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| Revised by: |  | | | | | |
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| R. Martin | 04/03/2023 | EPL | 1.0 |
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| Note :  1. If any of the below sections are not applicable for the project, mention as “Not applicable” with justification notes.  2. If any information pertaining to the below sections are documented externally, embed the external document in the corresponding section below.  3. If any information pertaining to the below sections are stored in standard tools such as EPM-Gate, Teamcenter etc., mention the file path/link in the corresponding section below. |

# Introduction

## Purpose

|  |
| --- |
| This document defines the requirements specification of CobaltKE17 ERAP project. |

## Scope

|  |
| --- |
| This user interface is intended to be used within FPS products that feature I&W dispensing. |

## Documents Referenced

### Codes (Norms) Agency Standards

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision and Date** | **Description** |
|  |  |  |

### Electrolux Standards

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision and Date** | **Description** |
|  |  |  |

### Third Party Standards

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision and Date** | **Description** |
|  |  |  |

### Other Documents

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision and Date** | **Description** |
|  |  |  |

# Stakeholder Identification

| SN | Stakeholder | Stakeholder Deliverable | Revision / Version No. | Planned Receipt Date | Actual Receipt Date | File Location (MS One Drive /Other servers) | Responsibility |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | SQI (Supplier Quality Improvement) Team | Ensure quality rating does not drop compared to current. | 1.0 | TBD | TBD |  | Jeff Kirkby |
|  | GTO + CX Technology | Ensure all HW/SW changes are met | 1.0 | 7/15/2023 | TBD |  | Richard Martin |
|  | Architecture | Module is a drop-in replacement to current | 1.0 | 02/15/2024 | TBD |  | Richard Martin |
|  | Choose an item. |  |  |  |  |  |  |
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# Raw Stakeholder Requirements

## <Raw Stakeholder requirements 1>

|  |
| --- |
| Stakeholder Name / Function : Luca Rizzo/Electronics Director |
| Receipt Date : 01/01/2023 |
| RAW Requirements ID : 001 |
| Update micro to NXP KE17  Incorporate Horizon framework for SW  Update H-bridge and humidity sensor layout  Maintain all dimensions |

## <Raw Stakeholder requirements 2>

|  |
| --- |
| Stakeholder Name / Function : |
| Receipt Date : |
| RAW Requirements ID : |
| <Raw Stakeholder Requirements> |

## <Raw Stakeholder requirements n>

|  |
| --- |
| Stakeholder Name / Function : |
| Receipt Date : |
| RAW Requirements ID : |
| <Raw Stakeholder Requirements> |

# Structured Stakeholder Requirements

|  |
| --- |
| Note : Refer to Reuse Strategy from RM Plan section of Project management plan for Structured stakeholder reuse requirements. |

## <Structured Stakeholder requirements 1>

|  |
| --- |
| Structured Requirements ID : 001 |
| Update the board trace layout for improving the circuitry of the H-bridge (x3) and the next generation humidity sensor |

## <Structured Stakeholder requirements 2>

|  |
| --- |
| Structured Requirements ID : 002 |
| Update the microprocessor to the NXP KE17 micro |

## <Structured Stakeholder requirements n>

|  |
| --- |
| Structured Requirements ID : 003 |
| Incorporate the UDA/Horizon framework for software development |

# Design (System) Requirements

|  |
| --- |
| Note : Refer to Reuse Strategy from RM Plan section of Project management plan for System reuse requirements. |

## General Description

### System Overview

|  |
| --- |
| System shall have between 4-15 buttons to control the majority or all of the functionality of the unit. System shall be able to scroll through dispensing options, display temperatures of compartments and any errors detected. System will display additional features if applicable such as but not limited to: drink timer, chill boost, freeze boost, dispenser light, and filter resets. |

### System Components

|  |
| --- |
| PCB HW – base component level  Light guide – mounted to board for support and LED isolation  Back cover – protection especially for ESD  Horizon SW – controls low level drivers and functionality of the UI |

### User Characteristics and Operational Environment

|  |
| --- |
| Use case will be in a consumer’s home or garage or office space for food preservation. Operational environment will be typically ambient temperature of household, 65-80°F but may vary if in a garage setting with greater fluctuations in temperature. |

### Operational Life Phases

|  |
| --- |
| System will last the life cycle of the entire product with a minimum of 10 years of service. If there are issues with the system, it can be replaced if deemed necessary by a certified technician. At which point the system can be recycled for components/raw materials or returned to lab for troubleshooting analysis. |

### Design and Implementation Constraints

|  |
| --- |
| Interface requirements shall be held strictly to the same dimensions as the current design. This will allow the system to be a drop-in replacement with no compounding changes to the overall system. |

