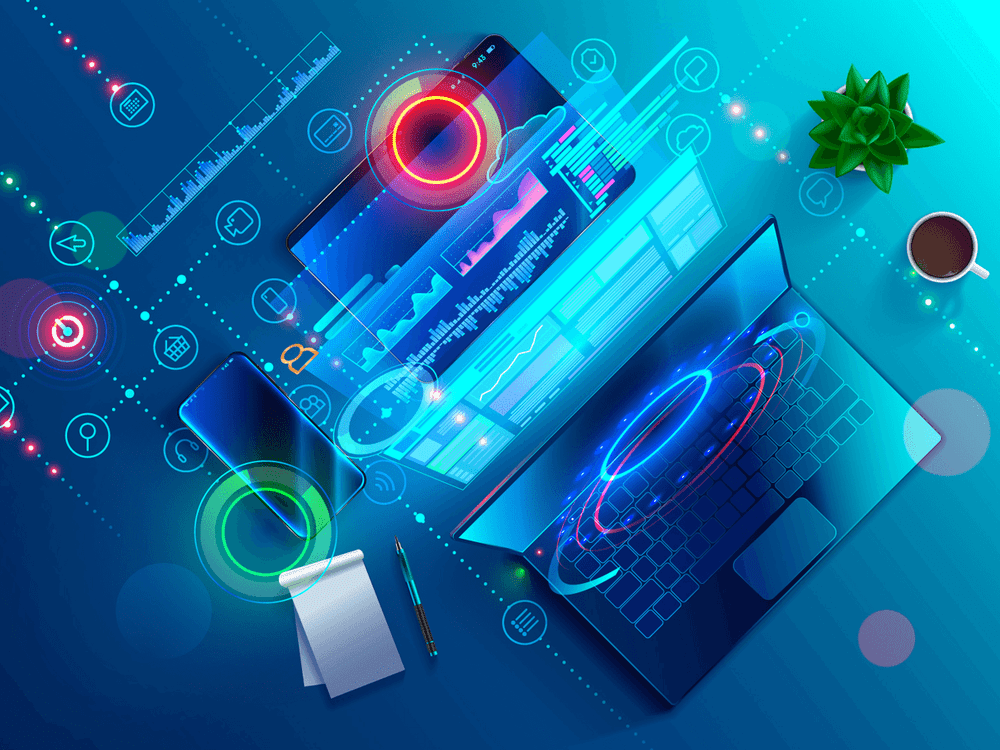
**Software Requirements Specification Document**



**Project: Data Centre Portal**

**Date Created: Jan, 2021**

This Requirements Document (RD) provides a comprehensive set of requirements applicable to the project together with the relevant justifications. The set of Requirements herewith described will be the baseline for the following design and development activities and associated verification.

The document shall enable formal traceability of different requirements, the designer shall associate to each requirement a unique identifier using a suitable methodology. Such methodology shall use a suitable set of acronyms (e.g. UN for User Needs, UR for User Requirements, SR for System Requirements) to facilitate traceability.

**Users** shall document their requirements in detail by completing **Section 1 Introduction (1.1,** **1.2, 1.3, 1.4** and **1.5**) and **2.2.** The rest of the document shall be completed by designer/programmer/application developer.

# **INTRODUCTION**

## **Reference Documents**

| Ref. | Document ID. | Title | Rev. |
| --- | --- | --- | --- |
|  |  |  |  |

*Purpose/reason*

* *The purpose of this project is to collect all information about Konza National Data Centre into a single user interface and present the users with the most relevant information within their context.*

## **Intended Audience & Reading Suggestions**

*The targeted Audience/users of the Konza National Data Centre include:*

* Ministries, Departments and Agencies (MDAs)
* Learning Institutions
* Small and medium-sized enterprises SMEs

## **Project Scope**

*How to achieve*

In Konza, we currently lacking a one stop shop source of information regarding our national data centre for our prospective customers, partners and even the entire globe to allow a smooth sequence of operations from anywhere anytime. The project will allow smooth operations across investors facilitation, customers, and partners hence making information available and transactions very easy through a self-service [portal.

## **Reference**

References

1. Business model pricing formula
2. Konza National data Centre Brochures
3. Video tutorials
4. Articles and documentations
5. KoTDA Website

# **USER NEEDS AND USER REQUIREMENTS**

## **User Needs**

The scope of this section will present the improvements/needs as desired and expressed by the ***user*** and expected to be answered by the proposed system, together with a concise presentation of the high-level interaction between the intended system and the different actors involved (e.g., use case). This can be done by providing a description of the current situation (before introduction of the service, with the problems to solve) and how this will change after the introduction of the proposed service.

