# Annex 5: Requirements Data Collected

Tactile Check Analysis Template e-EGS

# Procedure

1. Copy requirements to **Error! Reference source not found.** placeholder
2. Run Analyze Weak phrases  
     
   Creates comments for each *Weak* phrase found in the text.

Export all comments to excel by “Copy notes to Excel”

1. Run Analyze strong phrases  
     
   creates comments for each **Strong** phrase found in the text.

Export all comments to excel by “Copy notes to Excel”

1. Export Strong and Weak phrases to Excel template for further analysis  
   
2. Export Strong and Weak phrases to Excel template for further analysis  
   

## Table#1 holds the Weak and Subjective phrases.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Weak phrases** |  | **Incompleteness** |  | **Subjective Language** |  | **Negative Statements** |  | **Non-verifiable Terms** |  | **Loopholes** |  |
| adequate | 0 | TBD | 0 | user friendly | 3 | cannot | 0 | provide support | 0 | if possible | 0 |
| as appropriate | 0 | TBS | 0 | easy to use | 0 | can't | 1 | but not limited | 0 | as far as possible | 0 |
| be able to | 14 | TBE | 0 | cost effective | 0 |  |  | sufficient | 4 | possibly | 0 |
| be capable of | 0 | TBC | 0 | simple and efficient | 0 |  |  | Clear | 3 | eventually | 0 |
| capability of | 0 | TBR | 0 | each | 3 |  |  | Easy | 0 | if case | 0 |
| capability to | 0 | not defined | 0 | all | 6 |  |  | Strong | 0 | if appropriate | 0 |
| effective | 0 | not determined | 0 | never | 0 |  |  | Good | 0 | if needed | 0 |
| as required | 0 | but not limited to | 0 | always | 0 |  |  | Bad | 0 | if practical | 0 |
| normal | 0 | as a minimum | 0 | similar | 0 |  |  | useful | 0 |  |  |
| provide for | 0 |  |  | similarly | 0 |  |  | significant | 0 |  |  |
| timely | 0 |  |  | having in mind | 0 |  |  | recent | 1 |  |  |
| easy to | 0 |  |  | take into account | 0 |  |  | Support | 17 |  |  |
|  |  |  |  | as possible | 2 |  |  | Etc. | 3 |  |  |
|  |  |  |  | Minimize | 0 |  |  | And/Or | 1 |  |  |
|  |  |  |  | Maximize | 0 |  |  | almost always | 0 |  |  |
|  |  |  |  | Rapid | 0 |  |  | can | 6 |  |  |
|  |  |  |  | User-friendly | 0 |  |  | may | 3 |  |  |
|  |  |  |  | Quick | 0 |  |  | Optionally | 0 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Table#2 holds the Strong phrases.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **IMPERATIVE** | **Count** | **CONTINUANCE** | **Count** | **DIRECTIVE** | **Count** |
| shall | 38 | below: | 0 | e.g. | 2 |
| must | 29 | as follows: | 0 | i.e. | 3 |
| is required to | 0 | following: | 0 | For example | 1 |
| are applicable | 0 | listed: | 0 | Figure | 0 |
| are to | 4 | in particular: | 0 | Table | 0 |
| responsible for | 0 | support: | 0 | Note: | 16 |
| will | 8 | and | 82 |  |  |
| should | 124 |  |  |  |  |
|  |  |  |  |  |  |

# Requirements

Enter requirements data to analyze below line. This can be in the form of a table or plain text.

Total requirements count = 195 (out of a total req doc count 276)

## Business Process (Configuration Management & Control)

**Note:** The requirements for the generic for CM& C processes are described in the Functional requirements document 7912\_ REQ-Vx upgrade Vy.  
This chapter only mentions the differences/.additions required to the document.

### General Configuration Management **and** Control

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.1.1.1  Procedure | Requirement (CE 9)  First draft baseline **should** be delivered 2 weeks prior to airplane delivery, **and** the delta baseline on airplane delivery. |
| 3.1.1.2  Procedure | Requirement (CE 2)  Agreed procedures on deliverables between software suppliers **and** KLM **should** be in place. Agreement **should** include at least:  2A Deadline for delivery of Service Bulletin,  2B Deadline for delivery of LSAP,  2C Supplier’s responsibility for meeting deadlines, **and** quality **and** safety of the product. |
| 3.1.1.3  IT | Requirement (CE 87)  Access to the e-Enabled softw**are to**ols **should** be protected by authentication **and** authorization of the user. |
| 3.1.1.4  IT | Requirement (CE 88)  It **should** *be able to* define roles for the e-Enabled softw**are to**ols. |
| 3.1.1.5  IT | Requirement (CE 89)  It **should** be possible to assign/ revoke specific roles to users of e-Enabled softw**are to**ols. |
| 3.1.1.6 | Requirement (EDMS 3.1.1)  The EDMS **shall** authenticate users, via UserID **and** Password, before allowing access. |
| 3.1.1.7  IT | Requirement (EDMS 3.1.2)  The EDMS **shall** *support* remote login via a secure web interface. |
| 3.1.1.8  IT | Requirement (EDMS 3.1.3)  The EDMS **shall** *support* authorization based upon definable roles with assignable privileges. Privileges **should** include:   1. Workflow definition 2. Changerequest (approved Operator Proposal Requirement) state definition 3. Changerequest form definition 4. Assign roles to individual tasks 5. Open changerequest 6. Enter changerequest technical data 7. Enter the configuration changes per changerequest 8. Close assigned tasks 9. View changerequest data 10. Attach documents to changerequest Generate reports. |
| 3.1.1.9  IT | Requirement (EDMS 3.2.3)  EDMS access privileges **should** be configurable by a system administrator (Functional Application Manager) |
| 3.1.1.10  IT | Requirement (EDMS 3.2.5)  The EDMS **shall** allow the definition **and** sequencing of changerequest states to be configurable by a system administrator (Functional Application Manager). |
| 3.1.1.11  IT | Requirement (EDMS 3.2.7.1)  The system administrator **shall** *be able to* associate a specific changerequest (approved Operator Requirement Proposal) state change to a configuration management system update. Example: Changerequest state “Closed” triggers a Change management baseline update. |
| 3.1.1.12  IT | Requirement (EDMS 3.2.9)  The Change Management system **shall** allow the system administrator to define an airplane group (**for example**, the airline’s zzz fleet) which *can* be the target of a change request |
| 3.1.1.13  IT | Requirement (EDMS 3.2.2)  The format of the change request form **shall** be configurable by a system administrator. |

