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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 1 | Machine Installation | -Machine Provider | Setup | a) Installs Vending Machine  b) Enters (Default Password, Default Username, Location, ID)  c) Enables remotes access and monitoring for beneficiary | a) Validates and accepts credentials  b) Sends new credentials to remote servers  c) System operates and is accessible locally and/or remotely by beneficiary | a) Credential submission not accepted.  [SR] Network error prevents sending credentials to remote servers | Security  -Login credential should be stored in a safe storage area on the vending Machine and encrypted |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 2 | Vending Machine | Beneficiary (Customer) | Business Setup | a) Chooses product Mapping from management interface  b) Enters product name into corresponding input box and clicks Ok button  c) Select a product name from a dropdown list  d) Selects a desired slot location from a dropdown menu  e) Enters a desired price into corresponding input box and clicks OK button  f) Select A desired price from dropdown menu  g) Select a desired temperature range or status from the current product dropdown menu.  h) Select a quantity for product from a drop down menu.  i) Presses save on management interface. | a) Validates and accepts price input  b) Validates and accept slots allocation  c) Accepts temperature ranges  d) Accepts and stores created configurations. | a) Beneficiary enters wrong format for price  [SR] Beneficiary is alerted to his error and machine does not accept input  b) Beneficiary provides wrong quantity for product  [SR] System fails to calculate the individual weight of product | #Performance  -The system should process given configuration in not more than 5 seconds  #Extensibility  The system should allow the Machine Provider to modify and extend the list of selection in the management interface dropdown lists  #Usability  The machine provider must inform possible suppliers about changes made in the Vending machine business setup |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 3 | Suppliers (Restock) | Supplier | Stock/refill | a)Open machine’s door  b)Places goods into machine  c) Locks the door | a) System response to suppliers locking the door  b)System calculate individual weight for products in allocated slots  -System initialises AlertControl according to configuration  -System calculates an estimate of overall product value  -System calculates offset against current available money in the Machine | a) Supplier places products in the wrong slots.  [SR] System fails to estimate overall estimate of current money in the system. | #Extensibility  The internal process of allocating and specifying product should be modifiable by the beneficiary  #Performance  The system should update the current and financial state in not less than 30 seconds |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 4 | Customer (Beneficiary) | Customer | Purchase Vending Machine | a)Request vending machine type to a specific location from Machine provider  b)Pay for the vending machine | a)Location of installation is define and mapped out  b) Machine installation is carried out and machine details (Type, location, ID, Customer) is logged on the Machine provider database server | a) Customer machine installation is faulty  [SR] System refuses to log and confirm details. | #Availability  Vending machine should be made accessible and operational. |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 5 | User (Purchase) | Users | Purchase items | a) Select a preferred item by pressing a button  b)Insert cash or card for payment  c)Get or pick up item from the base of the base of the machine | a)Vending machine reads and calculate the prefer item details (Type, slot-line, numbers, amount)  b)Vending machine reads and calculate the preferred item details(Type, slot-line, number, amount)  c)Vending machine display amount due and receive the proportionate cash value  d) Vending machine dispense or drop the item selected for user to pick it up | a) User select item and did not insert cash or payment  [SR] Vending machine refuse to dispense item  b) Uset select wrong item and insert cash (lower than the item value)  [SR] Vending machine refuse to dispense item and refund cash. | #Performance  The response from Vending machine is faster and correct |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 6 | AlertControl (Account Imbalance) | Cash/Currency sensor | Determine the status of the inserted cash/cash | a) Read and confirm the cash/card properties that was inserted  b) Compare the cash/card amount to the calculated value of the selected items. | a) Detect the genuineness of the currency or card properties.  b) Accept the cash/card and send data to confirm (in the case of credit/debit/visa card) | a) Cash/card cannot be verify  [SR] System cannot dispensed items. | #Performance  System process of validation and verification of inserted cash/card is quick |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 7 | AlertControl (Temperature Imbalance) | Temperature | Reads temperatures | a) Sense the ambient environ for change in temperatures proportionate to the value set, for the environs. | a) Adjust the degree of coldness relatively | a) Temperature sensor not reading correctly the set-up temperature environ  [SR] Temperature function refuse to work | #Reliability  Vending machine send alert to Machine provider and reset itself |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 8 | AlertControl (Vandalism) | User | Vandalise | a) Handles machine with aggressive force and malicious intent | a)Internal Acelerometers report data higher than the specify threshold  -System sends alert and report corresponding logs to remote servers  -System sends an alert email to the Beneficiary. | a)Internal Accelerometers may be faulty  [SR] System not able to detect possible vandalism  [SR] System interprets a normal purchase as vandalism | #Extensibility  The system should allow system wide recalibration of sensors |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 9 | AlertControl (Weight Imbalance) | Weight Sensor | Report weight data | a) Reports data from sensors that does not correspond to overall estimation of current weight | a) The system check if a purchase was made  -System check what was purchased  -The system calculates weight imbalance against the individual weight of product that was purchase  -The System determines if the weight balance corresponds to a possible product that was not dispensed due to error  -The system validates should a refund be issued  -The system reports weight imbalance and actions taken to remote server and logs | a) System cannot read sensor  [SR] System fails to determine if current weight imbalance was related to a foregoing purchase and cannot decide whether it should issue a refund. | #Performance  The response to a weight imbalance and the decisive action to take should be performed in no more than 4 seconds.  #Security  The manipulation of weight sensor to invoke a refund without cause should be prevented by efficient calculation |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 10 | Machine Setup | Beneficiary (Customer) | Login Setup | a)Select change login from management interface  b) Enters new username in provided input Box  c)Enters new password in provided input box  d) Presses save | a) Validate new credentials  b) Stores new credentials | a) Beneficiary (customer) supplies password not adhering to required format.  [SR] Vending Machine does not accept input and alert beneficiary (customer) the error | Security  -New username and password must be stored in a save location and encrypted |

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| Nos | Use Cases | Actors | Actions | Steps | System Response | Alternate Route | Non Functional Requirement |
| 11 | Login | Beneficiary (customer) | Login | a) Enters username  b) Enters password | a) Validate Credentials  b) Allow access to management interface | a)Machine Provider supplies wrong username or password  [SR] Vending Machine denies access to management interface. | Performance  -The management interface should load in a timely fashion within 1 to 3 seconds  -The management interface should be easy to use and functions should be displayed in a disambiguated manner. |