Digital Policy Office

BEST PRACTICES
FOR BUSINESS ANALYST
APPENDIX C
A TEMPLATE OF
USER REQUIREMENTS DOCUMENT
WITH SAMPLE CONTENTS

[G60c]

Version: 1.1

July 2024

Amendment History				
Change Number	**Revision Description**	**Pages Affected**	**Rev. Number**	**Date**
1	Update Documents for the Establishment of Digital Policy Office (DPO)	Cover page; Hints and Tips - URL; With Sample Content - 2.3, 6.3.1,	1.1	July 2024

OVERVIEW

(a) A user requirement is "what" must be delivered to provide value to business when satisfied rather than "how" to deliver. A User Requirements Document (URD) describes what the proposed IT system looks like from a business perspective. It is important as it helps gain agreement with stakeholders and provides a foundation to IT project team on what the system needs to do to satisfy the business needs and user expectations, and provide input into the next phase of the development.

(b) A URD normally consists of the following information:

i) Introduction, e.g. purpose of the URD, project background, business objectives, project scope and objectives, etc.;

ii) Identified Risks, Assumptions and Constraints;

iii) Proposed System Overview, e.g. high-level system diagram or description and system user profile;

iv) Future Business Process;

v) Functional Requirements define the functions or features of a system that can be utilised by a user to fulfil business operation (i.e. what the system should do to provide business value when satisfied);

vi) Non-Functional Requirements such as audit, control and security, global business rules, data requirements, usability requirements, service level targets, user volume and equipment requirements, data growth and retention requirements, etc. specify criteria of how the system can perform and maintain these functions and features (i.e. how the system should work) from a business perspective;

vii) Implementation Considerations such as implementation strategy, rollout and transition approach, data conversion, training approach, etc.

viii) Appendices, e.g. Future Business Process Diagrams, Data Requirements, Reference Documents, Glossary of Terms, etc.

(c) A sample template of URD with sample content is provided below. B/Ds should adopt the sample template flexibly and make changes as necessary to suit project needs.

(d) Notes for using the template are written in ***"italic"*** text enclosed in pointed brackets **"< >"**, while sample contents are written in *"**bold italic**"* and can be replaced by project-specific information or removed to suit specific project needs. After all changes are made, all notes should be removed and font of all *"**bold italic**"* text should be changed to normal.

HINTS AND TIPS 

(a) The requirements should be accurate, clear, complete, verifiable, consistent, understandable and concise.

(b) Technical solutions or elements (e.g. data architecture, application architecture, system architecture, technical infrastructure, etc.) should be avoided. Such solutions are proposed by IT staff during system design.

(c) Acceptance criteria define the boundaries for the functional requirements and they should be written in a clear and concise manner.

(d) If Agile software development method is used, only high-level requirements will be produced in the SA&D stage. Requirements should be written in layman's terms which are called "User Stories". Please refer to the "Practice Guide for Agile Software Development[1]" for more information about Agile.

[1] "Practice Guide for Agile Software Development" can be found at https://www.digitalpolicy.gov.hk/en/our_work/digital_infrastructure/methodology/system_development/agile_software_development.html.

USER REQUIREMENTS DOCUMENT FOR

INVENTORY MANAGEMENT SYSTEM

OF

DDD DEPARTMENT

Version: 0.1

MMM YYYY

With Sample Content

Project Identification

Project Name:	***e.g. Implementation of Inventory Management System for DDD Department***	Date:	***dd/mm/yyyy***
Project Owner:	***e.g. Mr. AAA***	Business Analyst:	***e.g. Mr. SEO***
Post/Rank:	***e.g. Head(ITMU)***	Post/Rank:	***e.g. SEO(Team)1***

Revision History

Revision No.	Revision Date	Pages/Sections Revised	Remarks
Revision no	***dd/mm/yyyy***	***Revised pages and sections***	

Distribution List

Name	Post/Rank	B/D	Date
Mr. AA	***SSM(ITMU)1***	***DDD Department***	***dd/mm/yyyy***
Mr. BB	***SM(ITMU)11***	***DDD Department***	***dd/mm/yyyy***
Mr. CC	***SSO(SU)1***	***DDD Department***	***dd/mm/yyyy***
Mr. GG	***SM(ITMU)31***	***DDD Department***	***dd/mm/yyyy***
Ms. FF	***EO(DIV)11***	***DDD Department***	***dd/mm/yyyy***
...	...	...	...

Table of Contents

1 INTRODUCTION

1.1 PURPOSE

<This section describes the purpose of the document.>

e.g. This document defines the user requirements for the new computerised Inventory Management System (IMS) for DDD Department. The information stated in this document will be used as the basis for subsequent development activities including design, implementation, testing and post-implementation review.

1.2 PROJECT BACKGROUND

<This section provides background information about the project to facilitate reader's understanding why the project is initiated and reasons for change. Information may include name of B/D involved, sections or teams, major current problems, issues, challenges, etc.>

e.g. Currently, there is no IT system supporting the inventory management in DDD Department. The Supplies Section of the Administration Division in the department is responsible for managing the stores, inventory and procurement matters for the entire department. The Section has about xx staff and is headed by a Senior Supplies Officer (SSO). All inventory records are manually processed and maintained by the staff of the Supplies Section under the Administrative Division. There are about 29,999 inventory items stored in paper folders and some are also saved in spreadsheets or other word document formats for easy retrieval.

The department is looking for a computerised system for storing inventory records, and facilitating inventory management and control activities such as annual physical inventory checks, inventory transfer, write-off of lost inventory items and disposal of surplus stores.

1.3 BUSINESS OBJECTIVES

<This section briefly describes the high-level business objectives that the users need to achieve i.e. the expected business outcomes of the project. The performance of the developed system will be assessed whether it can meet the business objectives or not during the Post Implementation phase of the System Development Life Cycle (SDLC). These objectives should align with those stated in the Business Case Document.>

e.g. The high-level business objectives for the project are to:

1. ***facilitate the inventory management (easier recording, monitoring and control);***
2. ***reduce occurrence of discrepancies between inventory records and actual quantities in hand;***
3. ***enhance planning for future requisition of inventory items (handy updated balance information, analysis and report summaries);***
4. ***allow timely arrangement of maintenance programme of inventory items; and***
5. ***shorten the time for annual inventory checking exercise.***

1.4 PROJECT SCOPE

<This section provides a high-level description of what the project/the new IT system will do. This may include a list of major target functions/work, interfaces with other systems, feasibility study, training, data conversion, set up of new sites/offices, etc.>

e.g. The new IMS aims to automate the management of inventory covering the full life span from stock-in until disposal or write-off. The system is required to facilitate inventory management and control activities i.e. the arrangement of maintenance services, annual inventory checks, write-off of lost inventory items and disposal of surplus stores.

