Customer Requirements Specification

**SAG Glasses**

**ــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ**

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**Document Status:**

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| --- | --- | --- |
| **Name** | PO\_SAG\_CRS\_Glasses | |
| **Version** | V1.5 | |
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| **Author** | Omnia Muhammed | |
| **Date** | [7-12-2022] | |
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| **Mentor Approval** |  |  |
| **Final Approval** |  |  |

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| **Version** | **Author** | **Date** | **Change** |
| 1.0 | Reham Essam | [28/9/2022] | * Initial Creation |
| 1.1 | Jana Muhammed | [11/11/2022] | * Edit CRS Requirements * Edit Key Elements |

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| 1.2 | Jana Muhammed | [13/11/2022] | * Edit CRS Requirements * Edit system context |
| 1.3 | Omnia Muhammed | [17/11/2022] | * CRS\_REVIEW\_001 * CRS\_REVIEW\_002 * CRS\_REVIEW\_003 * CRS\_REVIEW\_004 * CRS\_REVIEW\_005 |
| 1.4 | Jana Muhammed | [20-11-2022] | * CRS\_REVIEW\_001 * CRS\_REVIEW\_002 * CRS\_REVIEW\_003 |
| 1.5 | Omnia  Muhammed | [7/12/2022] | * Edit CRS Requirements * Edit CRS Context * Edit Table of content |

**Reference Document:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref.number** | **Doc.Name** | **Version** | **Status** |
| 1 | PO\_SAG\_CR\_Glasses | V1.3 | Released |

Definition:

The Design of the project is The Glasses closed around the head, between the two lenses of the Glasses there is a camera, on the right hand there is a power button, flash and mic, on the left side there are three buttons and a speaker.

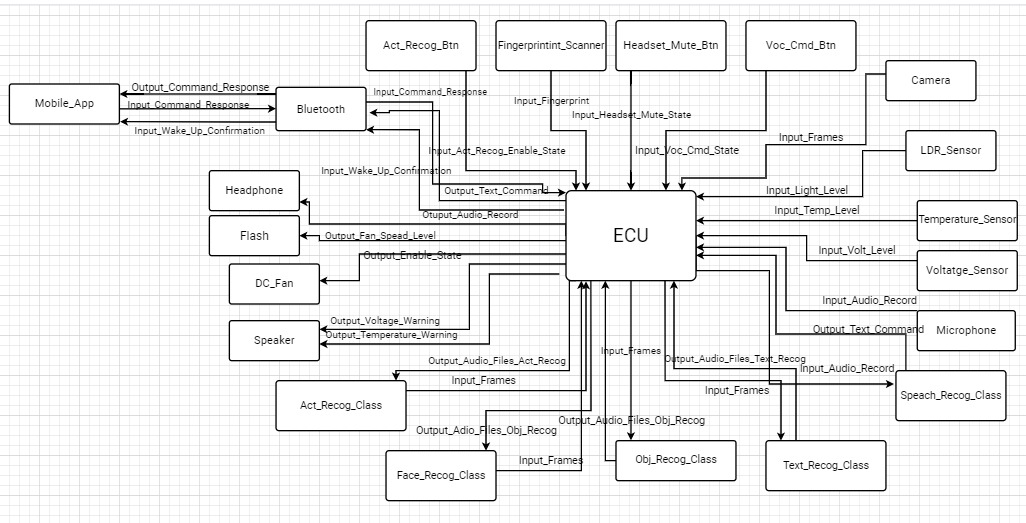
Features:

* The Glasses’ features can be controlled by the user through buttons.
* The Glasses have two modes (Day mode - Night mode).
* The Glasses can capture images.
* The Glasses support the voice command.
* The Glasses can speak.
* Glasses protection and maintenance.
* The Glasses use Bluetooth.

Key Elements:

* The Glasses shall have a button to turn it on/off.
* The Glasses shall have a button to control the headphone sound.
* The Glasses shall have a button to enable/disable image caption feature.
* The Glasses shall have a button to enable/disable voice commands.
* The Glasses shall detect the night/day mode using LDR.
* The Glasses shall have a camera that supports real-time capturing.
* The Glasses shall have a microphone through which it receives voice commands.
* The Glasses shall have headphones to play any audio.
* The Glasses shall send alerts through speaker.
* The Glasses shall keep tracking voltage and temperature level.
* The Glasses shall decrease heat using a DC fan.
* The Glasses shall have Bluetooth to connect to the mobile application.‏

