basis, identify and monitor for changes in local and international laws, regulations and other external requirements that must be complied with from an IT perspective.	MEA03-O1
MEA03-BP2	Optimise response to external requirements. Review and adjust policies, principles, standards, procedures and methodologies to ensure that legal, regulatory and contractual requirements are addressed and communicated. Consider industry standards, codes of good practice, and best practice guidance for adoption and adaptation.	MEA03-O2
MEA03-BP3	Confirm external compliance. Confirm compliance of policies, principles, standards, procedures and methodologies with legal, regulatory and contractual requirements.	MEA03-O1/O2
MEA03-BP4	Obtain assurance of external compliance. Obtain and report assurance of compliance and adherence with policies, principles, standards, procedures and methodologies. Confirm that corrective actions to address compliance gaps are closed in a timely manner.	MEA03-O1/O2
Work Products (WPs)		
Inputs		
Number	Description	Supports
Outside COBIT	Legal and regulatory compliance requirements	MEA03-BP1 MEA03-O1
BAI05-WP12	Compliance audit results	MEA03-BP3 MEA03-O2
BAI09-WP12	Results of installed licence audits	
BAI10-WP9	Licence deviations	
DSS01-WP7	Insurance policy reports	
EDM05-WP3	Rules for validating and approving mandatory reports	MEA03-BP4 MEA03-O1/O2
EDM05-WP5	Assessment of reporting effectiveness	

Process ID	MEA03 (cont.)		
Process Name	Monitor, Evaluate and Assess Compliance With External Requirements		
Outputs			
Number	Description	Input to	Supports
MEA03-WP1	Compliance requirements register	Internal	MEA03-BP1 MEA03-O1
MEA03-WP2	Log of required compliance actions	Internal	
MEA03-WP3	Updated policies, principles, procedures and standards	APO01.07 APO01.08 MEA03.02	MEA03-BP2
MEA03-WP4	Communications of changed compliance requirements	EDM01.01 All APO All BAI All DSS All MEA	
MEA03-WP5	Identified compliance gaps	Internal	MEA03-BP3 MEA03-O2
MEA03-WP6	Compliance confirmations	EDM01.03	
MEA03-WP7	Compliance assurance reports	EDM01.03	MEA03-BP4 MEA03-O1/O2
MEA03-WP8	Reports of non-compliance issues and root causes	EDM01.03	

Note: Refer to **figure 7** for a complete listing of outputs common to all processes.

4.0 Process CAPAbIIty IndIcAtors

This section presents the process capability indicators related to the process attributes (PAs) associated with capability levels 1 to 5 defined in the capability dimension of the process assessment model.

Process capability indicators are the means of achieving the capabilities addressed by the process attributes. Evidence of process capability indicators supports the judgement of the degree of achievement of the process attribute.

The capability dimension of the process assessment model consists of six capability levels matching the capability levels defined in section 2.3 of this process assessment model. This section describes the process capability indicators for the nine process attributes included in the capability dimension for levels 1 to 5.

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

4.1 Level 1—Performed Process

PA 1.1 Process Performance—A measure of the extent to which the process purpose is achieved. Full achievement of this attribute results in the process achieving its defined outcomes, as shown in **figure 8**.

Figure 8—PA 1.1 Process Performance		
Result of Full Achievement of the Attribute	Base Practices (BPs)	Work Products (WPs)
The process achieves its defined outcomes.	BP 1.1.1 Achieve the process outcomes. There is evidence that the intent of the base practice is being performed.	Work products are produced that provide evidence of process outcomes, as outlined in section 3.0.

4.2 Level 2—Managed Process

Process Performance is now implemented in a managed fashion (planned, monitored and adjusted) and its work products are appropriately established, controlled and maintained.

PA 2.1 Performance Management—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.
- Performance of the process is planned and monitored.
- Performance of the process is adjusted to meet plans.
- Responsibilities and authorities for performing the process are defined, assigned and communicated.
- Resources and information necessary for performing the process are identified, made available, allocated and used.
- Interfaces between the involved parties are managed to ensure effective communication and clear assignment of responsibility.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 9**.

Figure 9—PA 2.1 Performance Management		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. Objectives for the performance of the process are identified.	GP 2.1.1 Identify the objectives for the performance of the process. The performance objectives, scoped together with assumptions and constraints, are defined and communicated.	GWP 1.0 Process documentation should outline the process scope. GWP 2.0 Process plan should provide details of the process performance objectives.
b. Performance of the process is planned and monitored.	GP 2.1.2 Plan and monitor the performance of the process to fulfil the identified objectives. Basic measures of process performance linked to business objectives are established and monitored. They include key milestones, required activities, estimates and schedules.	GWP 2.0 Process plan should provide details of the process performance objectives. GWP 9.0 Process performance records should provide details of the outcomes. Note: At this level, the record of process performance may be in the form of reports, issues registers and informal records.
c. Performance of the process is adjusted to meet plans.	GP 2.1.3 Adjust the performance of the process. Action is taken when planned performance is not achieved. Actions include identification of process performance issues and adjustment of plans and schedules as appropriate.	GWP 4.0 Quality record should provide details of action taken when performance is not achieved.
d. Responsibilities and authorities for performing the process are defined, assigned and communicated.	GP 2.1.4 Define responsibilities and authorities for performing the process. The key responsibilities and authorities for performing the key activities of the process are defined, assigned and communicated. The need for process performance experience, knowledge and skills is defined.	GWP 1.0 Process documentation should provide details of the process owner and who is responsible, accountable, consulted and/or informed (RACI). GWP 2.0 Process plan should include details of the process communication plan as well as process performance experience, skills requirement.
e. Resources and information necessary for performing the process are identified, made available, allocated and used.	GP 2.1.5 Identify and make available resources to perform the process according to plan. Resources and information necessary for performing the key activities of the process are identified, made available, allocated and used.	GWP 2.0 Process plan should provide details of the process training plan and process resourcing plan.
f. Interfaces between the involved parties are managed to ensure effective communication and clear assignment of responsibility.	GP 2.1.6 Manage the interfaces between involved parties. The individuals and groups involved with the process are identified, responsibilities are defined and effective communication mechanisms are in place.	GWP 1.0 Process documentation should provide details of the individuals and groups involved (suppliers, customers and RACI). GWP 2.0 Process plan should provide details of the process communication plan.

PA 2.2 Work Product Management—A measure of the extent to which the work products produced by the process are appropriately managed. The work products referred to in this clause are those that result from the achievement of the process outcomes. As a result of full achievement of this attribute:

- Requirements for the work products of the process are defined.
- Requirements for documentation and control of the work products are defined.
- Work products are appropriately identified, documented and controlled.
- Work products are reviewed in accordance with planned arrangements and adjusted as necessary to meet requirements.

Note: 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.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 10**.

Figure 10—PA 2.2 Work Product Management		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. Requirements for the work products of the process are defined.	GP 2.2.1 Define the requirements for the work products , including content structure and quality criteria.	GWP 3.0 Quality plan should provide details of quality criteria and work product content and structure.
b. Requirements for documentation and control of the work products are defined.	GP 2.2.2 Define the requirements for documentation and control of the work products. This should include identification of dependencies, approvals and traceability of requirements.	GWP 1.0 Process documentation should provide details of controls (control matrix). GWP 3.0 Quality plan should provide details of work product, quality criteria, documentation requirements and change control.
c. Work products are appropriately identified, documented and controlled.	GP 2.2.3 Identify, document and control the work products. Work products are subject to change control, versioning and configuration management as appropriate.	GWP 3.0 Quality plan should provide details of work product, quality criteria, documentation requirements and change control.
d. Work products are reviewed in accordance with planned arrangements and adjusted as necessary to meet requirements.	GP 2.2.4 Review and adjust work products to meet the defined requirements. Work products are subject to review against requirements in accordance with planned arrangements and any issues arising are resolved.	GWP 4.0 Quality records should provide an audit trail of reviews undertaken.

4.3 Level 3—Established Process

Managed Process is now implemented using a defined process that is capable of achieving its process outcomes.

PA 3.1 Process Definition—A measure of the extent to which a standard process is maintained to support the deployment of the defined process. As a result of full achievement of this attribute:

- A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into a defined process.
- The sequence and interaction of the standard process with other processes are determined.
- Required competencies and roles for performing a process are identified as part of the standard process.
- Required infrastructure and work environment for performing a process are identified as part of the standard process.
- Suitable methods for monitoring the effectiveness and suitability of the process are determined.

Note: A standard process may be used as is when deploying a defined process, in which case tailoring guidelines would not be necessary.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 11**.

Figure 11—PA 3.1 Process Definition		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into a defined process.	GP 3.1.1 Define the standard process that will support the deployment of the defined process. A standard process is defined that identifies the fundamental process elements and provides guidance and procedures to support implementation and guidance on how it can be tailored when needed.	GWP 5.0 Policies and standards should provide details of the organisational objectives for the process, minimum standards of performance, standard procedures, and reporting and monitoring requirements. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.
b. The sequence and interaction of the standard process with other processes are determined.	GP 3.1.2 Determine the sequence and interaction between processes so that they work as an integrated system of processes. The standard process sequence and interaction with other processes are determined and maintained when a process is implemented in different parts of the organisation.	GWP 5.0 Policies and standards should provide a process mapping with details of standard processes and expected sequences and interaction. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.
c. Required competencies and roles for performing a process are identified as part of the standard process.	GP 3.1.3 Identify the roles and competencies for performing the standard process.	GWP 5.0 Policies and standards should provide details of roles and competencies for performing. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.
d. Required infrastructure and work environment for performing a process are identified as part of the standard process.	GP 3.1.4 Identify the required infrastructure and work environment for performing the standard process. The infrastructure (facilities, tools, methods, etc.) and work environment for performing the standard process are identified.	GWP 5.0 Policies and standards should identify minimum required infrastructure and work environment for performing the process. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.
e. Suitable methods for monitoring the effectiveness and suitability of the process are determined.	GP 3.1.5 Determine suitable methods to monitor the effectiveness and suitability of the standard process, including ensuring that appropriate criteria and data needed to monitor the effectiveness and suitability of the process are defined, and establishing the need to conduct internal audit and management review.	<p>GWP 5.0 Policies and standards should provide details of the organisational objectives for process, minimum standards of performance, standard procedures, and reporting and monitoring requirements. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.</p> <p>GWP 4.0 Quality records and GWP 9.0 Process performance records should provide evidence of reviews undertaken.</p>

PA 3.2 Process Deployment—A measure of the extent to which the standard process is effectively deployed as a defined process to achieve its process outcomes. As a result of full achievement of this attribute:

- A defined process is deployed based on an appropriately selected and/or tailored standard process.
- Required roles, responsibilities and authorities for performing the defined process are assigned and communicated.
- Personnel performing the defined process are competent on the basis of appropriate education, training and experience.
- Required resources and information necessary for performing the defined process are made available, allocated and used.
- Required infrastructure and work environment for performing the defined process are made available, managed and maintained.
- Appropriate data are collected and analysed as a basis for understanding the behaviour of the process, to demonstrate its suitability and effectiveness, and to evaluate where continuous improvement of the process can be made.