The project shall provide System Analysis & Design (SA&D) and System Implementation as well as Training and Data conversion services for the IMS of the DDD Department. The major functions to be provided by the system are listed below:

a) Creation, updating, deletion and enquiry of inventory items;

b) Transfer of inventory items;

c) Disposal of inventory items;
d) Trade-in of inventory items;
e) Write off/Replacement of loss inventory items;
f) Annual Physical Inventory Check;
g) Reports for inventory transactions and status of inventory items; and
h) Interfaces with other related IT system including Software Asset Management System for software licences and e-Procurement System for maintenance services, purchase orders and invoices.

1.5 PROJECT OBJECTIVES

e.g. The project objectives are to:
a) make use of ICT facilities to automate the current manual work processes for inventory processing;
b) improve the efficiency of daily inventory processing and re-allocate the saved staff resources to handle other more urgent procurement matters;
c) strengthen the control and monitoring of loss or surplus of inventory items;
d) shorten the processing time and effort for conducting annual physical inventory check;
e) provide online facilities for enquiry and report for the balance and status of inventory items, e.g. distribution of software and processing status of items to be disposed; and
f) provide online data for use by other related systems, e.g. software asset management system, procurement of maintenance services, etc.

2 IDENTIFIED RISKS, ASSUMPTIONS AND CONSTRAINTS

e.g. The followings are the identified risks, assumptions and constraints related to requirements collected at this stage from the business users and/or the stakeholders involved.

2.1 IDENTIFIED RISKS

e.g. The list of identified risks for the project is shown below:

Table 1 - Identified Risks Related to Requirements

No.	Risk Description	Likelihood (High/ Medium /Low/ Rare)	Impact Description (Cost, Schedule, Scope, Quality or Others)	Risk Rating	Possible Resolutions & Mitigation	Risk Owner
1.	*Many old paper supporting documents or forms may be unclear for reading, or be easily damaged during scanning*	*Low*	*Quality of supporting documents are affected*	*Low*	*Use flatbed scanning for fragile documents; define a cut-off time for not to scan all documents, e.g. scan documents only up to last three years.*	*Supplies Section*
2.	*Unable to extract related procurement information from the new e-Procurement System if it is not launched by mmm/yyyy*	*Medium*	*Project schedule will be affected.*	*Low*	*Close collaboration with e-Procurement System project team, and prepare for workaround solution*	*Supplies Section*
3.	…	…	…	…	…	…

2.2 ASSUMPTIONS

<Assumptions are factors that can affect the requirements, and are believed to be true during the entire SDLC of the project. Any changes to the assumptions may affect the project outcomes, e.g. resources, schedule, cost and benefits, etc.>

e.g. The identified assumptions are listed below:

1. ***The Inventory Record Administrators will proactively notify the Supplies Section for any inventory transactions for his/her section as soon as possible.***
2. ***There will be no changes in postings of key stakeholders during the SA&D phase. If there are changes, requirements are still able to be provided by the successors or other members in the stakeholder groups.***
3. ***Direct migration approach will be used to implement the system. No parallel run will be performed.***
4. ***Only supporting documents for the items procured in last xx years will be scanned into the system for use.***

2.3 CONSTRAINTS

<Constraints are factors or requirements imposed by the business or other systems that will limit the scope and functionality of the proposed IT system, e.g. Government law, policy and regulations, technical limitations, resources, expertise of project team members, etc. Constraints may also limit the available options for the system.>

e.g. The identified constraints are listed below:

1. ***The system shall comply with the DDD Circular No. 99/2014 on xxxxx, and the Guidelines on XXX published by DPO.***
2. ***The system must be run in the Government/departmental XXX platform to facilitate interfaces with other existing systems in the department.***
3. ***The setup of an interface for sending maintenance data about computer items in the new system to the e-Procurement system will depend on the availability of the new e-Procurement System which will be launched in MMM YYYY.***
4. ***The system cannot enforce all out posting or leaving officers from the department to submit an inventory transfer record for all inventory items under his purview before leaving DDD Department. It relies on the Inventory Administrator to perform this afterwards as the inventory receiver may not be known at the time of leaving.***
5. ***…***

3 PROPOSED SYSTEM OVERVIEW

<This section provides a brief description about the proposed IT system to be developed by presenting a high-level conceptual model of the system and showing a system user profile about the users of the proposed IT system that will be referred to in following sections.>

3.1 DESCRIPTION OF PROPOSED INVENTORY MANAGEMENT SYSTEM

<The following context diagram (or other diagrams) can be used to provide users with a high-level overview about the proposed system including the system boundaries, external and internal users/systems that interact with the system and the major requirements that they have defined in this document. Alternatively, BA may provide an overview of the proposed IT system in the form of text description.>

e.g. A sample of Context Diagram for the project is shown below:

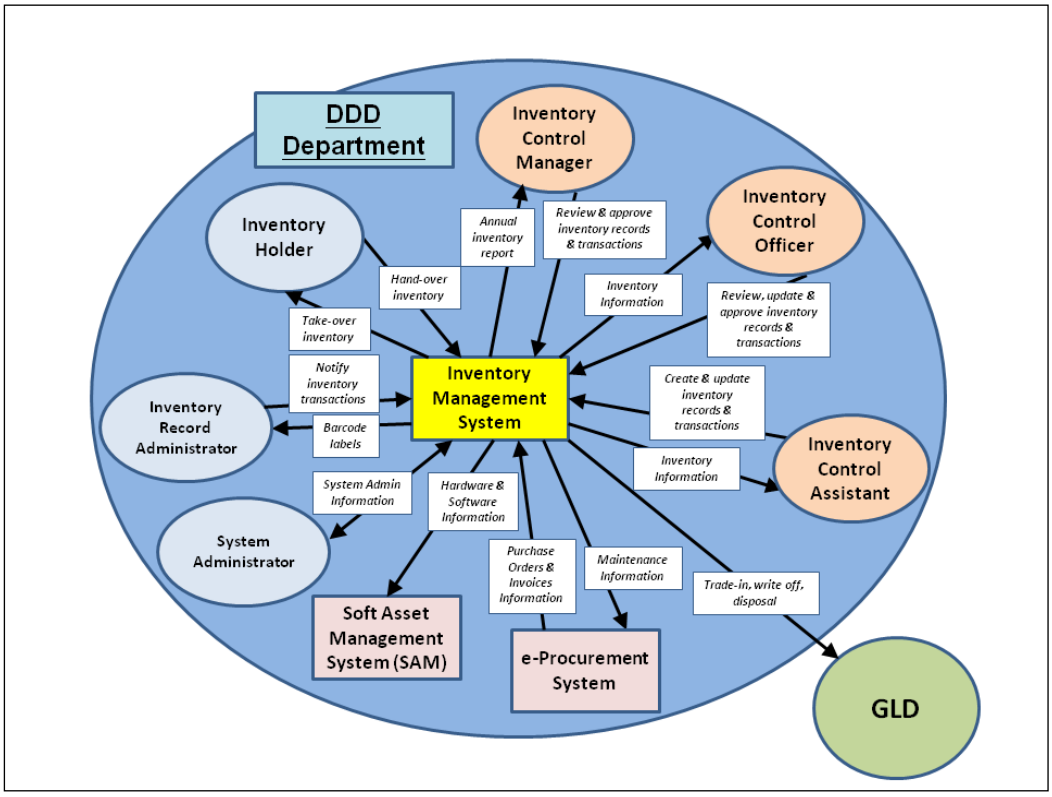

Figure 1 - Context Diagram of Inventory Management System

3.2 SYSTEM USER PROFILE

<The following provides a table of external and internal users of the proposed IT system. Each user will have a role in the proposed IT system as shown in the circles in the above context diagram, and mapped to a user type in the table below.>

e.g. A sample of System User Profile for the project is shown below:

Table 2 - System User Profile

No.	User Role	Responsibilities	Branch/ Division/ Section/ Unit	Staff Post/Rank	Stakeholder Group
1.	*Inventory Control Manager*	*Responsible for overseeing the entire system's operation and use*	*Supplies Section of Administrative Division*	*SSO(SU)1*	*Supplies Section*
2.	*Inventory Control Officer*	*Responsible for approval, review and control of the daily operation and update of inventory records*	*Supplies Section of Administrative Division*	*SO*	*Supplies Section*
3.	*Inventory Control Assistant*	*Responsible for inventory transactions and records update*	*Supplies Section of Administrative Division*	*SS*	*Supplies Section*
4.	*Inventory Holder*	*Responsible for inventory items of the section under his/her custody*	*XX Section*	*XX or equivalent ranks*	*Section Heads*
5.	*Inventory Record Administrator*	*Assist Inventory Holder to maintain up-to-date inventory records*	*XX Section*	*XX or equivalent ranks*	*Section Users*
6	*System Administrator*	*Responsible for system administration of the inventory system*	*IT Operations*	*IT Officer*	*ITMU*
7	*GLD Supplies*	*Responsible for approval of trade-in, write-off and disposal of inventory items*	*Division XX of GLD Department*	*Supplies Officer*	*GLD*

4 FUTURE BUSINESS PROCESS

4.1 LIST OF FUTURE BUSINESS PROCESS

<The following table provides a list of future business process flows for the system.>

Table 3 - List of Future Business Processes for the Inventory Management System

Process ID	Business Process Title
BP-001	***Creation of New Inventory Record***
BP-002	***Update of Selected Inventory Record***
BP-003	***Transfer of Inventory***
BP-004	***Disposal of Inventory***
BP-005	***Trade-in of Inventory***
BP-006	***Write off/Replacement of loss Inventory***
BP-007	***Annual Inventory Taking Exercise***

4.2 BP001-CREATION OF NEW INVENTORY RECORD

4.2.1 PROCESS DIAGRAMS FOR CREATION OF NEW INVENTORY RECORD

(a) Use Case Diagram for Creation of New Inventory Record

<Use Case Diagram is used to show a business case by identifying the involved actors and related actions or tasks that the actor will participate, or by identifying the related external event that the system needs to respond. Use Cases can help to handle events & processes. Please refer to Appendix A-5.6 for more information about Use Cases.>

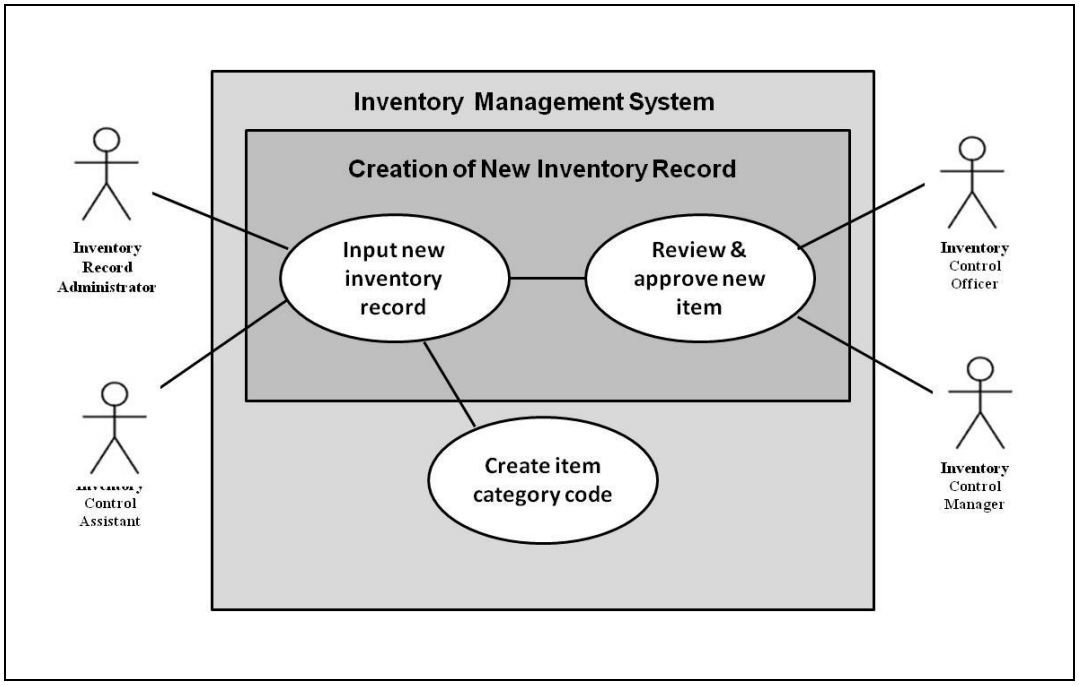

Figure 2 - Use Case Diagram - Creation of New Inventory Record

(b) Process Flow Diagram for Creation of New Inventory Record

<For each use case diagram, flow diagrams are used to graphically depict the sequence of operations or the movement of business processes. If the business process is a complex one, it can be further broken down into sub-processes.>

