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| User Requirement Specifications |
| Cylinders & Orders Management System (COMS) Project |
| This document describes the user requirement for the Cylinders & Orders Management System (COMS). It also provides the basis for the production of the System Specification. |

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**Cylinders & Orders Management System (COMS)  
 Project**

**User Requirements Specification**

**Distribution:**

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# 1 INTRODUCTION.

Hoang Kim joint stock company is one of the leading providers of printing cylinders in Vietnam. They currently use the latest technologies from Germany and Japan, and their client base include various Vietnamese corporations as well as across Southeast Asia.

The company would like to have an integrated IT system that can:

* Manage the main manufacturing process, i.e. sales orders and cylinders.
* Benchmark employees’ performance to calculate bonuses.
* Give management reporting tools for daily operations.
* Be easy to maintain and to add new features in the future.

## 1.1 Purpose.

The purpose of this document is to describe the user requirement for the Cylinders & Orders Management System (COMS). It also provides the basis for the production of the System Specification (ref GG/COMS/TS.2/v1).

## 1.2 Scope.

### 1.2.1 Software.

This user requirement specification is solely concerned with the functionalities of the COMS.

### 1.2.2 Documentation.

The following documents, which are specified in the COMS Project Plan, will be produced for both the project team and users who are involved in this project.

* System Specification
* Programmer's Manual
* User's Manual

## 1.3 Audience.

The intended readers of this User Requirement Specification are:

1. The project team: This is to provide them on overview of the initial user requirements of the system to be developed.
2. Mr. Truong Thieu Duong: He is required to review the specified requirements of the software in this document to ensure that all the user requirements have been addressed.

## 1.4 Organisation.

The overview of requirements for this project is specified in Section 2. The functional requirements are described in Section 3 and the external interfaces of this project are defined in Section 4.

The quality requirements are given in Section 5 and the project's environment is identified in Section 6. Section 7 describes the design constraints and Section 8 specifies the capacity of the project. Finally, a glossary of terms used in this project are defined in Section 8.

## 1.5 Definition of Terms.

The following terms have special meanings within this document.

1. The word ***shall*** implies a mandatory requirement.
2. The word ***should*** implies a desirable requirement.
3. The word ***will*** implies a mandatory requirement outside the scope of this document.
4. The word ***may*** implies a desirable requirement outside the scope of this document.
5. A glossary of terms used is given at the end of this document.

## 1.6 References.

To fully understand the background to this project, the reader should also be familiar with:

1. COMS Project Plan, reference GG/COMS/MP.1/v1.
2. COMS Quality Plan, reference GG/COMS /MQ.1/v1.

# 2. OVERVIEW OF REQUIREMENTS.

## 2.1 System Interfaces.

Currently, the system does not need to interface with any other system.

## 2.2 System Functions.

The following system functions are to be implemented in this system.

1. Managing of print sales order data, including list of cylinders belonging to the sales order.
2. Managing of cylinder data.
3. Managing of employee data, including management of roles.
4. Managing manufacturing work flow, including progress log for each cylinder & function to draw flow charts.
5. Generating cylinder statistics reports (by status, current step, etc.) & employee statistics reports (by marks, time range, errors, etc.).
6. Managing of employee performances and bonus calculation.

## 2.3 User Characteristics.

1. The main system users are workers who are not computer literate and only speak Vietnamese.
2. A user training session shall be provided for all users.

## 2.4 General Constraints.

Existing hardware and software resources should be used for this project. Additional hardware and software resources can be provided, if deemed necessary to increase the performance of the system.

## 2.5 Assumptions and Dependencies.

To be determined. There are no known assumptions or dependencies.

# 3. FUNCTIONAL REQUIREMENTS.

COMS performs the primary functions of manufacturing, as specified in the following subsections.

## 3.1 Sales Order , Cylinder and Employee Info Management.

1. Allow sales staff to create sales order.
2. Allow authorized sales staff to add / update / remove / delete cylinders from a sales order.
3. Allow sales order and cylinder data to be viewed by authorized users.
4. Allow mechanical department manager to print cylinder data.
5. Allow all department managers to manage subordinates’ roles. Some roles require approval from directors.
6. There will be an indicator at cylinder type setup to set as Replace / Normal / Backup to to allow how many cylinders are for Replace / Normal and Backup purpose.
7. There will be an indicator at cylinder making technology setup to set as Electro-mechanical engraving / Laser engraving.

