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TAXATION AND CUSTOMS UNION DG ITSM		
SUBJECT:		
FQP - Annex 24: Infrastructure Management		
FRAMEWORK CONTRACT # TAXUD/2007/CC/088		

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FQP - Annex 24: Infrastructure Management	VER.: 1.04
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DOCUMENT HISTORY

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0	03	08/10/2007	Further implementation	I/R	As req.
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0	07	10/12/2007	Further updates	I/R	As req.
0	08	01/04/2008	Further updates	I/R	As req.
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1	01-1	26/03/2009	Structure FQP modified	I/R	As req.
1	01-2	23/11/2009	Internal review	I/R	As req.
1	01-3	10/12/2009	Further updates after internal QC, ready to be delivered for information to DG TAXUD	I/R	As req.
1	01-4	15/01/2010	Further updates	I/R	As req.
1	02	01/02/2010	Sent for review to DG TAXUD afte internal QC	I	All
1	03	05/02/2010	Re-delivered for review to DG TAXUD afte internal QC	I/R	As req.
1	04	22/03/2010	Delivered for acceptance to DG TAXUD	I/R	As req.

(*) Action: I = Insert R = Replace

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1 - Introduction	ISSUE DATE: 22/03/2010

1. Introduction

This document is an annex to the Framework Quality Plan, deliverable DLV 0.1.1 requested in Specific Contract 04 [A2] under Framework Contract (IT Service Management for DG TAXUD) [A1], Work Package WP.0.1.

This document presents the Level 1, 2 and 3 of the ITSM process FQP - Annex 24: Infrastructure Management.

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2. Reference and Applicable Documents

This chapter presents two lists of relevant programme related documents. They are divided into reference and applicable documents.

2.1 Reference Documents

Id	Reference	Title	Date	Version
R1	ITS-IFQP-SC04- Framework Quality Plan	Framework Quality Plan	22/03/2010	1.04
R2	ITS-IFQP-SC04-Annex 9	ITSM Glossary	22/03/2010	1.13
R3	ITS-IFQP-SC04-Annex 5	List of internal procedures	22/03/2010	1.00

Table 1 – Reference documents

2.2 Applicable Documents

An applicable document is a document which content is binding for a contractor no matter what is mentioned in this FQP.

Id	Reference	Title	Date	Version
A1	TAXUD/2007/CC/088	Framework Contract	04/05/2007	N/A
A2	TAXUD/2008/DE/114	Specific Contract 04	30/06/2008	N/A

Table 2 – Applicable documents

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3. Terminology

3.1 Abbreviations and Acronyms

A list of the abbreviations and acronyms used in the context of the ITSM Programme, and more specifically for this document is provided in Annex 9 ITSM Glossary [R2].

3.2 Interface with DG TAXUD

Where there is a non-specific reference to DG TAXUD, Directorate General Taxation and Customs Union DG or other similar descriptions, it means that the interface can be with any one of the following business threads of DG TAXUD:

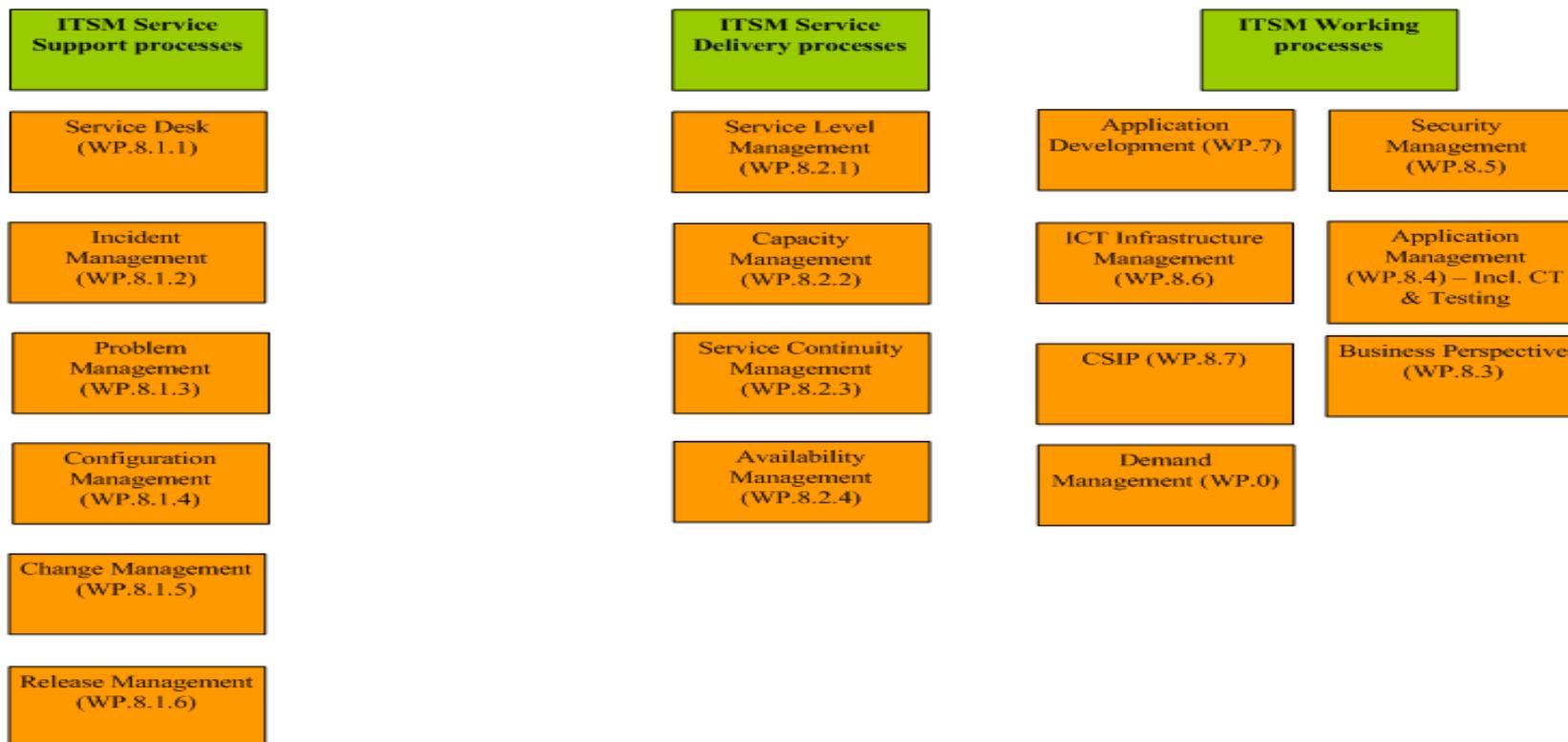
- DG TAXUD A4/CPT;
- DG TAXUD A4/ISD;
- DG TAXUD A4/APM;
- DG TAXUD A3/Tax;
- DG TAXUD A3/Exc;
- DG TAXUD A3/CUST;
- DG TAXUD A3/LISO.

Where it is intended that a reference is to a specific business thread, one of the business threads above shall be stated.

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4. TSM Process model

4.1 Level 0: Process flows



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Figure 4-1: ITSM Process Model

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4.2 Level 1: Infrastructure Management

ICT Infrastructure Management is responsible for planning, designing, building, testing and operating the ICT Infrastructure and the associated Commercial Off The Shelf software (COTS) as defined within the scope of the ITSM contract. All aspects of ICT Infrastructure Management - from identification of business requirements through the tendering process (described in the FQP main document under WP.0.4 - Production of proposals for Specific Contracts (SC) and Request for Actions (RfA)), to the testing, installation, deployment, and ongoing operation and optimisation of the ICT components and IT services – are covered.

ICT Infrastructure Management provides day-to-day administrative services in the entire production-computing environment, including the physical environment, the computer and network equipment and all COTS. This includes managing and providing operational support for all the installed components. ICT Infrastructure Management closely cooperates with other service management functions by providing basic monitoring services. For instance, ICT Infrastructure Management provides first level performance and capacity monitoring for the service monitoring and control function.

It is also to be noted that the ICT Infrastructure Management and Applications Management have parallel lifecycles:

- Application Management focuses on the software and service aspects, and involves both the Business side and the IT side of the organisation;
- ICT Infrastructure Management concentrates on the underlying ICT Infrastructure services needed to support the applications.

The responsibility of ICT Infrastructure Management is to design, implement, administer and operate the Data Centre, Networking, Server & Storage services, Operating environments and IT management Tools up to the level that the IT Services can be delivered by the other Work Packages.

As shown in the picture below ICT Infrastructure Management consists of seven sub-processes:

- Inf.1 Design Infrastructure (of the ICT architecture and standards);
- Inf.2 Plan Infrastructure (for the creation and infrastructure plans and project proposals);
- Inf.3 Deploy Infrastructure (for the detailed design, build, test & acceptance, roll-out and Hand-Over to operations); this activity is related to the ITSM Change and Release Management process
- Inf.4 Deploy Software (for the installation of software packages provided by Application Management); this activity is related to the ITSM Change and Release Management process;
- Inf.5 Operate Hosted Infrastructure;
- Inf.6 Operate DIGIT infrastructure;
- Inf.7 Maintain Technical Support Knowledge.

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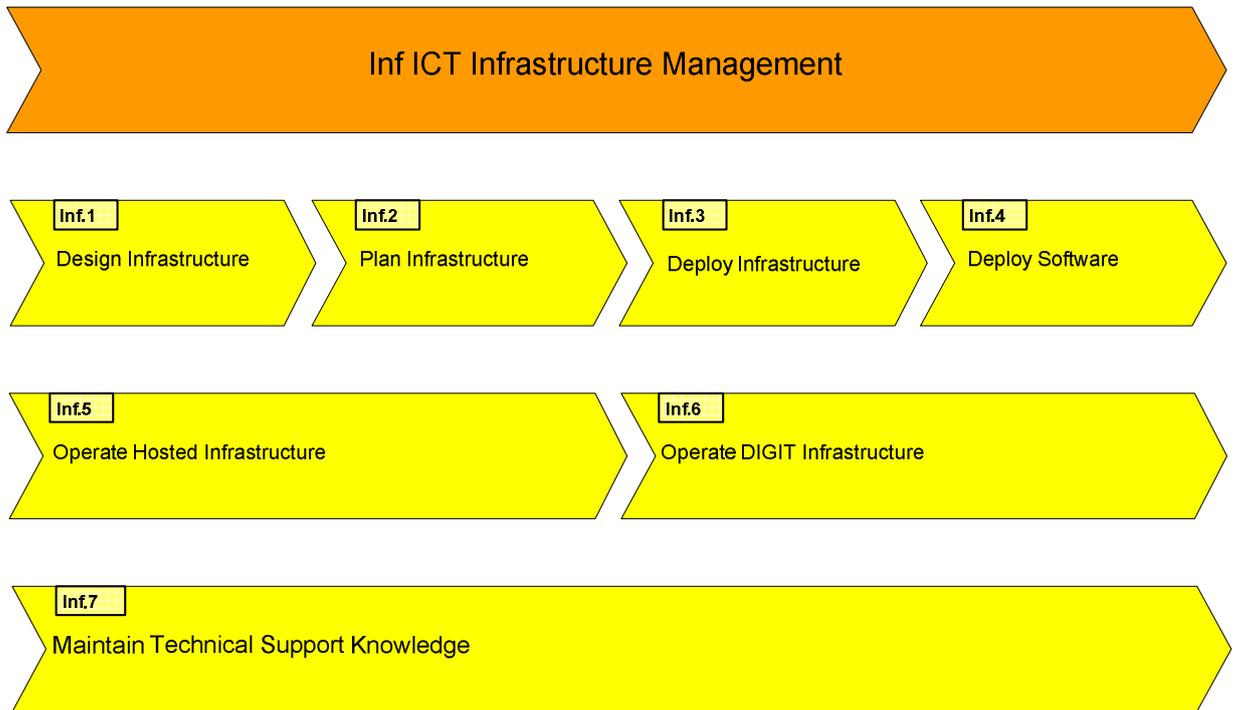


Figure 4-2: Inf sub-processes

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4.3 Level 2: Infrastructure Management

Inf.1 Design Infrastructure

The design process creates and maintains the ICT architecture including the ICT standards, technology strategies, policies and guidelines.

