

PHARMA DEVILS QUALITY ASSURANCE DEPARTMENT

DESIGN QUALIFICATION FOR ERP SYSTEM

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Table of Contents

1.0	Introduction	0
1.1.	Objective	6
1.2.	Scope	6
1.3.	Responsibilities Overview	6
1.4.	General Description	6
1.4.1.	General Software and Hardware Constraints	6
1.5.	Configuration	6
1.5.1.	Physical Security	6
1.5.2.	Logical Security	7
1.5.3.	User Role/Authorization Control Requirements	8
1.5.4.	Time Synchronization	8
2.0	Technical Requirements	9
2.1	Hardware Requirements	9
2.1.1	Server Specifications	9
2.1.2	Client Station Specifications Error! Bookmark not de	efined.
2.2	Software Requirements (ERP Software)	10
2.3	Environmental Conditions	10
2.4	Electrical Supplies	efined.
3.0	Data Requirements	11
3.1	Audit Trail Requirements:	11
3.2	Data Backup Requirements	11
3.3	Data Restoration Requirements	11
3.4	Data Archival Requirements	11
3.5	Data Migration Requirements	11
4.0	Lifecycle Requirements	11
4.1	Documentation Requirements	11
4.2	Standard Operating Procedures	12
5.0	Functional and Operational Requirements	12
5.1	Functional and Operational Requirements for Centralized System Administration Module	12
5.2	Functional and Operational Requirements for Setup Module	13
5.3	Functional and Operational Requirements for Purchase Module	14
5.4	Functional and Operational Requirements for Manufacturing Inventory Module	14

5.5	Functional and Operational Requirements for Quality Control Module	15
5.6	Functional and Operational Requirements for Production Module	15
5.7	Functional and Operational Requirements for Sales Inventory Module	16
5.8	Functional and Operational Requirements for Quality Assurance Module	17
5.9	Functional and Operational Requirements for Requisition Module	17
6.0	External interface, performance and timing requirements	17
6.1	User Interface and Capacity	17
6.2	Security and Access Control Requirements	18
7.0	Design Constraints	18
7.1	Software Constraints	18
7.2	Hardware Constraints	18
8.0	Regulatory	18
9.0	Abbreviations	19





1.0 Introduction

This document shall provide information about the design specification for implementation of ERP software at

1.1. Objective

The objective of this document is to define the design specification for ERP that must support the business needs of

1.2. Scope

This document is the one that describes the requirement of the system. It is meant for use by the developers and shall be the basis for validating the final delivered system. Any change made to the requirement in the future will have to go through a formal change approval process. The developer is responsible for asking for clarifications, wherever necessary, and shall not make any alteration without the permission of the client.

1.3. Responsibilities Overview:

EF	RP Systems Pvt. Ltd	
1.	Developing the system	Review and approve the design qualification
2.	Installation of software on the client's	document
	hardware	
3.	Conducting user training	
4.	Providing technical support	
5.	Preparation of required design qualification	
	document	

1.4. General Description:

1.4.1. General Software and Hardware Constraints

The system at the server side has provision to run Windows server (2008 or above). The system at the client side has provision to run on Windows 7 or above. The System has compatible with the existing LAN infrastructure at

1.5. Configuration:

1.5.1.Physical Security

Physical security describes security measures that are designed to deny access to unauthorized personnel (including attackers or even accidental intruders) from physically accessing a building, facility, resource, or stored information. Server room should be access by only authorized person. Access log should be maintained in software or in log register.

Req. No.	Requirements	
1.5.1.1	Physical Restriction to unauthorized user should be there.	