### Work Process Manage Allowable

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.1.3.1  IT req | Requirement (CE 10)  The EDMS **must** *be able to* accept the initial aircraft baseline in the format provided by OEM Vendor (XML). |
| 3.1.3.2  IT req | Requirement (CE 11)  The EDMS **must** *be able to* produce an overview of the relevant information position, hardware **and** software in a *user friendly* manner. This is both in viewing the system screen lay-out **and** in form of a report of the baseline authorized configuration. |
| 3.1.3.3  IT req. | Requirement (CE 12)  Creation of an as delivered s/w baseline in EDMS **must** be done by a CM&C authorized/ responsible role only. |
| 3.1.3.4  IT req. | Requirement (CE 13)  Changing of an as delivered s/w baseline in EDMS **must** be done by a CM&C authorized/ responsible role only. |
| 3.1.3.4a | Requirement (CE 14)  Covered by CE12 |
| 3.1.3.5 | Requirement (CE 32)  Covered by CE13 |
| 3.1.3.6  IT req | Requirement (CE 16)  The created as delivered s/w baseline **must** be approved by CM&C4 (OEM IT VENDOR terminology) responsible role. |
| 3.1.3.7  IT req | Requirement (CE 17)  The changed s/w baseline **must** be approved by CM&C4 (OEM IT VENDOR terminology) responsible role.  **Note:** CM&C4 is extisting role in OEM IT VENDOR. |
| 3.1.3.8  IT req | Requirement (CE 18)  The EDMS **must** *be able to* produce configuration reports with an overview of the relevant information position, hardware **and** software in a *user friendly* manner. This is both in viewing the system screen lay-out **and** in form of a report of the baseline authorized configuration.  **Note:** OEM IT VENDOR has a default report to be validated |
| 3.1.3.9  IT req | Requirement (CE 20)  EDMS allowed **and** actual configuration reports **should** be selectable per:   * Airplane registration * Airplane type * Airplane sub type * ATA chapter |
| 3.1.3.10 | Requirement (CE 21)  The history of allowable **and** actual s/w configuration **should** be traceable for at least 3 years.  **Note:** reference KLM MOE |
| 3.1.3.11  IT req | Requirement (CE 22)  EDMS configuration reports **should** be available online (Internal Network). |
| 3.1.3.12  IT req | Requirement (CE 23)  EDMS configuration reports **should** be printable with look **and** feel (same logical structure) of the screen representation. |
| 3.1.3.13  IT req | Requirement (CE 24)  Printed configuration reports **should** be provided with   * The airplane or fleet registration * A unique reference number * A print date **and** an UTC + UTC indication time stamp (Zulu/ UTC/ GMT)   Remark: This page **must** not be retained for reference (conform current hardcopy print of IPC) |
| 3.1.3.14  IT req | Requirement (CE 28)  EDMS Configuration reports **should** contain *all* allowed hardware/ software combinations obeying *all* interchangeability/ incompatibility rules  . |
| 3.1.3.15  IT req | Requirement (CE 33)  Changes made to the authorized (allowed) configuration **should** be traceable. |
| 3.1.3.16  IT req + process | Requirement (CE 34)  EDMS changes to the allowed configuration **should** be documented  **Note:** mainly process; intention of this requirement is to establish that EDMS changes *can’t* be made without substantiation. |
| 3.1.3.17  IT req | Requirement (CE 35)  EDMS changes made to the authorized (allowed) configuration **must** be made in accordance with standard engineering approval **and** validation process as dictated in the Central Engineering Procedures **and** Work Instructions.  **Note:** According to instructions P CE 0600 series, Alteration to Allowable. |
| 3.1.3.18  IT req. | Requirement (CE 36)  Changing the allowed configuration within EDMS **should** be a paperless process. |
| 3.1.3.19  IT req./process | Requirement (CE 37)  The allowed configuration change process **should** be a closed loop process. Definition of closed loop: the initiator of the allowed configuration alteration (=change) **will** receive feedback after the alteration has been accomplished on the aircraft. |
| 3.1.3.20  IT req | Requirement (CE 38)  The allowed configuration change process flow **must** follow the common Maintenix change process structure.   * + Baseline in build status   + Active status   + Revision status   + New active status |
| 3.1.3.21  IT req | Requirement (CE 39)  In the EDMS, the authorized (allowed) configuration **should** automatically switch from pre change status to post change status when the EDMS receives the following from maintenance work order system:   1. Confirmation that the job instruction card has been accomplished   **AND**;   1. An automatically generated (by the aircraft) as-flying (actual) post change Configuration Report.   **Ad 2 to be verified in the PoC** |
| 3.1.3.22  IT req/ process | Requirement (CE 71)  ~~Software configuration management~~ **~~should~~** ~~be performed on LSAPs stored on the airplane mass storage device.~~  Level 3 hardware **and** software CM&C as performed in EDMS **should** also apply to the airplane mass storage device **and** its content |
| 3.1.3.23  IT req | Requirement (CE 84)  The OEM Vendor ---- EDMS methodology **should** be adopted for configuration management of software. |
| 3.1.3.24 | Requirement (LM 6.3)  Configuration information **should** be available "at" the aircraft |
| 3.1.3.25 | Requirement (LM 6.4)  Configuration information **should** be the “full” allowed configuration. Full meaning the representation of allowed without any exceptions or further needed documentation to determine the allowed config. |
| 3.1.3.26 | Requirement (LM 6.5)  Configuration information **should** be per Airplane registration |
| 3.1.3.27 | Requirement (LM 6.6)  Configuration information ought to be allowed to be narrowed down to ATA chapter (**and** sub) |
| 3.1.3.28 | Requirement (LM 6.7)  Configuration information ought to be allowed to be shown per component per tracked slot |
| 3.1.3.29 | Requirement (LM 6.8)  Configuration information ought to be allowed to be sorted in several ways based on the available information |
| 3.1.3.30 | Requirement (LM 6.9)  Configuration information **should** be presented in a way respecting Human Factors rules |
| 3.1.3.31 | Requirement (LM 6.10)  Configuration information negative requirement on the system or report form |
| 3.1.3.32  IT req | Requirement (EDMS 3.4.1)  The configuration management system **shall** *support* an authorized (allowed) LSAP configuration as the item under configuration.  E.g items being components, software including position. |
| 3.1.3.33  IT req | Requirement (EDMS 3.4.2)  An authorized (allowed) airplane LSAP configuration **shall** consist of airplane identification **and** multiple part instances with the following data fields at a minimum:  a. Airplane Identification Data:   1. Tail number 2. Major Model   b. Part Instance Data:   1. Part number 2. Part description 3. Equipment reference 4. SW Location ID (SLID) 5. SW Location description 6. Data Load Screen display text   **Note:** example bullit 6 given  *Removed picture* |
| 3.1.3.34  IT req | Requirement (EDMS 3.4.3)  The configuration management system **shall** *be able to* establish the initial authorized (allowed) configuration for a given airplane by importing the “as-delivered” authorized configuration XML file as defined in OEM Vendor document “123456789 authorized Airplane Configuration Report XML Schema”. |
| 3.1.3.35  IT req | Requirement (EDMS 3.4.4)  The configuration management system **shall** store the configuration changes (**i.e.** adds **and**/ or delete of part instances) needed to get from one baseline configuration to the next baseline configuration.  Full trail |
| 3.1.3.36  IT req | Requirement (EDMS 3.4.5)  The configuration management system **shall** allow authorized users to access the current authorized (allowed) configuration for a specified airplane |
| 3.1.3.37  IT req | Requirement (EDMS 3.4.6)  The configuration management system **shall** associate *each* airplane authorized (allowed) configuration baseline with a change request defined in the change management system. |
| 3.1.3.38  IT req | Requirement (EDMS 3.5.1)  The EDMS **shall** generate the authorized (allowed) configuration XML document per OEM Vendor document “123456789 Authorized Airplane Configuration Report XML Schema” for a requested airplane tail number **and** one of the following pieces of information:   1. Current” = The current authorized (allowed) configuration 2. Current” + Change request (approved Operator Requirement Proposal) = The current authorized (allowed) configuration with the changes specified on the changerequest (created Job Instruction Cards) applied. Change request (Job Instruction Cards) **must** be in the “in-progress” state **and** **must** be applicable to the specified airplane tail number. This report represents the “post” configuration, **i.e.** the one after the LSAPs specified on changerequest (the approved Operator Requirement Proposal) have been loaded, **and** *can* be used by a mechanic (or the back-office) to verify the new configuration prior to closing the changerequest (Job Instruction Card). |
| 3.1.3.39  IT req | Requirement (EDMS 3.5.2)  The EDMS **shall** *support* user interface screen that displays the authorized (allowed) configuration of a specified airplane registration. |
| 3.1.3.40  IT req | Requirement (EDMS 3.5.2.1)  The authorized (allowed) configuration *may* be requested by airplane registration **and** one of the following.   1. “Current” = The current   authorized (allowed) configuration   1. “Current” + CR# ~~(~~approved Operator   Requirement Proposal) = the  current authorized (allowed) configuration  with the changes specified in the CR#  (approved Operator Requirement  Proposal) applied. The CR# ~~(~~approved  Operator Requirement Proposal)  **must** be an “in-progress” CR that is  applicable to the specified airplane registration number. (This  action does not update the current  configuration).   1. Accomplished CR# (approved Operator   Requirement Proposal) = the  authorized (allowed) configuration that  closed the CR# (approved Operator  Requirement Proposal).   1. Date = the baseline as it was on the specified date/time in universal time coordinates (UTC). |
| 3.1.3.41  IT req | Requirement (EDMS 3.5.2.2)  The EDMS **shall** *support* the sorting of the authorized (allowed) configuration screen part instances by a minimum:   1. H/w **and** S/w Part number 2. SLID (S/W location ID) |
| 3.1.3.42  IT req | Requirement (EDMS 3.5.2.3)  The EDMS **shall** generate a report showing the part instance change history for a specified airplane registration. |
| 3.1.3.43  IT req | Requirement (EDMS 3.6 + 3.6.2)  The EDMS **shall** have a user interface that allows the system operator to browse for **and** import the “as-delivered” XML document as specified in Import Initial Authorized Configuration.  **Note:**  OEM Vendor **will** provide the “as-delivered” authorized configuration report as an XML document for *each* new B---- airplane via the MyOEM VendorFleet web site. A specific authorized configuration is identified by airplane registration. |
| 3.1.3.44  IT req | Requirement (EDMS 3.6.1)  The EDMS **shall** *support* a web services interface to supply the authorized configuration XML document specified in Authorized Configuration XML Report |
| 3.1.3.45  IT req | Requirement (EDMS 3.7.1)  **LSAP Artifacts Repository**  The EDMS **shall** have the ability to *support* a repository of LSAPs artifacts (**i.e.** data **and** documents that are not software code) that are stored/ accessed by part number |
| 3.1.3.46  IT req | Requirement (EDMS 3.7.1.1)  **Definable fields**  The fields associated with an LSAP entry **shall** be definable by the system administrator (Functional Application Manager) |
| 3.1.3.47  IT req | Requirement (EDMS 3.7.1.2)  **Ability to attach documents**  The EDMS **shall** allow documents to attached to an LSAP entry |
| 3.1.3.48  IT req | Requirement (EDMS 3.7.1.3)  **Accessible to authorized users**  The LSAP artifacts repository **shall** be read accessible to authorized users ~~via the web~~. |
| 3.1.3.49  IT req | Requirement (EDMS 3.7.1.4)  **Versioning capability**  The EDMS **should** *support* versioning of attached documents. |
| 3.1.3.50  IT req | Requirement (EDMS 3.7.1.5)  **Linkage from Part Instances**  The EDMS **should** *support* linkage between part instances **and** the parts repository such that the user *can* select the part number field on a part instance the part data from the LSAP artifacts repository is displayed. |
| 3.1.3.51  IT req | Requirement (EDMS 3.2.6)  **Integrate Change Request states with Work Flow Management System**  Change Request states **shall** be integrated within the workflow management system. |
| 3.1.3.52  IT req | Requirement (EDMS 3.2.6.1)  **Associate Change Request states with Workflow tasks**  The system administrator **shall** *be able to* associate a specific workflow task completion to a specific Change Request state change. Example: the completion of workflow task “verify data load” triggers Change Request state “closed”. |
| 3.1.3.53  IT req | Requirement (EDMS 3.2.7)  **Integrate Change Request states with Configuration Management System**  Change Request states **shall** be integrated with the configuration management system. |
| 3.1.3.54  IT req | Requirement (EDMS 3.2.8)  **Apply to multiple airplanes**  The change management system **shall** allow a given Change Request to apply to multiple airplane configurations |
| 3.1.3.55  IT req | Requirement (EDMS 3.2.10)  ***Support* for Independent Simultaneously Change Requests**  The change management system **shall** allow more than one active Change Request for a given airplane at a given point in time. |
|  | **Workflow Management** |
| 3.1.3.56  IT req | Requirement (EDMS 3.3.1)  **Definable Tasks**  The workflow management system **shall** allow the administrator to define a set of tasks. |
| 3.1.3.57  IT req | Requirement (EDMS 3.3.2)  **Definable Flow**  The workflow management system **shall** allow an administrator to define the flow between tasks |
| 3.1.3.58  IT req | Requirement (EDMS 3.3.3)  **Branching**  The workflow management system **shall** allow the task flow to branch, including ”one to many” **and** “many to one”. |
| 3.1.3.59  IT req | Requirement (EDMS 3.3.4)  **Correlate Change and Workflow Tasks**  The workflow management system **shall** allow a workflow task to be associated with a change management task. Alternatively (**and** preferred) allow change management tasks/ states to be defined with the workflow. |
| 3.1.3.60 | Requirement (EDMS 3.3.5)  **Role Accessible Tasks**  The workflow management system **shall** allow a specific task to be accessible only by individuals associated with the specified role(s) for that task. |
| 3.1.3.61  IT req | Requirement (EDMS 3.3.6)  **Task Notification**  The workflow management system **shall** allow notify (email) owners of the next task(s) in the workflow when the previous task has been completed. |
| 3.1.3.62  IT req | Requirement (EDMS 3.3.7)  **Remote Access**  The workflow management system **shall** allow authorized users to set task stated remotely. |
| 3.1.3.63  IT req | Requirement (EDMS 3.3.8)  **Database Triggers**  The workflow management system **shall** allow the administrator to associate a task completion with a database trigger. |
| 3.1.3.64  IT req | Requirement (EDMS 3.4.7)  **Automatic Database Update**  The configuration management system **shall** *support* automatic incorporation of a defined change via a Work Management System Trigger. |