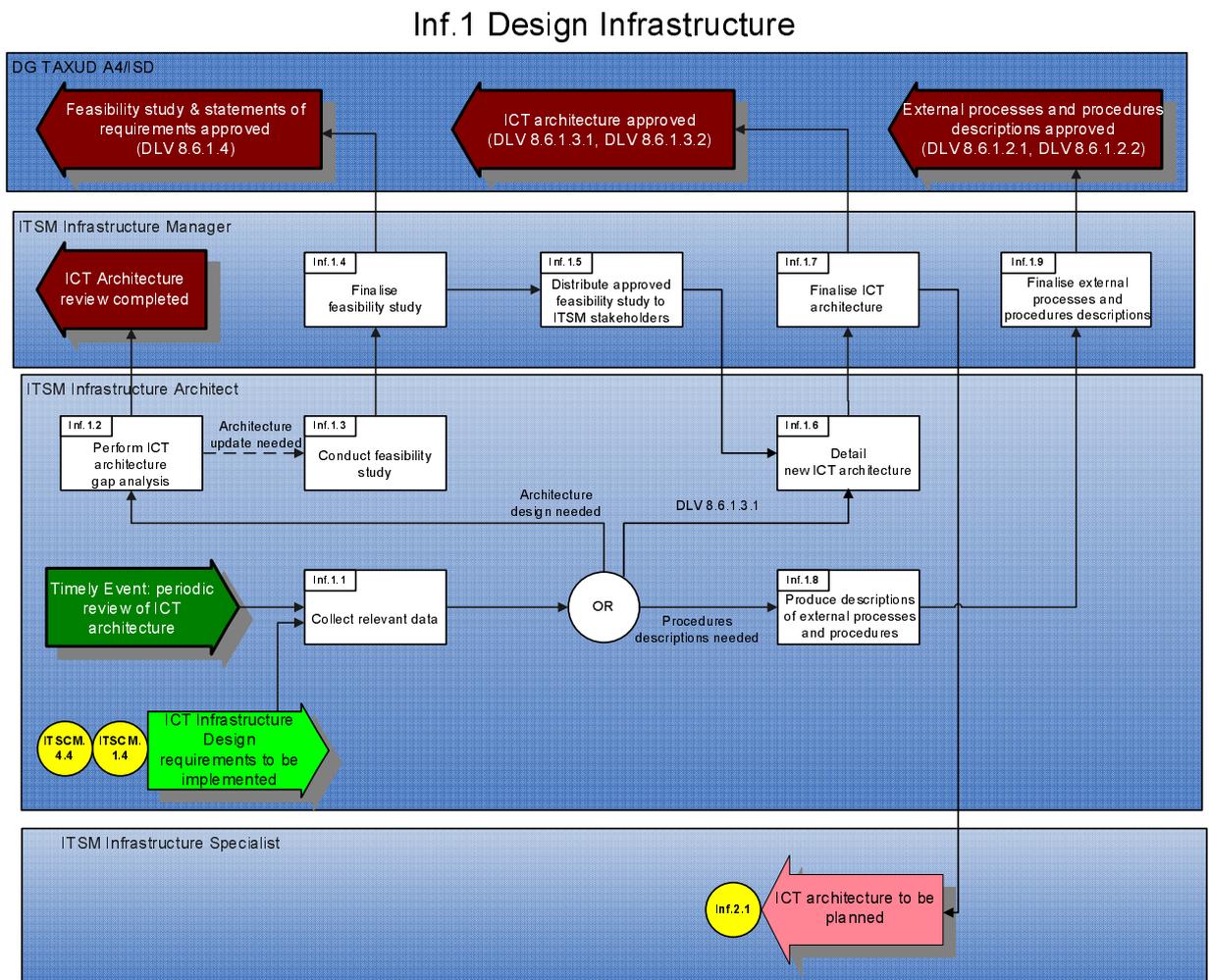


Figure 4-3: Inf.1 Design Infrastructure

A periodic review of the ICT architecture is conducted evaluating the business demands and requirement (including external laws and regulations...) against the current ICT Infrastructure. If gaps are identified, one or more solution alternatives are evaluated (using a feasibility study) and the ICT architecture is revised accordingly.

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Inf.2 Plan Infrastructure

The ICT Infrastructure planning process maintains the ICT Infrastructure roadmap and portfolio of plans to improve and/or implement changes in the ICT Infrastructure.

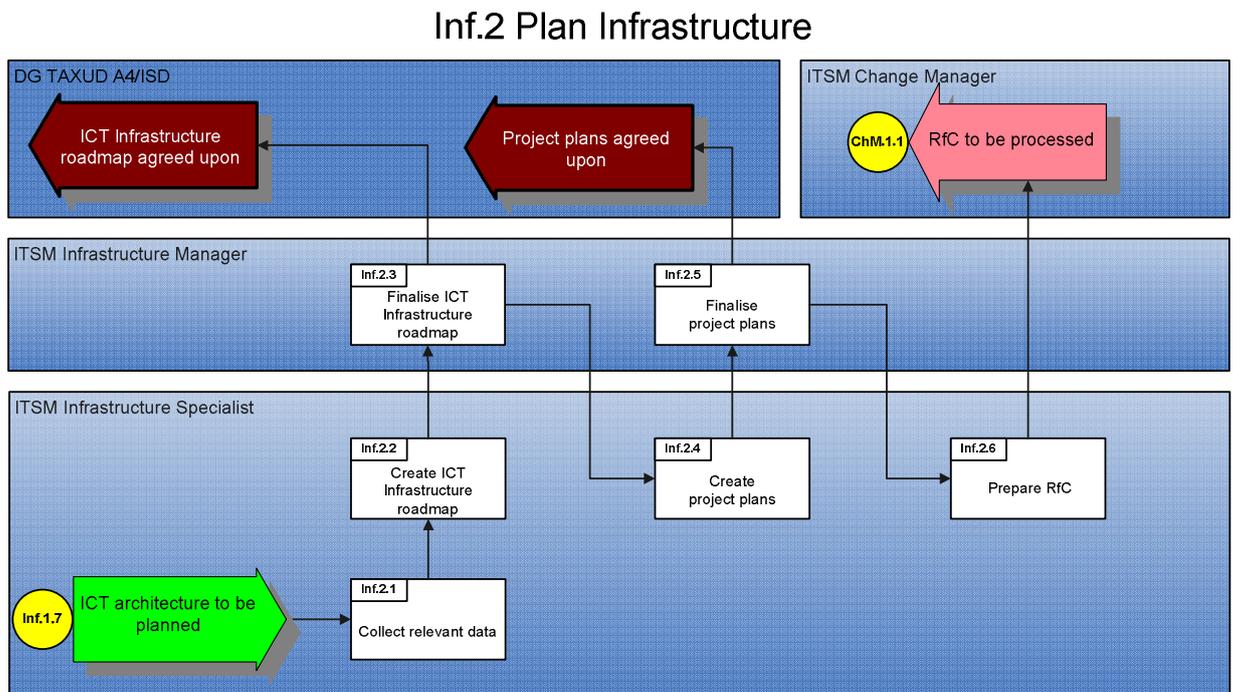


Figure 4-4: Inf.2 Plan Infrastructure

Changes in the ICT Infrastructure are delivered through a project-based approach governed by the Change Management and Release Management processes.

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Inf.3 Deploy Infrastructure

The Infrastructure deployment process is concerned with the design, implementation and rolling out of all ICT Infrastructure components (including hardware, operating system and system management tools).

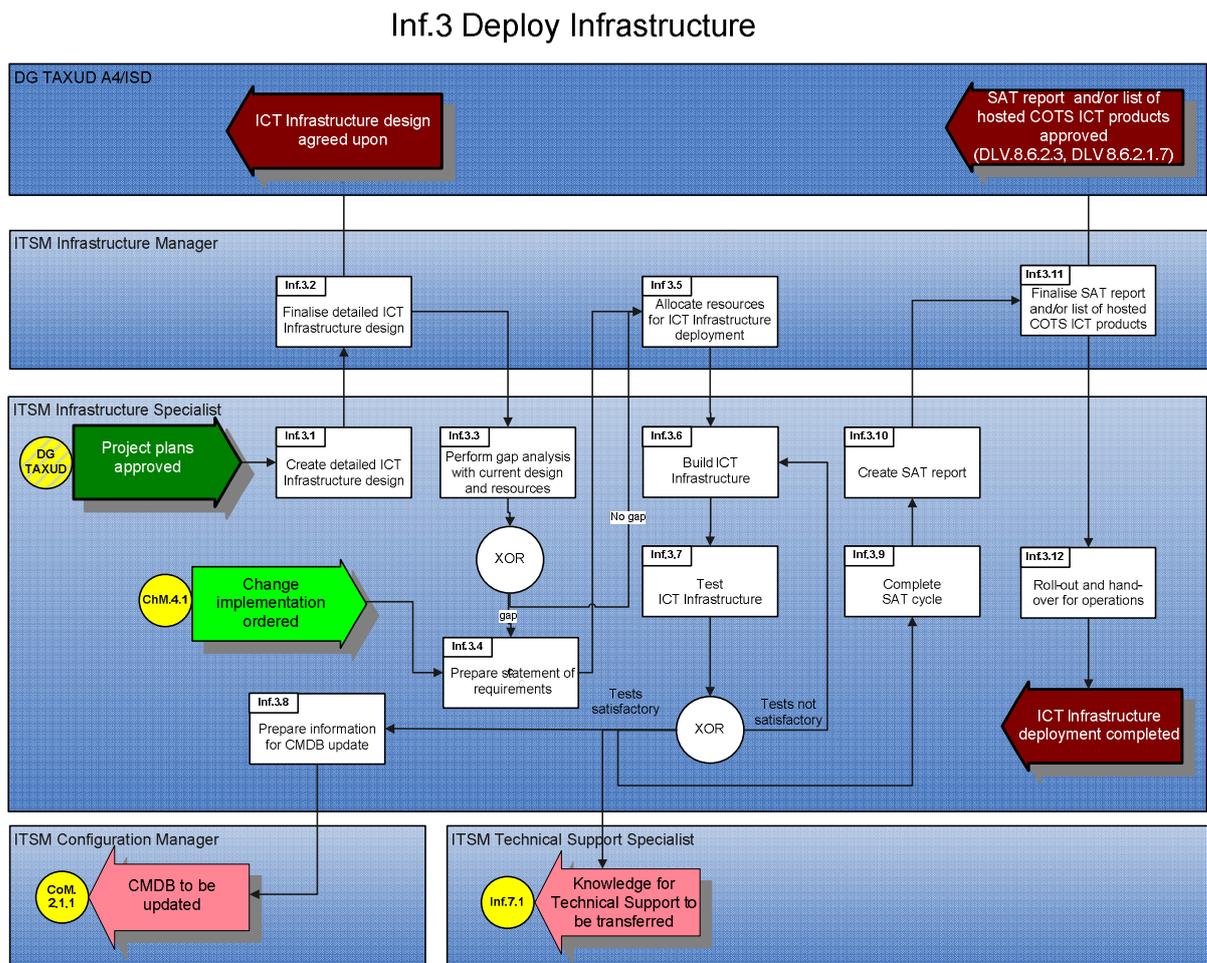


Figure 4-5: Inf.3 Deploy Infrastructure

This process covers the entire installation and configuration including standard software products part of the ICT Infrastructure baseline and standards such as operating system software and system administration tools (backup software, job scheduling for operating system administrative tasks, system administration scripts and tools). These deployment activities are controlled by XXX project management.