1.5.2.Logical Security:

Logical Security consists of software safeguards for an organization's systems, including user identification and password access, authenticating, access rights and authority levels. These measures are to ensure that only authorized users are able to perform actions or access information in a network or a workstation. It is a subset of security. The Logical security configuration and security policies of Server operating system and application software as per following

A) Server Operating system

Req. No.	Description	Policy Requirement
1.5.2.A.1	Minimum password age	30 Days
1.5.2.A.2	Maximum password age	60 Days
1.5.2.A.3	Minimum password length	7 character
1.5.2.A.4	Password must meet the complexity requirement	Yes
1.5.2.A.5	Enforce password history	24 Remember
1.5.2.A.6	Account lockout duration	5 min
1.5.2.A.7	Account should be locked invalid login attempts	5 attempts
1.5.2.A.8	Audit account login events should be defined for success or failure login	Yes



B) Application Software (ERP)

Req. No.	Description	Policy Requirement
1.5.2.B.1	Minimum password age 30 Days	
1.5.2.B.2	Maximum password age 60 Days	
1.5.2.B.3	Minimum password length 7 character	
1.5.2.B.4	Password must meet the complexity requirement Yes	
1.5.2.B.5	Account lockout duration 5min	
1.5.2.B.7	Account should be locked invalid login attempts 5 Attempt	
1.5.2.B.8	Audit account login events should be defined for success or failure login Yes	

1.5.3. User Role/Authorization Control Requirements

Req. No.	Requirement Description
1.5.3.1	The system must support at least the following user roles but not limited to: 1.Administrators
1.5.3.2	It shall not be possible to user to login into server operating system.

1.5.4. Time Synchronization

Req. No.	Description
1.5.4.1	The date and time shall be synchronized with application server



2.0 Technical Requirements:

2.1 Hardware Requirements

2.1.1 Server Specifications

A server is a system (software and suitable computer hardware) that responds to requests across a computer network to provide, or help to provide, a network service. Servers can be run on a dedicated computer. Servers operate within aclient-server architecture, servers are computer programs running to serve the requests of other programs, the clients. Thus, the server performs some task on behalf of clients. The clients typically connect to the server through the network.

The function of a computer server is to store, retrieve and send or "serve" data to other client computers on its network. Several individual computers on the network might make a request for the same file at essentially the same time, so the server must be equipped with hardware that has high-speed capabilities; and it must be running software that is designed to support multiple simultaneous file retrieval operations. Providing database access is one of the most important functions of a server.

The requirement specification of server shall be as follows:

Req. No.	Description	Minimum Requirement	
Application	Application Server		
2.1.1.1	Make	IBM or equivalent	
2.1.1.2	Model	X3200 or higher	
2.1.1.3	Processor	Intel Xeon E3 or higher	
2.1.1.4	Clock Frequency	2.0Ghz or higher	
2.1.1.5	RAM	8 GB or higher	
2.1.1.6	Capacity of HDD	500 GB or Higher	
2.1.1.7	Operating System	Windows Server 2008 or higher	
2.1.1.8	License of OS	Should be available	
2.1.1.9	Power Supply	220 - 240VAC	
2.1.1.10	IP address	Should be available	



2.2 Software Requirements (ERP Software):

Req. No.	Description	Software Specification	
Application	Application Software		
2.2.1	Software Name	ERP	
2.2.2	Application Build No.	79 or above	
2.2.3	License	Should be available	
Antivirus	Antivirus Software (For Clients)		
2.2.4	Software Name	Any reputed	
2.2.5	License	Should be available	
Antivirus Software (For Server)			
2.2.6	Software Name	Any reputed	
2.2.7	License	Should be available	

2.3 Environmental Conditions

The environmental condition of all network components, storage and server room should be in the specified range as follows:

Req. No.	Description	Specified Requirement
2.3.1	Operating temperature (°C)	10° to 30°C
2.3.2	Operating Relative humidity (%)	10% to 90%



3.0 Data Requirements:

3.1 **Audit Trail Requirements:**

Event log shall be generated as per requirements outlined below.