Note: Competency results from a combination of knowledge, skills and personal attributes that are gained through education, training and experience.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 12**.

Figure 12—PA 3.2 Process Deployment		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. A defined process is deployed based on an appropriately selected and/or tailored standard process.	GP 3.2.1 Deploy a defined process that satisfies the context. When the same process is used within different areas of the organisation, it is based on a standard process, tailored as appropriate, with conformance to the requirements of the defined process verified.	GWP 5.0 Policies and standards should define the standards to be followed across all implementations of the process. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.
b. Required roles, responsibilities and authorities for performing the defined process are assigned and communicated.	GP 3.2.2 Assign and communicate roles, responsibilities and authorities for performing the defined process. When the same process is used within different areas of the organisation, the authorities and roles for performing the activities of process are assigned and communicated.	GWP 5.0 Policies and standards should provide details, responsibilities and authorities for performing the activities of process. The evidential requirement at this level is not just that policies and standards exist, but that they are applied across the organisation.
c. Personnel performing the defined process are competent on the basis of appropriate education, training and experience.	GP 3.2.3 Ensure necessary competencies for performing the defined process. When the same process is used within different areas of the organisation, the appropriate competencies for assigned personnel are identified and suitable training is available for those deploying the defined process.	GWP 1.0 Process documentation should provide details of competencies and training requirements. GWP 2.0 Process plan should include details of the process communication plan, training plan and resourcing plan for each instance of the process.
d. Required resources and information necessary for performing the defined process are made available, allocated and used.	GP 3.2.4 Provide resources and information to support the performance of the defined process. When the same process is used within different areas of the organisation, the required human resources and information to perform the process are made available, allocated and used.	GWP 2.0 Process plan should include details of the resourcing plan for each instance of the process.
e. Required infrastructure and work environment for performing the defined process are made available, managed and maintained.	GP 3.2.5 Provide adequate process infrastructure to support the performance of the defined process. When the same process is used within different areas of the organisation, the required organisational support, infrastructure and work environment are made available, allocated and used.	GWP 2.0 Process plan should include details of the process infrastructure and work environment for each instance of the process.
f. Appropriate data are collected and analysed as a basis for understanding the behaviour of the process to demonstrate its suitability and effectiveness, and to evaluate where continuous improvement of the process can be made.	GP 3.2.6 Collect and analyse data about performance of the process to demonstrate its suitability and effectiveness. Data required to monitor the effectiveness and suitability of the process across the organisation are defined, collected and analysed as a basis for continual improvement.	GWP 4.0 Quality records and GWP 9.0 Process performance records should provide evidence of reviews undertaken tools for each instance of the process.

4.4 Level 4—Predictable Process

Established Process now operates within defined limits to achieve its process outcomes.

PA 4.1 Process Measurement—A measure of the extent to which measurement results are used to ensure that performance of the process supports the achievement of relevant process performance objectives in support of defined business goals. Measures may be either process measures or product measures or both. As a result of full achievement of this attribute:

- Process information needs in support of relevant defined business goals are established.
- Process measurement objectives are derived from process information needs.
- Quantitative objectives for process performance in support of relevant business goals are established.
- Measures and frequency of measurement are identified and defined in line with process measurement objectives and quantitative objectives for process performance.
- Results of measurement are collected, analysed and reported in order to monitor the extent to which the quantitative objectives for process performance are met.
- Measurement results are used to characterise process performance.

Note: Information needs may typically reflect management, technical, project, process or product needs.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 13**.

Figure 13—PA 4.1 Process Measurement

Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. Process information needs in support of relevant defined business goals are established.	GP 4.1.1 Identify process information needs , in relation with business goals. The business goals and process stakeholder information needs have been established as a basis for determining the process performance measurement objectives.	GWP 6.0 Process improvement plan should provide process improvement objectives and proposed Improvement actions.
b. Process measurement objectives are derived from process information needs.	GP 4.1.2 Derive process measurement objectives from process information needs. Measurement objectives are based on the defined process measurement objectives.	GWP 7.0 Process measurement plan should provide details of proposed measurement objectives.
c. Quantitative objectives for process performance in support of relevant business goals are established.	GP 4.1.3 Establish quantitative objectives for the performance of the defined process, according to the alignment of the process with the business goals. Quantitative measurement objectives are established that explicitly reflect business goals and have been verified as realistic and useful with organisational management and process owner(s).	GWP 7.0 Process measurement plan should provide details of proposed measurement measures and indicators.
d. Measures and frequency of measurement are identified and defined in line with process measurement objectives and quantitative objectives for process performance.	GP 4.1.4 Identify product and process measures that support the achievement of the quantitative objectives for process performance. Detailed measures for products and process are identified, together with the frequency of data collection and measurement as well as verification mechanisms.	GWP 7.0 Process measurement plan should provide details of proposed measures and indicators together with data collection procedures and analytical procedures.
e. Results of measurement are collected, analysed and reported in order to monitor the extent to which the quantitative objectives for process performance are met.	GP 4.1.5 Collect product and process measurement results through performing the defined process. Product and process measurement results are collected, analysed and reported according to a defined plan.	GWP 7.0 Process measurement plan should provide details of proposed analytical procedures. GWP 9.0 Process performance records should provide details of measurements collected and analysed.
f. Measurement results are used to characterise process performance.	GP 4.1.6 Use the results of the defined measurement to monitor and verify the achievement of the process performance objectives. The results of the defined measurement are analysed to verify achievement against the process performance objectives. Appropriate techniques are used to understand process performance and capability within defined control limits.	GWP 9.0 Process performance records should provide details of measurements collected and analysed.

PA 4.2 Process Control—A measure of the extent to which the process is quantitatively managed to produce a process that is stable, capable and predictable within defined limits. As a result of full achievement of this attribute:

- Analysis and control techniques are determined and applied where applicable.
- Control limits of variation are established for normal process performance.
- Measurement data are analysed for special causes of variation.
- Corrective actions are taken to address special causes of variation.
- Control limits are re-established (as necessary) following corrective action.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 14**.

Figure 14—PA 4.2 Process Control		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. Analysis and control techniques are determined and applied where applicable.	GP 4.2.1 Determine analysis and control techniques appropriate to control the process performance. Methods of measuring the effectiveness of process control are defined and validated.	GWP 1.0 Process documentation should provide details of controls (control matrix). GWP 8.0 Process control plan should exist that specifies for each process the measurement approach.
b. Control limits of variation are established for normal process performance.	GP 4.2.2 Define parameters suitable to control the process performance. The standard process definition is modified to include methods for process control and control limits are established.	GWP 8.0 Process control plan should exist that specifies for each control limits for normal performance.
c. Measurement data are analysed for special causes of variation.	GP 4.2.3 Analyse process and product measurement results to identify variations in process performance. The results of process control measurements are analysed to determine issues of concern and forwarded for action.	GWP 9.0 Process performance record should provide details of measurements collected and analysed.
d. Corrective actions are taken to address special causes of variation.	GP 4.2.4 Identify and implement corrective actions to address assignable causes. Corrective action is taken to address process control concerns and results are monitored and evaluated.	GWP 9.0 Process performance record should provide details of measurements collected and analysed and corrective action taken.
e. Control limits are re-established (as necessary) following corrective action.	GP 4.2.5 Re-establish control limits following corrective action. Process control limits are appropriately modified after corrective action is taken.	GWP 8.0 Process control plan should exist that specifies control limits for normal performance.

4.5 Level 5—Optimising Process

Predictable Process is continuously improved to meet relevant current and projected business goals.

PA 5.1 Process Innovation—A measure of the extent to which changes to the process are identified from analysis of common causes of variation in performance, and from investigations of innovative approaches to the definition and deployment of the process. As a result of full achievement of this attribute:

- Process improvement objectives for the process are defined that support the relevant business goals.
- Appropriate data are analysed to identify common causes of variations in process performance.
- Appropriate data are analysed to identify opportunities for best practice and innovation.
- Improvement opportunities derived from new technologies and process concepts are identified.
- An implementation strategy is established to achieve the process improvement objectives.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 15**.

Figure 15—PA 5.1 Process Innovation		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. Process improvement objectives for the process are defined that support the relevant business goals.	GP 5.1.1 Define the process improvement objectives for the process that supports the relevant business goals. Directions to process innovations are set. Quantitative and qualitative process improvement objectives—based on the potential for process innovation as well as business vision and goals— have been defined and documented.	GWP 7.0 Process improvement plan should provide process improvement objectives and proposed improvement actions.
b. Appropriate data are analysed to identify common causes of variations in process performance.	GP 5.1.2 Analyse measurement data of the process to identify real and potential variations in process performance. Process performance data are analysed to identify variations in process performance together with the root cause of common process performance issues.	GWP 9.0 Process performance records should provide details of measurements collected and analysed.
c. Appropriate data are analysed to identify opportunities for best practice and innovation.	GP 5.1.3 Identify improvement opportunities of the process based on innovation and best practices. Process improvement opportunities are identified based on comparison with industry best practices.	GWP 6.0 Process improvement plan should provide details of analysis against best practice.
d. Improvement opportunities derived from new technologies and process concepts are identified.	GP 5.1.4 Derive improvement opportunities of the process from new technologies and process concepts. Process improvement opportunities are identified based on review and analysis of emerging technological and process concept innovations, taking into account business environment changes including emerging business risks.	GWP 6.0 Process improvement plan should provide details of analysis of technology improvement opportunities.
e. An implementation strategy is established to achieve the process improvement objectives.	GP 5.1.5 Define an implementation strategy based on long-term improvement vision and objectives. A process improvement strategy is defined and validated based on long-term improvement goals and objectives. Commitment to improvement is demonstrated by organisational management and process owner(s).	GWP 6.0 Process improvement plan should provide details of the implementation strategy for process improvement.

PA 5.2 Process Optimisation—A measure of the extent to which changes to the definition, management and performance of the process result in effective impact that achieves the relevant process improvement objectives. As a result of full achievement of this attribute:

- Impact of all proposed changes is assessed against the objectives of the defined process and standard process.
- Implementation of all agreed changes is managed to ensure that any disruption to the process performance is understood and acted on.
- Based on actual performance, effectiveness of process change is evaluated against the defined product requirements and process objectives to determine whether results are due to common or special causes.

The GPs and GWPs that provide evidence of achievement of the attribute are shown in **figure 16**.