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Inf.4 Deploy Software

The software deployment process is responsible for the installation and configuration of logical environments and additional/optional infrastructure software components within the ICT Infrastructure based upon predefined installation procedures. This excludes the installation of business applications (as these are deployed by the Application Management process). Deployments done in Prod are traceable via SAT reports.

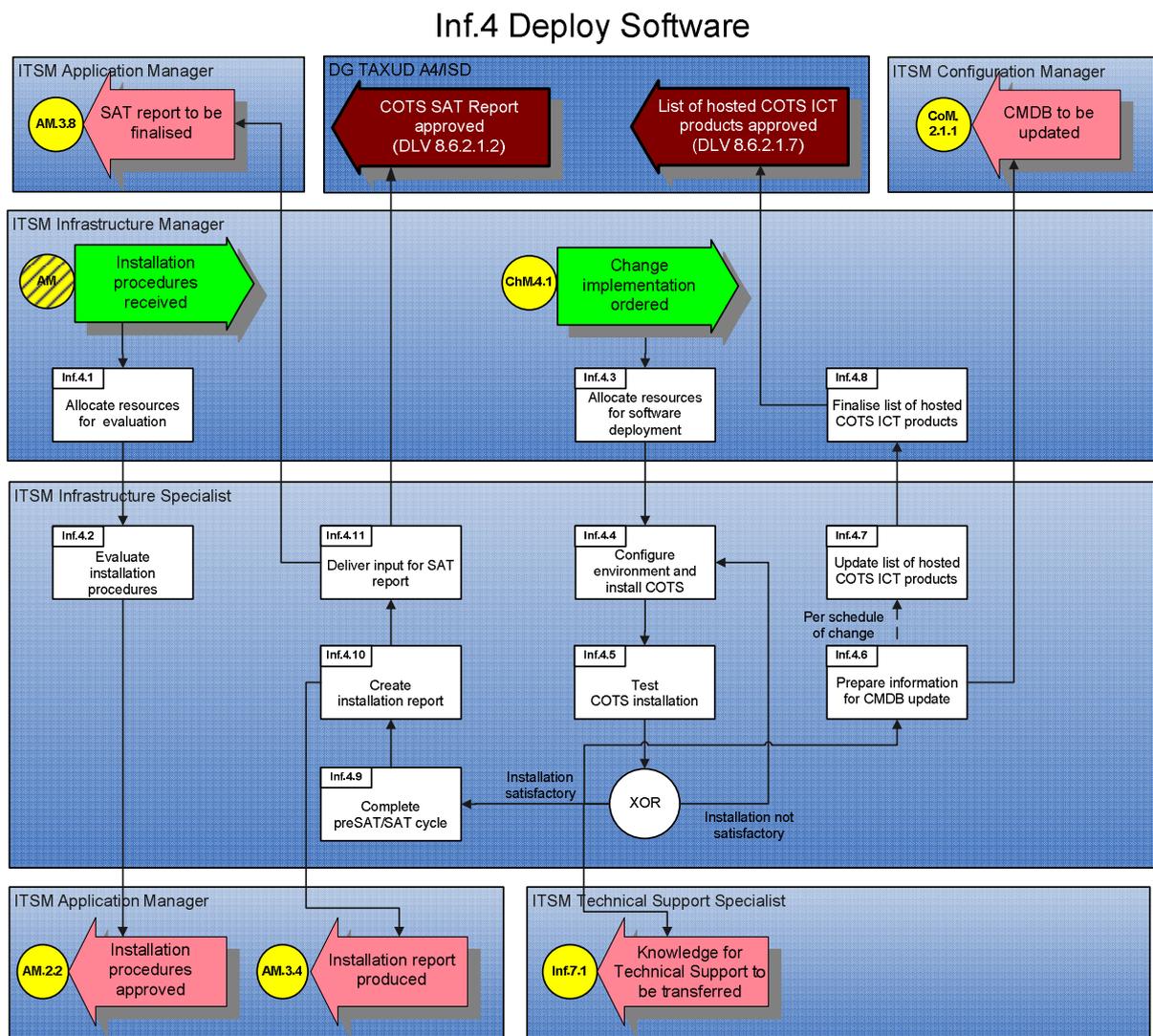


Figure 4-6: Inf.4 Deploy Software

This process only covers the installation and configuration of software products (COTS) not part of the standard operating environment (as these are deployed through the Infrastructure deployment process). Typically, these software products include: database management software, ITSM Tooling and other middleware products (e.g. web server,

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Tuxedo, Oracle, BEA Weblogic). These deployment activities are controlled by Change Management.

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Inf.5 Operate Hosted Infrastructure

The Operations process for the Hosted Infrastructure comprises all activities and measures necessary to enable and/or maintain the intended use of ICT services and infrastructure in order to meet Service Level Agreements and business targets.

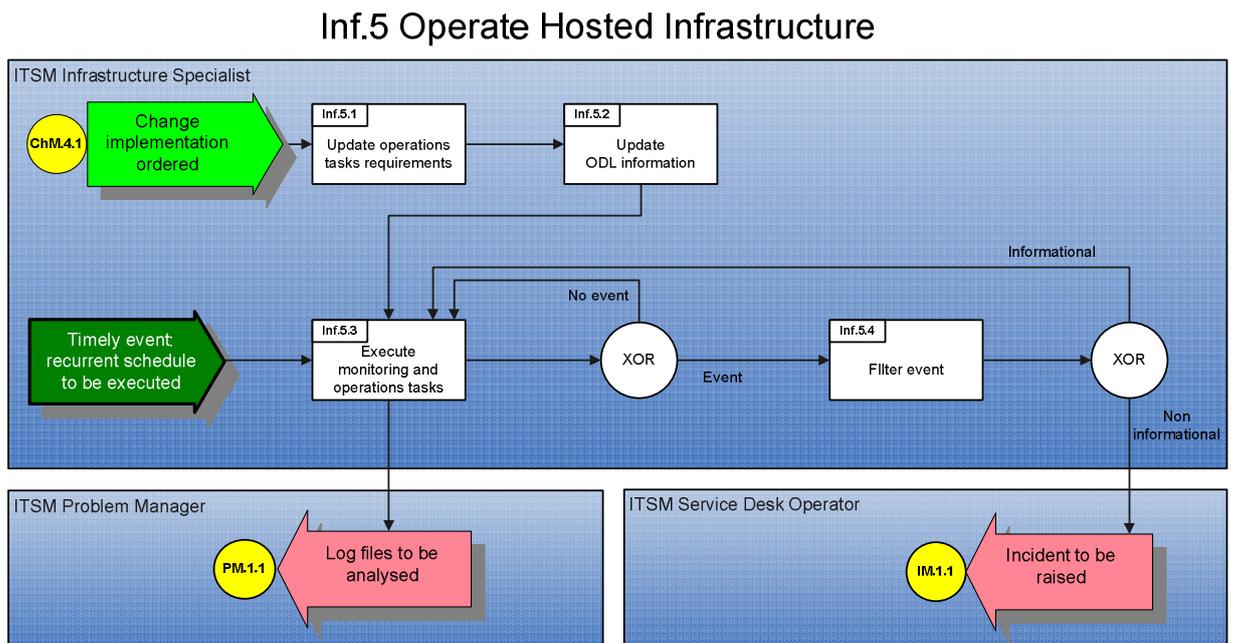


Figure 4-7: Inf.5 Operate Hosted Infrastructure

Operations are responsible for the daily monitoring and control of all ICT components this includes activities such as: execution of daily operational tasks (backup and job schedules), monitor ICT components (daily checks), event management (alerting) and maintain ODL information.

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Inf.6 Operate DIGIT Infrastructure

Operations for DIGIT Infrastructure only cover the subset of the operations activities related to event management (alerts treated within the Incident Management but also information on disk space for Capacity Management). Events received from DIGIT are logged and investigated. The status and resolution of events is monitored. In case of exceptions, an incident is raised to further diagnose and resolve the issue.

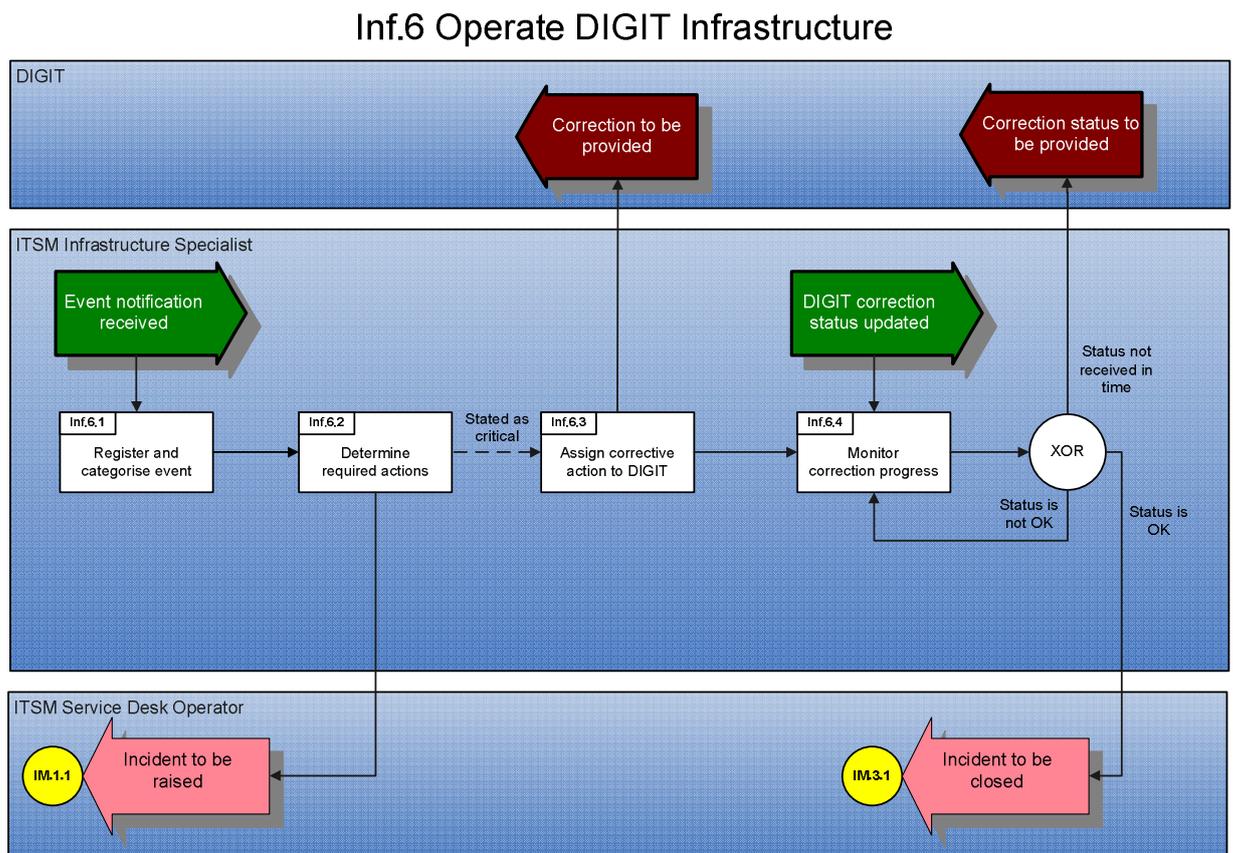


Figure 4-8: Inf.6 Operate DIGIT Infrastructure

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Inf.7 Maintain Technical Support Knowledge

Technical Support is concerned with the development of knowledge for the evaluation, support and proofing of all current and future ICT Infrastructure solutions.

