Requirement Analysis Document

Development of a Computerized

Maintenance Management System (CMMS)

Prepared for: Deutsche Gesellschaft für Internationale

Zusammenarbeit (GIZ) GmbH

Prepared by: Resolution Studio

Date: September , 2025

Project Report

Requirement Analysis Phase

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Executive Summary

This report presents the completion of the Requirement Analysis phase for the Computerized Maintenance Management System (CMMS) at the park.
Building on the Initiation Report delivered in July 2025, this stage focused on gathering and consolidating requirements through consultations with stakeholders, analysis of existing processes, and workshops designed to validate findings.
The outcome is a comprehensive set of functional and non-functional requirements which are now captured in the Requirement Analysis Document. This document forms the baseline for the system design phase and ensures that all departments and users share a common understanding of the goals and expectations of the CMMS.
The analysis confirmed the need to replace fragmented manual processes with a modern system that will improve accountability, transparency, and efficiency in maintenance and service delivery. With this milestone reached, the project is prepared to move forward to the design and prototyping stage as planned.

Background and Rationale

The Industrial Parks Development Corporation (IPDC) currently manages the park with paper-based reporting, memos, and manual approvals.
Maintenance records are incomplete and difficult to track, preventive activities depend on informal reminders, and billing for

utilities is recorded on spreadsheets. These practices cause delays, reduce visibility, and limit the ability of managers to monitor performance effectively.
During the Initiation phase, it was agreed that a CMMS was required to address these challenges. The Requirement Analysis phase was therefore launched to provide a detailed specification for the system. This phase has ensured that the system design will be based on clearly defined requirements and stakeholder consensus, as documented in the Requirement Analysis Document.

Methodology

The Requirement Analysis phase was carried out between July and September 2025 using document reviews, stakeholder interviews, structured questionnaires, and workshops.
The review of existing records and procedures, including downtime logs, maintenance history forms, preventive checklists, and corrective maintenance processes, highlighted both strengths and gaps in current practice.
Questionnaires distributed in July and August gathered input from engineering, electrical, water, wastewater, and inventory teams, while interviews in August engaged managers, technicians, and IT staff to capture detailed operational needs.
In September, workshops were held to validate the findings, map existing processes against future requirements, and define Service Level Agreements and performance indicators. Together, these activities produced the Requirement Analysis Document, which now serves as the consolidated output of this phase.

Key Findings

The analysis confirmed that operations remain heavily dependent on manual methods. Requests are received through memos or telephone calls, technicians record work in notebooks, and preventive maintenance is triggered by informal reminders.
Approvals for water-related repairs require multiple letters, while meter readings and flow data are kept on spreadsheets with limited analytical value. Wastewater monitoring and billing are also handled manually, and inventory management is not connected to maintenance activities, often leading to shortages or duplication.
Technicians expressed concern about the lack of clear communication and feedback loops, while tenants highlighted limited visibility on maintenance progress and billing. Managers identified the absence of service-level enforcement as a major barrier to prioritizing and tracking work. Although procedures exist, such as the corrective maintenance SOP, they are not digitized and remain disconnected from daily operations.

Requirement Specifications

The requirements defined in the Requirement Analysis Document now serve as the basis for design. The system must support the full lifecycle of maintenance requests and work orders, establish a comprehensive asset registry with barcoding and geo-tagging, and integrate inventory management with work execution.

Preventive maintenance schedules and inspection checklists must be embedded in the workflow, and tenants should have access to a portal for submitting requests, tracking status, and providing feedback. Billing for utilities and wastewater will also be included, with the possibility of integration with metering and SCADA systems in a later phase.

Non-functional requirements specify that the system must ensure data security, role-based access, audit trails, and reliable backup and recovery. It must be accessible via a mobile application that supports synchronization, be scalable to accommodate future integrations, and comply with national regulations and international data protection standards.

Stakeholder Roles

The analysis clarified the responsibilities of each group. Maintenance engineers and technicians will generate and complete work orders, while civil and infrastructure engineers will maintain the asset registry and oversee modifications.

Storekeepers will manage stock and issue spares, water and wastewater departments will oversee utilities and billing, IT staff will ensure system hosting, security, and integration, and tenants will interact with the system through a digital portal.

These roles and responsibilities are summarized in the RACI and access matrix included in the Requirement Analysis Document.

Milestones

Milestone	Status	Timeline
Project Initiation & Inception Report	Completed	July 2025
Requirement Gathering (Questionnaires, Interviews)	Completed	Aug 2025
Document Review & SOP Analysis	Completed	Aug–Sept 2025
Requirement Consolidation (Requirement Analysis Document)	Completed	Sept 2025

Process Mapping (As-Is / To-Be) & Acceptance Criteria	Completed	Sept 2025
Transition to System Design Phase	Pending	Oct 2025
Prototype Development	Upcoming	Nov–Dec 2025
Testing & Validation	Upcoming	Q1 2026
Deployment & Training	Upcoming	Q2–Q3 2026

The Requirement Analysis phase has been completed and the Requirement Analysis Document provides a consolidated reference for the system design.
With this milestone reached, the project will move into the design stage in October 2025, followed by prototype development before the end of the year, and testing and deployment in 2026.
To support adoption, a helpdesk platform (CRC) has been established to assist users with training and onboarding, accessible at: https://crc.et/signup_user_complete/?id=sjoa87fbnb8efpsqf8jqki7q3o&md=link&sbr=fa
In addition, project stakeholders can monitor implementation progress through the dedicated portal: https://ipdclemi.crc.et/

Sign-off

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