Figure 16—PA 5.2 Process Optimisation		
Result of Full Achievement of the Attribute	Generic Practices (GPs)	Generic Work Products (GWPs)
a. Impact of all proposed changes is assessed against the objectives of the defined process and standard process.	GP 5.2.1 Assess the impact of each proposed change against the objectives of the defined and standard process. The impact of proposed changes is assessed against the objectives of the process and to determine the impact on product quality and process performance as well as other related processes.	GWP 6.0 Process improvement plan should provide details of the required process improvement project quality approach.
b. Implementation of all agreed changes is managed to ensure that any disruption to the process performance is understood and acted on.	GP 5.2.2. Manage the implementation of agreed changes to selected areas of the defined and standard process according to the implementation strategy. The implementation of agreed changes is managed in accordance with defined change management and change enablement processes.	GWP 6.0 Process improvement plan should provide details of the implementation strategy for process improvement and evidence of changes in: <ul style="list-style-type: none"> • GWP 1.0 Process documentation • GWP 3.0 Quality plan • GWP 5.0 Policies and standards
c. Based on actual performance, effectiveness of process change is evaluated against the defined product requirements and process objectives to determine whether results are due to common or special causes.	GP 5.2.3 Based on actual performance, evaluate the effectiveness of process change against process performance, capability objectives and business goals. The effectiveness of the changes made to the process is measured, evaluated and reported after implementation.	GWP 6.0 Process improvement plan should provide details of the required process improvement project quality approach.

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Appendix A. Conformity of the COBIT 5 proCess Assessment Model

A.1 Introduction

This part of the COBIT 5 process assessment is the statement of conformance to the requirements defined in ISO/IEC 15504-2. For ease of reference, the requirements from Clause 6.3 of ISO/IEC 15504-2 are embedded verbatim in the text of this action.

A.2 Requirements for Process Assessment Models (From ISO/IEC 15504-2)

A.2.1 Introduction

In order to assure that assessment results are translatable into an ISO/IEC 15504 process profile in a repeatable and reliable manner, Process Assessment Models shall adhere to certain requirements. A Process Assessment Model shall contain a definition of its purpose, scope and elements; its mapping to the Measurement Framework and specified Process Reference Model(s); and a mechanism for consistent expression of results.

A Process Assessment Model is considered suitable for the purpose of assessing process capability by conforming to 6.3.2, 6.3.3, and 6.3.4.

ISO/IEC 15504:2, 6.3.1

The purpose of the COBIT 5 process assessment model is to support assessment of process capability in accordance with the requirements of ISO/IEC 15504:2 (refer to Clause 1).

A.2.2 Process Assessment Model Scope

6.3.2.1 *A Process Assessment Model shall relate to at least one process from the specified Process Reference Model(s).*

6.3.2.2 *A Process Assessment Model shall address, for a given process, all, or a continuous subset, of the levels (starting at level 1) of the Measurement Framework for process capability for each of the processes within its scope.*

Note: *It would be permissible for a model, for example, to address solely level 1, or to address levels 1, 2 and 3, but it would not be permissible to address levels 2 and 3 without level 1.*

6.3.2.3 *A Process Assessment Model shall declare its scope of coverage in the terms of:*

- a) the selected Process Reference Model(s);*
- b) the selected processes taken from the Process Reference Model(s);*
- c) the capability levels selected from the Measurement Framework.*

ISO/IEC 15504:2, 6.3.2

This process assessment model is based on COBIT 5, which serves as its 'process reference model'.

In the process dimension of this process assessment model, the model provides coverage of all processes in the process reference model.

In the capability dimension of this process assessment model, the model addresses all of the capability levels defined in the Measurement Framework in ISO/IEC 15504-2, Clause 5.

A.2.3 Process Assessment Model Elements and Indicators

A Process Assessment Model shall be based on a set of indicators that explicitly addresses the purposes and outcomes, as defined in the selected Process Reference Model, of all the processes within the scope of the Process Assessment Model; and that demonstrates the achievement of the process attributes within the capability level scope of the Process Assessment Model. The indicators focus attention on the implementation of the processes in the scope of the model.
ISO/IEC 15504:2, 6.3.3

The COBIT 5 process assessment model provides a two-dimensional view of process capability for the processes in the process reference model, through the inclusion of assessment indicators as shown in **figure 5**. The assessment indicators used are:

- Base practices (BPs) and work products (WPs)
- Generic practices (GPs) and generic work products (GWPs)

They support the judgement of the performance and capability of an implemented process.

Note: The assessment indicators for COBIT 5 process assessment model do not include resources.

A.2.4 Mapping Process Assessment Models to Process Reference Models

A Process Assessment Model shall provide an explicit mapping from the relevant elements of the model to the processes of the selected Process Reference Model and to the relevant process attributes of the Measurement Framework.

The mapping shall be complete, clear and unambiguous. The mapping of the indicators within the Process Assessment Model shall be to:

- a) the purposes and outcomes of the processes in the specified Process Reference Model*
- b) the process attributes (including all of the results of achievements listed for each process attribute) in the Measurement Framework.*

This enables Process Assessment Models that are structurally different to be related to the same Process Reference Model.
ISO/IEC 15504:2, 6.3.4

Each of the processes in this COBIT 5 process assessment model is identical in scope to the process defined in the process reference model. Each base practice and work product is cross-referenced to the process outcomes it addresses. All work products relate as inputs or outputs to the process as a whole—see the mappings in ISO/IEC 15504-2, Clause 5.

Each of the process attributes in this process assessment model is identical to the process attribute defined in the measurement framework. The GPs address the characteristics from each process attribute. The generic resources and GWPs relate to the process attribute as a whole.

The mappings of the GPs to the achievements associated with each process attribute are shown in section 4.0.

A.2.5 Expression of Assessment Results

A Process Assessment Model shall provide a formal and verifiable mechanism for representing the results of an assessment as a set of process attribute ratings for each process selected from the specified Process Reference Model(s).

Note: The expression of results may involve a direct translation of Process Assessment Model ratings into a process profile as defined in this international standard, or the conversion of the data collected during the assessment (with the possible inclusion of additional information) through further judgment on the part of the assessor.

ISO/IEC 15504:2, 6.3.5

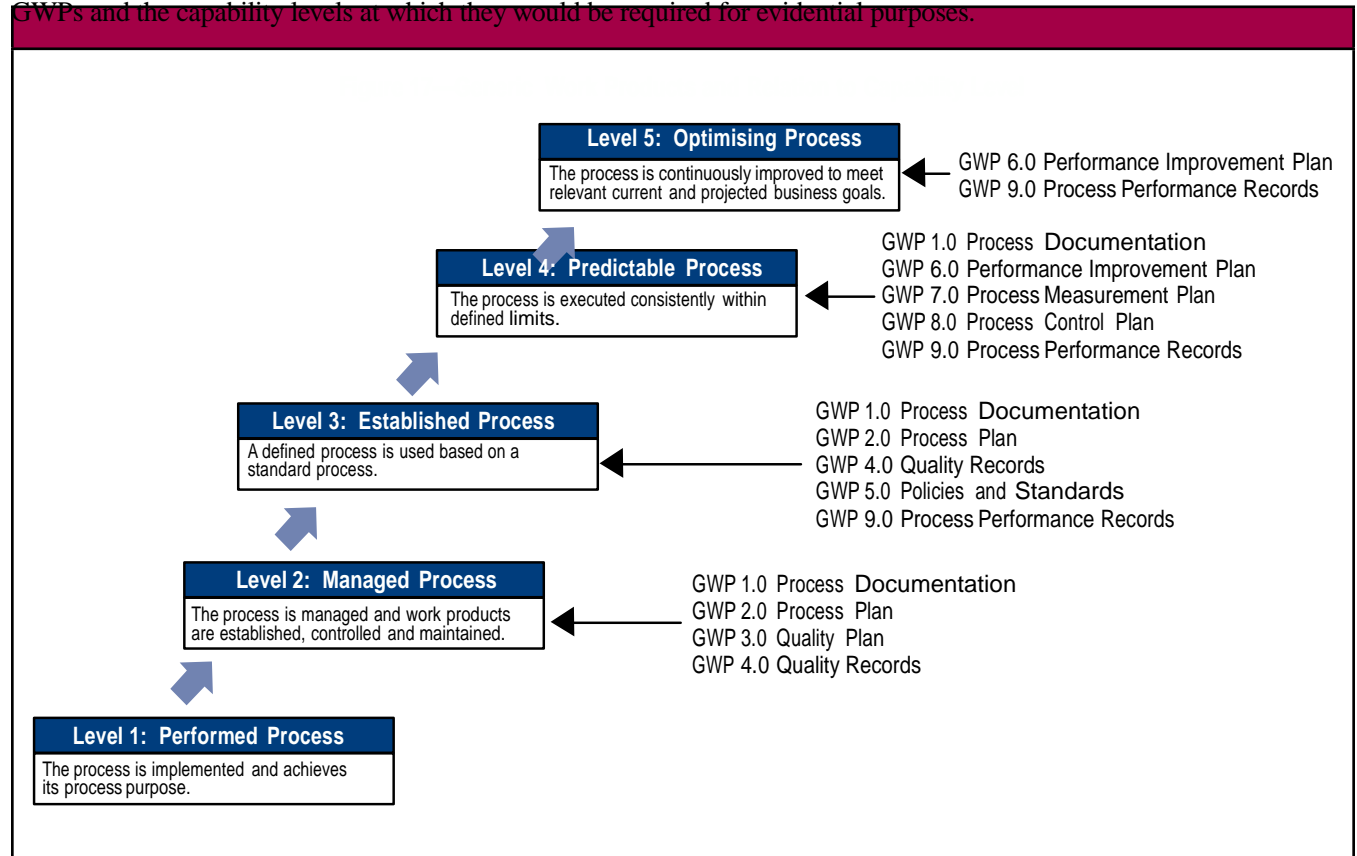
The processes in this process assessment model are identical to those defined in the process reference model. The process attributes and the process attributes rating in this process assessment model are identical to those defined in the ISO/IEC 15504-2 Measurement Framework. As a consequence, results of assessments based on this process assessment model are expressed directly as a set of process attribute ratings for each process within the scope of the assessment. No form of translation or conversion is required.

APPendix b. generic And level 1 OutPut Work Products

B.1 Generic Work Products (GWPs)

The GWPs are those work products required to support the management of a process. As outlined in section 4, their existence, together with GPs, provides evidence for the achievement of specific process capability attributes. The evidence includes such things as process objectives, responsibilities, performance requirements, improvement plans and outcomes required at various levels of process capability.

They are called ‘generic’ because similar work products would be expected for each process. They are indicative of the types of work products and content that will be introduced to support increased process capability. **Figure 17** lists the GWPs and the capability levels at which they would be required for evidential purposes.



It is not expected that every organisation will use GWP's with the exact description and content as shown in **figure 18**.