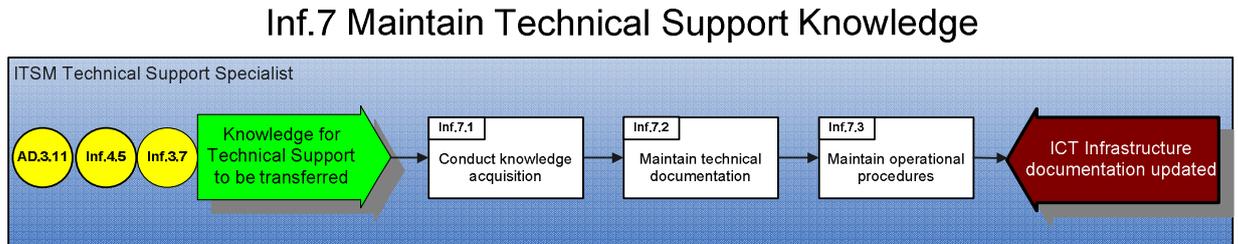


Figure 4-9: Inf.7 Maintain Technical Support Knowledge

Technical support is responsible for knowledge acquisition to ensure that all technical information and operational procedures are available and up-to-date to support ICT staff to manage and operate the ICT Infrastructure. Technical support maintains the ODL (Operational Document Library) containing documents such as training materials, product guides and manuals from vendors, operational procedures and work instructions.

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RACI Table for Inf

Activity	DG TAXUD A4/ISD	ITSM Infrastructure Manager	ITSM Infrastructure Architect	ITSM Infrastructure Specialist	ITSM Change Manager	ITSM Technical Support Specialist	ITSM Configuration Manager	ITSM Application Manager	ITSM Problem Manager	DIGIT	ITSM Service Desk Operator	ITSM Security Manager
Inf.1.1 Collect relevant data		A	R									
Inf.1.2 Perform ICT architecture gap analysis		A	R									
Inf.1.3 Conduct feasibility study		A	R	C		C		C				
Inf.1.4 Finalise feasibility study	C/I	A/R										C/I
Inf.1.5 Distribute approved feasibility study to ITSM stakeholders		A/R										
Inf.1.6 Detail new ICT architecture		A	R									
Inf.1.7 Finalise ICT architecture	C/I	A/R	C	I								C/I
Inf.1.8 Produce descriptions of external processes and procedures		A	R	C		C						
Inf.1.9 Finalise external processes and procedures descriptions	C/I	A/R	C									
Inf.2.1 Collect relevant data		A	C	R								
Inf.2.2 Create ICT infrastructure roadmap		A	C	R								
Inf.2.3 Finalise ICT infrastructure roadmap	C/I	A/R										C/I
Inf.2.4 Create project plans		A	C	R								

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Inf.4.9 Complete preSAT/SAT cycle		A		R				C/I				
Inf.4.10 Create installation report		A		R				C/I				
Inf.4.11 Deliver input for SAT report		A		R				C/I				
Inf.5.1 Update operations task requirements		A		R								
Inf.5.2 Update ODL information		A		R								
Inf.5.3 Execute monitoring and operations tasks		A		R				C/I				
Inf.5.4 Filter event		A		R		C					C/I	
Inf.6.1 Register and categorise event		A		R								
Inf.6.2 Determine required actions		A		R		C					C/I	
Inf.6.3 Assign corrective action to DIGIT		A		R		C					C/I	
Inf.6.4 Monitor correction progress		A		R							C/I	
Inf.7.1 Conduct knowledge acquisition		A	C	C		R						
Inf.7.2 Maintain technical documentation		A		I		R						
Inf.7.3 Maintain operational procedures		A		I		R						

Table 4-1: Inf RACI Table

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Communication interfaces with DG TAXUD A4/ISD

Interface description communication with DG TAXUD A4/ISD	Direction	Format
Inf 1 Design Infrastructure		
Periodic review of ICT architecture	Incoming	E-mail, printed template
Feasibility study and statements of requirements (DLV 8.6.1.4)	Outgoing	CIRCA publication
Feasibility study and statements of requirements approved	Incoming	E-mail and/or mail
ICT architecture (DLV 8.6.1.3.1, DLV 8.6.1.3.2)	Outgoing	CIRCA publication
ICT architecture approved	Incoming	E-mail and/or mail
External processes and procedures descriptions (DLV 8.6.1.2.1, DLV 8.6.1.2.2)	Outgoing	CIRCA publication
External processes and procedures descriptions approved (DLV 8.6.1.2.1, DLV 8.6.1.2.2)	Incoming	E-mail and/or mail
Inf 2 Plan Infrastructure		
ICT infrastructure roadmap	Outgoing	E-mail
ICT architecture roadmap agreed upon	Incoming	E-mail and/or mail
Project plan(s)	Outgoing	E-mail
Project plan (s) agreed upon	Incoming	E-mail and/or mail
ICT Infrastructure design(s)	Outgoing	E-mail
Inf 3 Deploy infrastructure		
ICT Infrastructure design(s) agreed upon	Outgoing	E-mail and/or mail
COTS SAT report (DLV.8.6.2.1.2)	Outgoing	CIRCA publication and/or mail
COTS SAT report approved (DLV.8.6.2.1.2)	Incoming	E-mail and/or mail
List of hosted COTS ICT products (DLV.8.6.2.1.7)	Outgoing	CIRCA publication and/or mail
List of hosted COTS ICT products approved (DLV.8.6.2.1.7)	Incoming	E-mail and/or mail

Table 4-2: Inf Communication interfaces with DG TAXUD A4/ISD

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4.4 Level 3: Infrastructure Management

Procedure	
<div data-bbox="285 539 505 656" style="border: 1px solid black; padding: 5px;"> <p>Inf.1.1</p> <p>Collect relevant data</p> </div>	<p><u>Inf.1: Design Infrastructure</u></p> <p>Inf.1.1: Collect relevant data</p> <p>This activity collects all necessary data to prepare the architectural review and assessment of the current ICT Infrastructure.</p> <p>To ensure that the ICT strategy, plans and architecture remain synchronised, a periodic review of the ICT architecture is required (annually at least). This activity initiates the review of current ICT architecture, or by a design change requirement, coming from other processes decisions that can influence the ICT architecture (for example, IT Service Continuity Management).</p> <p>This activity is responsible for collecting and analysing all requirements for the ICT architecture, including the current capabilities of the ICT Infrastructure.</p> <p>To perform this activity, a broad range of documents and data is collected such as:</p> <ul style="list-style-type: none"> • Business plans, demands and business requirements plans (from Business Perspective); • Plans and policies from other processes including: Availability plan(s); Capacity plan(s); IT Service Continuity Plan(s) and Security plan (and policies); • Application architectures and designs from Application Management and development; • Enterprise architectures, such as Commission Enterprise Architecture Framework (CEAF); • Service level requirements (from Service Level Management); • Configuration details (current ICT Infrastructure from CMDB); • Technology trends from the market; • Contracts (such as maintenance and support contracts); • Current ICT Architecture and ICT Infrastructure Designs; • Infrastructure performance, capacity and availability data (e.g. collected by monitoring systems); • ICT Infrastructure requirements derived from design documents (created by application and ICT Infrastructure projects). <p>Activities include:</p> <ul style="list-style-type: none"> • Capture and consolidate business requirements (related to

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	<p>business applications and business demands) affecting the ICT Infrastructure;</p> <ul style="list-style-type: none"> • Capture IT management requirements (for example related to: security, capacity, availability, continuity...); • Identify all proposed and planned projects (for new applications and ICT services); • Collect all ICT plans (from Capacity Management, Availability Management...); • Collect data related to technology trends (and supplier data). <p>The outcome of this activity is a collection of relevant ICT Infrastructure data containing the results and consolidation of ICT Infrastructure requirements (derived from: designs, requirements, plans and policies, technology trends...).</p> <p>Different parties and stakeholders will have to be involved during these data collection activities. For example representatives from DIGIT/DC and CCN. These parties will be engaged using formal meeting requests.</p> <p>If the ICT architecture has to be revised the ITSM Infrastructure Architect will continue by performing a gap analysis under step Inf 1.2; if the ICT architecture has to be drawn up for the first time (DLV 8.6.1.3.1), the next executed step is Inf 1.6. If the external procedures descriptions have to be created or revised, the step Inf 1.8 is undertaken.</p>		
<table border="1" data-bbox="284 1198 504 1310"> <tr> <td>Inf.1.2</td> </tr> <tr> <td>Perform ICT architecture gap analysis</td> </tr> </table>	Inf.1.2	Perform ICT architecture gap analysis	<p>Inf.1.2: Perform ICT architecture gap analysis</p> <p>A gap analysis is conducted on the current ICT architecture and ICT Infrastructure capabilities, against the future requirements and plans. Based upon this gap analysis, improvement options or required changes are identified for investigation in more detail, as part of a feasibility study.</p> <p>Input used to conduct the gap analysis include:</p> <ul style="list-style-type: none"> • ICT architecture (current) and related ICT Infrastructure designs (current); • ICT Infrastructure and architecture data collected (see Inf 1.1). <p>The outcome of this gap analysis is an ICT Infrastructure gap analysis report, which is an ITSM internal deliverable.</p> <p>In case the gap analysis outcome demonstrates the need for an ICT architecture revision, a feasibility study is initiated (Inf 1.3) to determine the best approach for modifying the ICT Infrastructure.</p>
Inf.1.2			
Perform ICT architecture gap analysis			

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Inf.1.3

Conduct feasibility study

Inf.1.3: Conduct feasibility study

Based upon the results of the previous activities, one or more scenarios for the proposed ICT architecture are created (high level ICT architecture). Modifications and solution alternatives for the new ICT architecture are identified, documented and reviewed.

ICT Infrastructure Management is continually improving the ICT Infrastructure and aligning the environment to the changing business demands. Building the current and future state of ICT architecture provides a firm fundamental understanding of where the organisation is today, and where it wants to be in the future. The next logical step is to launch programs and supporting projects to manage the change and reach future goals as quickly as possible (see planning process). Determining the optimal project investment path involves identifying alternative solutions and performing the analysis to select the best option.

Activities include:

- Determine solution candidates and alternatives (options);
- Conduct feasibility study to evaluate the different options;
- Define high level architecture;
- Create feasibility report;
- Document recommended options (for the proposed ICT architecture).

The following information is used as an input for this activity:

- ICT Infrastructure gap analysis report (produced by Inf 1.2);
- ICT architecture (current ICT architecture).

The outcome of this activity is:

- ICT Infrastructure feasibility study report (including the statement of requirements);
- ICT architecture (updated/proposed high level).

A feasibility study is initiated formally by a Request for Action, to determine the recommended options to modify and/or improve the current ICT architecture. During the feasibility study, a broad range of expertise is involved (such as technical support specialists and application specialists).