Req. No.	Requirement Description
	The system event log must track the following:
	Change in user authorization
3.1.1	User login/logout.
	 Create/Delete/Modify/Authorize/Un-authorize records with the user.
	Alarms/Faults/Messages/Reports generated during operation

3.2 Data Backup Requirements

Req. No.	Requirement Description
3.2.1	All GxP Impacted data should have backup.
3.2.2	Backup frequency should be defined.
3.2.3	Backup logs should be available
3.2.4	Backup path should be available

3.3 Data Restoration Requirements

Req. No.	Requirement Description
3.3.1	Restoration facility should be available

3.4 Data Archival Requirements

Not applicable

3.5 Data Migration Requirements

Not Applicable

4.0 Lifecycle Requirements:

4.1 Documentation Requirements

Req. No.	Description
4.1.1	Specification Document
4.1.2	List of Active ERP client stations
4.1.3	Server Technical Agreement
4.1.4	ERP Software Configuration Document for Server
4.1.5	Antivirus Software License Copy/Media
4.1.6	Licenses of all installed software Copy / Media



Req. No.	Description
4.1.7	List of ERP Business Process System users
4.1.8	ERP Software Installation Manual at Client
4.1.9	Server Installation Procedure

4.2 Standard Operating Procedures

For Lifecycle management of ERP Infrastructure Standard Operating Procedures, as relevant for below list shall be created:

Req. No.	Description
4.2.1	Access Control
4.2.2	Password Policy
4.2.3	Administrator SOP
4.2.4	Data Backup and Restore Management
4.2.5	Disaster Management and Recovery
4.2.6	User creation and deletion
4.2.7	Process wise SOP,s.

As the ERP infrastructure system servers are managed by IT, the above standard procedures shall be developed by ITto ensure the requirements are addressed.

5.0 Functional and Operational Requirements

5.1 Functional and Operational Requirements for Centralized System Administration Module	
5.1.1	Show Current Users
5.1.2	Show Locked Users
5.1.3	Examine Session Log
5.1.4	Application Module Control
5.1.5	Application Wise User Roles
5.1.6	Application Wise Program Access Rights
5.1.7	Location Wise Users
5.1.8	Generate Password and Pin



5.1 Functional and Operational Requirements for Centralized System Administration Module	
5.1.9	Location – Application wise user accounts
5.1.10	Special Access Privileges
5.1.11	Transaction Series Control (Post - GST)

Reference:Description of Functional and Operational Requirements for Centralized System Administration Module (Annexure 1)

5.2 Fu	5.2 Functional and Operational Requirements for Setup Module	
5.2.1	Item Type	
5.2.2	Item Sub-type	
5.2.3	Item Master	
5.2.4	Purchase group	
5.2.5	Location/ item type / sub type wise purchase group	
5.2.6	PO Standard terms	
5.2.7	Manufactures Masters	
5.2.8	Bought-out Item wise Approved Manufacturers	
5.2.9	Analysts	
5.2.10	QC Standards	
5.2.11	QC Properties Groups	
5.2.12	Common QC Properties	
5.2.13	Item's QC Specifications	
5.2.14	Production Centre	
5.2.15	Production Stages	
5.2.16	Production Stage wise Activities	
5.2.17	Bill of Process Definition	
5.2.18	Vendor Master	
5.2.19	Customer Master	



5.2 Functional and Operational Requirements for Setup Module	
5.2.20	Sales Division
5.2.21	Standard Payment Terms
5.2.22	Stores
5.2.23	HSN & SAC Codes Masters (Single Entry)
5.2.24	General Preference

Reference: Description of Functional and Operational Requirements for Setup Module (Annexure 2)

5.3 Functional and Operational Requirements for Purchase Module	
5.3.1	Vendor Item Catalog
5.3.2	Purchase Order
5.3.3	Purchase Order Amendment
5.3.4	Un-Authorization Work Bench
5.3.5	Document Closing Work Bench

Reference: Description of Functional and Operational Requirements for Purchase Module(Annexure 3)

5.4 Functional and Operational Requirements for Manufacturing Inventory Module		
5.4.1	Goods Receipt Note	
5.4.2	Goods Receipt From Others	
5.4.3	Purchase Return Note	
5.4.4	Material Issue To Production	
5.4.5	Material Issue To Other Department	
5.4.6	Material Issue To Others Location	
5.4.7	Material Issue to others	
5.4.8	Shortage Stock Adjustment	
5.4.9	Excess Stock Adjustment	
5.4.10	QC Intimations For Testing of GRN	
5.4.11	QC Intimation for Re-Testing of GRN	