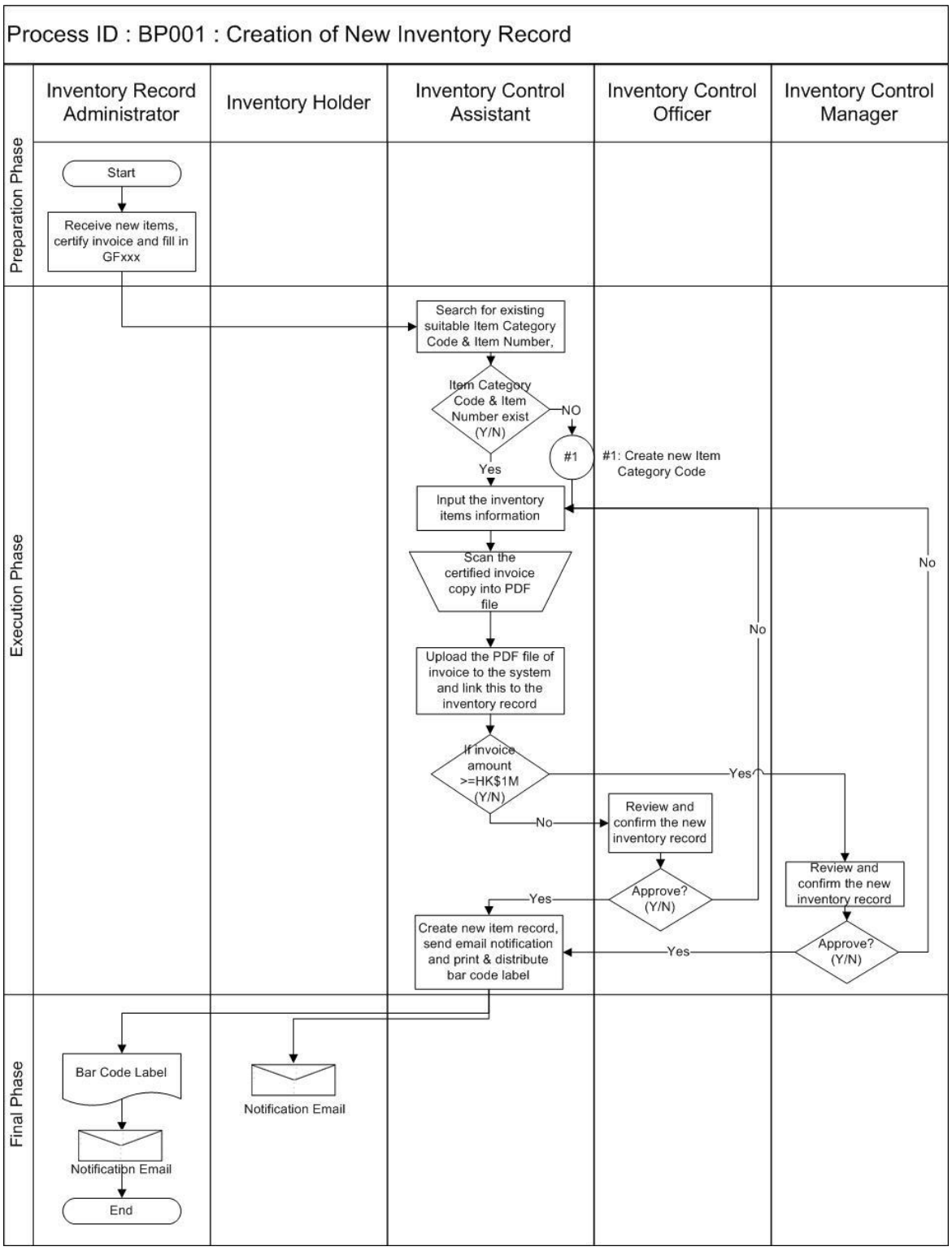

Figure 3 - Process Flowchart for Creation of New Inventory Record

4.2.2 PROCESS DESCRIPTION FOR CREATION OF NEW INVENTORY RECORD

<The following provides text description for the future business process flow.>

Table 4 - Process Description for Creation of New Inventory Record

Task No.	*Actor*	*Task Name and Description*	*Input*	*Output*
1	*Inventory Record Administrator*	*Receive new items, certify invoice and fill in GFxxx.* *Inform the Inventory Control Assistant of Supplies Section after receipt of newly purchased items for the Section, fill in form GFxxx and pass a copy of certified invoice for supporting.*	*New items, invoice*	*GFxxx form, a copy of certified invoice*
2	*Inventory Control Assistant*	*Search for existing suitable item Category Code & Item Number.* *If the Inventory Control Assistant can find suitable Item Category Codes and Item Numbers for all items, go to task 3.* *If not, Inventory Control Assistant will go to create new Items Category Codes, and then return to continue Task 3.*	*GFxxx form*	*Suitable Item Category Code(s)*
3	*Inventory Control Assistant*	*Input the inventory items information.* *The system should perform validity and completeness check of input information and validate it against PO.*	*GFxxx form, PO*	*Inventory items records*
4	*Inventory Control Assistant*	*Upload the PDF file of the certified invoice copy to the system, and link the inventory items under this record to the invoice.*	*Scanned copy of certified invoice in PDF*	*Inventory items records linked with invoice.*
5	*Inventory Control Assistant*	*Check if invoice amount >= HK$1M.* *If invoice amount >=HK$1M, seek*	*Inventory items records*	*Confirmed creation of inventory*

		approval from Inventory Control Manager. If invoice amount < HK$1M, seek approval from Inventory Control Officer.		*items records*
6	*Inventory Control Assistant*	*Create new item record, send email notification and print & distribute bar code label.* *Upon approval, send emails to notify Inventory Record Administrator and Inventory Holder and print and distribute bar code labels to Inventory Record Administrator for sticking on the items.*	*New inventory record*	*Bar code labels, notification emails*
Other information				
References:	*1. SPRxxx Clauses of the Stores and Procurement Regulations* *2. DDD Internal Circular 9/9999 Record of Inventory Items issued on dd/mm/yyyy* *3. Sample documents including GFxxx, invoice and PO.* *4. Current inventory item list (in Excel form).*			
Assumptions:	*1. It is assumed that any staff in a section who has initiated changes in inventory records of that section will proactively pass all required information to the Inventory Record Administrator of the Section, who in turn coordinates with the Inventory Control Assistant for creation of new inventory records.* *2. Each inventory item is properly categorised and assigned with an item number.* *3. No work-in-progress items will be recorded to the IMS.* *4. Each inventory item shall be linked with the corresponding invoice.*			
Business Rules:	*1. Each inventory record will contain multiple inventory items that are charged by one single invoice.* *2. The supplier's invoice must be properly signed and certified before submitted to the Inventory Record Administrator, who in turn will notify the Inventory Control Assistant to create a new inventory record.* *3. If the total amount per invoice >= HK$1M, approval for the creation of inventory record should be sought from the Inventory Control Manager is required. Otherwise, approval should be sought from the Inventory Control Officer.*			