## Business Process (Aircraft Maintenance Assistance)

### Work process Assist Maintenance Planning

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.2.1.1  IT **and** process | Requirement (LM 1.1.)  The s/w loading process **should** be unambiguous, consistent **and** distinct.  IT as well business process |
| 3.2.1.2  process | Requirement (LM 1.1.1)  No exceptions in organization of the process between the different s/w parts ***and****/or* hardware parts. |
| 3.2.1.3  process | Requirement (LM 1.2)  Planning of s/w loading tasks **should** follow ARIS & HLID process rules. |
| 3.2.1.4 | Requirement (LM 1.3)  In the organization of the s/w loading process, no supply chain steps **should** be organized in the Ground Engineer domain. |
| 3.2.1.5  PProcess REQ | Requirement (CE 41)  The current maintenance assist procedures *can* be re-used,  **Note:** due to the increased volume of software changes the process needs to be leaned in order to speed up the process of getting the software loads executable.  *OEM Vendor reference 40-50 loads per month per tail.* |
| 3.2.1.6  IT req | Requirement (CE 59)  A single maintenance work order system **should** be used for the creation **and** approval of tasks (Maintenance Assist processes) as well for scheduling the tasks (Maintenance Planning) |
| 3.2.1.7  Process REQ | Requirement (CE 83)  The LSAP change process **should** be prepared in such a way that this lead to a minimum of activities for the maintenance execution. |
| 3.2.1.8 | Requirement (LM 6.1)  Available s/w for particular registration is tailored to the actual hardware configuration. |
| 3.2.1.9 | Requirement (LM 2.1)  Instructions on Job Instruction Card **should** be *clear* **and** precise (including layout). |
| 3.2.1.10 | Requirement (LM 2.3)  A Job Instruction Card is specific for one tail.  Reference Excellent Job card |
| 3.2.1.11 | Requirement (LM 2.3.1)  A Job Instruction Card **should** hold the loading of software on hosting hardware with one function.  Exception: batch loading method  Reference Excellent Job card |
| 3.2.1.12 | Requirement (LM 2.3.2)  A Job Instruction Card **should** hold batch loading method information in case multiple s/w parts **are to** be loaded. |
| 3.2.1.13 | Requirement (LM 2.5)  S/w mentioned on the Job Instruction Card is identified by “known” p/n’s (as identified in the Allowed Configuration overviews) |
| 3.2.1.14 | Requirement (LM 3.5)  S/W **should** be distributed automatically to the maintenance laptops (no actions required from the supply chain organization (store people). |