5.4 Functional and Operational Requirements for Manufacturing Inventory Module	
5.4.12	Un-authorization Work Bench
5.4.13	Document Closing Work Bench

Reference: Description of Functional and Operational Requirements for Mfg. Inventory Module (Annexure 4)

5.5 Functional and Operational Requirements for Quality Control Module		
5.5.1	QC Register Entry For GRN's	
5.5.2	QC Analysis Update For GRN's	
5.5.3	Extend AR Validity for GRN's	
5.5.4	QC Register Entry For Production	
5.5.5	QC Analysis Update For Production	
5.5.6	QC Register Entry For Intimation	
5.5.7	QC Analysis Update For Intimation	
5.5.8	GRN's pending for QC	
5.5.9	Intimations pending for QC	
5.5.10	Production batches pending for QC	
5.5.11	QC Specifications due for renewal query	
5.5.12	Item's re-testing history query	
5.5.13	QC test property trend report	
5.5.14	QC assay test trend report	
5.5.15	Un-Authorization Work Bench	

Reference: Description of Functional and Operational Requirements for Quality Control Module (Annexure 5)

5.6 Functional and Operational Requirements for Production Module		
5.6.1	Production Batch Order	
5.6.2	Store Requisition from Production	
5.6.3	Batch Production Activity Log	



5.6 Functional and Operational Requirements for Production Module		
5.6.4	Production Transfer Note	
5.6.5	Material Return From Production	
5.6.6	Store requisition from Other Department	
5.6.7	Open Completed Batches	
5.6.8	Location Wise Production Query	
5.6.9	Production Batches Release Query	
5.6.10	Un-authorization Work Bench	
5.6.11	QC Intimation for Production Batch	
5.6.12	Document Closing Work Bench	

Reference: Description of Functional and Operational Requirements for Production Module (Annexure 6)

5.7 Fur	5.7 Functional and Operational Requirements for Sales Inventory Module	
5.7.1	Sales Order Rates (SOR)	
5.7.2	Sales Order Rates Amendment	
5.7.3	Invoice using sales order rate (ISO)	
5.7.4	Sales return note (SRN)	
5.7.5	Finish Goods Inward (FGI)	
5.7.6	Finish Goods Outward (FGO)	
5.7.7	Goods Receipt Note- Trading (GRT)	
5.7.8	Write Back Memo (WBK)	
5.7.9	Write Off Memo (WOF)	
5.7.10	Sales Stock Balance Query	
5.7.11	Un authorization Work Bench	
5.7.12	Document Closing Work Bench	

Reference: Description of Functional and Operational Requirements for Sales Inventory Module (Annexure 7)



5.8 Functional and Operational Requirements for Quality Assurance Module	
5.8.1	Purchase Requisition
5.8.2	Store Requisition from Other Department
5.8.3	Un-Authorization Work Bench

Reference: Description of Functional and Operational Requirements for Requisition Module (Annexure 8)

5.9 Functional and Operational Requirements for Requisition Module		
5.9.1	Item Wise Manufactures (QA Approval)	
5.9.2	Item's QC Specifications (QA Approval)	
5.9.3	Bill of Process (QA Approval)	
5.9.4	Vendor-Item Manufacturer's (QA Approval)	
5.9.5	Production Batch Release (By QA In-charge)	
5.9.6	Production Batch Release (By QA Manager)	

Reference: Description of Functional and Operational Requirements for Quality Assurance Module (Annexure 9)

6.0 External interface, performance and timing requirements

6.1 User Interface and Capacity

Req. No.	Description	
6.1.1	System has designed in such a way that one module can be accessed by multiple users, however the same user may not access the same module by logging into two different workstations	
6.1.2	ERP display correct time and date	
6.1.3	System support access right and user right for transaction where the administration must have complete control over the system	
6.1.4	The ERP has provision to support more than 10 concurrent user accounts based on license procured	