	4. …

4.3 BP002-UPDATE OF INVENTORY RECORD

4.3.1 USE CASE DIAGRAM FOR UPDATE OF INVENTORY RECORD

<Other Use Case Diagram and Business Process Flowchart can be shown below.>

5 FUNCTIONAL REQUIREMENTS

<State the Functional Requirements in this section in numbered tables or paragraphs by grouping them according to business nature or types of requirements and assigned with a unique requirement number, e.g. REQ- CRE-000, 001, 002, 003, etc. for ease of reference.>

5.1 LIST OF FUNCTIONAL REQUIREMENTS

<All functional requirements of the proposed IT system should be listed in the following table and then explained in detail one by one. Each requirement is assigned with a priority to indicate its importance, e.g. MUST (M), SHOULD (S), COULD (C) and WON'T (W). B/D may assign priorities using other ranking, e.g. High, Medium and Low.>

Table 5 - List of Functional Requirements

Req. ID	Requirement Title	Target Users	Priority
REQ-CRE-000	***Creation of New Inventory Record***		
REQ-CRE-001	***Input a new inventory record***	***Inventory Control Assistant***	***M***
REQ-CRE-002	***Review and approve the record for invoice amount < HK$1M***	***Inventory Control Officer***	***M***
REQ-CRE-003	***Review and approve the record for invoice amount >=HK$1M***	***Inventory Control Manager***	***M***
REQ-CRE-004	***Print out the input inventory record for checking***	***Inventory Control Assistant***	***S***
REQ-UPD-000	***Update of Selected Inventory Record***		
	……		
REQ-TFR-000	***Transfer of Inventory***		
	……..		
REQ-DPL-000	***Disposal of Inventory***		
	……..		
REQ-TDE-000	***Trade-in of Inventory***		
	……..		
REQ-WRT-000	***Write off/Replacement of Loss Inventory***		
	……..		
REQ-EXE-000	***Annual Inventory Taking Exercise***		
REQ-PLB-000	***Print Bar Code Label***		

Req. ID	Requirement Title	Target Users	Priority
REQ-PLB-001	*Generate bar code label for all items of an inventory record*	*Inventory Control Assistant*	*M*
REQ-PLB-002	*Print bar code label*	*Inventory Control Assistant*	*M*
REQ-INF-000	*Interface with the Software Asset Management System*		
REQ-INF-001	…….		
REQ-INF-002	…….		

5.2 REQ-CRE-000 CREATION OF NEW INVENTORY RECORD

< A sample of Requirement Description is shown below.>

Table 6 - Requirement Description (REQ-CRE-001)

Item	Description
Requirement ID	*REQ-CRE-001*
Requirement Title	*Input a new inventory record*
Priority	*Must*
Functional Requirement Description	● *The Inventory Control Assistant shall be able to create a draft of item record. Each record must have the following information (mandatory fields):* *1. Item Category Code* *2. Item No.* *3. Purchase Order No.* *4. Item Description* *5. Quantity* *6. Serial No.* *7. Location* *8. Owned by (Section)* *9. Owned by Person* *10. Date Received* *11. Item Price in HKD* ● *A list of item category code should be provided for user to search and select the suitable item category code. Upon selection of an item category code, a list of available item number should be displayed for selection. A "new item"*

Item	Description
	link/button should be provided by opening another screen to create a new item category code and item no. and return the new item code upon creation. ● *If an item is wrongly added, a deletion option should be provided for removal of the wrongly added item and its corresponding details.* ● *The system should allow scanning of the hardcopy invoice and/or upload of the softcopy of the scanned invoice to the system, and links the invoice to the corresponding inventory record.* ● *Since individual items under one inventory record may be transferred to other persons, it is required to link the invoice to each item instead of the entire inventory record for ease of retrieval and maintenance use.* ● *An email will be sent to Inventory Holder and Inventory Record Administrator to notify that the new item record is created.* ● *A bar code label will be printed and sent to the Inventory Record Administrator for sticking the label onto the item.*
Frequency of Use	*Daily*
Acceptance Criteria	*1. All mandatory fields must be input and checked for validity before the new inventory record is created.* *2. All inventory item category codes and item numbers must be created and existed in the inventory code master list.* *3. An email notification should be automatically sent to Inventory Holder and Inventory Record Administrator after the approved creation of new item record.* *4. Each inventory item should link with one invoice only.* *5. Invoice no. should match with an existing PO in which PO invoice is transferred from the e-Procurement System using direct purchase or SOA bulk contracts.* *6. …*
Related Business Process	*Refer to BP-001.*

<Notes:

1. *Requirement ID: Specify a unique ID for each requirement entry*
2. *Requirement Title: Specify a title for the requirement.*
3. *Priority: State the priority of the requirement, i.e. "MUST(M)", "SHOULD(S)", "COULD(C)" or "WON'T(W)".*
4. *Functional Requirement Description: Describe the functional requirement in more details.*
5. *Frequency of use: How frequent is the function used on average.*
6. *Acceptance criteria: Describe how, or to what level of quality the feature should be provided to satisfy the users' needs.>*

Table 7 - Example of Another Requirement Description

Item	Description
Requirement ID	***REQ-CRE-002***
Requirement Title	***Review and approve the record for invoice amount < HK$1M***
Priority	***Must***
Functional Requirement Description	…
Frequency of Use	…
Acceptance Criteria	…
Related Business Process	…

6 NON-FUNCTIONAL REQUIREMENTS

<State the Non-Functional Requirements for the non-functional features such as audit, control and security, global business rules, data requirements, usability requirements, service level targets, user volume and equipment requirements, data growth and retention requirements, etc. that the proposed IT system must possess from a business perspective. The following proposed non-functional requirements can be changed or removed to suit project needs.>