## Business Process (Aircraft Maintenance)

### Work Process Control **and** Administration

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.3.4.1  IT req | Requirement (CE 19)  The EDMS **should** *be able to* provide the allowed configuration to the SCX-ASCM in an XML format as specified in OEM Vendor document 123456789 “Airplane Configuration Report Requirements”. |
| 3.3.4.2  IT req | Requirement (CE 25)  EDMS Configuration reports **must** be available on Maintenance Laptops. |
| 3.3.4.3  IT req | Requirement (CE 26)  EDMS Configuration reports **should** be viewable from the maintenance laptop in a human readable format for end user.  Example given; no XML format |
| IT/ process req. | Requirement (EDMS 3.4.8)  After accomplishment of a task the business **must** provide the following data to the EDMS Engineering in order to close the task in the EDMS. The feedback information **shall** contain *sufficient* information for CM&C to manage the configuration of the Aircraft.     1. Airplane registration 2. Corrective action 3. Action date 4. AML sequence number 5. Defect date 6. Barcode (if applicable) 7. Position of the replaced hardware 8. Part number of removed/ installed   software   1. Part number of removed/ installed hardware 2. Serial number of removed/ installed hardware |
| 3.3.4.4  IT req | Requirement (CE 27)  The SCX-ASCM tool on the maintenance laptop **must** receive the allowed configuration out of the EDMS as well the as-flying (actual) airplane configuration in an XML format as specified in OEM Vendor document 123456789 “ Airplane Configuration Report Requirements”. |
| 3.3.4.5  IT req | Requirement (CE 30)  EDMS Configuration reports **should** be available online in the KLM E&M back office in a human readable format **and** in XML format. |
| 3.3.4.6  IT | Requirement (CE 31)  The standard OEM Vendor SCX-ASCM tool **will** be used for creation of comparison report. |
| 3.3.4.7  IT | Requirement (CE 63)  The allowed airplane configuration as stored in the EDMS **should** be available in XML format on the maintenance laptop (SCX-ASCM tool) for production during maintenance execution. This process **must** be automated.  **Note:**  *Automation to make sure that most recent allowed configuration is available in a lean process.* |
| 3.3.4.8  IT | Requirement (CE 64)  The actual airplane configuration **must** be available for comparison by use of the SCX-ASCM tool installed on the AF-KL network. |
| 3.3.4.9  IT | Requirement (CE 65)  The actual MSD configuration **must** be available for comparison by use of the SCX-ASCM tool installed on the AF-KL network. |
| 3.3.4.10  IT | Requirement (CE 66)  It **should** be possible to receive the actual airplane configuration for comparison via:   * 1. An uplink request via the LSAP proxy server functionality   2. The maintenance laptop. |
| 3.3.4.11  IT | Requirement (CE 67)  It **should** be possible to receive the actual MSD configuration for comparison via:   1. An uplink request via the LSAP proxy server functionality 2. The maintenance laptop. |
| 3.3.4.12  IT | Requirement (CE 68)  The maintenance work order system **should** provide a Job Instruction Card accomplished confirmation to engineering in order to *support* the EDMS configuration management process. |
| 3.3.4.13 | Requirement (LM 6.2)  On a request, readily available real time registration specific configuration overview of the hardware **and** software configuration (tool) **should** be available throughout the organization (including the ground engineer) |

## Business Process (Software (LSAP) logistical services)

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.4.1  Process **and** IT | Requirement (CE 74)  The electronic software data distribution process **should** be designed to handle *all* types of field loadable software. |
| 3.4.2 | Requirement (CE 75)  The electronic software data distribution process in its full extent **should** be implemented before the entry of service of the ---- within KLM. |
| 3.4.3  IT req | Requirement (CE 76)  The electronic software data distribution process for the ---- **must** be a standardized process without exceptions. |
| 3.4.4  process | Requirement (CE 77)  The electronic software data distribution process **should** be logical **and** intuitive. |
| 3.4.5  process | Requirement (CE 78)  The electronic software data distribution process **should** be as lean *as possible* |
| 3.4.6  process | Requirement (CE 79)  The electronic software data distribution process **should** be unambiguous. |
| 3.4.7  IT **and** process | Requirement (CE 80)  The electronic software data distribution process **should** comply with the regulatory applicable requirements. |
| 3.4.8  IT | Requirement (CE 81)  The electronic software data distribution process **should** be automated **and** wireless as much *as possible* |
| 3.4.9 IT | Requirement (CE 82)  The electronic software data distribution process **should** be supported by a single Configuration management **and** Control system.(EDMS) |
| 3.4.10 process | Requirement (CE 85)  *Each* electronic software data distribution sub process **should** have one process owner. |

## Business Process (To Provide Software (LSAP) Resource)

To provide software (LSAP) resource

### Work process To receive serviceable software (LSAP)

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.8.1.1 | Requirement (CE 1)  Only software supplied by vendors on the approved vendor list **will** be accepted by KLM.  **Note:**  The proposed process or IT solution **should** *be able to* test against an approved vendor list. |
| 3.8.1.2  process | Requirement (CE 3)  Supplier deliverables consist of:  3A The LSAP, including LSAP certificate  (COC, FAA 8130-3 form, EASA Form 1,  *etc.*)  3B Service Bulletin documentation  conform S1000D issued by the S1000D  Council which consists of Aerospace **and**  Defense Industries Association of Europe  (ASD), Aerospace Industries Association  (AIA) **and** ATA e-Business Program.   * Description of LSAP purpose * Description of the content & functionality of the LSAP * Technical approval * Instructions for continued airworthiness   Applicable airplane/ LRU part number effectivity |
| 3.8.1.3  process | Requirement (CE 4)  Documents related to LSAPs **should** be received preferred in an electronically format |
| 3.8.1.4  IT | Requirement (CE 5)  Distribution of LSAPs from the supplier **should** be electronically through KLM DDM-PE. Received LSAPs **will** be uncrated by use of a CSCT for inspection incoming goods **and** **must** be electronically signed. |
| 3.8.1.5  IT +Process | Requirement (CE 2D)  Backup procedure for delivery of LSAPs. |
| 3.8.1.6  IT + process | Requirement (CE 6)  LSAPs received on hardware media **must** be electronically signed for inspection incoming goods in CSCT, or by other means protected against unauthorized changes. |
| 3.8.1.7  process | Requirement (CE 7)  LSAPs received on hardware media **should** be part marked (identified) in accordance with industry standards **and** regulations. |
| 3.8.1.8  process | Requirement (CE 8)  Distribution of software on hardware media **should** be shipped in accordance with the standard requirements for part shipment. |
| 3.8.1.9  Process/ IT | Requirement (CE 45)  After the inspection incoming goods have been accomplished satisfactory out of CSCT, a confirmation receipt **should** be handed over to the PO system in order to close the LSAP purchase order. |
| 3.8.1.10  IT | Requirement (CE 46)  DDM-PE **must** be autonomous / fully automatic for the user (CSCT operator) |
| 3.8.1.11  IT | Requirement (CE 47)  The KLM DDM-PE **should** be suitable for receiving LSAPs of multiple software suppliers (**e.g.** OEM Vendor, Honeywell *etc.*) |
| 3.8.1.12  Process | Requirement (CE 48)  LSAPs **should** be delivered in a format compatible with CSCT. |
| 3.8.1.13  IT | Requirement (CE 49)  User **should** *be able to* configure the LSAP received notification function in the DDM-PE. |
| 3.8.1.14  IT | Requirement (CE 50)  The DDM-PE storage location **should** have:   * *Sufficient* storage capacity. * Role based access. * High availability (Incl. *support* 7X24). * Backup/ Restore process. |
| 3.8.1.15  IT | Requirement (CE 51)  The CSCT **should** have:   * *Sufficient* storage capacity * Role based access * High availability (Incl. *support* 7X24). * Backup/ Restore process |
| 3.8.1.16  Process | Requirement (CE 53)  Backup processes for receiving LSAP from supplier **must** be in place in case the DDM-PE is not available or *can* not be used by supplier. |
| 3.8.1.17  Process | Requirement (CE 54)  Backup Incoming Goods Inspection process **must** be in place in case the CSCT is not available or usable |
| 3.8.1.18  IT | Requirement (CE 56)  The integrity of LSAP transfer from the DDM-PE to the CSCT **should** be guaranteed. |
| 3.8.1.19  IT | Requirement (CE 57)  The integrity of LSAP transfer from the CSCT to the LSAP Librarian **should** be guaranteed. |
| 3.8.1.20  IT | Requirement (CE 58)  The LSAP librarian repository **should** meet the legal requirements for storage of to LSAP related maintenance records (FAA 8130-3, EASA form 1 *etc.*).  Note ref source KLM MOE 2.14.45  Retention period  A copy of *all* records is retained for a minimum of three years from the date the aircraft, engine or component was released to service. |

