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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

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| --- |
| The purpose of this document si to describe the high-level architecture of the system for CobaltKE17. |

## Scope

|  |
| --- |
| This document defines various possible architectures for CobaltKE17 and presents an analysis that is to be referred for selection of most appropriate and suitable architecture for design. This document provides input to Software and Hardware architecture. |

## Documents Referenced

### Codes (Norms) Agency Standards

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision and Date** | **Description** |
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### Electrolux Standards

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision** | **Description** |
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### Third Party Standards

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| **Standard** | **Revision and Date** | **Description** |
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### Other Documents

|  |  |  |
| --- | --- | --- |
| **Standard** | **Revision and Date** | **Description** |
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# System Architecture

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| Below is the overview of CobaltKE17 system architecture part of the refrigeration appliance. The system is divided into the following parts:   * PCB HW * LED display block * LED display membrane * Light guide/carrier * Back cover * Screws * Fascia |

## Concept of Operation

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| --- |
| Functional modes:   * Sleep mode * Awake mode * Service mode * Sabbath mode * EOL mode * Demo mode   Manual operations from user:   * Wake UI * Change from Wake mode into one of the other 4 modes (excluding Sleep mode) * Select features for refrigeration appliance and temperature settings |

## System Architecture Considerations

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| --- |
| Modules to be reused following the EDMs:   * Software EDM   + Touch library   + Buzzer drivery   + LED display driver   + DAAS protocol   + MACs protocol   + Humidity and temerature sensor via I2C   + DC output light driver   + DC digital input driver   + H-bridge driver * Hardware EDM   + MACs circuit   + DAAS circuit   + Input sensing circuit   + Touch circuit |

## System Architecture Details

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| --- |
| Architecture will match that of current Cobalt system |

### **System Architecture – Option 1**

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### **System Architecture – Option 2**

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|  |

## System Architecture Analysis

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| Cost is the only aspect changing and will be evaluated once we receive quotes for the KE17 version. |

## Operational Environment & Safety Conditions

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| System will go through various environmental testing and EMC testing in application to verify it meets industry and Electrolux standards.  System will typically operate within a user’s home or garage where temperatures can range from 20-100°F with 0-100% humidity depending on the region. |

## Architecture Finalization

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| --- |
| TBD based on System Architecture Analysis. |

## System Dynamic Behavior

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| Behavior will be representative of the current behavior with the implementation of the UDA/Horizon framework. |

### **System Operational Behavior**

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|  |

### **System Modules, States and Events**

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|  |

## Resource Consumption

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## User Interface Design

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| N/A, System is the user interface |

## System Configuration

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| Configurations shall represent the current configurations of the user interface. New projects will receive requirements through the Design team and then parameters and features will be mapped based on this input. |

## Purchase / Re-Use Modules Strategy

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| All plastic parts are reused from original design.  All sub-circuits unaffected by the project scope will carry over. |

## Assumptions

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| --- |
| Board dimensions will not change. |

## Constraints

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| --- |
| Board dimensions will not change.  Cost of system can be at max $1 cost impact compared to current system. |

# Functional Block Diagram

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## Firmware / Software Architecture

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## Hardware Architecture

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# Notes

## Terms, Definitions, Abbreviations and Acronyms

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| **Terms** | **Defintions** |
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**Appendix**

**Template Revision History:**

|  |  |  |  |
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| B.Gopalakrishnan | 2020-07-07 | Draft Release | Draft v0.1 |
| B.Gopalakrishnan | 2021-06-28 | Updated for GEO name change | Draft v0.2 |
| B.Gopalakrishnan | 2022-04-12 | Initial Baseline | v1.0 |
| P.Kumaravelu  K.Damodaran | 2022-11-10 | 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- | V2.0 |

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