6.1 LIST OF NON-FUNCTIONAL REQUIREMENTS

Table 8 - List of Non-Functional Requirements

Req. ID	Category	Requirement Title	Target Users	Priority
REQ-ACS1	*Audit , Control & Security*	*System Audit*	*System Administrator*	*M*
REQ-ACS2	*Audit , Control & Security*	*System Control*	*System Administrator*	*M*
REQ-ACS3	*Audit , Control & Security*	*System Security*	*System Administrator*	*M*
REQ-ACS4	*Audit , Control & Security*	*Backup and Recovery Requirements*	*Inventory Control Manager*	*M*
REQ-ACS5	*Audit , Control & Security*	*Disaster Recovery Requirements*	*Inventory Control Manager*	*M*
REQ-ACS6	*Audit , Control & Security*	*Privacy Requirements*	*Inventory Control Manager*	*M*
REQ-GBR1	*Global Business Rules*	*Global Business Rules*	*Inventory Control Manager*	*M*
REQ-DAR1	*Data Requirements*	*Global Data Requirements*	*Inventory Control Manager*	*M*
REQ-DAR2	*Data Requirements*	*Key Data Requirements*	*Inventory Control Manager*	*M*
REQ-USR1	*Usability*	*General Usability Requirements*	*Inventory Control Manager*	*M*
REQ-SLT1	*Service Level Targets*	*System Availability*	*Inventory Control Manager*	*M*
REQ-SLT2	*Service Level Targets*	*System Performance*	*Inventory Control Manager*	*M*
REQ-DGR1	*Data Growth and Retention Requirements*	*Data Growth and Retention Requirements*	*Inventory Control Manager*	*M*
REQ-UER1	*Number of Users & IT Equipment Requirement*	*Number of Users & IT Equipment Requirement*	*Inventory Control Manager*	*M*

6.2 AUDIT, CONTROL & SECURITY REQUIREMENTS

<This section specifies the audit, system control and security requirements such as system audit, system control, system security, backup and recovery, disaster recovery and privacy.>

6.2.1 REQ-ACS1 SYSTEM AUDIT

<This section specifies the requirements on system audit such as audit trail, change logs, access logs, etc. >

Table 9 - REQ-ACS1 System Audit

Item	Description
Requirement ID	***REQ-ACS1***
Category	***Audit , Control & Security***
Requirement Title	***System Audit***
Priority	***Must (except for those specially specified)***
Non-Functional Requirement Description	***The System shall provide audit trail functionalities which include:*** ***1. Keep record of user login/logout information, e.g. unsuccessful login attempts, login and logout times, etc.;*** ***2. Keep record of user profile information such as creation/update/deletion of user, post/rank, user group belonged to, etc.;*** ***3. Keep record of user group profile information such as creation/update/deletion of user group, functions access rights and privileges of the user group, etc.;*** ***4. Keep detailed record of the audit trail, which shall include user ID, functions performed, etc;*** ***5. Be able to store the before-image and after-image of changes on the inventory transactions;*** ***6. Provide facilities to authorised users to allow them to print out audit trail and log records to screen or printer;*** ***7. …***

<Notes:

1. *Requirement ID: Specify a unique ID for each requirement entry.*
2. *Category: Specify the category of requirement e.g. Audit, Control & Security.*
3. *Requirement Title: Specify a title for the requirement.*
4. *Priority: State the priority of the requirement i.e. "MUST(M)", "SHOULD(S)", "COULD(C)" or "WON'T(W)".*
5. *Non-functional Requirement Description: Describe the non-functional requirement in more details.>*

6.2.2 REQ-ACS2 SYSTEM CONTROL

<This section specifies the requirements on system control such as user access control, operational control, system administration control, physical access control, etc.>

Table 10 - REQ-ACS2 System Control

Item	Description
Requirement ID	***REQ-ACS2***
Category	***Audit, Control & Security***
Requirement Title	***System Control***
Priority	***Must (except for those specially specified)***
Non-Functional Requirement Description	***1. User must be provided with a unique user ID and password to log-in the system.*** ***2. User groups are created according to the level of access rights and functions that are allowed to access.*** ***3. System administration functions should be defined in a separate function menu and separated from other normal user functions.*** ***4. Users should be disallowed to click into menu items in which no access rights are granted.*** ***5. …***

6.2.3 REQ-ACS3 SYSTEM SECURITY

<This section specifies the system security requirements such as data protection during storage and transmission, application security, etc.>

Table 11 - REQ-ACS3 System Security

Item	Description
Requirement ID	***REQ-ACS3***
Category	***Audit, Control and Security***
Requirement Title	***System Security***
Priority	***Must (except for those specially specified)***
Non-Functional Requirement Description	***1. All user passwords must not be displayed on screen during user input.*** ***2. All imported/uploaded data files must be virus-free.*** ***3. All security patches should be properly tested before installed to all system software/programs before production roll out.*** ***4. …***

6.2.4 REQ-ACS4 BACKUP AND RECOVERY REQUIREMENTS

<This section specifies the requirements on backup and recovery including both system (e.g. system and application programs and configuration) and data files.>

Table 12 - REQ-ACS4 Backup and Recovery Requirements

Item	Description
Requirement ID	***REQ-ACS4***
Category	***Audit, Control and Security***
Requirement Title	***Backup and Recovery Requirements***
Priority	***Must (except for those specially specified)***
Non-Functional Requirement Description	***1. The System shall provide daily and monthly system and data backup.*** ***2. The backup shall be performed and completed at midnight.*** ***3. The total lead time for system recovery (in case of system failure) shall not exceed 6 hours with no loss of completed transactional data.***

	4. …

6.2.5 REQ-ACS5 DISASTER RECOVERY REQUIREMENTS

<This section states the requirement on disaster recovery e.g. minimum service level under disaster, off-site backup arrangement to enable recovery, recovery time required upon disaster, etc.>

Table 13 - REQ-ACS5 Disaster Recovery Requirements

Item	Description
Requirement ID	***REQ-ACS5***
Category	***Audit, Control & Security***
Requirement Title	***Disaster Recovery Requirements***
Priority	***MUST***
Non-Functional Requirement Description	***1. The system should have an effective solution for resilience and disaster recovery.*** ***2. The system shall be able to recover for use in the disaster recovery site within 6 hours after the normal production site is failed to provide services.*** ***3. In case of total system loss, the system shall be recovered by restoring the latest system backup within 6 hours.*** ***4. The disaster recovery site shall have no less than 30% processing capabilities of the production site.*** ***5. …***

6.2.6 REQ-ACS6 PRIVACY REQUIREMENTS

<This section states the privacy requirements if any e.g. protection of personal data including name, HKID# or passport number, request for access to personal data by data owner, logging of access to privacy data, etc.>

Table 14 - REQ-ACS6 Privacy Requirements

Item	Description
Requirement ID	***REQ-ACS6***
Category	***Audit, Control & Security***
Requirement Title	***Privacy Requirements***