A feasibility study addresses either a problem to resolve, or an opportunity to seize. The main purpose of the study is to ascertain the likelihood of each potential solution alternative's probability of satisfying the business needs in terms of economic, operational and technical feasibility. The outcome of the feasibility study is a recommended solution option, further defined in the ICT architecture

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	<p>and related ICT Infrastructure design documents.</p> <p>Based on the size and/or complexity of the situation, the study effort is broken down into smaller, more manageable pieces and prioritised accordingly. The typical process steps to conducting a feasibility study include those outlined below. These steps are often conducted concurrently, iteratively and, in fact, some steps are intentionally not addressed, depending on the complexity and criticality of the effort. Process steps include:</p> <ul style="list-style-type: none"> • Determine requirements for the study; • Determine objectives, scope and approach, and plan the effort; • Conduct a current state assessment; • Identify potential solutions; • Determine the feasibility of each option; • Document and communicate the results of the study, and obtain approval; • Develop the Business Case for the recommended solution. <p>The Feasibility Study Report identifies each of the solution options available and rates the likelihood of each option achieving the desired result. The Feasibility Study Report is typically comprised of the following information:</p> <ul style="list-style-type: none"> • Executive summary; • Business problem and/or opportunity statement, including information uncovered during the current state assessment and the external research activities; • Feasibility study requirements, including the business drivers of the initiative; • Impact on security conventions; • For each option that was assessed, the results of the study including the following pieces of information: <ul style="list-style-type: none"> ○ A description of the solution option; ○ A description of the assessment process and methods that were used; ○ A description of the overall results; documenting expected vs. actual results, scoring, and other considerations; ○ A list of identified risks associated with the alternative. A risk is an event that may adversely affect the ability of the solution to meet the business need; ○ A list of identified issues which adversely impact the success of the solution; ○ Assumptions made during the study process to close gaps in information. It is important to note that if the assumption does not prove to be true, it may pose a risk to the success of the option under consideration; ○ An estimate of the required investments and costs to
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	<p>operate and maintain the solution;</p> <ul style="list-style-type: none"> • Alternative Solution Ranking (ranking criteria and ranking scores); • Results – recommended solution, including any additional rationale for the decision; • Appendix containing all supporting information. <p>If needed, different parties will be involved in the feasibility study (such as DIGIT/DC and CCN).</p>		
<table border="1"> <tr> <td>Inf.1.4</td> </tr> <tr> <td>Finalise feasibility study</td> </tr> </table>	Inf.1.4	Finalise feasibility study	<p>Inf.1.4: Finalise feasibility study</p> <p>The feasibility study is finalised and discussed with stakeholders.</p> <p>The ICT Infrastructure feasibility study report created in Inf 1.3 is used as the primary input for this activity.</p> <p>The outcome of this activity is the formal accepted Feasibility study & statements of requirements (DLV 8.6.1.4).</p>
Inf.1.4			
Finalise feasibility study			
<table border="1"> <tr> <td>Inf.1.5</td> </tr> <tr> <td>Distribute approved feasibility study to ITSM stakeholders</td> </tr> </table>	Inf.1.5	Distribute approved feasibility study to ITSM stakeholders	<p>Inf.1.5: Distribute approved feasibility study to ITSM stakeholders</p> <p>ITSM stakeholders are notified by e-mail of the existence of the approved feasibility study report and the document itself is posted on the ITSM Collaborative tool.</p> <p>The feasibility study will be submitted for review and acceptance (SfR, SfA) to DG TAXUD A4/ISD and when applicable to other external parties such as DIGIT/DC and CCN.</p>
Inf.1.5			
Distribute approved feasibility study to ITSM stakeholders			
<table border="1"> <tr> <td>Inf.1.6</td> </tr> <tr> <td>Detail new ICT architecture</td> </tr> </table>	Inf.1.6	Detail new ICT architecture	<p>Inf.1.6: Detail new ICT architecture</p> <p>After the feasibility study has been approved, the ICT architecture, ICT standards and policies are updated (according to the proposed solutions and/or modifications). This activity covers the creation and the evolutive maintenance of the ICT architecture.</p> <p>The ICT architecture definition is made of:</p> <ul style="list-style-type: none"> • ICT architectural principles and guidelines; • ICT standards (standard ICT components); • ICT architecture document (DLV 8.6.1.3.1, or its evolutive maintenance DLV 8.6.1.3.2). <p>The outcome of the previous activities are used to construct the ICT architecture, including:</p> <ul style="list-style-type: none"> • consolidated data (current infrastructure designs, requirements,
Inf.1.6			
Detail new ICT architecture			

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	<p>plans and policies, technology trends...) (from Inf 1.1);</p> <ul style="list-style-type: none"> • ICT Infrastructure gap analysis report (from Inf 1.2); • ICT Infrastructure feasibility study report (from Inf 1.3 and Inf 1.4.); • ICT architecture (proposed high level) (from Inf 1.3); • ICT architecture (previous version) (from Inf 1.6). <p>The ICT architecture is created and maintained for DG TAXUD A4/ISD and for the trans-European systems, addressing all taken over Business Threads and ITSM Thread.</p> <p>The ICT architecture document contains network diagrams and TIP graphical views of the following topics:</p> <ul style="list-style-type: none"> • Backup and storage architecture; • Monitoring; • Network architecture; • Software, hardware and middleware architecture; • Hosting and data centre architecture. <p>Typically, an ICT architecture document is created on different levels of detail:</p> <ul style="list-style-type: none"> • Conceptual (requirements and principles); • Logical (identification of ICT Infrastructure services and logical building blocks); • Physical (selection of ICT products and standards). <p>The architecture is created using the expertise of different specialists including:</p> <ul style="list-style-type: none"> • Security specialists; • Availability specialists (e.g. for high availability options); • Continuity specialists (for fallback scenarios); • Storage specialists; • Technical support specialists. 		
<table border="1"> <tr> <td>Inf.1.7</td> </tr> <tr> <td>Finalise ICT architecture</td> </tr> </table>	Inf.1.7	Finalise ICT architecture	<p>Inf.1.7: Finalise ICT architecture</p> <p>The ICT architecture document is finalised and discussed with stakeholders. This includes the formal review cycle with the DG TAXUD A4/ISD.</p> <p>Once the ICT architecture document (DLV 8.6.1.3.1 or its evolutive maintenance DLV 8.6.1.3.2) is formally approved, this is communicated to the stakeholders (notification by e-mail and posted on the ITSM Collaborative tool).</p>
Inf.1.7			
Finalise ICT architecture			

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<table border="1"> <tr> <td>Inf.1.8</td> </tr> <tr> <td>Produce descriptions of external processes and procedures</td> </tr> </table>	Inf.1.8	Produce descriptions of external processes and procedures	<p>Inf.1.8: Produce descriptions of external processes and procedures</p> <p>This activity consists of creating and/or maintaining the external processes and procedures definition and description.</p> <p>The outcome of this activity is the documented external processes and procedures (DLV 8.6.1.2.1, or its evolutive maintenance DLV 8.6.1.2.2).</p> <p>The external processes and procedures deliverable defines the touch points between the ITSM organisation and external parties. It includes only the interfaces related to the ITSM processes as defined in the Level 0 diagrams of the Section 6.</p> <p>Examples of touch points:</p> <ul style="list-style-type: none"> • Incident Management interface/touch points (raise an incident, incident assignment/escalation to external party via specific Service Desk (CCN/TC, DIGIT/IRMA), ...); • Change Management (to assign tasks and/or change requests to external parties such as DIGIT); • Capacity Management (exchange information/data about capacity and performance aspects of the end-to-end ICT services); • Configuration data (exchange configuration details of CI's depending upon CI's from another party); • Monitoring data (e.g. capacity, performance, availability). <p>The external processes and procedures description defines the following information per touch point:</p> <ul style="list-style-type: none"> • Process activity (reference to the source and target process step); • Data exchange (definition of information exchanged between involved parties); • Contracts and agreements (indication whether the interface is governed by a formal SLA/OLA); • Involved roles (from ITSM and external party); • Interface type (e.g. planned, event driven/ad hoc); • Interface method (e.g. e-mail, phone).
Inf.1.8			
Produce descriptions of external processes and procedures			
<table border="1"> <tr> <td>Inf.1.9</td> </tr> <tr> <td>Finalise external processes and procedures descriptions</td> </tr> </table>	Inf.1.9	Finalise external processes and procedures descriptions	<p>Inf.1.9: Finalise external processes and procedures descriptions</p> <p>The external processes and procedures document is finalised and discussed with stakeholders. This includes the formal review cycle with the DG TAXUD A4/ISD.</p>
Inf.1.9			
Finalise external processes and procedures descriptions			

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	<p>The outcome of this activity is the approved External processes and procedures document (DLV 8.6.1.2.1 or DLV 8.6.1.2.2).</p> <p>Once the deliverable is formally approved, this is communicated to the stakeholders (sent by e-mail and stored on the ITSM Collaborative tool and CIRCA).</p>
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<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.2.1</p> <p>Collect relevant data</p> </div>	<p><u>Inf.2: Plan Infrastructure</u></p> <p>Inf.2.1: Collect relevant data</p> <p>All relevant data for the creation of the ICT Infrastructure plans and roadmap is collected. This includes:</p> <ul style="list-style-type: none"> • An inventory of all current projects and initiatives affecting the ICT Infrastructure including business and application initiatives; • Deliverables produced by Inf 1.1 (data collected for the architectural review); • ICT architecture (as produced by Inf 1).
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.2.2</p> <p>Create ICT Infrastructure roadmap</p> </div>	<p>Inf.2.2: Create ICT Infrastructure roadmap</p> <p>An architectural roadmap is developed within the major areas of the ICT architecture:</p> <ul style="list-style-type: none"> • Technology roadmap; • IT management roadmap (management of the technology). <p>The roadmap is a programme for future ICT development indicating what needs development and when. The roadmap displays the major steps to be taken in order to realise the proposed ICT architecture (time line of 1 to 3 years).</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.2.3</p> <p>Finalise ICT Infrastructure roadmap</p> </div>	<p>Inf.2.3: Finalise ICT Infrastructure roadmap</p> <p>The ICT Infrastructure roadmap (an ITSM internal document) is discussed and agreed upon by all stakeholders, including DG TAXUD A4/ISD.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.2.4</p> <p>Create project plans</p> </div>	<p>Inf.2.4: Create project plans</p> <p>The ICT Infrastructure roadmap is translated into a portfolio of projects to realise the target ICT architecture. The input to create the ICT Infrastructure project portfolio plan includes:</p> <ul style="list-style-type: none"> • ICT Infrastructure Roadmap; • ICT architecture approved; • ICT Infrastructure project plans (current); • Change and release schedules (calendar of ICT Infrastructure changes); • Release plans and policies.

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	<p>The ICT architecture is implemented using the ITSM Programme management methods, while taking into account prioritisation of the different ICT Infrastructure project proposals.</p> <p>The outcome of this activity is one or more ICT Infrastructure projects plans. The project plans are created and approved according to the standard project management methodology.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.2.5</p> <p>Finalise project plans</p> </div>	<p>Inf.2.5: Finalise project plans</p> <p>The portfolio of projects is reviewed, updated and agreed upon by all stakeholders, including DG TAXUD A4/ISD.</p> <p>The outcome of this activity is the approved ICT Infrastructure project plans.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.2.6</p> <p>Prepare RfC</p> </div>	<p>Inf.2.6: Prepare RfC</p> <p>All actions are initiated through an RfC to the Change Management.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.3.1</p> <p>Create detailed ICT Infrastructure design</p> </div>	<p><u>Inf.3: Deploy Infrastructure</u></p> <p>Inf.3.1: Create detailed ICT Infrastructure design</p> <p>Once the ICT Infrastructure Project plans are approved, the ICT deployment activities are initiated. Deployment covers the entire cycle from design, build, testing through Hand-Over and roll-out of the ICT Infrastructure. Therefore, the first phase is to create one or more detailed ICT Infrastructure designs. This activity creates the specification, the sizing and the design of all the CI's to deploy.</p> <p>This activity is responsible for the overall coordination and design of the required infrastructure and the associated technologies and procedure needed to manage these infrastructure services. This includes the following tasks:</p> <ul style="list-style-type: none"> • Collect ICT Infrastructure requirements (e.g. business and application requirements, security...); • Collect IT management requirements (e.g. availability, capacity...); • Create ICT Infrastructure design (according to ICT standards and ICT architecture); • Define configuration settings and baselines for the ICT components; • Create IT management design and configuration (for IT operations such as backup, job scheduling, housekeeping, log file management, monitoring...). <p>Development parties (X-DEV) will participate in the ICT</p>