6.2 Security and Access Control Requirements

Req. No.	Description	
6.2.1	Proper alarms will be raised if the user has entered wrong user name or password, and the user	
	must not be able to access the module if erroneous log-in information is entered.	
6.2.2	System has provision to track of log information regarding user activity	
6.2.3	System has designed in such a way that the system administrator must be the only one who	
0.2.3	can change but cannot access user's passwords(In case password is lost)	
6.2.4	System has provision to assign username and password for all users who are authorized to	
0.2.4	access the system	
6.2.5	System has provision for three levels of password	

7.0 Design Constraints

7.1 Software Constraints

The system at the server side has provision to run on Windows server (2008 or above). The system at the client side has provision to run on Windows 7 or above.

7.2 Hardware Constraints

a) Xeon 2.0GHz with minimum 8GB RAM / 500GB HDD/1Gbps Ethernet – Application Server

8.0 Regulatory:

Req. No.	Description	
8.1	System has provision to createindividual unique users and function wise rights are assigned	
8.2	After a configurable period of time, system will automatically ask user to enter new password. In this procedure system will ask for existing password & new password and this new password should not be same as existing password	
8.3	System has provision for user's password to comply with minimum 7 length requirement.	
8.4	System has password complexity feature like At least one upper case character At least one lower case character At least one numeric character At least one special character	
8.5	The authorized user can change the system data & time	

Security Policy for accessing servers and configuring server policies are separatelybeing defined in IT SOP.



9.0 Abbreviations:

ABBREVIATION	FULL FORM
CSV	Computerized System Validation
URS	User Requirement Specification
PIC/S	Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-Operation Scheme
US FDA	United States Food and Drug Administration
CFR	Code of Federal Regulations
EU	European Union
ERP	Enterprise Resource Planning
DQ	Design Qualification
ERP	Enterprise Resource Planning
RM	Raw Material
PM	Packing Material
FG	Finished Goods
IM	Intermediate Material
GMP	Good Manufacturing Practices
A/C	Account
Qty.	Quantity
QA	Quality Assurance
IT	Information Technology
INV	Manufacturing Inventory
PUR	Purchase
PRD	Production
QCS	Quality Control
SLM	Sales



ABBREVIATION	FULL FORM
DMS	Document Management System
MNT	Maintenance
STM	Setup
CSA	Centralized System Administration
SOP	Standard Operating Procedure
LL	Loan License
LOD	Loss on dry
GxP	Good "X" Practice where X = M, C, D, E M = Manufacturing C = Clinical D = Documentation E = Engineering
PRQ	Purchase Requisition
PO	Purchase Order
GRN	Goods Receipt Note
GRO	Goods Receipt From Others
GRL	Goods Receipt From Other Location
PRN	Purchase Return
MIL	Material Issue To Other Location
MIO	Material Issue To Others
MIP	Material Issue To Production
MID	Material Issue To Other Department
SSA	Shortage Stock Adjustment
ESA	Excess Stock Adjustment



ABBREVIATION	FULL FORM
MRD	Material Return From Other Department
QIN	 QC Intimation for Testing of GRN QC Intimation for Re-Testing of GRN QC Intimation for Production Batch
QCG	QC Register Entry for GRNQC Analysis Update for GRN
QCP	 QC Register Entry For Production QC Analysis Update For Production
QCI	 QC Register Entry For Intimation QC Analysis Update For Intimation
ВОР	Bill of Process
SRP	Store Requisition From Production
SRD	Store Requisition From Other Department
MRP	Material Return From Production
IMT	Intermediate Material Transfer Note
PTN	Production Transfer Note
SOR	Sales Order Regular
ISO	Invoice Using Sales Order Rates
FGI	Finished Goods Inward
FGO	Finished Goods Outward
SRN	Sales Return Note
GRT	Goods Receipt Note- Trading
WBK	Write Back Memo
WOF	Write Off Memo