Priority	***MUST***
Non-Functional Requirement Description	***1. …***

6.3 GLOBAL BUSINESS RULES REQUIREMENTS

<This section specifies any global business rules i.e. policies, regulations, standard, etc. that affect the system globally and have not been described in the above functional requirements.>

6.3.1 REQ – GBR1 GLOBAL BUSINESS RULES

Table 15 - REQ-GBR1 Global Business Rules

Item	Description
Requirement ID	***REQ-GBR1***
Category	***Global Rules Requirements***
Requirement Title	***Global Rules Requirements***
Priority	***MUST***
Non-Functional Requirement Description	***1. All processing and control of inventory records must comply with the requirements stipulated in the Stores and Procurement Regulations in Government.*** ***2. All security measures must comply with the security requirements stated in the Government Security Regulations and the Baseline IT Security Policy published by DPO.*** ***3. …***

6.4 DATA REQUIREMENTS

<This section lists out the data requirements for the proposed IT system which affects the system globally or have significant impact to other systems, and have not been described in the above functional requirements. If required, a summary of key data requirements can also be specified here. Details of the data requirements may also be captured and supplemented in Appendix 1.>

6.4.1 REQ – DAR1 GLOBAL DATA REQUIREMENTS

Table 16 - REQ – DAR1 Global Data Requirements

Item	Description
Requirement ID	***REQ-DAR1***
Category	***Data Requirements***
Requirement Title	***Global Data Requirements***
Priority	***MUST***
Non-Functional Requirement Description	***1. All Chinese data should be in Traditional Chinese.*** ***2. All "date" data to be recorded by the system actually represents date and time.*** ***3. All passwords must allow input of symbols including *, $, # , &, …*** ***4. All price amounts should not allow negative values.*** ***5. …***

6.4.2 REQ-DAR2 KEY DATA REQUIREMENTS

Table 17 - REQ – DAR2 Key Data Requirements

Item	Description	
Requirement ID	***REQ-DAR1***	
Category	***Data Requirements***	
Requirement Title	***Global Data Requirements***	
Priority	***MUST***	
Non-Functional Requirement Description		
Data Group	Data Required	Source
Inventory Item	***Inventory Item No.***	***Automatically generated by system***
	Inventory Item Description in	***Input by Inventory Control***

Item	Description	
Requirement ID	***REQ-DAR1***	
Category	***Data Requirements***	
Requirement Title	***Global Data Requirements***	
Priority	***MUST***	
Non-Functional Requirement Description		
Data Group	Data Required	Source
	English	***Assistant***
	Inventory Item Description in Chinese	***Input by Inventory Control Assistant***
	Category Code	***Selected from the system***
	Serial Number	***Input by Inventory Control Assistant***
	Model Number	***Input by Inventory Control Assistant***
	Location ID	***Input by Inventory Control Assistant***
	Project ID	***Input by Inventory Control Assistant***
	PO Number	***Input by Inventory Control Assistant***
	Acquisition Date	***Input by Inventory Control Assistant***
	Item Price (HKD)	***Input by Inventory Control Assistant***
	Item Unit	***Input by Inventory Control Assistant***
	Item Quantity	***Input by Inventory Control Assistant***
	Invoice Number	***Input by Inventory Control Assistant***
	Certified Invoice Scanned Copy (in PDF file)	***Scanned and uploaded by Input by Inventory Control Assistant***
	Prepared By	***Automatically generated by system***
	Prepared Date	***Automatically generated by system***
	Recommended By	***Input by Inventory Control Assistant***

Item	Description	
Requirement ID	***REQ-DAR1***	
Category	***Data Requirements***	
Requirement Title	***Global Data Requirements***	
Priority	***MUST***	
Non-Functional Requirement Description		
Data Group	Data Required	Source
	Recommended Date	***Automatically generated by system***
	Approved By	***Input by Inventory Control Assistant***
	Approved Date	***Automatically generated by system***
	Last Updated By	***Automatically generated by system***
	Last Updated Date	***Automatically generated by system***
Supplier	***Supplier ID***	***Automatically generated by system***
	Supplier Short Name	***Input by Inventory Control Officer***
	Supplier Full Name in English	***Input by Inventory Control Officer***
	Supplier Name in Chinese	***Input by Inventory Control Officer***
	Supplier Phone Number	***Input by Inventory Control Officer***
	Supplier Fax Number	***Input by Inventory Control Officer***
…	…	…
…	…	…
…	…	…

6.5 USABILITY REQUIREMENTS

<This section states the usability requirements i.e. ease of use for the proposed IT system. Language requirements, e.g. user interface, report etc. may also be stated.>

6.5.1 REQ-USR1 GENERAL USABILITY REQUIREMENTS

Table 18 - REQ-USR1 General Usability Requirements

Item	Description
Requirement ID	***REQ-USR1***
Category	***Usability Requirements***
Requirement Title	***General Usability Requirements***
Priority	***MUST***
Non-Functional Requirement Description	***The system should meet the following usability requirements:*** ***1. Menu items, field labels, system or error messages, etc. shown in the user interface should be clear, direct, consistent, meaningful and easy to understand.*** ***2. User should be able to on-line browse the user manual by clicking into a hyperlink provided in main menu. The user manual should be clear, and should provide sufficient guidance to users.*** ***3. The menu navigation should be clear and consistent throughout the system.*** ***4. User actions should be consistent, e.g. for actions which cannot be undone, should always ask for user confirmation and allow users to cancel.*** ***5. …***

6.6 SERVICE LEVEL TARGETS

<This section specifies the service level targets such as system availability and performance, etc. that the proposed IT system will have to meet.>

6.6.1 REQ-SLT1 SYSTEM AVAILABILITY

<This section states the requirement on system availability i.e. how often can the system be accessed, e.g. service hours, tolerance for system down time for maintenance, tolerance for data loss, etc.>

Table 19 - REQ-SLT1 System Availability

Item	Description
Requirement ID	***REQ-SLT1***
Category	***Service Level Targets***
Requirement Title	***System Availability***
Priority	***MUST***
Non-Functional Requirement Description	***1. The system needs to provide service with a high availability of 99.5% during normal office hours (i.e. from 8:00 a.m. to 6:30 p.m. Monday to Saturday).*** ***2. Maintenance can be done any time after the normal office hours.*** ***3. Data tolerance or lost can only be allowed for the current working day.*** ***4. …***

6.6.2 REQ-SLT2 SYSTEM PERFORMANCE

<This section specifies the performance level such as the system response time required in general. Any response time that is specific for a particular type of event or transaction should be stated in the above functional requirements.>