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	<p>Infrastructure design (and the review cycle) to ensure the application requirements are covered. Development must specify the requirements of the application upon the ICT Infrastructure (thus specifying the required environment and capabilities of the underlying ICT Infrastructure).</p> <p>The main aim is the design of new or changed ICT Infrastructure services. The requirements for these new services are extracted from the ICT architecture, business requirements, plans and application designs.</p> <p>Input for detailed design includes:</p> <ul style="list-style-type: none"> • ICT architecture; • Availability Plan; • Availability design criteria and guidelines; • Capacity Plan; • ICT Service Continuity Plan; • Security Plans, policies and designs; • Application requirements and design. <p>Each requirement is analysed, documented and agreed upon, and a solution design is produced, which is then compared with the strategies and constraints from ICT architecture to ensure that it conforms to corporate and IT policies.</p> <p>The goal is to design the appropriate ICT Infrastructure services (technology services) including their architectures, processes, policies and documentation, to meet current and future agreed business and application requirements.</p> <p>The outcome of this design includes:</p> <ul style="list-style-type: none"> • ICT detailed infrastructure design documents; • ICT Infrastructure requirements document; • IT management requirements (related to managing the ICT Infrastructure and its components). 		
<table border="1"> <tr> <td>Inf.3.2</td> </tr> <tr> <td>Finalise detailed ICT Infrastructure design</td> </tr> </table>	Inf.3.2	Finalise detailed ICT Infrastructure design	<p>Inf.3.2: Finalise detailed ICT Infrastructure design</p> <p>The created ICT Infrastructure design is discussed and reviewed with the involved stakeholders, including the DG TAXUD A4/ISD. The results are the approved ICT detailed infrastructure designs.</p>
Inf.3.2			
Finalise detailed ICT Infrastructure design			
<table border="1"> <tr> <td>Inf.3.3</td> </tr> <tr> <td>Perform gap analysis with current design and resources</td> </tr> </table>	Inf.3.3	Perform gap analysis with current design and resources	<p>Inf.3.3: Perform gap analysis with current design and resources</p>
Inf.3.3			
Perform gap analysis with current design and resources			

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	<p>Here, the proposed infrastructure design is matched against the current capabilities and resources.</p> <p>The following input is used to conduct the gap analysis:</p> <ul style="list-style-type: none"> • ICT detailed infrastructure design; • Configuration details of the current ICT Infrastructure; • Contracts and licences (current available ICT products). <p>This review/gap analysis provides a structured mechanism for determining the organisation's capabilities and state of readiness for delivering new or revised Infrastructure service.</p> <p>The result is the gap analysis, captured in the ICT Infrastructure Gap Analysis Report. This report shows the differences between the as-is and the to-be situation.</p> <p>In case the gap analysis reveals that new components are required the next step will be Inf.3.4, in case no new components are required the flow will continue directly with Inf.3.5.</p>		
<table border="1"> <tr> <td>Inf.3.4</td> </tr> <tr> <td>Prepare statement of requirements</td> </tr> </table>	Inf.3.4	Prepare statement of requirements	<p>Inf.3.4: Prepare statement of requirements</p> <p>Based upon the gap analysis between the target ICT Infrastructure and the current available ICT Infrastructure products, contracts and software licences, a list of additional HW/SW components and services is identified.</p> <p>For the selection of the suppliers and/or acquisition of ICT products, a SOR document is created.</p> <p>The requirements are consolidated into SORs for the selection and acquisition of ICT products from vendors. Requirements are sorted by categories, such as:</p> <ul style="list-style-type: none"> • Capacity and performance requirements; • Availability requirements; • Security requirements; • Technical requirements (functional and non-functional); • Financial requirements. <p>The contracting and procurement process manages the selection of the suppliers and purchasing of the required ICT products and licences.</p>
Inf.3.4			
Prepare statement of requirements			
<table border="1"> <tr> <td>Inf.3.5</td> </tr> <tr> <td>Allocate resources for ICT Infrastructure deployment</td> </tr> </table>	Inf.3.5	Allocate resources for ICT Infrastructure deployment	<p>Inf.3.5: Allocate resources for ICT Infrastructure deployment</p> <p>The deployment is planned in terms of required IT staff and ICT</p>
Inf.3.5			
Allocate resources for ICT Infrastructure deployment			

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	<p>resources. The ICT Infrastructure Manager ensures that the required resources are available for the deployment activities (this includes the validation of software licences ...).</p> <p>Different resources (human, licence and financial resources) are required for the deployment project such as:</p> <ul style="list-style-type: none"> • Technical expertise; • Supplier involvement; • Test team members; • Deployment Project Manager; • Deployment coordinator; • Software licences; • ... <p>An ITSM Infrastructure Specialist is nominated as a Deployment Coordinator and is responsible for the entire delivery of the ICT solution through development, testing and roll-out.</p> <p>Detailed project plans and resource schedules are developed and maintained during the deployment for internal ITSM use.</p>	
<table border="1" style="width: 100%; height: 100%;"> <tr> <td style="text-align: center; vertical-align: top;"> Inf.3.6 Build ICT Infrastructure </td> </tr> </table>	Inf.3.6 Build ICT Infrastructure	<p>Inf.3.6: Build ICT Infrastructure</p> <p>This activity is responsible to install, configure, assemble and possibly retire the technical infrastructure components.</p> <p>The input for this activity includes:</p> <ul style="list-style-type: none"> • ICT detailed infrastructure design; • Test results (and defects to resolve); • ICT Infrastructure standards (from ICT architecture); • Configuration baselines/standards; • ICT Infrastructure components and licences (purchased). <p>The ICT Infrastructure changes are being developed according to the underlying requirements from the business and ICT Infrastructure standards. They finally make part of the current ICT Infrastructure in the production environment. To prevent interruption of the ‘live environment’, one or more separate environments are created:</p> <ul style="list-style-type: none"> • Development environment; • Test environment; • Acceptance environment; • Production environment. <p>The outcome of this activity includes:</p>
Inf.3.6 Build ICT Infrastructure		

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	<ul style="list-style-type: none"> • Test plan, test data and test scenarios; • ICT Infrastructure acceptance criteria; • ICT Infrastructure and infrastructure components (build); • ITSM management components (build); • Operations procedures and work instructions (related to the modified ICT Infrastructure); • Configuration details (specification of configurations deployed); • Decommissioned CIs. 		
<table border="1" style="width: 100%;"> <tr> <td style="width: 50px; text-align: center;">Inf.3.7</td> </tr> <tr> <td style="text-align: center;">Test ICT Infrastructure</td> </tr> </table>	Inf.3.7	Test ICT Infrastructure	<p>Inf.3.7: Test ICT Infrastructure</p> <p>The delivered ICT Infrastructure (deployed CI's) is reviewed, validated and tested to ensure that the deliverable fulfils all requirements. The tests are conducted based upon the test plan (created under "Inf 3.6") and standard technical test management procedures.</p> <p>The input for these activities includes:</p> <ul style="list-style-type: none"> • Technology deliverable: ICT Infrastructure and infrastructure components (build); • Technology deliverable: ITSM management components (build); • Test plan, test data and test scenarios; • ICT Infrastructure acceptance criteria. <p>The outcome of this activity is:</p> <ul style="list-style-type: none"> • Test results; • Knowledge for Technical Support to be transferred (tests satisfactory). <p>If tests were satisfactory, the CMDB is to be updated (Inf 3.8), the knowledge for technical support is to be transferred and a SAT cycle is started (Inf 3.9). If tests were not satisfactory, activity returns back to ICT Infrastructure build (Inf 3.6).</p>
Inf.3.7			
Test ICT Infrastructure			
<table border="1" style="width: 100%;"> <tr> <td style="width: 50px; text-align: center;">Inf.3.8</td> </tr> <tr> <td style="text-align: center;">Prepare information for CMDB update</td> </tr> </table>	Inf.3.8	Prepare information for CMDB update	<p>Inf.3.8: Prepare information for CMDB update</p> <p>All configuration modifications due to the deployment activities are captured and documented, then stored in the CMDB. This includes the following aspects:</p> <ul style="list-style-type: none"> • Hardware CI's deployed (related to ICT products); • Software CI's deployed (e.g. operating system); • Contract and licence data (e.g. licence keys deployed); • Details of the configuration settings;
Inf.3.8			
Prepare information for CMDB update			

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	<ul style="list-style-type: none"> • Description of configured operations tasks (e.g. backup schedule, job schedule...); • Documentation of deployed CI's (e.g. installation and operations guides, user manuals...); • Project documentation (this includes all design documentation: requirements, network diagrams...). <p>These documents and data are stored in the CMDB.</p>		
<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Inf.3.9</td> </tr> <tr> <td style="text-align: center;">Complete SAT cycle</td> </tr> </table>	Inf.3.9	Complete SAT cycle	<p>Inf.3.9: Complete SAT cycle</p> <p>At this point, the delivery is subject to a SAT cycle or a qualification, according to the risks at stake (substantial evolutive maintenance through SAT, corrective patch through qualification). Upon successful completion, the delivery is deployed in the operational environment by the ICT Infrastructure processes.</p> <p>Site Acceptance Testing (SAT) phase has the purpose to test as completely as possible the infrastructure release, in an acceptance environment, isolated from other working environments and controlled by DG TAXUD A4/ISD. The SAT phase is executed where the infrastructure is located.</p> <p>The SAT test plan is used as an input to conduct the test (the SAT test plan is created in Inf 3.6).</p> <p>It is particularly important during the SAT phase to ensure knowledge transfer towards the technical support process of ICT Inf and rapid successful alignment of the application with the operation environment. Indeed the ICT Infrastructure Technical Support process must be able to provide support for the ITSM Tools once they enter into operation.</p>
Inf.3.9			
Complete SAT cycle			
<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Inf.3.10</td> </tr> <tr> <td style="text-align: center;">Create SAT report</td> </tr> </table>	Inf.3.10	Create SAT report	<p>Inf.3.10: Create SAT report</p> <p>After completion of the SAT cycle, the SAT report is created. The test results and findings are captured in the SAT Test Report using the standard report template (TEMPO).</p> <p>The SAT Report includes an overview of the executed test scenarios, test cases and tests runs; it also includes the results of the SAT session and the conclusions.</p>
Inf.3.10			
Create SAT report			
<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Inf.3.11</td> </tr> <tr> <td style="text-align: center;">Finalise SAT report and/or list of hosted COTS ICT products</td> </tr> </table>	Inf.3.11	Finalise SAT report and/or list of hosted COTS ICT products	<p>Inf.3.11: Finalise SAT report and/or list of hosted COTS ICT products</p> <p>The SAT report is finalised by the ITSM Infrastructure Management and internally reviewed before passing through the formal review of DG TAXUD A4/ISD.</p>
Inf.3.11			
Finalise SAT report and/or list of hosted COTS ICT products			

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	<p>The result are a formal Deployment SAT report (DLV 8.6.2.3) and/or a list of hosted COTS ICT products (DLV.8.6.2.1.7), approved by the DG TAXUD A4/ISD.</p>		
<table border="1"> <tr> <td>Inf.3.12</td> </tr> <tr> <td>Roll-out and hand-over to operations</td> </tr> </table>	Inf.3.12	Roll-out and hand-over to operations	<p>Inf.3.12: Roll-out and Hand-Over to operations</p> <p>The deployed infrastructure becomes operational after acceptance of the SAT report. After completion and acceptance of the deliverables, the infrastructure and associated documentation is handed over to the operations team responsible for the daily administration and support of the production environment.</p> <p>The knowledge and information that is handed over includes:</p> <ul style="list-style-type: none"> • ICT Infrastructure Design documentation; • Operational procedures and work instructions; • Known errors (if any). <p>The following activities are part of the roll-out and Hand-Over:</p> <ul style="list-style-type: none"> • Hand-Over of documentation and knowledge to operations staff; • Training of operations staff; • Activation of deployed infrastructure (make systems available for operation); • Activation of operations tasks (e.g. backup schedule, job schedule); • Provision of after-care/support (early life support).
Inf.3.12			
Roll-out and hand-over to operations			
<table border="1"> <tr> <td>Inf.4.1</td> </tr> <tr> <td>Allocate resources for evaluation</td> </tr> </table>	Inf.4.1	Allocate resources for evaluation	<p><u>Inf.4: Deploy Software</u></p> <p>Inf.4.1: Allocate resources for evaluation</p> <p>The ITSM Infrastructure Manager receives the updates of the installation procedures from development (e.g. CUST/DEV) via Application Management.</p> <p>The installation procedures are validated and evaluated by ITSM Infrastructure Specialists, to ensure that they are correct and comply with the ICT standards and policies, as defined in the ICT architecture document (DLV.8.6.1.3.1).</p>
Inf.4.1			
Allocate resources for evaluation			
<table border="1"> <tr> <td>Inf.4.2</td> </tr> <tr> <td>Evaluate installation procedures</td> </tr> </table>	Inf.4.2	Evaluate installation procedures	<p>Inf.4.2: Evaluate installation procedures</p> <p>The updated version of the installation procedure is received through the Service Desk, prior to the actual installation of the software components. The installation procedure is maintained by the development teams governed by the ITSM Release Manager.</p> <p>The installation procedure is reviewed (and tested), to ensure that it is</p>
Inf.4.2			
Evaluate installation procedures			

