**IoT Smart Baby Monitoring System Use Cases**

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| **Name** | System Set Up for Parents |
| **Description** | *Finish when we know how to set it up* |
| **Primary Actors** | Parents |
| **Secondary Actors** | none |
| **Pre-conditions** | Parent’s must have acquired all pieces (ideally from a packaged box) and the “Manual” / “User Guide”. On the App, parents must go to the following page: “Settings” >> “Set Up”. |
| **Primary Flow** | Steps: |
| **Secondary Flow** | None, only one way to set up correctly. |
| **Post-condition** |  |
| **Exceptions** |  |

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| **Name** | General Calibration |
| **Description** | The parents will need to calibrate the device to fit the needs of their babies’ specific needs. |
| **Primary Actors** | Parents |
| **Secondary Actors** | Baby |
| **Pre-conditions** | Parents have chosen the “Settings” >> “Calibrate” page on the app. |
| **Primary Flow** | Steps: |
| **Secondary Flow** |  |
| **Post-condition** | Parents can leave the |
| **Exceptions** |  |

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| **Name** | Baby Crying (Sleeping/Playing) |
| **Description** | If the system picks up that the baby is crying in another room, then it will react in one of a few ways. Generally, the system will attempt to calm down the baby and then notify the parents.  If “Sleeping”, then the system selects quiet options to attempt to calm the baby down.  If “Playing”, the system selects any option it wants from the selection. |
| **Primary Actors** | Parent |
| **Secondary Actors** | Baby |
| **Pre-conditions** | The system has been set up according to the use case above and the system has been set to the “Baby Alone” mode from the correct android app page (either Sleeping or Playing). This mode means that the system will consistently be analyzing the baby’s room analyzing for data indicating the baby is crying (or might cry). |
| **Primary Flow** | Main Flow Steps:   1. The system verifies “Baby Alone” mode is set and validates whether the parents set it to Sleeping or Playing mode. 2. If the system notices that the baby is awake an unhappy (analyze voice, and face), then it will attempt the tools available for it and attempt to put the baby back to sleep (play lullaby, if hot make colder and vice versa) 3. After a certain amount of time (pre-set by parents), the parents will receive a notification informing them that the baby is crying. 4. The Parents have the option to attempt any of the tools again if they want (they will receive a summary of the attempted methods to settle the baby down). 5. If the options selected above do not work (the parents will be notified if they work), the parents can select the option for them to go and tend to the baby (and the notifications will stop). 6. After all is done, the parent’s will be prompted to select a reason for the baby’s discomfort from a provided list (for Data Analysis). |
| **Secondary Flow** | none |
| **Post-condition** | The system will continue to try calming down the baby and notifying the parents until the parents select the option for them to tend to the baby. |
| **Exceptions** | none |

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| **Name** | Baby Data Analysis |
| **Description** | The parents can get analyses of the (all) data collected for their baby. |
| **Primary Actors** | Parents |
| **Secondary Actors** | None |
| **Pre-conditions** | The parents have chosen the “Data Analysis” page on the app. |
| **Primary Flow** | Steps:   1. Parents enter a (variable) length of time to analyze 2. The system will query the database for the selected time and determine the following factors: (accuracy depends on parent’s cooperation in terms of entering the reason their babies woke up (in the Baby Crying use case)  * Average Hunger Times * Average Wakeup Times * Average Sleep/Nap time * Most effective methods (to calm down the baby) * Etc.  1. The system will also consistently be learning from the data that is in the database (machine learning) over time. 2. The system will display a page with all the collected data present for the parents. |
| **Secondary Flow** | none |
| **Post-condition** | The parents view the page with the data analysis for their baby. |
| **Exceptions** | Invalid date range request another attempt. |

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| **Name** | Live Stream of Baby |
| **Description** | The parents will have the ability to see live footage of their baby at any time via the “Baby Livestream” page in the app. |
| **Primary Actors** | Parents |
| **Secondary Actors** | Baby |
| **Pre-conditions** | Parents have chosen the “Baby Livestream” page on the app. |
| **Primary Flow** | Steps:   1. The parents select the option to turn on the camera (in the babies’ room) if it hasn’t been turned on yet (in Baby Alone mode) and start the |
| **Secondary Flow** |  |
| **Post-condition** | Parents can leave the |
| **Exceptions** |  |