### Compatibility with Other Devices and Defined Operating Environments

|  |
| --- |
| System will be compatible with an array of main control boards as well as other user interfaces depending on the application. |

### User Documentation Requirements

|  |
| --- |
|  |

## Functional Requirements



### <Functionality 1>

|  |
| --- |
| Wait for key presses from user and perform a function based on what is mapped to that particular key press. |

### <Functionality 2>

|  |
| --- |
| Turn on/off a load if directly connected to the user interface for control. |

### <Functionality 3>

|  |
| --- |
|  |

### <Functionality n>

|  |
| --- |
|  |

## Non-Functional Requirements

|  |
| --- |
| Incorporate the UDA/Horizon framework for the SW application. |

### Statutory and Regulatory Requirements

|  |
| --- |
|  |

### Standards Compliance

|  |
| --- |
|  |

### Safety and Security Requirements

|  |
| --- |
| Shall pass all industry standard ESD/EMC testing |

### Performance Requirements

|  |
| --- |
| Performance must match that of current Cobalt user interface |

### Environmental Requirements

|  |
| --- |
|  |

### Reliability Requirements

|  |
| --- |
|  |

### Mechanical Requirements

|  |
| --- |
| Must maintain the same dimensions as current to reuse plastic mating components. |

### Other Requirements

|  |
| --- |
|  |

## Interface Requirements

### External System Interfaces

|  |
| --- |
| Must transmit and receive communication from other user interfaces if applicable and the main control board. |

#### Human Interface

|  |
| --- |
| Must monitor keys for inputs from a user and perform function mapped to that key press. |

### Hardware Interfaces

|  |
| --- |
| Must use the NXP KE17 microprocessor |

### Communication Interfaces

|  |
| --- |
| Must maintain same communication interfaces as current design |

## Behavioral Model and Description

|  |
| --- |
|  |

# Sub-system Requirements

|  |
| --- |
| Note : Refer to Reuse Strategy from RM Plan section of Project management plan for Sub-system reuse requirements. |

## <Sub-system requirements 1>

|  |
| --- |
| Sub-system Requirements ID : |
| <Sub-system Requirements> |

## <Sub-system requirements 2>

|  |
| --- |
| Sub-system Requirements ID : |
| <Sub-system Requirements> |

## <Sub-system requirements n>

|  |
| --- |
| Sub-system Requirements ID : |
| <Sub-system Requirements> |

# Notes

## Terms, Definitions, Abbreviations and Acronyms

|  |  |
| --- | --- |
| **Terms** | **Defintions** |
| Functional Requirement | It is a requirement that specifies a function that a system or system component must be able to perform. Functional requirements describe the behaviors (functions or services) of the system that support its mission, goals, tasks, and/or activities. |
| Non-Functional Requirement | It include constraints (on various attributes of these functions or tasks) and qualities (properties or characteristics of the system that its users care about, which affect their degree of satisfaction with the system). For example non-functional requirements specify how much or how well the device must perform, addressing issues such as speed, strength, response times, accuracy, limits of operation, etc. This includes a quantitative characterization of the use environment, including, for example, temperature, humidity, shock, vibration, and electromagnetic compatibility. Requirements concerning device reliability and safety also fit into this category. |

**Appendix**

**Template Revision History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Authors** | **Date** | **Description** | **Version** |
| B.Gopalakrishnan | 2020-06-09 | Draft Release | Draft v0.1 |
| B.Gopalakrishnan | 2020-06-10 | Updated for internal review comments | Draft v0.2 |
| B.Gopalakrishnan | 2020-07-01 | Updated the format with Electrolux fonts | Draft v0.3 |
| B.Gopalakrishnan | 2020-09-02 | Updated the document number format | Draft v0.4 |
| B.Gopalakrishnan | 2021-02-19 | Updated for GEO name change | Draft v0.5 |
| B.Gopalakrishnan | 2022-04-13 | Initial Baseline | v1.0 |
| P.Kumaravelu  K.Damodaran | 2022-12-5 | Single row text box added to all the sections  Note added  Document ID has been updated from GDxxxxxxxxx/A format to GEO-XXX-XXX-X-XXXXX/A  File name, header, footer modified from E. to E-  New sections added - Sec 2 Stakeholder Identification, Sec 3 Raw Stakeholder requirements, Sec 4 Structured Stakeholder requirements, Sec 6 Sub-system requirements and notes added | V2.0 |

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|  | **Name** | **Competency / Category** | **Signature** | **Date** |
| **Reviewed by:** | Luigi Conenna | GEO Process & Cost CL |  | 2022-12-5 |
| **Approved by:** | Luigi Conenna | GEO Process & Cost CL |  | 2022-12-5 |