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	<p>clear and complete.</p> <p>It is then evaluated against the ICT standards, policies, and configuration baselines/standards.</p> <p>Finally, the ITSM Infrastructure Specialist performs a review and a validation. Comments and recommendations made are forwarded to the ITSM Application Manager.</p>		
<table border="1"> <tr> <td>Inf.4.3</td> <td>Allocate resources for software deployment</td> </tr> </table>	Inf.4.3	Allocate resources for software deployment	<p>Inf.4.3: Allocate resources for software deployment</p> <p>Deployments are triggered through a formal change request. The resources required to implement the change are determined and scheduled by the ICT Infrastructure Manager.</p> <p>The IT Infrastructure Manager maintains the resource availability and schedules the task to IT Infrastructure Specialist(s).</p>
Inf.4.3	Allocate resources for software deployment		
<table border="1"> <tr> <td>Inf.4.4</td> <td>Configure environment and install COTS</td> </tr> </table>	Inf.4.4	Configure environment and install COTS	<p>Inf.4.4: Configure environment and install COTS</p> <p>The installation and configuration of the required software products is executed according to the defined installation procedure received from Service Desk (see “Inf 4.2”). The software packages and scripts are provided by the development team through the DSL (maintained by Release Management).</p> <p>The installation consists of multiple steps:</p> <ul style="list-style-type: none"> • Setting-up of one or more logical environments for the installation of COTS; • Installation of the COSTS ICT products; • Documenting configuration settings and changes (incorporated in the CMDB); • Configuring operations management tasks/scripts (e.g. for monitoring, scheduling). <p>In case the deployment aims at an ICT Infrastructure hosted by and under the control of DIGIT, the contractor must take the necessary actions to trigger the required tactical and operational activities of DIGIT, provide the necessary information, plan, ensure the coordination, follow-up progress, provide remote technical support to the 3rd party when necessary, escalate to the Commission in case of exception, proceed to the testing of the deployed CI.</p> <p>The outcome is an installed environment including the required COTS ICT products.</p>
Inf.4.4	Configure environment and install COTS		
<table border="1"> <tr> <td>Inf.4.5</td> <td>Test COTS installation</td> </tr> </table>	Inf.4.5	Test COTS installation	<p>Inf.4.5: Test COTS installation</p> <p>The installation of the software products is reviewed and verified, in order to ensure that the installation was successful.</p>
Inf.4.5	Test COTS installation		

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	<p>The test plan and procedures that are part of the installation procedure are executed in order to test the COTS installation. Different roles are involved in this activity.</p> <p>These testing activities result in the following:</p> <ul style="list-style-type: none"> • Knowledge for Technical Support transferred (installation satisfactory); • Support request to create (in case the installation was not satisfactory); • Test report created. <p>If tests were satisfactory, the CMDB is to be updated (Inf 4.8), the knowledge for technical support is to be transferred and a preSAT/SAT cycle is started (Inf 4.9). If tests were not satisfactory, activity returns back to configuration and installation (Inf 4.4).</p>		
<table border="1"> <tr> <td>Inf.4.6</td> </tr> <tr> <td>Prepare information for CMDB update</td> </tr> </table>	Inf.4.6	Prepare information for CMDB update	<p>Inf.4.6: Prepare information for CMDB update</p> <p>All configuration modifications are captured and documented, in order to store them into the CMDB. This includes the following aspects:</p> <ul style="list-style-type: none"> • Software CI's deployed (e.g. operating system); • Contract and licence data (e.g. COTS licence keys deployed); • Details of the configuration settings; • Description of configured operations tasks (e.g. backup schedule, job schedule...); • Store the log book of deployment activities; • Documentation of deployed CI's (e.g. installation and operations guides, user manuals...). <p>These documents and data are stored in the CMDB.</p>
Inf.4.6			
Prepare information for CMDB update			
<table border="1"> <tr> <td>Inf.4.7</td> </tr> <tr> <td>Update list of hosted COTS ICT products</td> </tr> </table>	Inf.4.7	Update list of hosted COTS ICT products	<p>Inf.4.7: Update list of hosted COTS ICT products</p> <p>A list is maintained (part of the CMDB) of all software products that have been deployed, including licence information (if applicable). The following minimum information is maintained per COTS product:</p> <ul style="list-style-type: none"> • Configuration ID; • Configuration name (name of the CI); • Configuration type; • Software product (reference to the formal software product model/type including manufacturer/vendor); • Installed on (reference to the CI on which the software component
Inf.4.7			
Update list of hosted COTS ICT products			

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	<p>is installed);</p> <ul style="list-style-type: none"> • Contracts and licences (related maintenance/support contracts and licences); • Installation date; • Purchase order (reference to the formal purchase order). <p>This list is part of the deliverable DLV 8.6.2.1.7.</p>		
<table border="1"> <tr> <td>Inf.4.8</td> </tr> <tr> <td>Finalise list of hosted COTS ICT products</td> </tr> </table>	Inf.4.8	Finalise list of hosted COTS ICT products	<p>Inf.4.8: Finalise list of hosted COTS ICT products</p> <p>The list of hosted COTS ICT products is formally approved with and communicated to stakeholders (notification by e-mail and storage on the ITSM Collaborative tool), including DG TAXUD A4/ISD.</p> <p>The outcome is the list of hosted COTS ICT products (DLV 8.6.2.1.7).</p>
Inf.4.8			
Finalise list of hosted COTS ICT products			
<table border="1"> <tr> <td>Inf.4.9</td> </tr> <tr> <td>Complete preSAT/SAT cycle</td> </tr> </table>	Inf.4.9	Complete preSAT/SAT cycle	<p>Inf.4.9: Complete preSAT/SAT cycle</p> <p>At this point, the delivery is subject to either preSAT/SAT cycle or a qualification, according to the risks at stake (substantial evolutive maintenance through preSAT/SAT, corrective patch through qualification).</p> <p>The SAT is the second phase of Acceptance Testing, which involves testing by the Users on the target systems.</p> <p>During the preSAT phase, it is ensured that knowledge is transferred towards the technical support process of ICT Inf and that alignment of the application with the operation environment is successful. Indeed the ICT Infrastructure Technical Support process must be able to provide support for the COTS once they enter into operation.</p> <p>The purpose of the preSAT phase is to test, in the DG TAXUD environment, a few basic points (on request of Application Management), related to the infrastructure delivered:</p> <ul style="list-style-type: none"> • The installation and set up are working without problems; • The main functions of the infrastructure are working as planned. <p>Site Acceptance Testing (SAT) phase has the purpose to test as completely as possible the infrastructure release delivered by the developer, in an acceptance environment, isolated from other working environments and controlled by DG TAXUD A4/ISD.</p> <p>Upon successful completion, the delivery is deployed in the operational environment by the ICT Infrastructure processes.</p>
Inf.4.9			
Complete preSAT/SAT cycle			

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<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.4.10</p> <p>Create installation report</p> </div>	<p>Inf.4.10: Create installation report</p> <p>After the deployment of the software products and execution of the SAT, an installation report is produced and delivered to Application Management.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.4.11</p> <p>Deliver input for SAT report</p> </div>	<p>Inf.4.11: Deliver input for SAT report</p> <p>After completion of the preSAT/SAT, using the SAT test results and findings, the SAT report is created.</p> <p>The SAT Report can include (depending on the type of installation, e.g. COTS, application, operating system, and supplier's requirements) a log of installation scripts, application logs, tests runs. It always includes the results of the SAT session and the conclusions.</p> <p>SAT Reports are stored on the ITSM Publishing Platform.</p> <p>Data of this report is given to Application Management for finalisation. It is also used to provide to DG TAXUD A4/ISD the COTS SAT Report (DLV.8.6.2.1.2), for approval.</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.5.1</p> <p>Update operations tasks requirements</p> </div>	<p><u>Inf.5: Operate Hosted Infrastructure</u></p> <p>Inf.5.1: Update operations tasks requirements</p> <p>This activity maintains the requirements related to the schedule of daily operational tasks and monitoring activities to perform. Updates of these operational tasks such as backup and job schedules or monitoring options are executed based upon formal change requests.</p> <p>The outcome of this activity includes:</p> <ul style="list-style-type: none"> • Monitoring requirements; • Daily housekeeping tasks; • Operations schedule (backup and other job schedules).
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Inf.5.2</p> <p>Update ODL information</p> </div>	<p>Inf.5.2: Update ODL information</p> <p>This activity deals with the update and maintenance of the Operational Document Library (ODL). This document management system contains all operational procedures, backup and job schedules, work instructions related to daily operational tasks such as monitoring, periodic house keeping tasks, ...</p> <p>Procedures and work instructions include:</p> <ul style="list-style-type: none"> • Procedures and instructions for daily operational tasks (e.g. start-up/shutdown procedures); • Detailed house keeping and run book of daily operational tasks.

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	<p>The ODL is currently organised as Office documents and PDF files, stored on a shared disk resource (file server at ITSM Infra premises).</p> <p>The type of documents referenced are:</p> <ul style="list-style-type: none"> • Hardware/software topics: <ul style="list-style-type: none"> ○ Inventories tables; ○ Network infrastructure diagrams; ○ Physical infrastructure schemas (data centres, DIGIT...); ○ Licence documents; ○ Contract documents; ○ Hardware maintenance information; ○ CMDB. • Operational procedures: <ul style="list-style-type: none"> ○ Daily checks on hosted infrastructure; ○ Backup procedures; ○ Instructions for DIGIT Infrastructure; ○ How-to's; ○ Work instructions for Infrastructure operation. • Monitoring documentation: <ul style="list-style-type: none"> ○ Monitoring software configuration; ○ Instructions for generating reporting data (MPR/MSR); ○ Screenshots of monitoring software output. • Useful generic information: <ul style="list-style-type: none"> ○ Contact list; ○ Who's who table; ○ ITIL documentation; ○ Business Threads applications technical leaflets; ○ ITSM Collaborative tool user manual. <p>Monitoring is documented in the:</p> <ul style="list-style-type: none"> • “Operations daily activity Handbook”: <ul style="list-style-type: none"> ○ Describes how the support for DG TAXUD is organised; ○ Contains internal procedures for problem solving, on demand operations, daily/monthly/yearly operations. • ODL, currently organised as Office documents and PDF files, stored on a shared disk resource (file server at ITSM Infra premises). 		
<table border="1"> <tr> <td>Inf.5.3</td> </tr> <tr> <td>Execute monitoring and operations tasks</td> </tr> </table>	Inf.5.3	Execute monitoring and operations tasks	<p>Inf.5.3: Execute monitoring and operations tasks</p> <p>Periodic checks, monitoring and housekeeping activities related to operating the ICT Infrastructure are executed according to the defined schedules and defined operational procedures. This includes but is not limited to:</p>
Inf.5.3			
Execute monitoring and operations tasks			