Figure 18—Generic Work Products (GWPs)

GWP ID	GWP	Typical Contents	Related GP	Additional Explanation
1.0	Process Documentation	Process name	N/A	The name of the process.
		Process owner	GP 2.1.4	The person responsible for the design of the process. This includes being responsible for the creation, update and approval of documents (procedures, work instructions/protocols) to support the process.
		Process scope	GP 2.1.1	A clear statement of where the process begins and ends
		Process roles	GP 2.1.6	Details of key roles in the process: <ul style="list-style-type: none"> • Supplier(s) and inputs • Output and customers
		Process map	GP 3.1.2	Generally, in the form of a schematic picture of a process to show the sequential flow of work. In most cases, there will be a map showing flows across a number of processes.
		RACI chart	GP 2.1.4 GP 2.1.6	Identifies who is responsible, accountable, consulted and informed with respect to each of the key activities in the process
		Internal control matrix	GP 2.2.2	Matrix showing identified risk within the business process together with identified controls
		Process procedures	GP 3.1.1	A document outlining the activities required to achieve the required process outcomes
2.0	Process Plan	Process performance objectives	GP 2.1.1 GP 2.1.2	Will vary, depending on the process. However, there should be evidence of targets such as milestones, required activities, estimated output volumes or schedules.
		Process resourcing	GP 2.1.5 GP 3.2.4	A plan indicating resources and information required to meet the performance required for the process, and information on what resources are to be supplied
		Process communication	GP 2.1.4 GP 2.1.6 GP 3.2.3	A plan for the communication required for the process. It should include such things as the: <ul style="list-style-type: none"> • Responsibility for communication • Target audience • Content that should be communicated • Timing for communications • Communication approach
		Process infrastructure and work environment	GP 3.1.4 GP 3.2.5	The facilities, tools, methods and work environment for performing the processes
		Process performance experience, skills requirement	GP 2.1.4	Job descriptions and skills required to undertake the process
		Process training requirement	GP 2.1.5	User skills and competencies, including individual training requirements
3.0	Quality Plan	Statement of quality policy and objectives	GP 2.1.2	A statement of the customer's quality expectations for the process, e.g., deliverables or timeliness
		Work products content	GP 2.2.1	Identification of all work products, their structure and expected content
		Quality criteria for the work products produced during the processes as basis for reviews and approvals	GP 2.2.1	The criteria against which each work product will be reviewed and approved
		Work products documentation	GP 2.2.2	The requirements for documentation and control requirement, including identification, traceability and approvals
		Work products change control, versioning and configuration management requirements	GP 2.2.3	Outline of procedures for versioning and change control to be applied to work products
4.0	Quality Records	Records of reviews against requirements and action taken providing evidence during the required controls and quality checks	GP 2.2.4	Record of reviews undertaken of work products together with any issues arising and resolution

Figure 18—Generic Work Products (GWPs) (cont.)

GWP ID	GWP	Typical Contents	Related GP	Additional Explanation
5.0	Policies and Standards	Organisational objectives and responsibility for the process	GP 3.1.1	A statement of the organisation's objectives for the process as it is applied across organisational units. It should identify overall responsibilities of the process. Note: The implementation of policies and standards across the organisation will have to be confirmed.
		Minimum standard of performance required for a process	GP 3.1.1	The expected level of performance expected for the process across the organisation. This could include milestones, required activities, estimated output volumes or schedules. Note: It is possible that this will be established for individual implementations of the process rather than as a generic performance.
		Standard process mapping, including expected sequence and interaction between processes	GP 3.1.2 GP 3.2.1	A schematic picture of the sequential flow of work expected for the process. This should also identify expected interactions between different implementations of the process.
		Standardised procedures	GP 3.2.1	A document outlining the procedures that should be followed in all implementations of the processes
		Roles and competency for performing the process to minimum standards of performance	GP 3.1.3 GP 3.2.2 GP 3.2.3	Standardised job descriptions, experience, qualifications and skill requirements for the process
		The minimum infrastructure (facilities, tools, methods, etc.) and work environment for performing the standard process	GP 3.1.4	The facilities, tools, methods and work environment for performing the processes
		Reporting and monitoring requirements, including audit and review	GP 3.1.5	Expected reports and monitoring required for the process, including standardised reporting requirements
6.0	Performance Improvement Plan	Process improvement objectives	GP 5.1.1	The level of performance expected from the process, based on business objectives
		Analysis against best practice	GP 5.1.3	Identified opportunities for process improvements based on analysis of comparison with industry best practices
		Technology improvement opportunities	GP 5.1.4	Identified opportunities for process improvements based on analysis of technology and process innovations
		Improvement actions	GP 5.1.5	Identified actions for improving the process across the organisation
		Improvement implementation plan	GP 5.1.6	The proposed improvements, planned actions to implement those improvements, responsibilities and time table
		Project quality approach	GP 5.1.5	Proposed process for confirming the achievement of the improvements—measures, reviews, etc.
7.0	Process Measurement Plan	Measurement objectives	GP 4.1.1	Quantitative objectives for the process relative to quality and process performance, based on customer needs and business objectives
		Proposed measure/indicators	GP 4.1.2	Identification of what is to be measured and the measurement indicators
		Data collection procedures	GP 4.1.3	Identification of how data are to be collected to support measurement
		Analytical procedures	GP 4.1.3 GP 4.1.4	Identification of analytical procedures to be used, from simple charts and graphs, to more sophisticated quantitative analyses such as statistical process control (SPC), structural modelling, or other multivariate statistical methods
8.0	Process Control Plan	Control techniques	GP 4.2.1	A description of the methods used to minimise process and product variation. It will differ for each process and may include such things as standards, testing, reviews, walk-through and testing.
		Measurement approach	GP 4.2.1	How the variation in each process will be measured
		Control limits for normal performance	GP 4.2.2	The acceptable level of process variations
9.0	Process Performance Records	Records of reviews against requirements and action taken	GP 4.1.5	Record of actual process performance, with any variations from expected results and action taken to rectify variations

B.2 Level 1 Output Work Products

Figure 19 provides level 1 output WPs. It was compiled from ISO/IEC 15504:1, 15504:7, COBIT 5 and this publication. For a general introduction to the concepts of process assessment, refer to section 4 of ISO/IEC 15504:1.

Figure 19—Level 1 Output Work Products		
WP ID	WP	Description
EDM01-WP1	Enterprise governance guiding principles	A document or record that outlines basic principles similar to ISO 38500 upon which the COBIT 5 framework is based
EDM01-WP2	Decision-making model	A definition of information required and authority levels necessary to make informed decisions
EDM01-WP3	Authority levels	A document similar to a RACI chart that shows clearly roles, responsibilities and accountabilities and levels of authority
EDM01-WP4	Enterprise governance communications	A system or process that communicates the appropriate oversight of IT in the enterprise
EDM01-WP5	Reward system approach	Documentation that confirms and clarifies the approach to rewards or incentives for employee performance; usually part of a performance process
EDM01-WP6	Feedback on governance effectiveness and performance	Reported information generated by monitoring the effectiveness of the performance of the governance system
EDM02-WP1	Evaluation of strategic alignment	The output of a governance activity enabled by a description of the enterprise goals with the associated contribution to enterprise goals
EDM02-WP2	Evaluation of investment and services portfolios	Reported information or results of evaluating the portfolio of IT-enabled investments, services and assets to determine the likelihood of achieving enterprise objectives and delivering value at a reasonable cost
EDM02-WP3	Investment types and criteria	Part of portfolio structure, it shows the types of investment and associated criteria
EDM02-WP4	Requirements for stage-gate reviews	Criteria for reviews that are important to control IT-enabled investments and would form part of the programme or portfolio monitoring and review process
EDM02-WP5	Feedback on portfolio and programme performance	Information such as key goals and metrics that are generated by a portfolio and programme monitoring process
EDM02-WP6	Actions to improve value delivery	Results of an assessment approach or process to identify value delivery improvement opportunities or corrective actions
EDM03-WP1	Risk appetite guidance	Forms part of an enterprise risk management plan that shows an understanding and guidance of the enterprise's risk tolerance
EDM03-WP2	Approved risk tolerance levels	An approval process for risk tolerance levels should be in place.
EDM03-WP3	Evaluation of risk management activities	Exists as part of a risk assessment system or process
EDM03-WP4	Risk management policies	Policies, standards or operating practices that outline the enterprise risk management requirements, roles, responsibilities and controls
EDM03-WP5	Key objectives to be monitored for risk management	Key goals associated with key metrics to be monitored as part of the risk assessment process
EDM03-WP6	Approved process for measuring risk management	Information usually part of a risk register or remediation log kept as part of the risk assessment process during which risk management deviations in practice are identified
EDM03-WP7	Remedial actions to address risk management deviations	Evidenced from a risk register or remediation log as part of the risk assessment process
EDM03-WP8	Risk management issues for the board	Risk management issues with sufficient ranking or severity to require attention from the board of directors
EDM04-WP1	Guiding principles for allocation of resources and capabilities	Statements that describe the allocation of resources and capabilities as part of the resource planning process or strategy
EDM04-WP2	Guiding principles for enterprise architecture	Statements that describe the enterprise architecture planning and strategy
EDM04-WP3	Approved resources plan	A resource assignment plan approved by both IT and the business
EDM04-WP4	Communication of resourcing strategies	Part of the monitoring and reporting process to assist in informed decision making
EDM04-WP5	Assigned responsibilities for resource management	A RACI chart will outline these roles and responsibilities.
EDM04-WP6	Principles for safeguarding resources	A rule that must be followed that helps safeguard data and is usually part of the resourcing planning process or strategy

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
EDM04-WP7	Feedback on allocation and effectiveness of resources and capabilities	Information resulting from the monitoring and reporting process for ensuring resource optimisation
EDM04-WP8	Remedial actions to address resource management deviations	Part of the monitoring and reporting process for ensuring resource optimisation
EDM05-WP1	Evaluation of enterprise reporting requirements	An evaluation of both internal and external reporting requirements including legal and regulatory and will be part of the governance framework
EDM05-WP2	Reporting and communications principles	Principles will be part of the reporting in the governance framework.
EDM05-WP3	Rules for validating and approving mandatory reports	Rules will be part of the reporting in the governance framework and could be in the form of policies, operating practices, and standards and/or procedures.
EDM05-WP4	Escalation guidelines	A part of reporting in the governance framework and could be in the form of policies, operating practices and standards and/or procedures
EDM05-WP5	Assessment of reporting effectiveness	Usually found from an annual internal audit or assessment report on the effectiveness of governance
APO01-WP1	IT-related policies	Policies and/or operating practices/standards that reflect IT operations and accountabilities
APO01-WP2	Non-compliance remedial actions	Part of the IT-related policies, procedures and practices for the IT management framework
APO01-WP3	Evaluation of options for IT organisation	Part of the IT management framework related to IT organisation
APO01-WP4	Defined operational placement of IT function	Part of the IT management framework related to IT organisation
APO01-WP5	Definition of organisation structure and functions	Part of the IT management framework related to IT organisation
APO01-WP6	Organisation operational guidelines	Part of the IT-related policies, procedures and practices for the IT management framework
APO01-WP7	Communication ground rules	Part of a monitoring and reporting process in the IT management framework
APO01-WP8	Definition of IT-related roles and responsibilities	A RACI chart will outline these roles and responsibilities.
APO01-WP9	Definition of supervisory practices	Part of the IT-related policies, procedures and practices for the IT management framework
APO01-WP10	Process capability assessments	Part of a monitoring and reporting process for defining an IT framework such as COBIT PAM
APO01-WP11	Process improvement opportunities	Opportunities to improve arising from the use of a monitoring and reporting process for defining an IT framework
APO01-WP12	Performance goals and metrics for process improvement tracking	Part of a monitoring and reporting process for defining an IT framework
APO01-WP13	Communications on IT objectives	Part of a monitoring and reporting process for defining an IT framework
APO01-WP14	Data classification guidelines	Part of an enterprise architecture plus data retention and risk management policy
APO01-WP15	Data security and control guidelines	Part of the IT-related policies, procedures and guidelines, but specific to data security
APO01-WP16	Data integrity procedures	Part of the IT-related policies, procedures and guidelines, but specific to data security; these are the more detailed procedures.
APO02-WP1	Sources and priorities for changes	Part of understanding the enterprise direction and looking at internal and external sources for change. This is part of the strategic planning process.
APO02-WP2	Baseline of current capabilities	An assessment of current business capabilities as part of the strategic planning process
APO02-WP3	Gaps and risk related to current capabilities	Part of the capability assessment; gaps will be present in either a risk/gap register or remediation log.
APO02-WP4	Capability SWOT analysis	Part of the assessment of business capability in the strategic planning process
APO02-WP5	High-level IT-related goals	Part of the strategic plan road map
APO02-WP6	Required business and IT capabilities	Part of the strategic plan road map
APO02-WP7	Proposed enterprise architecture changes	Part of both an enterprise architecture plan and the IT strategic plan
APO02-WP8	Gaps and changes required to realise target capability	Part of the capability assessment; gaps will be present in either a risk/gap register or remediation log.