## Business Process (ESDD Configuration Management & Maintenance)

### Work process ESDD Configuration Management & Maintenance

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.9.1.1  IT + process | Requirement (CE 69)  The maintenance laptop **should** be configured in accordance with EASA/ OEM Vendor requirements **and** recommendations. |
| 3.9.1.2  IT + process | Requirement (CE 70)  The maintenance laptop **should** be used **and** managed in accordance with FAA/ EASA requirements **and** requirements **and** recommendations as specified in the ANSOG document.  **Note:** To be specified which EASA requirements,my understanding is the EASA **will** follow the FAA requirements **and** recommendations as specified in the ANSOG |
| 3.9.1.3 | Requirement (LM 1.4)  The maintenance laptop **should** be available based on the planned demand. |
| 3.9.1.4 | Requirement (LM 1.4.1)  The maintenance laptops **should** be available according ARIS **and** HLID process descriptions |
| 3.9.1.5 | Requirement (LM 1.4.2)  The amount of maintenance laptops **should** be based on availability **and** reliability (tool failure **should** not lead to process disturbance) |
| 3.9.1.6 | Requirement (LM 3.1)  The maintenance laptop **should** have acceptable startup **and** response times.  **Note:**  Refer to JIRA item SWLOADING 101 |
| 3.9.1.7 | Requirement (LM 3.2)  The maintenance laptops **should** *be able to* load *all* required software on *all* KLM ---- aircraft registrations. |
| 3.9.1.8 | Requirement (LM 3.4)  The s/w distribution tool **should** prevent the distribution of s/w on another then the selected aircraft type **and** registration. |
| 3.9.1.9 | Requirement (LM 3.6)  The maintenance laptop **should** *be able to* report its health status in a centralized manner. |
| 3.9.1.10 | Requirement (LM 3.7)  The maintenance laptop **should** *be able to* report its status of distributed (staged) s/w parts to the maintenance laptop in a centralized manner. |
| 3.9.1.11 | Requirement (LM 3.7.1)  ~~Smart description pending~~  Refer to Jira item SWLOADING 99 |
| 3.9.1.12 | Requirement (LM 3.8)  The GUI of the maintenance laptop **must** be *user friendly*.  Maintenance laptop = COTS OEM Vendor not to be influenced by KLM |
| 3.9.1.13 | Requirement (LM 3.8.1)  The GUI of the maintenance laptop **must** provide a  *clear* information about the health status. |
| 3.9.1.14 | Requirement (LM 3.8.2)  The GUI of the maintenance laptop **must** provide *clear* information about the loaded s/w parts per tail. |
| 3.9.1.15 | Requirement (LM 3.8.3)  The GUI of the maintenance laptop **should** sort parts on type (**e.g.** Part 25 & Part 121) **and**/ or aircraft registration. |
| 3.9.1.16 | Requirement (LM 3.8.4)  The GUI of the maintenance laptop **should** *be able to* filter on applicable s/w parts per aircraft registration selection. |
| 3.9.1.17 | Requirement (LM 3.8.5)  The GUI of the maintenance laptop **should** provide the ability to sort s/w parts in a logical order. |
| 3.9.1.18 | Requirement (LM 3.8.5.1)  The GUI of the maintenance laptop **should** provide the ability to select s/w parts in a logical order (e.g per LRU **and**/ or ATA) |
| 3.9.1.19  IT | Requirement (IMO 1)  A/C IT operation (Software loading etc) is fully independent from any other AF/KLM IT operation. Both in function **and** hardware.  ***Note:*** *The risk of virtualization* ***and*** *running it as regular IT is that is no separation of concerns when push comes to shove. Think of downtime of servers or the long* ***and*** *complex escalation chain in regular IT for incidents* ***and*** *the fact that support it outsourced to support desks that have no intimate knowledge of A/C. A/C IT needs a direct, hands-on support. A/C need to fly, they are our most expensive assets.*  *This is in line with OEM Vendor recommendation.* |
| 3.9.1.20  IT | Requirement (IMO 2)  IT security **should** stay to the level of mitigating reasonable risks **and** not be more stringent than advised by OEM Vendor.  ***Note:*** *OEM Vendor puts in the airline in service experience, which* ***should*** *be sufficient for save operations of the A/C. If we are not really careful, we could go overboard.* |

## Business Process (ANSOG requirements )

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.12.1  IT req | Requirement (ANSOG 1)  It **should** be possible to retain airplane system CIS-MS File Server Module (FSM) System log files for at least 90 days. |
| 3.12.2  IT req | Requirement (ANSOG 2)  It **should** be possible to retain airplane system Crew Server Module “Controller Server Module Reports” for at least 90 days. |
| 3.12.3  IT req | Requirement (ANSOG 3)  It **should** be possible to retain airplane system Network Interface Module “Controller Server Module Reports” for at least 90 days. |
| 3.12.4  IT req | Requirement (ANSOG 4)  (Optional) It **should** be possible to retain  airplane system Airplane File Server Module  “Controller Server Module Reports” for at least 90  days. |
| 3.12.5  IT req | Requirement (ANSOG 5)  It **should** be possible to retrieve airplane system CIS-MS File Server Module (FSM) System log files for at least 90 days. |
| 3.12.6  IT req | Requirement (ANSOG 6)  It **should** be possible to retrieve airplane system Crew Server Module “Controller Server Module Reports” for at least 90 days. |
| 3.12.7  IT req | Requirement (ANSOG 7)  It **should** be possible to retrieve airplane system Network Interface Module “Controller Server Module Reports” for at least 90 days. |
| 3.12.8  IT req | Requirement (ANSOG 8)  (Optional) It **should** be possible to retrieve airplane system Airplane File Server Module “Controller Server Module Reports” for at least 90 days. |
| 3.12.9  IT req | Requirement (ANSOG 9)  It **should** be possible to save retrieved airplane system CIS-MS File Server Module (FSM) System log files in a protected area for a retention period of at least 90 days. |
| 3.12.10  IT req | Requirement (ANSOG 10)  It **should** be possible to save retrieved airplane system Crew Server Module “Controller Server Module Reports” in a protected area for a retention period of at least 90 days. |
| 3.12.11  IT req | Requirement (ANSOG 11)  It **should** be possible to save retrieved airplane system Network Interface Module “Controller Server Module Reports” in a protected area for a retention period of at least 90 days. |
| 3.12.12  IT req | Requirement (ANSOG 12)  (Optional) It **should** be possible to save retrieved airplane system Airplane File Server Module “Controller Server Module Reports” in a protected area for a retention period of at least 90 days. |
| 3.12.13  IT req | Requirement (ANSOG 13)  From the airplane received log file crates **should** be stored in a protected area in their digitally signed crated state. |
| 3.12.14  IT req | Requirement (ANSOG 14)  From the airplane received report crates **should** be stored in a protected area in their digitally signed crated state. |
| 3.12.15  IT req | Requirement (ANSOG 15)  The file naming convention of stored CIS-MS File Server Module (FSM) System log files crates **should** be TailID\_ELS\_Log\_YYYYMMDDHHMMSS+0000.zip |
| 3.12.16  IT req | Requirement (ANSOG 16)  The file naming convention of stored CIS Crew Server Module “Controller Server Module Reports” crates **should** be TailID\_CMS\_Security\_YYYYMMDDHHMMSS+0000.zip |
| 3.12.17  IT req | Requirement (ANSOG 17)  The file naming convention of stored Network Interface Module “Controller Server Module Reports” crates **should** be TailID\_CMS\_Security\_YYYYMMDDHHMMSS+0000.zip |
| 3.12.18  IT req | Requirement (ANSOG 18)  The file naming convention of stored Airplane File Server Module “Controller Server Module Reports” crates **should** be TailID\_CMS\_Security\_YYYYMMDDHHMMSS+0000.zip |

## Business Process (ANSOG recommendations)

### Work Process Control Access to Airport wired **and** wireless service network (recommendation 2)

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.13.7.1  procedure | Requirement (ANSOG 43)  Access to airport wired **and** wireless service network **should** be physical controlled. |
| 3.13.7.2  IT req | Requirement (ANSOG 44)  Authentication of personnel **and** devices **should** be established in order to acquire access to airport wired **and** wireless service network. |
| 3.13.7.3  IT req | Requirement (ANSOG 45)  Authorization to only permitted assets **should** be established in order to acquire access to airport wired **and** wireless service network. |
| 3.13.7.4  IT req | Requirement (ANSOG 46)  Intrusions on the airport wireless service network **should** be detected. |
| 3.13.7.5  IT req | Requirement (ANSOG 47)  Intrusions on the airport wireless service network **should** be prevented. |
| 3.13.7.6  procedure | Requirement (ANSOG 48)  Procedures on changes on the wired **and** wireless service network design **should** be in place. |
| 3.13.7.7  procedure | Requirement (ANSOG 49)  Procedures for handling unwanted security events on the wired **and** wireless service network **should** be in place. |
| 3.13.7.8  IT req | Requirement (ANSOG 50)  Security events on the wired **and** wireless network **should** be logged. |
| 3.13.7.9  Procedure | Requirement (ANSOG 51)  Specific wireless network instructions **should** be in place. |
| 3.13.7.10  Procedure | Requirement (ANSOG 52)  A process of exchange of airport wireless service **and** airplane certificate information between the ---- operator **and** the airport wireless service provider **should** be in place. |