## **User Needs Description**

*<This section shall be completed by the user>*

Any user needs shall be defined based on the following rules. It will be listed in a row of table as presented in Table 1.

|  |  |  |
| --- | --- | --- |
| **ID** | **User Need** | **User Group** |
| UN-0100 | Users have the need to get faster and more effective Internet connectivity to browse Internet |  |
| UN-0200 | Need the system to be a self-service portal. |  |
| UN-0300 | Users should be able to access general information about KNDC and different flavors without necessarily logging in. |  |
| UN-0400 | Users need to see the about page for general information describing what the Konza National Data Centre is. |  |
| UN-0500 | Users need the system to provide capability of Uploading data to the system and allow retrieval of uploaded materials. |  |
| UN-0600 | The system should allow users to only upload relevant materials by filling in an upload form for security purposes |  |
| UN-0700 | To request for specific services and make quotations, users have to login in order to view prices as generated by the pricing formula according to their specifications. |  |
| UN-0800 | System should be able to link to ERP, CRM, KoTDA Website |  |
| UN-0900 | Users should have real time interaction with the system enabled by a chatbot. |  |
| UN-1000 | Users should see FAQs |  |
| UN-1100 | Users should access contacts for further enquiries |  |
| UN-1200 | Users should access additional information from the Newsletter, brochures, Wiki |  |
| UN-1300 | Partners page for partner facilitation information |  |

Table 1: User Needs

Where:

* **ID**: unique identification composed of a prefix, for instance **“UN”**, followed by a serial number, which could be composed of four digits (e.g**., UN-0100, UN-0200** etc.). In the initial phase the serial number could start from 0100 and will proceed in steps of 100 per requirement, in order to allow the possibility of adding new or more detailed needs during the requirements definition.
* **User Need**: Describes the need in qualitative terms.
* **Source**: The user that expressed this need.

## **User Requirements**

This section shall be completed by the designer/developer in describing in a structured form the set of statements originated by the users. The section shall describe the functions, performance and capabilities that the system will bring to users during its utilisation. A mapping between User Requirements and User Needs will be part of this section.

## **User Requirements Description**

*<This section shall be completed by developer/designer>*

The designer/developer shall define user requirements based on the following rules. It will be listed in a row of table as presented in Table 2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Req. ID** | **User Requirement Name** | **Description** | **Justification and/or comment** | **User Need Ref.** |
| UR-PERF-0100 | BB access minimum performance | A minimum data rate of 1 Mbit/s in DW and 256kbit/s shall be provided to each user to browse Internet |  | UN-0100 |
| UR-PERF-0200 | BB access typical performance | Each user shall also get up to 10 Mbit/s DW and 1 Mbit/s UP with a 1:10 congestion rate on their network |  | UN-0100 |
|  |  |  |  |  |

Table 2: User Requirements

Where:

* **ID**: unique identification composed of the UR prefix, followed by a serial number composed of four digits (e.g., **UR-0100, UR-0200** etc.). It is suggested to use for the numbering scheme the same criteria used for the User Needs (e.g., start from 0100 and proceed in steps of 100 per requirement).
* **User Requirement**: Define the requirement through a concise name
* **Description:** Describes the requirement in more details and about the impact on the system definition
* **Justification**: Provides the rationale for the requirement and what are the benefits.
* **User Need Ref**.: Define the cross reference with respect to the satisfied need.

# **SYSTEM REQUIREMENTS**

The system requirement shall be originated by the designer about what the system shall do and/or shall be to fulfil the User Requirements (e.g., associated to constraints, environment, operational and performance features).

This section shall identify, allocate and specify the System Requirements defined by the designer. A mapping between System Requirements and User Requirements (if applicable) or User needs is part of this section.

## **System Requirements**

The designer shall define any requirement based on the following rules. It will be listed in a row of table as presented in Table 3.

| **ID** | **System Requirement** | **Priority** | **Description** | **Verification Method** | **User Req.** |
| --- | --- | --- | --- | --- | --- |
| SR-PRF-0100 | Data rate | M | The system shall use this xyz service profile of this xyz Internet service provider | T | UR-PERF-0100, UR-PERF-0200 |
| SR-PRF-0200 | User terminal ODU | M | The ODU shall have an antenna of 1.2 m diameter and 2W BUC | I | UR-PERF-0100, UR-PERF-0200 |

Table 3: Requirements Description

Where:

* **ID:** unique identification composed of a prefix, followed by a serial number composed of four digits (e.g., **SR-0100, SR-0200** etc.).
* **Priority**: define whether the requirement is:
  + Must have **(M**) – must be implemented in the system.
  + Should have **(S)** – must be implemented but may wait until a second increment.
  + Could have **(C)** – could be implemented but it is not central to the project objectives.
  + Wish to have **(W)** – will not be implemented but it will be considered for a future phase.
* **Description**: describes the requirement.
* **Verification Method**:
  + Inspection **(I)** – Verification by inspection shall consist of visual determination of physical characteristics. Visual inspection of either graphical interface, textual results, user manual, or equipment manufacturer specifications. It will require an analysis of the documentation and/or visual inspection, providing evidence of the correct implementation that satisfy the requirement by means of screenshot, extraction of sections from operational manuals, etc. Therefore, no specific test procedure with detailed operations is envisaged.
  + Analysis **(A)** – Verification by analysis is done when other methods are not appropriate or too cumbersome to perform a verification by test. It is usually done by collecting data like test results related to some part of the system, and then, knowing the system design, an engineering-based judgement is performed to infer whether the verification was successful or not.
  + Demonstration **(D)** – Verification by demonstration is done verifying the behaviour of the system, either once or more than once, without special test equipment or instrumentation. Demonstration can be documented in different ways, such as with pictures or screen captures.
  + Test **(T)** - Verification tests consist of measuring product performance and functions under representative environments.

# **STANDARD OPERATING PROCEDURES**

## **Appendix 1**

The Authority shall use this appendix to serve as Guideline in order to develop Requirements during KoTDA’s Applications Projects.

The following diagram shows the logical flow linking User Needs, User Requirements with System Requirements



Logical separation of the requirements depending on the involvement of the different agents:

**User Requirements – the “WHAT”**

*Proposed definition*: Statement originated by the users describing the functions and

capabilities that the system shall bring to them during its utilization

* Related to a process that the user must be able to accomplish using the system / service
* Derived from the analysis of user expectations, problems, needs, constraints and scenarios.
* Originated by users, based on an in-depth interaction with the designer. This dialogue helps to translate the user needs into verifiable user requirements.
* Should not propose solutions or technologies.

**System Requirements – the “HOW”**

*Proposed definition:* Statement typically originated by the designer about what the system shall do and/or shall be to fulfil the User Needs or Requirements (e.g. associated to constraints, environment, operational and performance features)

* Derived from the user needs or requirements, need to be verifiable and traceable to the user needs or requirements.
* Originated by: designer/system engineer.

**Ground rules applicable to SR**

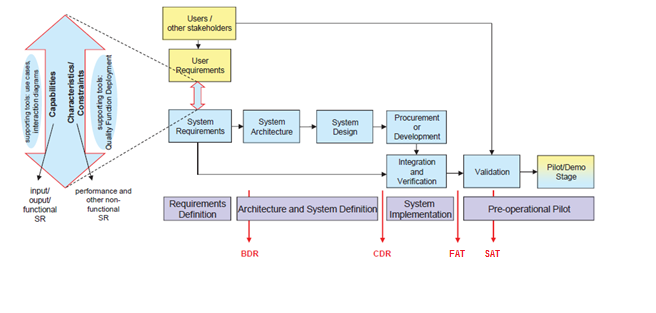
* They shall be agreed and meaningful for both users and designer (i.e., need of constant dialogue)
* They shall be limited to a single thought, concise, simple and stated in a positive way
* SR shall be needed (i.e., responding to at least one UR and or need)
* They shall be verifiable and attainable
* They shall be presented in formal documents
* Each requirement shall be accompanied by:
  + Description: helps to understand and interpret the requirement, and to transform knowledge in project asset. Needs to be documented and linked to the requirement, likely in a design document (e.g., Design Justification File).
  + Test Verification method: needs to be considered and documented while writing the requirements
  + Hint: words such as “adequate, easy, high speed, maximise, minimise, quickly, robust, sufficient, use’-friendly” are likely to indicate unverifiable requirements and should not be used.
  + Traceability: needed to identify a requirement source, helps correct omissions, redundant or unnecessary requirements. Requirements can be traceable by assigning unique identifiers to each requirement. Traceability matrices can be used to quickly check the SR dependences.

## **Appendix 2**

This Appendix provides some ground rules for Project Management towards Requirements process:

Inclusion of a Requirements Review in the projects, as part of the BDR. It is Characterized by the following:

* This will include the Users and Designers
* Gives the opportunity to the designer to explain the System Requirements and the associated rationale
* Collect User feedback on System Requirements



## **Sign-off**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Date** | **Sign** |
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