Figure 19—Level 1 Output Work Products (*cont.*)

WP ID	WP	Description
APO02-WP9	Value benefit statement for target environment	Part of the IT strategic plan and results from the benefits analysis process of the IT Investment portfolio
APO02-WP10	Definition of strategic initiatives	Part of the strategic plan road map
APO02-WP11	Risk assessment	Part of the risk assessment process and will be included in the strategic plan road map
APO02-WP12	Strategic road map	A plan that outlines the key steps/phases in getting or achieving a strategic plan
APO02-WP13	Communication plan	Part of a reporting and monitoring process for strategic planning
APO02-WP14	Communications package	The process outline for all communication dealing with strategic planning, includes the plan, methods and delivery of communication and frequency
APO03-WP1	Defined scope of architecture	Part of the definition of a reference enterprise architecture model
APO03-WP2	Architecture principles	Part of the definition of a reference enterprise architecture model
APO03-WP3	Architecture concept business case and value proposition	Business case proposal for an architecture concept
APO03-WP4	Baseline domain descriptions and architecture definition	Part of an enterprise architecture model
APO03-WP5	Process architecture model	A typical process architecture model organises the logic for business process and IT infrastructure, which reflects the integration and standardisation requirements of the enterprise operating model.
APO03-WP6	Information architecture model	Part of an enterprise architecture model, but will specifically relate to how information is organised
APO03-WP7	High-level implementation and migration strategy	Implementation and migration strategy for architecture
APO03-WP8	Transition architectures	Part of the implementation and migration strategy for architecture
APO03-WP9	Resource requirements	Part of the implementation plan for enterprise architecture
APO03-WP10	Implementation phase descriptions	Part of the implementation plan for enterprise architecture
APO03-WP11	Architecture governance requirements	Part of the enterprise architecture model or framework governance requirements
APO03-WP12	Solution development guidance	Part of the implementation plan for enterprise architecture
APO04-WP1	Innovation opportunities linked to business drivers	Part of an innovation plan for applications and IT infrastructure articulated in a strategic IT plan
APO04-WP2	Research analyses of innovation possibilities	Found in an innovation planning process and will form part of a strategic IT plan
APO04-WP3	Evaluations of ideas for innovation	Found in an innovation planning process and will form part of a strategic IT plan
APO04-WP4	Proof of concept scope and outline business case	Validation of assumptions for a proof of concept and will be part of the business case
APO04-WP5	Test results from proof-of-concept initiatives	Part of a pilot or test found in an evaluation report
APO04-WP6	Results and recommendations from proof-of-concept initiatives	Part of a pilot or test found in an evaluation report
APO04-WP7	Analysis of rejected initiatives	Part of a pilot or test found in an evaluation report
APO04-WP8	Innovation plan	Innovation plan with the summary of approved and evaluated opportunities, business benefits and risks articulated
APO04-WP9	Recognition and reward programme	Part of the strategic IT plan
APO04-WP10	Assessments of the use of innovative approaches	Part of an innovation plan
APO04-WP11	Evaluation of innovation benefits	Part of the business case preparation and planning
APO04-WP12	Adjusted innovation plans	Final adjusted innovation plan
APO05-WP1	Defined investment mix	Part of the investment portfolio
APO05-WP2	Identified resources and capabilities required to support strategy	Reviewing the strategy to identify the enterprise capabilities in support of the strategy
APO05-WP3	Feedback on strategy and goals	Part of a monitoring and communications plan to report on portfolio management
APO05-WP4	Funding options	Reviewing source of funds statements as they relate to the investment portfolios

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
APO05-WP5	Investment return expectations	Part of the management of benefits of the portfolios
APO05-WP6	Programme business case	Part of the business case process. There may be several programme business cases, depending on the number and types of portfolios.
APO05-WP7	Business case assessments	For both project and programmes
APO05-WP8	Selected programmes with ROI milestones	Part of the programme business case
APO05-WP9	Investment portfolio performance reports	Part of a monitoring and communications plan to report on portfolio management
APO05-WP10	Updated portfolios of programmes, services and assets	Part of the portfolio maintenance process. Assessors should verify that such a process exists and provides sufficient audit reporting to verify that portfolios are effectively maintained.
APO05-WP11	Benefit results and related communications	Part of a monitoring and communications plan to report on portfolio management. These will be articulated as part of programme business cases.
APO05-WP12	Corrective actions to improve benefit realisation	Part of a benefits realisation plan
APO06-WP1	Accounting processes	For managing IT-related expenditures. Most IT departments will have their own system for managing costs and budgets and business allocations, or be part of or integrated into the main enterprise accounting systems.
APO06-WP2	IT cost classification scheme	Part of the IT accounting system
APO06-WP3	Financial planning practices	Part of the enterprise financial planning system integrated into the IT cost and budget systems. Look for the enterprise policy and procedures.
APO06-WP4	IT budget and plan	Also will report outputs from the IT accounting system or process
APO06-WP5	Budget communications	Part of the IT financial reporting process. Budgets, plans and variance analysis will be reported as part of this process.
APO06-WP6	Prioritisation and ranking of IT initiatives	Part of the IT budgetary control system, which will be part of the accounting process
APO06-WP7	Budget allocations	Part of the IT accounting system and agreed on with the business
APO06-WP8	Categorised IT costs	Part of the IT accounting system and agreed on with the business
APO06-WP9	Cost allocation model	Part of the IT accounting system and agreed on with the business
APO06-WP10	Cost allocation communications	Part of the IT financial reporting process. Budgets, plans and variance analysis will be reported as part of this process.
APO06-WP11	Cost data collection method	Part of the IT financial reporting process. Budgets, plans and variance analysis will be reported as part of this process.
APO06-WP12	Cost consolidation method	Part of the IT financial reporting process. Budgets, plans and variance analysis will be reported as part of this process.
APO06-WP13	Cost optimisation opportunities	Part of the IT financial reporting process. Budgets, plans and variance analysis will be reported as part of this process.
APO07-WP1	Staffing requirement evaluations	Part of business and IT planning cycles, usually annually, and forms part of the operating plans and budgets. HR departments will contain planning reports that are input into the main plans.
APO07-WP2	Competency and career development plans	Forms part of the business and IT operating plans and be part of the HR systems
APO07-WP3	Personnel sourcing plans	An evaluation of internal and external sources, depending on the competencies required for both IT and business
APO07-WP4	Skills and competencies matrix	A matrix that maps skills and competencies to the specific job or role
APO07-WP5	Skills development plans	A skills plan that identifies competency gaps and plans for development
APO07-WP6	Review reports	Part of the HR reporting system. Assessors should confirm with management what reports exist.
APO07-WP7	Personnel goals	Forms part of a staff annual appraisal or performance evaluation process
APO07-WP8	Performance evaluations	Usually annually and part of the appraisal process
APO07-WP9	Improvement plans	Part of the performance evaluation specific to the person being evaluated
APO07-WP10	Inventory of business and IT human resources	Part of the HR reporting system. Assessors should confirm with management what reports exist.
APO07-WP11	Resourcing shortfall analyses	Part of the skills development plans

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
APO07-WP12	Resource utilisation records	Part of the HR system
APO07-WP13	Contract staff policies	Some HR systems contain separate processes and master files for all contracts.
APO07-WP14	Contract agreements	Some HR systems contain separate processes and master files for all contracts.
APO07-WP15	Contract agreement reviews	Should be done with HR and IT and the business
APO08-WP1	Clarified and agreed-on business expectations	Forms part of the business and IT operating plans. Sometimes these are reflected in specific SLAs or OLAs
APO08-WP2	Agreed-on next steps and action plans	Forms part of the business and IT operating plans and/or business and IT service delivery plans
APO08-WP3	Agreed-on key decisions	Forms part of the business and IT operating plans and/or business and IT service delivery plans
APO08-WP4	Complaint and escalation status	Forms part of the contract process
APO08-WP5	Communication plan	Forms part of the business and IT operating plans and/or business and IT service delivery plans
APO08-WP6	Communication packages	The process outline for all communication dealing with relationship planning. It will include the plan, methods and delivery of communication and frequency.
APO08-WP7	Customer responses	Part of the communication package especially for periodic customer (internal and external) surveys and assessments
APO08-WP8	Satisfaction analyses	Part of the communication package especially for periodic customer (internal and external) surveys and assessments
APO08-WP9	Definition of potential improvement projects	Identify potential opportunities for IT to be an enabler of enhanced enterprise performance as part of the communication package and strategic IT plan.
APO09-WP1	Identified gaps in IT services to the business	Part of a service catalogue process, which contains SLAs and OLAs to allow effective monitoring and reporting of gaps
APO09-WP2	Definitions of standard services	Usually found in a service catalogue
APO09-WP3	Service definitions	Usually found in a service catalogue
APO09-WP4	Updated service portfolio	Usually managed by the business with agreement of IT services and is the main driver or enabler of the service catalogue
APO09-WP5	Service catalogues	All IT services and relevant target groups are documented in a catalogue.
APO09-WP6	SLAs	SLAs are defined in the service catalogue. An SLA is a part of a service contract where the level of service is formally defined.
APO09-WP7	OLAs	OLAs are defined in the service catalogue. An OLA defines the interdependent relationships amongst the internal support groups of an organisation working to support a SLA.
APO09-WP8	Service level performance reports	Forms part of the monitoring and reporting process and is periodic, usually monthly and/or quarterly
APO09-WP9	Improvement action plans and remediations	Comes out of the monitoring and reporting process and will usually be found in an issues log
APO09-WP10	Updated SLAs	Based on improvement action plans, assessor should verify if and when SLAs are updated.
APO10-WP1	Supplier significance and evaluation criteria	Forms part of a procurement system, which will have reports analysing the supplier or vendor master file
APO10-WP2	Supplier catalogue	Usually a supplementary system that typically identifies suppliers and associated contracts and categorises them into type, significance and criticality. Supplier and contract evaluation criteria should be established.
APO10-WP3	Potential revisions to supplier contracts	New or changed contracts should conform to enterprise standards and legal and regulatory requirements. Any contractual disputes are dealt with and contract revisions made.
APO10-WP4	Supplier roles and responsibilities	Outlined in a supplier catalogue
APO10-WP5	Communication and review process	Part of a supplier monitoring and reporting process. Assessors should check for periodic reviews of supplier performance.
APO10-WP6	Review results and suggested improvements	Part of a supplier monitoring and reporting process. Assessors should check for periodic reviews of supplier performance.
APO10-WP7	Identified supplier delivery risk	Part of a supplier risk assessment and should be present in the contract process
APO10-WP8	Identified contract requirements to minimise risk	Part of a supplier risk assessment and should be present in the contract process
APO10-WP9	Supplier compliance monitoring criteria	Part of a supplier monitoring and reporting process. Assessors should check for periodic reviews of supplier performance.