### Work Process Create Secure Part Signing Process, **and** Control Access to Private keys (recommendation 4)

| **Req.#** | **Requirement description** |
| --- | --- |
| 3.13.9.1  Process | Requirement (ANSOG 56)  A process **should** be in place for validating the manufacturer’s digital signature on received software parts. |
| 3.13.9.2  IT req | Requirement (ANSOG 57)  It **should** be possible to apply an own unique digital signature to received parts once the parts successfully have passed the inspection incoming goods criteria. |
| 3.13.9.3  IT req | Requirement (ANSOG 58)  The CSCT tool **should** be used to apply the own unique digital signature on parts that have successfully passed the inspection incoming goods. |
| 3.13.9.4  IT req | Requirement (ANSOG 59)  The CSCT tool **should** only be accessible to authorized personnel. |
| 3.13.9.5  IT req | Requirement (ANSOG 60)  Access to the CSCT **should** have:   1. Limited log ins 2. Require a password to be entered to activate the signing keys in order to sign the parts. |
| 3.13.9.6  IT req +  procedure | Requirement (ANSOG 61)  Private cryptographic keys *may* be stored in a hardware-based, cryptographically secure keystore. |
| 3.13.9.7  IT req | Requirement (ANSOG 62)  The CSCT tool **should** be segregated from other applications **and** be installed on a special hardware platform. |
| 3.13.9.8  IT req | Requirement (ANSOG 63)  The GBST tool **should** only be accessible to authorized personnel. |
| 3.13.9.9  IT req | Requirement (ANSOG 64)  Access to the GBST **should** have:   1. Limited log ins 2. Require a password to be entered to activate the signing keys in order to sign the parts. |
| 3.13.9.10  IT req | Requirement (ANSOG 65)  The GBST tool **should** be segregated from other applications **and** be installed on a special hardware platform. |
| 3.13.9.11  procedure | Requirement (ANSOG 66)  Trusted certificates **must** be controlled by authorized personnel. |
| 3.13.9.12  Process | Requirement (ANSOG 67)  Updates of trusted certificates *may* only be done by authorized personnel.  **Note:** The GBST tool **will** collect the certificates into an OAS AMI LSAP, which then is signed by the CSCT, **and** provisioned to the airplane. |
| 3.13.9.13  procedure | Requirement (ANSOG 68)  Optional: in case an Airplane File Server Module **will** be installed on the airplane a policy **should** be defined on how often the IFE/ AFSM security keys **should** be refreshed. |

Table nr: 1 number rows: 13

Table nr: 2 number rows: 66

Table nr: 3 number rows: 14

Table nr: 4 number rows: 14

Table nr: 5 number rows: 10

Table nr: 6 number rows: 20

Table nr: 7 number rows: 20

Table nr: 8 number rows: 18

Table nr: 9 number rows: 10

Table nr: 10 number rows: 13

Total tables: 10 With a total rows/req counted: 208 Manual adjustment for table headers is required.

Tactile Check Analysis Template CMS+

# Procedure

1. Copy requirements to **Error! Reference source not found.** placeholder
2. Run Analyze Weak phrases  
     
   Creates comments for each *Weak* phrase found in the text.

Export all comments to excel by “Copy notes to Excel”

1. Run Analyze strong phrases  
     
   creates comments for each **Strong** phrase found in the text.

Export all comments to excel by “Copy notes to Excel”

1. Export Strong and Weak phrases to Excel template for further analysis  
   
2. Export Strong and Weak phrases to Excel template for further analysis  
   

## Table#1 holds the Weak and Subjective phrases.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Weak phrases** |  | **Incompleteness** |  | **Subjective Language** |  | **Negative Statements** |  | **Non-verifiable Terms** |  | **Loopholes** |  |
| adequate | 0 | TBD | 0 | user friendly | 0 | cannot | 0 | provide support | 0 | if possible | 0 |
| as appropriate | 0 | TBS | 0 | easy to use | 0 | can't | 5 | but not limited | 0 | as far as possible | 0 |
| be able to | 0 | TBE | 0 | cost effective | 0 |  |  | sufficient | 0 | possibly | 0 |
| be capable of | 0 | TBC | 0 | simple and efficient | 0 |  |  | Clear | 0 | eventually | 0 |
| capability of | 0 | TBR | 0 | each | 0 |  |  | Easy | 0 | if case | 0 |
| capability to | 0 | not defined | 0 | all | 6 |  |  | Strong | 0 | if appropriate | 0 |
| effective | 0 | not determined | 0 | never | 0 |  |  | Good | 0 | if needed | 0 |
| as required | 0 | but not limited to | 0 | always | 1 |  |  | Bad | 0 | if practical | 0 |
| normal | 0 | as a minimum | 0 | similar | 0 |  |  | useful | 0 |  |  |
| provide for | 0 |  |  | similarly | 0 |  |  | significant | 0 |  |  |
| timely | 0 |  |  | having in mind | 0 |  |  | recent | 0 |  |  |
| easy to | 0 |  |  | take into account | 0 |  |  | Support | 2 |  |  |
|  |  |  |  | as possible | 0 |  |  | Etc. | 0 |  |  |
|  |  |  |  | Minimize | 0 |  |  | And/Or | 0 |  |  |
|  |  |  |  | Maximize | 0 |  |  | almost always | 0 |  |  |
|  |  |  |  | Rapid | 0 |  |  | can | 6 |  |  |
|  |  |  |  | User-friendly | 0 |  |  | may | 0 |  |  |
|  |  |  |  | Quick | 0 |  |  | Optionally | 0 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Table#2 holds the Strong phrases.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **IMPERATIVE** | **Count** | **CONTINUANCE** | **Count** | **DIRECTIVE** | **Count** |
| shall | 0 | below: | 0 | e.g. | 0 |
| must | 0 | as follows: | 0 | i.e. | 0 |
| is required to | 0 | following: | 0 | For example | 0 |
| are applicable | 0 | listed: | 0 | Figure | 0 |
| are to | 0 | in particular: | 0 | Table | 3 |
| responsible for | 0 | support: | 0 | Note: | 0 |
| will | 3 | and | 51 |  |  |
| should | 10 |  |  |  |  |
|  |  |  |  |  |  |

# Requirements

Enter requirements data to analyze below line. This can be in the form of a table or plain text.

#### Work partitioning

The following business event list is the result of using business events to partition the work of requesting allowed part number(s) into 16 Business functions. The events are the same as in the CMS design, but with other users (Availability Controller **and** Warehouse Employee)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nr** | **Event name** | **input** | **output** | **Business use case summary** |
| 1 | Engineering wants to maintain allowed parts | * Request to create/update allowed part | * Allowed part maintain | Ensure that the engineer is authorized to search known parts **and** maintain them as allowed Part |
| 2 | AMT/AMM/TS wants to create a fault with a part requirement | * Started work package * Allowed Part | * Created Fault * Part request (created) | Ensure that the AMT/AMM is authorized to create a fault, adds a part requirement, resulting in a part request that contains allowed parts, qty, requested location, tail) |
| 3 | Availability Controller wants to process a request for a part (or other allowed parts) | * Part request (created) | * Part is reserved | Integration reserves a part **and** informs the requestor about ETA, From Location **and** supplied Part + Serial number. |
| 4 | Warehouse Employee wants to issue reserved Part | * Part is reserved | * Part is issued | Warehouse Employee processes the reservation into a pick **and** issue **and** makes the requested part ready for transport |
| 5 | Logistic Employee wants to deliver the Part to the requested location | * Part is issued | * Part is delivered (at the requested location) | Logistic Employee transports the part from the expedition to the requested location |
| 6 | AMT/AMM completes the fault | * Part is delivered | * Installed part * Fault Completed * Removed part | AMT/AMM picks the delivered, removes the part from AC **and** installs the delivered/ seriviceable part. Then completes the fault |
| 7 | AMT/AMM turns in  removed part | * Removed Part | * Removed part turned in | AMT/AMM turns in the removed /unserviceable part with the removal administration |
| 8 | Availability Controller *can’t* (automatically) process a request for a part | * Part request (created, updated) | * Source part | The requested quantity is not available (Reason **and** status is OPEN). Availability controller is informed to source the part |
| 9 | AMT defers the fault from the work package | * Part NOT reserved * Part is reserved | * Part request (updated, without a location) * Deferred fault | AMT defers the fault with assigned part(s) **and** un-assigns the fault from the work package. Resulting in an updated part request without a location |
| 10 | Availability Controller sources part(s) | * Part request (created or updated) * Source part | * Part is reserved * Request to create/update allowed part | Availability Controller sources the allowed part serial number **and** arranges that stock is reserved at the requested location |
| 11 | Warehouse Employee (physically) changes the location of the reserved part | * Part request (updated) * Part is reserved | * Part is reserved * Part delivered (at requested location) | Warehouse Employee changes the location of a reserved part **and** delivers the part at the new requested location |
| 12 | Aircraft Maintenance planner assigns Fault to a work package | * Part is delivered (at requested location) | * Deferred Fault assigned to a work package * Part request (updated with a new location) | Aircraft maintenance planner assigns Fault with reserved part to a work package, resulting in a update part request with a new location |
| 13 | AMT/AMM wants to adjust a request for a part | * Part request (created) | * Part request (updated) | AMT/AMM adjusts a request for a part examples: cancel request, quantity update, change allowed part(s) |
| 14 | AMT/AMM-Lead or Aircraft Maintenance Planner wants to adjust the Work package | * Work Package created | * Part request (updated) * Adjusted Work package | AMT/AMM-Lead or Aircraft Maintenance Planner is able to adjusts the location or date/time of a Work package |
| 15 | Availability Controller wants to process an update part request | * Part request (updated) | * Part is reserved * Source part | Integration is able to adjust the request for a reserved part Or Integration is NOT able to adjust the request for a reserved part |
| 16 | Warehouse Employee want to cancel a picking request (reserved PN) | * Part is reserved | * Part reservation is canceled * Part NOT reserved | Warehouse Employee is able to cancel a reserved request (in case of missing/ damaged pn) **and** the requestor **should** be informed that the request is adjusted from RESERVE to OPEN |

