***A1.2 Tabular description of the most relevant use cases***

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| USE CASE 1 | Signal Reception | |
| Goal in Context | Signals from the sensors are received correctly. | |
| Preconditions | Sensors are installed and the system is running. | |
| Success End Condition | Values are received and processed. | |
| Primary actor | Sensor | |
| Trigger | No trigger | |
| DESCRIPTION | Step | Action |
|  | 1 | Sensors send the detected values to the system. |
|  | 2 | The system correctly receives and process those values. |

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| RELATED INFORMATION | Signal Reception |
| Priority: | Very High |
| Performance | The system must be able to handle at least 150000 signals per minute. |
| Frequency | Every minute. |
| Superordinates | Signal Elaboration |

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| USE CASE 2 | Signal Elaboration | |
| Goal in Context | Understand if the values are usual or above the threshold. | |
| Preconditions | Signal Reception is working correctly. | |
| Success End Condition | The correct values are sent to the client. | |
| Primary actor | Sensor. | |
| Trigger | The system receives the data. | |
| DESCRIPTION | Step | Action |
|  | 1 | The system receives the data. |
|  | 2 | The sensor that sent the values is identified and its set threshold values are found. |
|  | 3 | The newly received values are compared to the thresholds. |
| EXTENSIONS | Step |  |
|  | 1a | Some values are over the threshold:  Alert of values over the threshold. |

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| RELATED INFORMATION | Signal Elaboration |
| Priority: | Very high |
| Performance | Must be able to elaborate at least 150000 signals per minute. |
| Frequency | Every time a signal is received. |
| Superordinates | Storage |

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| USE CASE 3 | Alert of over-threshold values | |
| Goal in Context | Make sure the Manager is alerted of the critical conditions | |
| Preconditions | Manager is logged in dashboard | |
| Success End Condition | Alert is given to manager in case of dangerous situations in a certain area | |
| Failed End Condition | System alerts Manager that it isn’t able to detect dangerous situations | |
| Primary | Building Manager, Area Manager, Urban Manager | |
| Trigger | A value over threshold is detected | |
| DESCRIPTION | Step | Action |
|  | 1 | A value over threshold is detected |
|  | 2 | A warning is displayed |
| SUB-VARIATIONS |  | Branching Action |
|  | 1 | One value type over threshold is shown ORANGE |
|  | 2 | Two value types over threshold are shown RED |
| Priority: | Very High | |
| Frequency: | Every time that an unusual value is detected | |

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| USE CASE 4 | Storage | |
| Goal in Context | Signal values are correctly stored. | |
| Preconditions | Values have been received and handled correctly. | |
| Success End Condition | The system will know the last known values from that sensor. | |
| Primary actor | Sensor | |
| Trigger | A signal is received. | |
| DESCRIPTION | Step | Action |
|  | 1 | The signal is received and handled. |
|  | 2 | The signal is stored to complete the story of the values of a certain sensor. |

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| RELATED INFORMATION | Storage |
| Priority: | High |
| Performance | Must be able to store at least 150000 signals per minute. |
| Frequency | Every time a signal is received. |
| Superordinates | <optional, name of use case(s) that includes this one> |
| Subordinates | <optional, depending on tools, links to sub.use cases> |

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| USE CASE 5 | Show sensors’ value | |
| Goal in Context | System shows sensors’ value to the manager | |
| Preconditions | Manager is logged in dashboard | |
| Success End Condition | The Manager is correctly shown current sensors’ value | |
| Failed End Condition | Error message | |
| Primary | Building Manager, Area Manager, Urban Manager | |
| Trigger | Manager Login | |
| DESCRIPTION | Step | Action |
|  | 1 | Manager logs in dashboard |
|  | 2 | System evaluates current sensors’ value and label it with different colours considering the treshold value |
|  | 3 | System shows elaborated data to Manager |
| EXTENSIONS | Step | Branching Action |
|  | 1a | Values over the imposed threshold detected : Alert of threshold value |

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| USE CASE 6 | Expand area view | |
| Goal in Context | Manager can see a section of the area of expertise in detail | |
| Preconditions | Manager is logged in and dashboard is showing data | |
| Success End Condition | Manager can evaluate detail detected from sensors of an area | |
| Failed End Condition | Manager can’t focus on a particular area | |
| Primary | Manager | |
| Trigger | Manager select an area of interest | |
| DESCRIPTION | Step | Action |
|  | 1 | Manager logs in dashboard |
|  | 2 | System shows entire area sensors’ value |
|  | 3 | Manager selects a section of area |
|  | 4 | System shows details of selected area |

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| USE CASE 7 | Manage Sensors’ Properties | |
| Goal in Context | Admin can be able to change threshold value fo each sensor | |
| Preconditions | Admin logged in dashboard | |
| Success End Condition | Admin have modified threshold values of sensors | |
| Failed End Condition | Error Message | |
| Primary | Admin | |
| Trigger | Admin clicks on settings panel in dashboard | |
| DESCRIPTION | Step | Action |
|  | 1 | Admin logs in dashboard |
|  | 2 | Admin opens setting panel |
|  | 3 | Admin selects a sensor |
|  | 4 | Admin change threshold value for the selected sensor |

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| RELATED INFORMATION | Manage sensor properties |
| OPEN ISSUES | Understand who can change threshold values |