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
APO10-WP10	Supplier compliance monitoring review results	Part of a supplier monitoring and reporting process. Assessors should check for periodic reviews of supplier performance and compliance, especially with legal and statutory requirements.
APO10-WP11	Supplier RFIs and RFPs	RFIs and RFPs are part of a formal supplier selection process.
APO10-WP12	RFI and RFP evaluations	Part of the supplier selection process
APO10-WP13	Decision results of supplier evaluations	Part of the supplier selection process
APO11-WP1	QMS roles, responsibilities and decision rights	A QMS is established to outline clear roles, responsibilities and decision rights (who is accountable and authorised to make the decision).
APO11-WP2	Quality management plans	An overall quality plan should be maintained that promotes continuous improvement. This should include the need for, and benefits of, continuous improvement. Assessors should collect and analyse data about the QMS, and check for the effectiveness of the QMS.
APO11-WP3	Results of QMS effectiveness reviews	Part of a continuous monitoring and reporting process
APO11-WP4	Quality management standards	Part of the QMS and should be in line with the IT control framework requirements
APO11-WP5	Customer requirements for quality management	Customer requirements should be aligned in the QMS.
APO11-WP6	Acceptance criteria	Part of the QMS and should be in line with the IT control framework requirements
APO11-WP7	Review results of quality of service, including customer feedback	Part of a continuous monitoring and reporting process
APO11-WP8	Results of quality reviews and audits	Part of a continuous monitoring and reporting process
APO11-WP9	Process quality of service goals and metrics	Part of the QMS and should be in line with the IT control framework requirements
APO11-WP10	Results of solution and service delivery quality monitoring	Part of a continuous monitoring and reporting process and will typically be a periodic report
APO11-WP11	Root causes of quality delivery failures	Part of a continuous monitoring and reporting process and can be found in a root cause log or register
APO11-WP12	Communications on continual improvement and best practices	Part of a continuous monitoring and reporting process and can be found in periodic reporting to management
APO11-WP13	Examples of good practice to be shared	Part of a continuous monitoring and reporting process and can be found from analysis of review meetings and management reporting
APO11-WP14	Quality review benchmark results	Part of a continuous monitoring and reporting process and can be found from a process capability or maturity modelling assessment
APO12-WP1	Data on the operating environment relating to risk	An assessor would review the enterprise risk assessment process that contains a risk profile, scenarios, events, a risk register, reporting tools. The risk profile will show all relevant data on the operating environment.
APO12-WP2	Data on risk events and contributing factors	Part of the enterprise risk profile
APO12-WP3	Emerging risk issues and factors	Part of the enterprise risk profile
APO12-WP4	Scope of risk analysis efforts	Part of the enterprise risk profile
APO12-WP5	IT risk scenarios	Part of the enterprise risk profile. Scenario analysis is a process of analysing possible future events by considering alternative possible outcomes and or events, e.g., loss of data due to disaster.
APO12-WP6	Risk analysis results	Outcomes of a risk assessment show impacts, probabilities and how they are managed.
APO12-WP7	Documented risk scenarios by line of business and function	See risk profile and IT risk scenarios. This is part of the enterprise risk management plan.
APO12-WP8	Aggregated risk profile, including status of risk management actions	The IT risk register contains this information.
APO12-WP9	Risk analysis and risk profile reports for stakeholders	Part of the risk assessment process and ongoing monitoring and reporting, usually quarterly for ongoing and at project or programme start-up and also for new IT application and software developments

Figure 19—Level 1 Output Work Products (*cont.*)

WP ID	WP	Description
APO12-WP10	Review results of third-party risk assessments	Part of third-party and contract reviews
APO12-WP11	Opportunities for acceptance of greater risk	Depends on the organisation's risk appetite, which should be defined in the risk profile
APO12-WP12	Project proposals for reducing risk	Part of the risk management process, it usually is based on an analysis of the risk register and periodic reporting process
APO12-WP13	Risk-related incident response plans	Linked to the IT and information security incidence response and reporting process
APO12-WP14	Risk impact communications	Part of the risk assessment and risk reporting process
APO12-WP15	Risk-related root causes	Part of the risk assessment and risk reporting process
APO13-WP1	ISMS policy	There will be either a policy, standard or operating practice that will be part of the information security management system.
APO13-WP2	ISMS scope statement	Part of the ISMS strategy and planning documentation or the ISMS programme outline
APO13-WP3	Information security risk treatment plan	Part of the ISMS risk assessment process based on the risk profile
APO13-WP4	Information security business cases	Only if required for an information security project or programme
APO13-WP5	ISMS audit reports	Part of internal audit reporting or monthly information security reporting, which will also be integrated into a security incident response and reporting system.
APO13-WP6	Recommendations for improving the ISMS	Part of normal ISMS monitoring and reporting. Assessors should look for or ask for this.
BAI01-WP1	Updated programme and project management approaches	Part of the organisation's project/programme management information (PMI) system or framework
BAI01-WP2	Stakeholder engagement plan	Part of the portfolio management process
BAI01-WP3	Results of stakeholder engagement effectiveness assessments	Part of the portfolio management process and periodic project and programme management reporting
BAI01-WP4	Programme concept business case	Usually the first, high-level business case produced at a programme level. Once noted and approved to go to the next stage, and after more analysis and feasibility studies, a more detailed business case is done and broken down to project level.
BAI01-WP5	Programme mandate and brief	Part of the project/programme manager's office (PMO) setup and process, and creates the charter to set up a project or programme
BAI01-WP6	Programme benefit realisation plan	A precursor to the business case and would normally be part of that analysis
BAI01-WP7	Programme plan	Produced by the programme manager and is detailed enough to show costs, benefits, resourcing, timelines, dependencies and risk analysis
BAI01-WP8	Programme budget and benefits register	A key part of the PMO setup and process and a source of input for business cases, benefits realisation planning, and programme and project management
BAI01-WP9	Resource requirements and roles	Part of the PMO setup and process and creates the charter to set up a project or programme
BAI01-WP10	Results of benefit realisation monitoring	Part of the PMO setup and process and should be incorporated into the monthly project and programme monitoring and reporting
BAI01-WP11	Results of programme goal achievement monitoring	Part of the PMO setup and process and should be incorporated into the monthly project and programme monitoring and reporting
BAI01-WP12	Results of programme performance reviews	Part of the PMO setup and process and should be incorporated into the monthly project and programme monitoring and reporting
BAI01-WP13	Stage-gate review results	A stage-gate process is a conceptual and operational road map for moving a new-product project from idea to launch. Stage-gate divides the effort into distinct stages separated by management decision gates. For example, some are organised around a project life cycle (appraise, select, define, execute and operate), some by project phases. A decision must be made at each gate before the project or programme can progress. Assessors should look for the reviews of these decisions.
BAI01-WP14	Project plans	Part of the normal PMO setup and process

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
BAI01-WP15	Project baseline	Part of project planning and is done at the project start-up and at periodic intervals decided on by the PMO
BAI01-WP16	Project reports and communications	Part of the normal PMO setup and process
BAI01-WP17	Quality management plan	Part of the normal PMO setup and process
BAI01-WP18	Requirements for independent verification of deliverables	Usually part of the stage-gate reviews. A gate decision maker may ask for this if necessary, but it is dependent on the project or programme.
BAI01-WP19	Project scope statements	Self-explanatory and part of the normal PMO setup and process
BAI01-WP20	Project definitions	Self explanatory and part of the normal PMO setup and process
BAI01-WP21	Project risk management plan	Self-explanatory and part of the normal PMO setup and process
BAI01-WP22	Project risk assessment results	Self-explanatory and part of the normal PMO setup and process
BAI01-WP23	Project risk register	Self-explanatory and part of the normal PMO setup and process
BAI01-WP24	Project performance criteria	Self-explanatory and part of the normal PMO setup and process
BAI01-WP25	Project progress reports	Self-explanatory and part of the normal PMO setup and process
BAI01-WP26	Agreed-on changes to project plan	Self-explanatory and part of the normal PMO setup and process
BAI01-WP27	Project resource requirements	Self-explanatory and part of the normal PMO setup and process
BAI01-WP28	Project roles and responsibilities	Self-explanatory and part of the normal PMO setup and process
BAI01-WP29	Gaps in project planning	Self-explanatory and part of the normal PMO setup and process
BAI01-WP30	Post-implementation review results	Timing is an issue here, usually undertaken after several months of operation
BAI01-WP31	Project lessons learned	Part of the post-implementation review
BAI01-WP32	Stakeholder project acceptance confirmations	Part of the project sign-off and closure
BAI01-WP33	Communication of programme retirement and ongoing accountabilities	Part of the project sign-off and closure
BAI02-WP1	Requirements definition repository	Part of the systems development analysis for new developments and is a log or register holding all business user requirements
BAI02-WP2	Confirmed acceptance of requirements from stakeholders	Usually done as part of a feasibility study report
BAI02-WP3	Record of requirement change requests	Part of a change log for operational change management
BAI02-WP4	Feasibility study report	A comprehensive report that contains user requirements, outline of the solutions for development, risk assessment, capacity and performance planning, etc.
BAI02-WP5	High-level acquisition/development plan	Contains the initial design and development proposal for applications and infrastructure
BAI02-WP6	Requirements risk register	Similar to the IT or enterprise risk management risk register and integrated into the main risk assessment process
BAI02-WP7	Risk mitigation actions	Derived from the requirements risk register
BAI02-WP8	Sponsor approvals of requirements and proposed solutions	There must be evidence of requirements sign-off of both the statement of requirements (SOR) and definitions and the feasibility study report.
BAI02-WP9	Approved quality reviews	Part of the ongoing project development cycle
BAI03-WP1	Approved high-level design specification	Self-explanatory and part of the system development life cycle (SDLC) process
BAI03-WP2	Approved detailed design specification	Self-explanatory and part of the SDLC process
BAI03-WP3	Documented solution components	Self-explanatory and part of the SDLC process
BAI03-WP4	Approved acquisition plans	May be found in the mergers and acquisitions department with copies in the IT department, if predominantly an IT development