#### Business use case scenarios

|  |  |
| --- | --- |
| **NR** | **Business case scenario** |
| **1** | **Business event 1:** Engineering wants to maintain allowed part  **Business use case:** Define allowed part  **Trigger:** Request to create/update allowed part  **Precondition:** Engineer is authorized to create/ update Part Groups  **Interested stakeholders:** AMT/AMM **and** Logistic Employee   * Engineer/ Logistic Employee or Mechanic sends a request to Engineering to create/ update the allowed part * Engineer checks if *all* necessary information is available * If *all* information is available   Then   * Engineer creates/ updates the allowed part (part group) **and** informs the requestor   Otherwise   * Engineer does not creates/ updates the allowed part (part group) **and** informs the requestor   **Outcome:** Allowed part maintained |
| **2** | **Business event 2:** AMT/AMM wants to create a fault with a part requirement  **Business use case:**  Create a fault with a part requirement  **Trigger:** Allowed part, Started work package  **Precondition:** Allowed parts are maintained**,** started work package is available  **Interested stakeholders:** AMT/AMM **and** Logistic Employee   * Mechanic creates a fault **and** adds a part requirement, * Resulting in a part request that contains allowed parts, qty, requested location, tail, a date/ time (Driving Deadline) **and** the check   **Outcome:** Part request (created), created fault |
| **3** | **Business event 3:** Availability Controller wants to process a request for a part (or other allowed parts)  **Business use case:** Process a part request  **Trigger:** Part request (created)  **Precondition:** part request contains: *all* allowed part numbers, a date/ time, a location, the tail **and** the check  **Interested stakeholders:** Availability controller **and** AMT/AMM   * Logistic (system) processes the part request * a reservation is made **and** a message is send to the requestor (system) containing an PN+MFR, Serial number, ETA (based on SL **table**), Part provider/From location **and** External id/Crocos Code volgnr.   **Outcome:** Part is reserved |
| **4** | **Business event 4:** Warehouse Employee wants to issue reserved Part  **Business use case:** Pick/issue the reserved pn’s  **Trigger:** Part is reserved  **Precondition:** Reservation (with a PN+SN) is automatically printed  **Interested stakeholders:** Warehouse Employee   * The automatic printed picking slip is processed by a Logistic Employee * Logistics Employee picks the part **and** make the shipment ready for transport to the requested location * The Logistic Employee administrates the picked part number (for Crocos TBA)   **Outcome:** Part is issued |
| **5** | **Business event 5:** Logistic Employee wants to deliver the Part to the requested location  **Business use case:** PN’s are transported to the requested location  **Trigger:** Part is issued  **Precondition:** Part request is picked **and** issued  **Interested stakeholders:** Logistic Employee   * The shipment is transported from the expedition to the requested location * The part is supplied at the requested location   **Outcome:** Part is delivered (at the requested location) |
| **6** | **Business event 6:** AMT/AMM completes the fault  **Business use case:** Complete fault  **Trigger:** Part is delivered  **Precondition:** Work package is in Work, fault with part requirement is created  **Interested stakeholders:** AMT/AMM   * AMT/AMM picks the delivered, removes the part from AC **and** installs the delivered part. Then completes the fault   **Outcome:** Installed part, Fault completed, Removed part |
| **7** | **Business event 7:** AMT/AMM turns in removed part  **Business use case:** turn in part  **Trigger:** Removed part  **Precondition:** Part installed  **Interested stakeholders:** AMT/AMM **and** Warehouse employee/ availability controller   * AMT/AMM turns in the removed part with the removal administration   Outcome: Removed part turned in |
| **8** | **Business event 8:** Availability Controller *can’t* process a request for a part  **Business use case:** inform part request *can’t* (automatically) be processed  **Trigger:** Part request (created, updated)  **Precondition:** part request contains: *all* allowed part numbers, a date/ time, a location, the tail **and** the check  **Interested stakeholders:** Availability controller **and** AMT/AMM   * Integration *can’t* reserve a part **and** informs the requestor (“Reason” **and** status is OPEN) * Inform the availability controller to start to source a part based on the part request info   **Outcome:** Source part |
| **9** | **Business event 9:** AMT defers the fault from the work package  **Business use case:** Defer fault with a part requirement  **Trigger:** Part NOT reserved, Part is reserved  **Precondition:** A fault with a part requirement in a (in work/started) work package  **Interested stakeholders:** AMT **and** Logistic Employee   * AMT defers the fault with assigned part(s) **and** un-assigns the fault from the work package. Resulting in an updated part request without a location * Part request status is (automatically) set back to OPEN * Reserved parts **should** be reassigned (see Business event 11)   **Outcome:** Deferred fault, part request (updated) |
| **10** | **Business event 10:** Availability Controller sources part(s) for deferred fault  **Business use case:** Source part for deferred fault  **Trigger:** Part request (created or updated), Source part  **Precondition:** A fault with a part requirement is deferred, part NOT reserved  **Interested stakeholders:** Availability controller **and** Aircraft Maintenance planner   * Availability Controller sources the allowed part serial number **and** arranges that stock is reserved at the requested location * If location is not known, then it **will** be reserved at the default location which is the “hil bak”   **Outcome:** Part is reserved, Request to create/update allowed part |
| **11** | **Business event 11:** Warehouse Employee (physically) changes the location of the reserved part  **Business use case:** Reserve part at requested location  **Trigger:** Part is reserved, Part request (updated)  **Precondition:** A fault with a part requirement is deferred, part reserved  **Interested stakeholders:** Warehouse Employee, Availability controller **and** Aircraft Maintenance planner   * Warehouse Employee changes the location of a reserved part **and** delivers the part at the new requested location * If location is not known, then it **will** be reserved at the default location which is the “hil bak”   **Outcome:** Part is reserved, Part is delivered |
| **12** | **Business event 12:** Aircraft Maintenance planner assigns Fault to a work package  **Business use case:** Assign fault to a work package  **Trigger:** Part delivered (at requested location)  **Precondition:** A fault with a part requirement is deferred, part delivered  **Interested stakeholders:** Aircraft Maintenance planner **and** AMT/AMM   * Aircraft maintenance planner assigns Fault with reserved part to a work package, resulting in a update part request with a new location * Part request status is (automatically) set back to OPEN * Reserved parts **should** be reassigned (see Business event 11)   **Outcome:** Part request (updated with a new location), Deferred Fault assigned to a work package |
| **13** | **Business event 13:** AMT/AMM wants to adjust a request for a part  **Business use case:** Adjust a part requirement  **Trigger:** Part request (created)  **Precondition:** A fault with a part requirement in a in work/started work package  **Interested stakeholders:** Availability controller **and** AMT/AMM   * AMT/AMM adjusts a request for a part   examples:   * cancel request * quantity update (not according procedure) * change allowed part(s)   **Outcome:** Part request (updated) |
| **14** | **Business event 14:** AMT/AMM-Lead or Aircraft Maintenance Planner wants to adjust the Work package  **Business use case:** Adjust work package  **Trigger:** Work Package created  **Precondition:** in work/ started Work Package  **Interested stakeholders:** AMT/AMM-Lead or Aircraft Maintenance Planner **and** Availability controller   * AMT/AMM-Lead or Aircraft Maintenance Planner is able to adjusts a Work package   Examples:   * the location * date/time   **Outcome:** Part request (updated), Adjusted Work package |
| **15** | **Business event 15:** Availability Controller wants to process an update part request  **Business use case:** Process an update part request  **Trigger:** Part request (updated)  **Precondition:** Part was created in a in work/ started Work Package  **Interested stakeholders:** Availability Controller **and** AMT/AMM   * Integration is able to adjust the request for a reserved part (in case reserved part is not issued)   Or   * Integration is NOT able to adjust the request for a reserved part (in case reserved part is already issued), but part stays reserved   Or   * Integration is not able to reserve a part, source of the part **should** start   **Outcome:** Part is reserved, Source part |
| **16** | **Business event 16:** Warehouse Employee want to cancel a picking request (reserved PN)  **Business use case:** Cancel a picking request  **Trigger:** Part is reserved  **Precondition:** Part request was reserved **and** picking slip was created  **Interested stakeholders:** Warehouse Employee, Availability Controller **and** AMT/AMM   * Warehouse Employee is able to cancel a request for a reserved part / serial number   Examples:   * + Requested Part serial number is missing   + Requested Part serial number is damaged * The requestor **should** be informed that the request is adjusted (from RESERVE to OPEN)   **Outcome:** Part reservation is canceled, Part NOT reserved |