Table 20 - REQ-SLT2 System Performance

Item	Description
Requirement ID	***REQ –SLT2***
Category	***Service Level Targets***
Requirement Title	***System Performance***
Priority	***MUST***
Non-Functional Requirement Description	***The System should be able to meet the system response time as follows:*** ***1. 4 seconds for xx % of transactions for data enquiry and data update.*** ***2. 30 seconds for report generation of inventory transactions.*** ***3. …***

6.7 DATA GROWTH AND RETENTION REQUIREMENTS

<This section specifies the annual growth of data, and how long the data will be stored in the system and when the unused historical data will be removed.>

6.7.1 REQ-DGR1 DATA GROWTH AND RETENTION REQUIREMENTS

Table 21 - REQ-DGR1 Data Growth and Retention Requirements

Item	Description
Requirement ID	***REQ-DGR1***
Category	***Data Growth and Retention Requirements***
Requirement Title	***Data Growth and Retention Requirements***
Priority	***MUST***
Non-Functional Requirement Description	***1. The expected annual growth rate of data is about 5%.*** ***2. Disposed inventory items shall be archived and removed from the system as at 31 Dec after disposed for xx years since the current year.*** ***3. Past inventory transactions such as transfer should be archived and removed from the system if the year of the transaction creation date has been over xx years from the current year.*** ***4. Daily or monthly audit logs shall be removed from the system after conducting backup.*** ***…***

6.8 NUMBER OF USERS & IT EQUIPMENT REQUIREMENT

<This section specifies the estimated number of users (e.g. concurrent users, maximum number of users, etc.) and number of equipment (e.g. workstations, printers, scanners, mobile devices, etc.) required at various office sites for the proposed IT systems. The actual figures/items may be updated or further breakdown by IT project team during the system design of the proposed IT systems and availability of funding.>

6.8.1 REQ-UER1 NUMBER OF USERS & IT EQUIPMENT REQUIREMENT

Table 22 - REQ-UER1 Number of Users & IT Equipment Requirement

Item	**Description**
Requirement ID	***REQ –UER1***
Category	***Number of Users & IT Equipment Requirement***
Requirement Title	***Number of Users & IT Equipment Requirement***
Priority	***MUST***
Non-Functional Requirement Description	***The estimated number of users and IT equipment required are given below:***

Item	**Quantities Required**
No. of users required to access the system (with an estimated annual growth rate of 2% per year for each office)	***Hong Kong (Head Quarter Office): 100*** ***Kowloon Office: 50*** ***N.T. Office : 30***
No. of existing workstations for connecting to the system	***Hong Kong (Head Quarter Office): 80*** ***Kowloon Office: 50*** ***N.T. Office : 40***
No. of new bar code label printers required (for printing 2D/3D bar code labels, each label of size xx cm long x yy cm wide)	***Hong Kong (Head Quarter Office): 2*** ***Kowloon Office: 1*** ***N.T. Office : 1***

7 SYSTEM IMPLEMENTATION CONSIDERATION

<This section specifies the preferred implementation strategy for the proposed IT system. Implementation strategy generally covers a roll-out approach (e.g. phase roll-out, big-bang, parallel run, pilot run, etc.) with implementation schedule, data conversion (e.g. data migrated from existing system into new system, manual conversion of paper-based data, scanning of documents, conversion of historical data etc.), organisation changes (e.g. formation of new business units, re-organisation of teams, changes in staff postings and duties, etc.), training approach (e.g. classroom training, web-based training, videos, briefing, demonstration, etc.). Users should carefully consider the strategy as this could have significant impact on the way the system is developed.>

e.g.

1. ***The proposed IT system is expected to be ready for use by MMM YYYY using big-bang roll-out approach. No parallel run is required.***
2. ***As there is no existing system, no system migration is required and no data conversion is required. But pre-loading of code tables such as inventory category code, item codes and user profiles are required before system roll-out.***
3. ***A few sessions of classroom training for staff in the Supplies Section and other Inventory Record Administrators and Holders are required.***
4. ***…***

APPENDIX

1 DATA REQUIREMENTS TABLE

<This section states the detailed data requirements as supplementary information to section 6.4. This section is optional subject to the availability of information at the time of elicitation.>

Table 23 - Inventory Item

Data Required	Unique	Type	Max. Length/Size	Must input	Remark
Inventory Item No.	*Yes*	*Alpha-numeric*	*8*	*Yes*	
Inventory Item Description in English		*Alpha-numeric*	*200*	*Yes*	
Inventory Item Description in Chinese		*Alpha-numeric*	*200*	*No*	
Category Code		*Alphabets*	*4*	*Yes*	*Category ID must exist in Item Category Group*
Serial Number	*Yes*	*Alpha-numeric*	*20*	*No*	
Model Number		*Alpha-numeric*	*30*	*No*	
Location ID		*Alpha-numeric*	*6*	*Yes*	*e.g. NPGO, TAMAR, WT, WCH, etc.*
Project ID		*Alpha-numeric*	*8*	*No*	*The project vote number if the item is procured for specific project use.*
PO Number		*Alpha-numeric*	*8*	*Yes*	*PO number must exist in Purchase Order Group*
PO Date		*Date*	*8*	*Yes*	

Data Required	Unique	Type	Max. Length/Size	Must input	Remark
Item Price (HKD)		*Numeric (10 integers with two decimal places)*	*9999999999.99*	*Yes*	*Price must be equal to the corresponding price for the PO item.*
Item Unit		*Alpha-numeric*	*8*	*Yes*	*Unit must be equal to corresponding unit for the PO item.*
Item Quantity		*Numeric (10 integers)*	*9999999999*	*Yes*	*Quantity must be equal to the PO quantity item.*
Invoice Number		*Alpha-numeric*	*10*	*Yes*	*Use common scanned format, e.g. jpeg, pdf, tif, etc.*
Certified Invoice Scanned Copy		*File*	*4 MB*	*Yes*	
Prepared By		*Alpha-numeric*	*20*	*Yes*	*User ID must exist in user profile*
Prepared Date		*Date*	*8*	*Yes*	
Recommended By		*Alpha-numeric*	*20*	*Yes*	*User ID must exist in user profile*
Recommended Date		*Date*	*8*	*Yes*	
Approved By		*Alpha-numeric*	*20*	*Yes*	*User ID must exist in user profile*
Approved Date		*Date*	*8*	*Yes*	
Last Updated by		*Alpha-numeric*	*20*	*Yes*	*User ID must exist in user profile*
Last Updated Date		*Date*	*8*	*Yes*	

2 REFERENCES

<This section lists and attaches the related samples of source documents for reference.>