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
BAI03-WP5	Updates to asset inventory	Self-explanatory and should be part of asset inventory procedures
BAI03-WP6	Integrated and configured solution components	Usually undertaken by the accounts department, but instigated by the bringing the new asset into production
BAI03-WP7	Quality assurance plan	Self-explanatory and part of the SDLC process
BAI03-WP8	Quality review results, exceptions and corrections	Self-explanatory and part of the SDLC process
BAI03-WP9	Test plan	Part of the new system changeover planning documents
BAI03-WP10	Test procedures	Part of the new system changeover planning documents
BAI03-WP11	Test result logs and audit trails	Part of the new system changeover planning documents
BAI03-WP12	Test result communications	Part of the new system changeover planning documents
BAI03-WP13	Record of all approved and applied change requests	Found in a change management log
BAI03-WP14	Maintenance plan	Part of the new system changeover planning documents
BAI03-WP15	Updated solution components and related documentation	Usually found in a plan for the maintenance of solution and infrastructure components. Periodic reviews against business needs and operational requirements should be included.
BAI03-WP16	Periodic maintenance analyses	Usually found in a plan for the maintenance of solution and infrastructure components. Periodic reviews against business needs and operational requirements should be included.
BAI03-WP17	Service definitions	Forms part of a service portfolio or catalogue and defines all services including SLAs and OLAs
BAI03-WP18	Updated service portfolio	Needs updating periodically due to normal maintenance and changes in SLAs and OLAs, service offerings, etc.
BAI04-WP1	Availability, performance and capacity baselines	An assessment of system infrastructure and application performance and capacity, is assessed during the development stages and baselined after testing and start-up of the system or process
BAI04-WP2	Evaluations against SLAs	Periodic evaluations, usually monthly, as part of monthly IT reporting and monitoring and uses the service catalogue or portfolio as a reference point
BAI04-WP3	Prioritised improvements	Based on monthly evaluations of system performance
BAI04-WP4	Performance and capacity plans	Produced with baselining during the monthly reporting and monitoring process
BAI04-WP5	Availability, performance and capacity monitoring review reports	Part of the monthly IT monitoring and reporting process
BAI04-WP6	Performance and capacity gaps	Normally logged in a register or log and forms part of the monthly IT monitoring and reporting process
BAI04-WP7	Corrective actions	Shown in the register or log. Assessor should verify that there are follow-up actions as part of the periodic reporting process.
BAI04-WP8	Emergency escalation procedure	Part of the change management process defined in the change management operating practices and or standards
BAI04-WP9	Availability, performance and capacity scenarios	Part of capacity planning and originates during the system development phases through baselining, testing and change over. Will need updating as part of capacity planning and reporting on a periodic basis.
BAI04-WP10	Availability, performance and capacity business impact assessments	Part of the IT risk management assessment process. It will not normally be separate, so assessor should check to see that the risk register includes these impacts.
BAI05-WP1	Communications of drivers for change	Part of the organisation change management process and will include strong business input
BAI05-WP2	Communications from executive management committing to change	Part of the change management process. Business should be accountable for all IT changes; documentation should exist confirming this, usually in the programme or project change management process.
BAI05-WP3	Implementation team and roles	Part of the PMO procedures and programme initiation document
BAI05-WP4	Common vision and goals	Part of the PMO procedures and programme initiation document
BAI05-WP5	Vision communication plan	Part of the programme or project plans, may not be a separate document
BAI05-WP6	Vision communications	Part of the project reporting process
BAI05-WP7	Aligned HR performance objectives	Part of the benefits realisation planning and business case

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
BAI05-WP8	Identified quick wins	Part of the benefits realisation planning and business case
BAI05-WP9	Communications of benefits	Part of the benefits realisation planning and business case
BAI05-WP10	Operation and use plan	More tactical and typically a plan that outlines the details of how the changes will be used and the operation process around them
BAI05-WP11	Success measures and results	Part of the operation and use plan
BAI05-WP12	Compliance audit results	Assumes an internal audit or formal assessment/evaluation of the change management programme or project
BAI05-WP13	Awareness communications	Part of the change management communication plan
BAI05-WP14	HR performance review results	Part of sustaining the changes. It relates to the effective training of new staff and is typically linked to the annual appraisal process.
BAI05-WP15	Knowledge transfer plans	Part of sustaining the changes. There should be some form of ongoing communication campaigns, continued top management commitment, adoption monitoring and sharing of lessons learned across the enterprise.
BAI05-WP16	Communications of management's commitment	Part of the organisational change management process. Assessors should confirm that these communications are documented.
BAI05-WP17	Reviews of operational use	Part of the monthly monitoring and reporting process
BAI06-WP1	Impact assessments	Part of the IT risk management process. Assessor should verify that normal operational change impacts are being captured in the risk register.
BAI06-WP2	Approved requests for change	Documented in a change management log and must have user/requestor authorisation
BAI06-WP3	Change plan and schedule	Part of the change management process. Day-to-day changes will be documented in an annual plan and monthly schedule and will typically include all patch management, normal upgrades, etc.
BAI06-WP4	Post-implementation review of emergency changes	Usually done quarterly as part of the ongoing monitoring and reporting process
BAI06-WP5	Change request status reports	Typically shows where the change is in the cycle, development, test, etc.
BAI06-WP6	Change documentation	Starts with a comprehensive change log or register and will include requests for change, review and approval, feedback to management and initiator. Segregation of duties is an important part of this documentation.
BAI07-WP1	Approved implementation plan	Part of the changeover/cutover planning and includes roles and responsibilities, a detailed schedule of testing and handover procedures
BAI07-WP2	Implementation fallback and recovery process	Part of the implementation plan and a crucial element in the plan
BAI07-WP3	Migration plan	Part of the implementation and documents how both master data and operational data are to be transferred; typically includes both manual and automated processes
BAI07-WP4	Approved acceptance test plan	Usually part of the implementation plan or a subset, but is usually comprehensive enough because it is one of the key phases of system changeover.
BAI07-WP5	Test data	Part of test planning; usually requires preparation and decisions on source, live examples or dummy data.
BAI07-WP6	Test results log	Part of the testing process
BAI07-WP7	Evaluation of results	Refers to the test results
BAI07-WP8	Approved acceptance and release to production	Final sign-off is crucial to the successful launch of a new system and comes after the evaluation of test results.
BAI07-WP9	Release plan	Part of the acceptance and approval process
BAI07-WP10	Release log	Optional. Many enterprises will have a release plan without a separate release log, but will have a change implementation log, which includes all phases of the implementation.
BAI07-WP11	Supplemental support plan	Part of the implementation plans showing users who will be supported through the initial start-up phase and ongoing and how they will be supported. The length of the ongoing support will depend on the size and complexity of the changed system or process.
BAI07-WP12	Post-implementation review	Usually lags behind launch and support period. Assessors should confirm that it is planned.
BAI07-WP13	Remedial action plan	Part of the cutover planning; is important to ensure the support period of the implementation
BAI08-WP1	Classification of information sources	Similar to a data classification scheme, but enhanced for not only statutory requirements of data and record retention, but internal uses of information, taking into consideration knowledge database organisation

Figure 19—Level 1 Output Work Products (*cont.*)

WP ID	WP	Description
BAI08-WP2	Published knowledge repositories	Usually part of the web system combined with a repository (e.g., SharePoint), but specifically targeting public classified information
BAI08-WP3	Knowledge user database	A system like SharePoint or iMIS that the organisation will use or its user database
BAI08-WP4	Knowledge awareness and training schemes	Self-explanatory
BAI08-WP5	Knowledge use evaluation results	Enterprises should track the use of the knowledge database and capture or record the results.
BAI08-WP6	Rules for knowledge retirement	Part of the a knowledge strategy and plan that as part of a data classification and retention policy clarifies specific rules of retirement, which take into consideration legal and regulatory requirements
BAI08-WP7	Communications on value of knowledge	Part of the knowledge strategy and planning process
BAI09-WP1	Asset register	Asset registers are usually part of or integrated into the enterprise's accounting software application and not normally found in separate IT registers. However, these systems will allow asset classifications to meet individual functional requirements such as the organisation of IT and information assets.
BAI09-WP2	Results of physical inventory checks	Physical inventories are usually conducted annually. It is important for IT to include this type of monitoring into its reporting process.
BAI09-WP3	Results of fit-for-purpose reviews	Review of IT assets in terms of meeting business requirements. It is a check for obsolescence and is important to ensure ongoing support for business or enterprise goals.
BAI09-WP4	Communication of planned maintenance downtime	An essential part of operational planning especially around databases, networks and critical applications
BAI09-WP5	Maintenance agreements	With vendors, but also with internal business users. Software licensing will be included in this process.
BAI09-WP6	Approved asset procurement requests	Part of the IT procurement process and usually linked to the purchase order/invoice matching process
BAI09-WP7	Updated asset register	Usually required when new or amended assets are added or made and part of the normal asset process
BAI09-WP8	Authorised asset retirements	Part of the normal assets management process and integrated into the accounting rules for assets retirement. Is not done in isolation of accounting policy and procedures.
BAI09-WP9	Results of cost optimisation reviews	Part of the assets monitoring and reporting process
BAI09-WP10	Opportunities to reduce asset costs or increase value	Part of the assets monitoring and reporting process
BAI09-WP11	Register of software licences	Assessors should verify the existence of a separate register for software licences because it is important for the audit process.
BAI09-WP12	Results of installed licence audits	Part of an audit report, usually annually
BAI10-WP1	Scope of configuration management model	Part of the actual configuration model. This is a detailed model of the IT infrastructure and how it relates to IT services.
BAI10-WP2	Logical configuration model	Self-explanatory; see scope explanation.
BAI10-WP3	Configuration repository	A database that holds the model, definitions, standards, etc.
BAI10-WP4	Configuration baseline	Part of the configuration model and repository. A baseline will be done at the development and planning stages.
BAI10-WP5	Updated repository with configuration items	Part of the maintenance process for configuration management
BAI10-WP6	Approved changes to baseline	Part of the maintenance process
BAI10-WP7	Configuration status reports	Part of the IT monitoring and reporting on configuration management
BAI10-WP8	Results of physical verification of configuration items	Part of the IT monitoring and reporting on configuration management
BAI10-WP9	Licence deviations	Where there are deviations on external licensing agreement, if applicable
BAI10-WP10	Results of repository completeness reviews	Part of the IT monitoring and reporting on configuration management
DSS01-WP1	Operational schedule	An IT operational schedule includes all IT services including outsourced, facilities management, infrastructure and environmental factors.