**System Context:**



**CRS Requirements:**

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***001***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_002-V1.3 |
| **Description** | On ECU startup, the ECU shall set Headset\_Mute\_State with INN\_Headset\_Enabled as the default mode. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***002***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_002-V1.3 |
| **Description** | In the INN\_Headset\_Enabled mode, the ECU shall be able to send Output\_Audio\_Record to the Headset. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***003***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_002-V1.3 |
| **Description** | When Headset\_Mute\_Btn sends Input\_Headset\_Mute\_State, and the current mode is INN\_Headset\_Enabled, the ECU shall switch the Headset\_Mute\_State to INN\_Headset\_Disabled. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***004***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_003-V1.3 |
| **Description** | When Headset\_Mute\_Btn sends Input\_Headset\_Mute\_State, and the current mode is INN\_Headset\_Disabled, the ECU shall switch the Headset\_Mute\_State to INN\_Headset\_Enabled. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***005***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_004-V1.3 |
| **Description** | On ECU startup, the ECU shall set Voc\_Cmd\_State with INN\_Voc\_Cmd\_Enabled as the default state. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***006***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_004-V1.3 |
| **Description** | In the INN\_Voc\_Cmd\_Enabled mode, the ECU shall be able to receive Intput\_Voc\_Cmd\_State to the Headset. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***007***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_004-V1.3 |
| **Description** | When Voc\_Cmd\_Btn sends Input\_Voc\_Cmd\_State, and the current mode is INN\_Voc\_Cmd\_Enabled, the ECU shall switch the Voice\_Cmd\_State to INN\_Voc\_Cmd\_Disabled. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***008***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_004-V1.3 |
| **Description** | When Headset\_Voc\_Cmd\_Btn sends Input\_Voc\_Cmd\_State, and the current mode is INN\_Voc\_Cmd\_Disabled, the ECU shall switch the Voc\_Cmd\_State to INN\_Voc\_Cmd\_Enabled. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***009***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_003-V1.3 |
| **Description** | On ECU startup, the ECU shall set Act\_Recog\_Enable\_State with INN\_Act\_Recog\_Disabled as a default state. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***011***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_003-V1.3 |
| **Description** | When Act\_Recog\_Btn sends Input\_Act\_Recog\_State, and the current mode is INN\_Act\_Recog\_Enabled, the ECU shall switch the Act\_\_Recog\_State to INN\_Act\_Recog\_Disabled. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***010***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_003-V1.3 |
| **Description** | In the INN\_Act\_Recog\_Enabled mode, the ECU shall be able to send Output\_Audio\_Files\_Act\_Recog to the Headset. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***012***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_003-V1.3 |
| **Description** | When Act\_Recog\_Btn sends Input\_Act\_Recog\_State, and the current mode is INN\_Act\_Recog\_Disabled, the ECU shall switch the Headset\_Act\_Recog\_State to INN\_Act\_Recog\_Enabled. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***013***-V1.2 | **Covers** | PO\_SAG\_CR\_ Glasses \_005-V1.3 |
| **Description** | The ECU shall be able to take the Input\_Light\_Level from LDR\_Sensor | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***014***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_005-V1.3 |
| **Description** | If the Input\_Light\_Level is with the INN\_Night\_Mode range, then the ECU shall set Output\_Flash\_Enable\_State to INN\_Flash\_Enabled and send it to Light\_Flash. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***015***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_005-V1.3 |
| **Description** | If the Input\_Light\_Level is with the INN\_Day\_Mode range, then the ECU shall set Output\_Flash\_Enable\_State to INN\_Flash\_Disabled and send it to Light\_Flash. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***016***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_009-V1.3 |
| **Description** | When the ECU encounter any of the four low-voltage thresholds, the ECU shall send an Output\_voltage\_Warning signal, to the Speaker, with the detected threshold based on the Input\_Voltage\_level received from Voltage\_sensor. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***017***-V1.5 | **Covers** | PO\_SAG\_CR\_ Glasses \_010-V1.0 |
| **Description** | When the Input\_Temp\_level received from Temperature\_sensor is exceeding the maximum threshold, The ECU shall send Output\_Temperature\_Warning to the speaker. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***018***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to make a phone call, the ECU shall send the “call by number” command to the mobile app. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***019***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to create an alarm, he should specify the alarm's name, time, day and the repetitions state, the ECU shall send the “create alarm” command with the specified parameters to the mobile app. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***020***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to create a reminder, he should specify the reminder's name, time, day and the repeatition state, the ECU shall send the “create reminder” command with the specified parameters to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***021***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to list all the remindes of a specific day, the ECU shall send the “list reminders” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***022***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to cancel an existing alarm/alarms,,the ECU shall send “cancel alarm” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***023***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wnats to create a to do list, the ECU shall send the “create to do list” to command to the mobile app‏. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***024***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to open the Gmail app, the ECU shall send the “open gmail” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***025***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to open the mobile data, the ECU shall send the “open mobile data” to the mobile app. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***026***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to open the WIFI, the ECU shall send the “open wifi” to the mobile app. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***027***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | When the user wants to open the mobile location, the ECU shall send the “open mobile location” to the mobile app‏.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***028***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to know his current location, the ECU shall send the “get my location” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***029***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to know the current date and time, the ECU shall send the “get date” and “time” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***030***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to know the weather, the ECU shall send the “get weather” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***031***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to read the notifications, the ECU shall send the “read notifications” command to the mobile app. | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***032***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to open the "Be My Eyes" application, the ECU shall send the “app be my eyes” command to the mobile app.‏ | | |

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| **Req\_ID** | Req\_PO\_SAG\_CRS\_Glasses\_***033***-V1.1 | **Covers** | PO\_SAG\_CR\_ Glasses \_0011-V1.0 |
| **Description** | when the user wants to know the weather, the ECU shall send the “get weather” command to the mobile app.‏ | | |