## 3.2 Cylinder Manufacturing Process Management.

1. Allow workers to scan to update cylinder status immediately after completing a step, link the worker id to that step for that cylinder, and note the amount of time required, for performance grading. The update in status will be logged and can be accessible at any time.
2. Each cylinder will have a priority level. Under a step, higher-priority cylinders must be processed first.
3. Allow operation managers to update the schedule for a step.
4. Allow workers to send a faulty cylinder to the previous step, and log the error from a list of error code or by text. The error will be linked to the step where it occurred.
5. These error descriptions can be viewed and changed.
6. Allow operation managers to send a faulty cylinder to a step not according to the work flow.
7. Allow operation managers to stop processing a cylinder or stop processing a sales order. Also allow them to resume processing that cylinder or sales order. This role can only be granted by IT staff and requires approval from a director.
8. Allow mechanical dept. manager to print cylinder progress form (for scanning barcode).
9. Allow managers to view all cylinders currently under one step.
10. Allow managers to export schedules into excel.
11. Allow all staff to view cylinder’s progress log and sales order’s progress log.
12. Allow department managers to change the work flow(list of steps) in their own departments. Using GUI to make changes to steps in workflow steps.

## 3.3 Employee Performance Management.

1. Calculate and store the mark a worker achieves after he performed a step, based on a specified formula.
2. Allow accounting staffs to print out workers’ list of marks achieved during a period. They can also print out the list of step for reference.
3. Allow accounting staffs to modify performance formulas, based on 4 specified constants and other parameters such as cylinder size, number count, or color count in the sales order.
4. Allow one step to have more than one formulas. Based on cylinder characteristics such as size, hollowness, the system will pick the suitable formula in real time.
5. Allow managers to view a worker performance (e.g. number of cylinders he worked on) during a period.
6. Allow managers to view list of errors occurred under a step during a period, filterable by each worker.

# 4. EXTERNAL INTERFACES.

## 4.1 Workstations (PC).

The existing workstations installed at users' desks shall be used for this system.

## 4.2 Hardware Interfaces.

Barcode scanners will be used. Other hardware technology can be explored to further improve performance and user interactions.

## 4.3 Software Interfaces.

No external interface is required at the moment.

# 5. QUALITY REQUIREMENTS.

## 5.1 Reliability.

The system shall be available on every normal working day and should be available on weekends.

## 5.2 Security.

1. The system shall only be available to authorized users.
2. Access to the various functions shall be restricted according to the roles required.

## 5.3 Integrity.

Transactions should not be deleted. Changes to specific data should be logged at database level. Direct database access should be limited. Any direct database update (without using the system) should be logged by other means.

# 6. ENVIRONMENT.

## 6.1 Hardware.

To be determined at analysis & design phase.

## 6.2 Software.

To be determined at analysis & design phase.

## 6.3 Methods.

ISS System Development Life Cycle (SDLC) and documentation standards shall be applied to this project.

# 7. DESIGN CONSTRAINTS.

1. To be determined.

# 8. CAPACITY.

1. Initially eighty users shall be connected to the system and all shall use the system concurrently.
2. Initially the system shall cater for:
   1. 1500 sales orders and 3000 cylinders per month.

# 9. GLOSSARY.

|  |  |
| --- | --- |
| Cylinder (VN: trục) | The company’s product. It will be managed by COMS as it goes through the manufacturing process. There are 3 types of cylinder:   * Normal: client will be charged a normal price * Back-up: client will be charged a discounted price   Replacement: client will not be charged. |
| Sales Order (đơn hàng) | The list of cylinders to be produced, with client info. |
| Department (bộ phận) | Each department will manage one or several work flows. |
| Work Flow (sơ đồ sản xuất) | Include a series of steps that will affect the cylinders. |
| Step (động tác) | A procedure under a work flow that an employee will perform on the cylinder. |
| Schedule (lịch sản xuất) | The list of in-progress cylinder under one step. Each cylinder has a priority level. Higher level cylinders must be processed first. |
| User (nhân viên) | A staff who will use the system. Each user will have a set of roles. |
| Worker (nhân viên sản xuất) | A type of user who will perform a step. |
| Role ( quyền) | To allow a user to perform a step, or other functions of the system. |
| Formula (công thức) | Will be used to calculate a worker’s performance. |

# APPENDIX A: CONTEXT DIAGRAM

Process Diagram for COMS System

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| Approval Record []/Forms/Approval | | |
| Project Name COMS Project | | |
| Document Ref |  | |
| Approved by | Date | |
| Authorised by | Date | |
| The document authorisation appears on the title page. | |  |
| The structure of the publication is logical. | |  |
| The distribution list is correct. | |  |
| The title page is signed. | |  |
| Calculations appear reasonable, are neatly presented and have been checked. | |  |
| Theory and formulae are correct and properly applied. | |  |
| Illustrations are relevant, readable and logically placed. | |  |
| There are no typographical errors. | |  |
| Units are consistent throughout. | |  |
| The security classification is correct. | |  |
| There are no obvious omissions. | |  |
| The document complies with the Client's requirements, however specified. | |  |
| Responsibility is accepted for all opinions, conclusions and recommendations. | |  |
| The document does not run counter to company policy. | |  |
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