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
DSS01-WP2	Backup log	Part of data management. Assessors should check for operating practices/standards and/or policies for this.
DSS01-WP3	Asset monitoring rules and event conditions	Event conditions are part of comprehensive incident management, monitoring and reporting.
DSS01-WP4	Event logs	Same as for event conditions.
DSS01-WP5	Incident tickets	Part of the incident management and help desk system
DSS01-WP6	Environmental policies	Deals specifically with the management of IT environments, including data centers and storage rooms
DSS01-WP7	Insurance policy reports	Results of comparison of measures and contingency plans against insurance policy requirements
DSS01-WP8	Facilities assessment reports	Part of facilities management and physical risk assessments
DSS01-WP9	Health and safety awareness	Part of health safety and security environmental (HSSE) process and policies
DSS01-WP10	Independent assurance plans	Plans for independent audit and assurance of operational and HSSE activities, a critical part of a robust monitoring and reporting process.
DSS02-WP1	Incident and service request classification schemes and models	Part of the incident management process. Classifications schemes classifying the type of events/errors, etc., are a normal part of an incident management model.
DSS02-WP2	Rules for incident escalation	Part of the incident management model and process
DSS02-WP3	Criteria for problem registration	Part of the incident management model and process
DSS02-WP4	Incident and service request log	Part of the incident management model and process
DSS02-WP5	Classified and prioritised incidents and service requests	Part of the incident management model and process
DSS02-WP6	Approved service requests	Part of the incident management model and process
DSS02-WP7	Fulfilled service requests	Part of the incident management model and process
DSS02-WP8	Incident symptoms	Description of the issues that are caused by a certain problem
DSS02-WP9	Problem log	Separate to the incident log, but related
DSS02-WP10	Incident resolutions	Documented in an incident log. Assessors should check for alignment with the problem log.
DSS02-WP11	Closed service requests and incidents	Part of the incident logs
DSS02-WP12	User confirmation of satisfactory fulfillment or resolution	Part of the monitoring and reporting of incidents. Status reports should include user feedback/confirmation.
DSS02-WP13	Incident status and trends report	Part of the monitoring and reporting of incidents
DSS02-WP14	Request fulfilment status and trends report	Part of the monitoring and reporting of incidents
DSS03-WP1	Problem classification scheme	Similar to the incident classification, but specific to problems versus incidents
DSS03-WP2	Problem status reports	Part of the monitoring and reporting of problems and their status
DSS03-WP3	Problem register	Problems and their status are recorded; similar to an incident log or register
DSS03-WP4	Root causes of problems	Part of the problem register and ongoing problem management process
DSS03-WP5	Problem resolution reports	Part of the monitoring and reporting of problems and their status
DSS03-WP6	Known-error records	Source can be from incident logs and should be recorded in the problem register
DSS03-WP7	Proposed solutions to known errors	Found in the problem register
DSS03-WP8	Closed problem records	Found in the problem register
DSS03-WP9	Communication of knowledge learned	Part of the monitoring and reporting of problems and their status
DSS03-WP10	Problem resolution monitoring reports	Part of the monitoring and reporting of problems and their status
DSS03-WP11	Identified sustainable solutions	Part of the problem register
DSS04-WP1	Policy and objectives for business continuity	Can be found in an operating practice for business continuity and disaster recovery planning
DSS04-WP2	Disruptive incident scenarios	Part of the IT risk and enterprise risk management process

Figure 19—Level 1 Output Work Products (*cont.*)

WP ID	WP	Description
DSS04-WP3	Assessments of current continuity capabilities and gaps	Part of a comprehensive risk register. Some enterprises will keep a subregister of continuity gaps and capabilities.
DSS04-WP4	Business impact analyses	Part of the enterprise risk management system
DSS04-WP5	Continuity requirements	Specified as part of comprehensive business continuity plans (BCPs)/disaster recovery plans (DRPs)
DSS04-WP6	Approved strategic options	Specified as part of comprehensive BCPs/DRPs
DSS04-WP7	Incident response actions and communications	Specified as part of comprehensive BCPs/DRPs
DSS04-WP8	Business continuity plan	Self-explanatory, but will include links to emergency and incident management and IT DRPs
DSS04-WP9	Test objectives	Part of BCPs/DRPs
DSS04-WP10	Test exercises	Part of BCPs/DRPs
DSS04-WP11	Test results and recommendations	Part of the BCP monitoring and reporting process
DSS04-WP12	Results of reviews of plans	Part of the BCP monitoring and reporting process
DSS04-WP13	Recommended changes to plans	Part of the BCP monitoring and reporting process
DSS04-WP14	Training requirements	Part of the BCP monitoring and reporting process
DSS04-WP15	Monitoring results of skills and competencies	Part of the BCP monitoring and reporting process
DSS04-WP16	Test results of backup data	Part of the BCP monitoring and reporting process
DSS04-WP17	Post-resumption review report	Part of the BCP monitoring and reporting process
DSS04-WP18	Approved changes to the plans	Part of the BCP monitoring and reporting process
DSS05-WP1	Malicious software prevention policy	This policy can also be an operating practice, which combines policies, controls required and sometimes standards and will include the need to cover all malicious software, viruses, Trojans, etc.
DSS05-WP2	Evaluations of potential threats	Results from a threat and vulnerability assessment
DSS05-WP3	Connectivity security policy	Found in network security architecture
DSS05-WP4	Results of penetration tests	Part of the periodic monitoring and security reporting
DSS05-WP5	Security policies for endpoint devices	An endpoint device is any piece of hardware or software that is capable of autonomously connecting to, obtaining an IP address on, transmitting data through or processing code for a network. Examples are desktop computers, laptops, servers, printers, digital imaging devices, consumer electronic devices, smartphones, network appliances, routers, hubs, switches and network attached storage.
DSS05-WP6	Approved user access rights	Part of the security identity management and access control process
DSS05-WP7	Results of reviews of user accounts and privileges	Part of the management of user accounts, which can include password policy and requirements
DSS05-WP8	Approved access requests	Part of the security identity management and access controls process
DSS05-WP9	Access logs	Part of the security identity management and access controls process
DSS05-WP10	Security incident characteristics	Part of the security incident management and reporting process
DSS05-WP11	Security event logs	Part of the security incident management and reporting process
DSS05-WP12	Security incident tickets	Part of the security incident management and reporting process
DSS05-WP13	Inventory of sensitive documents and devices	Important for data privacy and normally part of a comprehensive policy or operating practice on the management of sensitive data
DSS05-WP14	Access privileges	Part of the security identity management and access controls process
DSS06-WP1	Results of processing effectiveness reviews	Part of the monthly information security monitoring and reporting process
DSS06-WP2	Root cause analyses and recommendations	Part of the monthly information security monitoring and reporting process, and linked to the security incident manage system
DSS06-WP3	Processing control reports	Part of the monthly information security monitoring and reporting process
DSS06-WP4	Allocated roles and responsibilities	Part of the security plan and programme
DSS06-WP5	Allocated levels of authority	Part of the security plan and programme. Assessor should check to see if there is a RACI chart.
DSS06-WP6	Allocated access rights	Part of a security identity management and access control process

Figure 19—Level 1 Output Work Products (cont.)

WP ID	WP	Description
DSS06-WP7	Evidence of error correction and remediation	Part of the monthly information security monitoring and reporting process, and linked to the security incident management system
DSS06-WP8	Error reports and root cause analysis	Part of the monthly information security monitoring and reporting process, and linked to the security incident management system
DSS06-WP9	Retention requirements	See data retention policies or operating practices.
DSS06-WP10	Record of transactions	Part of the security identity management and access control process
DSS06-WP11	Reports of violations	Part of the monthly information security monitoring and reporting process, and linked to the security incident management system
MEA01-WP1	Monitoring requirements	Part of an IT monitoring approach that includes business requirements
MEA01-WP2	Approved monitoring goals and metrics	Part of an IT monitoring approach that includes business requirements
MEA01-WP3	Monitoring targets	Part of an IT monitoring approach that includes business requirements
MEA01-WP4	Processed monitoring data	Part of the monitoring and reporting process for internal IT performance
MEA01-WP5	Performance reports	Part of the monitoring and reporting process for internal IT performance
MEA01-WP6	Remedial actions and assignments	Part of the monitoring and reporting process for internal IT performance
MEA01-WP7	Status and results of actions	Part of the monitoring and reporting process for internal IT performance
MEA02-WP1	Evidence of control effectiveness	Based on the internal control assessments; will exist as control narratives associated with a remediation log and typically for external regulatory requirements such as US Sarbanes-Oxley, Health Insurance Portability and Accountability Act (HIPAA), EU Data Protection, BASEL III, etc.
MEA02-WP2	Results of internal control monitoring and reviews	Found in both control narrative reports and control test reports
MEA02-WP3	Results of benchmarking and other evaluations	Found in CMMI assessment reports or COBIT 5 capability process assessment reports
MEA02-WP4	Self-assessment plans and criteria	Found in COBIT 5 self-assessment reports
MEA02-WP5	Results of self-assessments	Found in COBIT 5 self-assessment reports
MEA02-WP6	Results of reviews of self-assessments	Found in COBIT 5 self-assessment reports
MEA02-WP7	Assurance review scope	Part of scoping of an internal control assessment or assurance review plan
MEA02-WP8	Engagement plan	Part of an assurance, audit or assessment plan
MEA02-WP9	Assurance review practices	Part of IT policies or operating practices for the effective monitoring of internal controls and IT process capability
MEA02-WP10	Refined scope	Part of scoping of an internal control assessment or assurance review plan
MEA02-WP11	Assurance review results	Typically found in a control remediation log or a capability assessment report
MEA02-WP12	Assurance review report	Self-explanatory
MEA03-WP1	Compliance requirements register	Not all enterprises will keep a compliance register because it is difficult to maintain. Assessors should be more focused on the evidence of process capability assessments as most controls meet most regulatory and or compliance requirements.
MEA03-WP2	Log of required compliance actions	Kept by individual or key statutory requirements, e.g., US Sarbanes-Oxley
MEA03-WP3	Updated policies, principles, procedures and standards	All IT policies and procedures should be continuously maintained on an 'as needed' basis. Assessors should check for evidence of a review process.
MEA03-WP4	Communications of changed compliance requirements	Normally undertaken by the business. Assessors should check for evidence that there is such a communication aligned with the IT department.
MEA03-WP5	Identified compliance gaps	Usually found in a control remediation register or log
MEA03-WP6	Compliance confirmations	Usually through audit or external or internal assessment reporting
MEA03-WP7	Compliance assurance reports	Usually through audit or external or internal assessment reporting
MEA03-WP8	Reports of non-compliance issues and root causes	Usually through audit or external or internal assessment reporting

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