Display content

All possible data:

- Battery life
- Orientation of IMU(as arrows)
- Status of flex sensor(together with arrows)
- Status of emergency button
- Current gesture
- Connectivity status
- Info on the car(speed, direction, battery life)

Multiple screens

A main screen:

Appears when all is ready to go. Will show useful information:

- Battery percentage of the glove ; percentage
- Signal strength between glove and end device ; great/good/bad/NC(not connected)
- Battery of the end device ; percentage
- Feedback from the end device like speed if possible ; km/h
- Status of the hardware/ emergency interrupt ; no/ yes?
- Orientation of the glove ; a moving circle in another bigger circle
- Resistance from the flex sensor ; a circle that gets bigger the more resistance

An all black screen:

Appears while the device is in sleep mode.

When will what action take place?

Sleep mode:

When the hardware interrupt is used once and not disabled within 5 seconds.

Watchdog timer:

Will make sure that the sensors are measuring, the data is being displayed and send within defined time frame.

Hardware interrupts:

When a button is pushed, all data transfer will be stopped and the device will be put into sleep mode if not pressed again. When in sleep mode press the button to start the device.

Software interrupts:

When the connection is lost send an interrupt to connect again before further action is taken.

Using RTOS / embedded Linux:

The esp32 will use its multiple cores and RTOS task creations to execute functions.

Reading a sensor:

The chosen sensors(IMU and flex) will be constantly read, displayed on the glove display and send to the end device.

Control an actuator:

The send data from the sensors over Bluetooth or WIFI will be used to control step or other motors on the end device.

ChangeLog

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