## Product use cases

|  |  |  |  |
| --- | --- | --- | --- |
| Nr | **PUC no.** | **BUC no.** | **Product Use Case Name** |
| 1 | 5.2.1 | 2 - AMT/AMM wants to create a fault with a part requirement | Part request created |
| 2 | 5.2.1.1 |  | *All* allowed parts   * The assigned part **and** *all* other allowed parts (not allowed parts are filtered out) * A Part is defined by a Part **and** Manufacturer Number |
| 3 | 5.2.1.2 |  | Requested location   * only locations at AMS are in scope |
| 4 | 5.2.1.3 |  | Requested date time  (Driving deadline) |
| 5 | 5.2.1.4 |  | Requested tail   * The AC registration. For CMS+ first phase only KL owned registrations are in scope |
| 6 | 5.2.1.5 |  | The quantity   * For tracked parts this is *always* 1 ea |
| 7 | 5.2.1.6 |  | Part request status is OPEN |
| 8 | 5.2.2 | 3- Availability Controller wants to process a request for a part (or other allowed parts) | Part is reserved  See ch 13. Appendix Stock available |
| 9 | 5.2.2.1 |  | ETA   * In UTC time |
| 10 | 5.2.2.1.1 |  | “From location” supplied by Crocos   * Suppling warehouse is needed to determine the ETA |
| 11 | 5.2.2.1.2 |  | SAP **Table** for ETA calculation  See chapter 12. Appendix SL **table** for ETA calculation  Determine ETA based on suppling warehouse **and** (requested) location |
| 12 | 5.2.2.2 |  | Part based on Crocos reservation |
| 13 | 5.2.2.2.1 |  | Reserved part is an allowed part serial number |
| 14 | 5.2.2.2.2 |  | Part is reserved in the warehouse location nearest to the requested location |
| 15 | 5.2.2.3 |  | Create OEM IT VENDOR inventory based on PN+SN **and** location   * Administrate which Part serial number is going to be supplied |
| 16 | 5.2.2.4 |  | Part provider (suppling warehouse)   * The suppling warehouse based on Crocos data |
| 17 | 5.2.2.5 |  | Part request status is RESERVE |
| 18 | 5.2.2.6 |  | Send part request info (incl reserved) to Availability controller |
| 19 | 5.2.3 | 4- Warehouse Employee wants to issue reserved Part | Part is issued  See ch 13. Appendix Stock available |
| 20 | 5.2.3.1 |  | Administrate the issued part number + serial number in Crocos (TBA) |
| 21 | 5.2.3.2 |  | Validate if administrated part + serial number is equal against reserved part + serial number |
| 22 | 5.2.4 | 5- Logistic Employee wants to deliver the Part to the requested location | Part is delivered  See ch 13. Appendix Stock available |
| 23 | 5.2.4.1 |  | Part Serial number is delivered at the requested location  The transport document (tracking sticker) **should** contain the (delivery) location |
| 24 | 5.2.5 | 6- AMT/AMM completes the fault | Fault completed  See ch 13. Appendix Stock available |
| 25 | 5.2.5.1 |  | Execute the maintenance work |
| 26 | 5.2.5.2 |  | Administrate installed **and** removed part |
| 27 | 5.2.6 | 7- AMT/AMM turns in Removed part | Removed part is returned  See ch 13. Appendix Stock available |
| 28 | 5.2.6.1 |  | Turn in removed part (with administration) |
| 29 | 5.2.7 | 8- Availability Controller *can’t* process a request for a part | Inform Availability controller |
| 30 | 5.2.7.1 |  | Requested location is unknown (No Area) |
| 31 | 5.2.7.2 |  | Part Unknown (No Code nr Found ) |
| 32 | 5.2.7.3 |  | No stock available for the requested date/location |
| 33 | 5.2.7.4 |  | Part request status stays OPEN **and** reason is send |
| 34 | 5.2.7.5 |  | Send part request info (incl not processed) to Availability controller to start sourcing process |
| 35 | 5.2.8 | 9- AMT defers the fault from the work package | Defer fault |
| 36 | 5.2.8.1 |  | Defer Fault from WP (with severity MEL) |
| 37 | 5.2.8.1.1 |  | Defer fault with a stock promise  See ch 14. Appendix Defer fault with promised stock |
| 38 | 5.2.8.1.2 |  | Defer fault without a stock promise  See ch 15. Appendix Defer fault with No stock Promise |
| 39 | 5.2.9 | 10- Availability Controller sources part(s) | Source part |
| 40 | 5.2.9.1 |  | Source an allowed part, based on part request info from PUC 5.2.1 |
| 41 | 5.2.9.2 |  | Reserve the sourced part according PUC 5.2.2 |
| 42 | 5.2.9.3 |  | Vendor/OEM *can* supply a part that is not allowed according the request. Request to create/update allowed part |
| 43 | 5.2.9.4 |  | Inform about the expected ETA for the sourced part |
| 44 | 5.2.10 | 11- Warehouse Employee (physically) changes the location of the reserved part | Warehouse Employee changes the location of a reserved part **and** delivers/stores the part at the new requested location |
| 45 | 5.2.11 | 12- Aircraft Maintenance planner assigns Fault to a work package | Assign Fault to a Work package |
| 46 | 5.2.11.1 |  | Assign fault with reserved part to a work package   * Ensure that the part request status stays RESERVED |
| 47 | 5.2.12 | 13- AMT/AMM wants to adjust a request for a part | Adjust a part request |
| 48 | 5.2.12.1 |  | Cancel request |
| 49 | 5.2.12.1.1 |  | Cancel part request with a stock promise  Logistics is not able to cancel an issued request. Part **will** be delivered **and** AMT/AMM has to return the not used part. Availability controller **should** be informed |
| 50 | 5.2.12.1.2 |  | Cancel part request fault without a stock promise  Availability controller **should** be informed **and** stop the sourcing process (PUC 5.2.9) |
| 51 | 5.2.12.2 |  | Adjust allowed parts  Adjust the allowed parts in the part group  Availability controller **should** be informed to *support* the sourcing process |
| 52 | 5.2.12.3 |  | Adjust quantity  Availability controller **should** be informed to *support* the sourcing process |
| 53 | 5.2.13 | 14- AMT/AMM-Lead or Aircraft Maintenance Planner wants to adjust the Work package | Adjust work package |
| 54 | 5.2.13.1. |  | Change location |
| 55 | 5.2.13.2. |  | Change date time |
| 56 | 5.2.14 | 15- Availability Controller wants to process an update part request | process an update part request |
| 57 | 5.2.14.1 |  | Able to process the updated part request with a promise |
| 58 | 5.2.14.2 |  | Able to process the updated part request without a promise. |
| 59 | 5.2.14.3 |  | Not able to updated part request |
| 60 | 5.2.15 | 16- Warehouse Employee want to cancel a picking request (reserved PN) | Cancel a picking request  See ch16. Appendix Logistics cancels picking request |
| 61 | 5.2.15.1. |  | Cancel based on Crocos |