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	<ul style="list-style-type: none"> • Monitoring (automated or manual verification activities); • Event logging; • Executing and monitoring daily job schedules and tasks such as backup tasks; • Checking log files; • Conducting house keeping activities; • Tape handling; • Executing scheduled maintenance tasks; • Executing periodic checks and verification tasks. <p>The outcome of this activity includes:</p> <ul style="list-style-type: none"> • Log files to be analysed (by Problem Management); • Events detected (input for Inf 5.4); • Operations data collected (e.g. logging of executed tasks). <p>In case exceptions are detected, an event is generated and then handled by event management (Inf 5.4). An event can be defined as any detectable or discernible occurrence that has significance for the management of the IT Infrastructure or the delivery of IT service, as well as the evaluation of the impact a deviation might cause to the services.</p> <p>Monitoring concerns:</p> <ul style="list-style-type: none"> • Business Threads environments; • XXX Infrastructure. <p>Monitoring is executed for hardware and software components:</p> <ul style="list-style-type: none"> • Hardware: <ul style="list-style-type: none"> ○ Servers; ○ Network components (routers, switches, VPN boxes, ...); ○ Storage and backup environment; ○ Desktops/virtual workstations (via Central Management Software of VMWARE); • COTS: <ul style="list-style-type: none"> ○ OS (Windows, AIX, Linux, Solaris); ○ VMWare ESX virtual workstations and servers; ○ Exchange server; ○ SQL Server ○ Oracle (database, middle-tier); ○ LDAP (iPlanet)
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	<ul style="list-style-type: none"> ○ BEA Weblogic Application Server ○ Tuxedo ○ REDIX converter ● Business Threads applications, at the time of delivering this FQP: <ul style="list-style-type: none"> ○ Customs : ART, CN, EBTI, EOS, SMS, SUSP, SURV, TARREP, DDS, CS/RD, CS/MIS, Web2000, CRMS, ECICS2, ISPP, QUOTA2, SMART ○ Excise: SEEDv1, TA, PSP ○ Taxation; Vies on Web, TEDB ○ ITSM:ITSM Portal, ITSM SMT, Vies Web Monitoring, Vies Monitoring, CMR, SEEDV1 Monitoring <p>Monitoring is performed by tools and manual actions:</p> <ul style="list-style-type: none"> ● Monitoring software (SCOM, Host Monitor, BMC Patrol, Nagios, PRTG Traffic Grapher); ● Additional scripts; ● Manual supervision; ● E-mail alerts analysis. <p>Monitoring measures are taken from:</p> <ul style="list-style-type: none"> ● Ping to servers; ● UNIX processes status; ● Oracle instances status; ● Memory status; ● CPU status; ● Services status; ● Check volumes on file systems; ● Network connectivity; ● URL access verification; ● Manual and automated log check; ● E-mail alerts of CCN/TC; ● VPN connectivity to ITSM systems; <p>Monitoring is planned and reported:</p> <ul style="list-style-type: none"> ● ITSM morning check (backups, accessibility to some applications, batch jobs); ● Monthly MSR report; ● ITSM evening check (idem morning check); ● Daily reports from DIGIT infrastructure (DDS, Web applications, transmissions, number of alerts forwarded to ITSM Support...);
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	<ul style="list-style-type: none"> • Service window activity covered by system operators in the ITSM Infra control room; • Supervision of mailbox “Monitoring” where alerts are sent. <p>Housekeeping and preventive maintenance processes consist of all the regular and routine processes necessary to support and maintain a resilient ICT Infrastructure. It includes activities such as:</p> <ul style="list-style-type: none"> • Clearing or deletion of operating system log files and journals; • Deletion of operating system TEMPORary files or workspace; • Cleaning of operational environments; • Support and maintenance of management tools and systems; • Management of operational users, files and passwords; • Shift Hand-Over and reporting; • Equipment maintenance and cleaning; • Operational reporting. 		
<table border="1" data-bbox="284 976 509 1095"> <tr> <td data-bbox="284 976 363 1010">Inf.5.4</td> </tr> <tr> <td data-bbox="284 1010 509 1095">Filter event</td> </tr> </table>	Inf.5.4	Filter event	<p>Inf.5.4: Filter event</p> <p>This activity handles all events that occur throughout the IT Infrastructure and if needed escalates exception conditions to Incident Management.</p> <p>Activities conducted are:</p> <ul style="list-style-type: none"> • Event examination and filtering: requires analysis of the detected condition to see whether any action is required and determines the time-scale required for that action; • Event processing, correlation and escalation: once the event has been deemed significant and is requiring some action, further analysis takes place to identify if any other similar or related events have occurred that can be handled at the same time. The criticality and impact of the event is assessed, reported and escalated to the appropriate processes and staff. This involves the automated creation of incidents of the appropriate category, severity, urgency and priority. <p>The events detected are analysed in more detail to determine the meaning of each event and to determine whether there is any predefined response to that event. When the type of event allows it, an automatic resolution and standard work instruction is executed to resolve the event (e.g. restart process).</p> <p>A set of diagnostic tools is used, such as diagnostic scripts, fault trees and a database of Known Errors and common workarounds. These tools are used as soon as an error is detected, to determine the appropriate response.</p>
Inf.5.4			
Filter event			

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	<p>If the event is not of an informational type, the Service Desk is asked to create an incident. The Incident Management process is responsible to resolve the incident and inform stakeholders (through the Service Desk).</p>		
<table border="1"> <tr> <td>Inf.6.1</td> </tr> <tr> <td>Register and categorise event</td> </tr> </table>	Inf.6.1	Register and categorise event	<p><u>Inf.6: Operate DIGIT Infrastructure</u></p> <p>Inf.6.1: Register and categorise event</p> <p>Event notifications received from monitoring and/or Incident Management tools from DIGIT (the specific tools used by DIGIT to register and manage events and incidents) are collected, logged and filtered. Events are categorised and the criticality and impact is determined.</p> <p>The affected service and related configuration items are determined.</p> <p>Events are received using different technologies such as automatic e-mail notifications...</p>
Inf.6.1			
Register and categorise event			
<table border="1"> <tr> <td>Inf.6.2</td> </tr> <tr> <td>Determine required actions</td> </tr> </table>	Inf.6.2	Determine required actions	<p>Inf.6.2: Determine required actions</p> <p>The events received are analysed and diagnosed in more detail, to determine the impact and required actions.</p> <p>An incident is raised, through Incident Management within the ITSM organisation.</p> <p>If the event is stated as critical, ITSM Infra asks the ITSM Service desk to open a call (DIGIT creates an IRMA ticket).</p> <p>To initiate an action to DIGIT/DC an incident is created. This incident is assigned to DIGIT/DC who will be notified by e-mail (and if needed additional information is provided by phone).</p> <p>The formal assignment and monitoring of the incident is managed through the Incident Management process (see Incident Management process).</p> <p>Additional details are covered by the external processes and procedure document and if applicable the OLA.</p>
Inf.6.2			
Determine required actions			
<table border="1"> <tr> <td>Inf.6.3</td> </tr> <tr> <td>Assign corrective action to DIGIT</td> </tr> </table>	Inf.6.3	Assign corrective action to DIGIT	<p>Inf.6.3: Assign corrective action to DIGIT</p> <p>DIGIT is contacted to investigate the event in more detail. If needed corrective actions are taken by DIGIT.</p> <p>The incident created in Inf 6.2 is used to monitor the progress of the DIGIT support team. The external reference number of the incident created by DIGIT is also captured in the ITSM incident record.</p>
Inf.6.3			
Assign corrective action to DIGIT			

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	<p>This action requires a formal registration of an incident. The incident will then be handled by DIGIT/DC. The progress of this incident will be monitored by ITSM Incident Management.</p>		
<table border="1"> <tr> <td>Inf.6.4</td> </tr> <tr> <td>Monitor correction progress</td> </tr> </table>	Inf.6.4	Monitor correction progress	<p>Inf.6.4: Monitor correction progress</p> <p>The status of the outstanding event/incident is monitored, to ensure that the issue is resolved within the agreed response and resolution time targets.</p> <p>After DIGIT has provided an update, the status and/or resolution is verified. If the status is back to normal again, the incident is closed, in conformance with the standard closure procedure as defined in procedure IM.3 Incident closure.</p>
Inf.6.4			
Monitor correction progress			
<table border="1"> <tr> <td>Inf.7.1</td> </tr> <tr> <td>Conduct knowledge acquisition</td> </tr> </table>	Inf.7.1	Conduct knowledge acquisition	<p><u>Inf.7: Maintain Technical Support Knowledge</u></p> <p>Inf.7.1: Conduct knowledge acquisition</p> <p>The required knowledge is continuously monitored and acquired related to the planned and installed ICT Infrastructure products.</p> <p>This includes for example:</p> <ul style="list-style-type: none"> • Technical reference guides and manuals related to ICT products; • Relevant documentation provided by suppliers/vendors; • System documentation from development and deployment projects; • Known errors and workaround provided by suppliers. <p>To realise this, the Technical Support Specialists are involved in the different ICT projects and engage with suppliers to keep their knowledge of the ICT Infrastructure products up-to-date.</p> <p>During the Infrastructure Deployment projects (as defined in Inf 3), Technical Support Specialists capture the required documentation and knowledge needed to support and operate the ICT Infrastructure.</p>
Inf.7.1			
Conduct knowledge acquisition			
<table border="1"> <tr> <td>Inf.7.2</td> </tr> <tr> <td>Maintain technical documentation</td> </tr> </table>	Inf.7.2	Maintain technical documentation	<p>Inf.7.2: Maintain technical documentation</p> <p>All required technical documentation captured in Inf 7.1 is updated and maintained for the entire ICT Infrastructure and installed ICT components.</p> <p>This documentation is maintained in the technical knowledge database and in the ODL.</p> <p>This includes for example:</p> <ul style="list-style-type: none"> • Product manuals and installation guides;
Inf.7.2			
Maintain technical documentation			

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	<ul style="list-style-type: none"> • Release notes; • Training materials. 		
<table border="1" data-bbox="284 360 507 479"> <tr> <td data-bbox="284 360 363 398">Inf.7.3</td> </tr> <tr> <td data-bbox="284 398 507 479">Maintain operational procedures</td> </tr> </table>	Inf.7.3	Maintain operational procedures	<p data-bbox="528 353 1201 398">Inf.7.3: Maintain operational procedures</p> <p data-bbox="528 427 1437 539">Operational procedures are developed, documented and verified with relevant internal/external personnel and/or organisations. The operational procedures are maintained in the ODL.</p> <p data-bbox="528 568 959 607">Operational procedures include:</p> <ul data-bbox="528 629 1437 1599" style="list-style-type: none"> • Description of housekeeping tasks, e.g. ITSM-IP-195-COTS Inventory-EN-0.10.doc, ITSM-IP-207-Corrective Maintenance-EN-0.10.doc, ITSM-IP-275-Reporting Procedure - Capacity ITSM Tablespaces-EN-v0.10.doc, ITSM-IP-232-Avast Anti-Virus Update on Wks-EN-0.10.doc; • Access control and security related procedures, e.g. ITSM-IP-191-ITSM User Creation-EN-0.10.doc, ITSM-IP-220-User and role creation on Solaris-EN-0.10.doc, ITSM-IP-200-How to connect to ITSM Taxud network-EN-0.10.doc, ITSM-IP-211-Generate SSH Key-EN-0.10.doc; • Backup and recovery procedures, e.g. ITSM-IP-188-Database backup and restore procedure using RMAN on Unix Server-EN-0.10.doc, ITSM-IP-208-Restore VMs-EN-0.10.doc, ITSM-IP-209-Backup VMs-EN-0.10.doc; • Data archival and restore procedures, e.g. ITSM-IP-234-Cloning with Legato Networker-EN-0.10.doc; • Monitoring procedures and manual verification activities, e.g. ITSM-IP-236-Manual Monitoring - TARIC Transmission to 3rd parties-EN-0.10.doc, ITSM-IP-238-Manual Monitoring - Web Applications in PROD are OK-EN-0.10.doc; • Standard work instructions for the resolution of events (e.g. manual or automatic responses to failures), e.g. ITSM-IP-255-How to - Monitoring Tool - Host Monitor 1-EN-0.10.doc, ITSM-IP-257-How to - Monitoring Tool - Nagios 1-EN-0.10.doc. <p data-bbox="528 1615 1337 1720">We refer to the List of Internal Procedures [R3] for a detailed overview of operational procedures related to Infrastructure Management.</p>
Inf.7.3			
Maintain operational procedures			