

## Problem Statement

Hospital patients face a problem with long waiting lines in hospitals. For hospitals wanting faster waiting queues in vital signs measuring, our product AVSMS provides a solution that is efficient, cheap, portable, and does not require external assistance.

## Constraints

- SDAIA Compliance > 90%
- Microcontroller failure rate < 0.1%
- Machine Dimensions 90 cm by 2.2 m
- Voltage range operation 3.3V to 12V DC

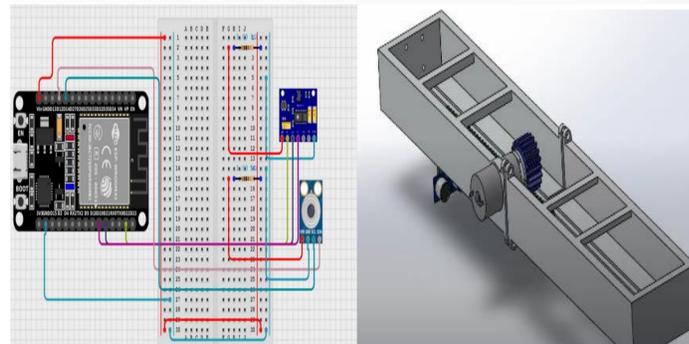
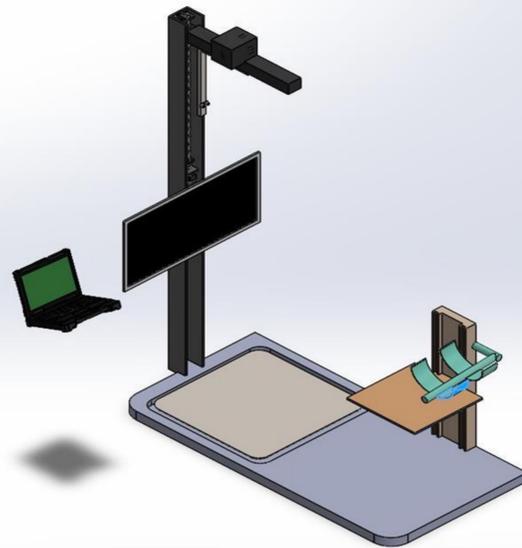
## Specifications

- Alerts dangerous readings < 5 seconds
- Data analysis accuracy > 90%
- Displays last 10 measurements records
- Measured temperature within  $\pm 1^\circ\text{C}$
- Measured SpO2 within  $\pm 2\%$
- Overcurrent prevention fuses with range 0.3 mA to 2.4 A
- Height measurement maximum = 2.2m
- Blood pressure cuff closes < 5 seconds
- LEDs lit in < 1 second
- Readings displayed in < 5 seconds
- Components baud rate > 9600 bits/s
- Prototype weight < 30kg
- Cooling system keeping system < 30 °C

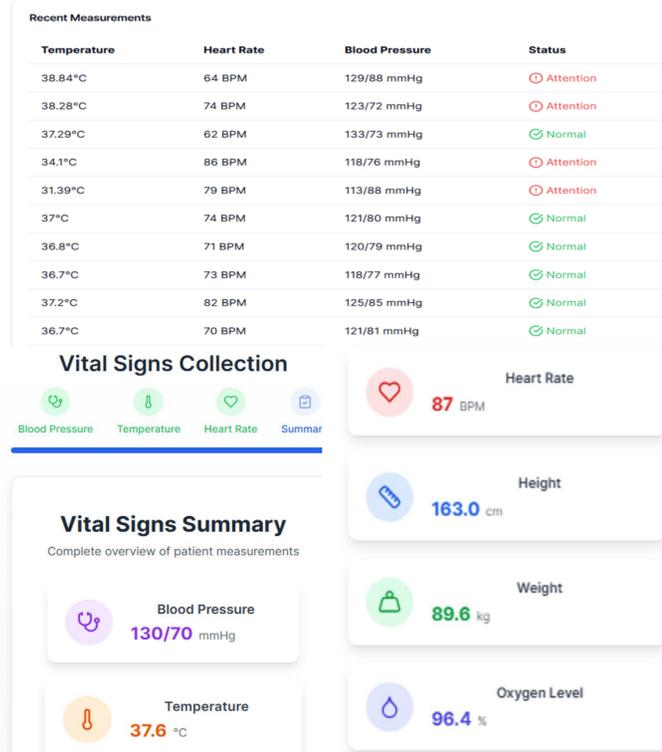
## Standards Followed

- ISO/IEC 27001 Standard for Information Security Management Systems
- NIST Special Publication 800-53 Security and Privacy Controls
- ISO 13485 Standard for medical devices
- SASO Standards

## Prototype Design



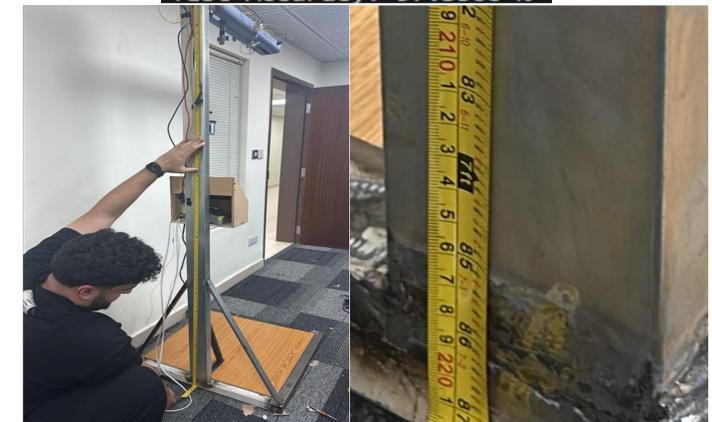
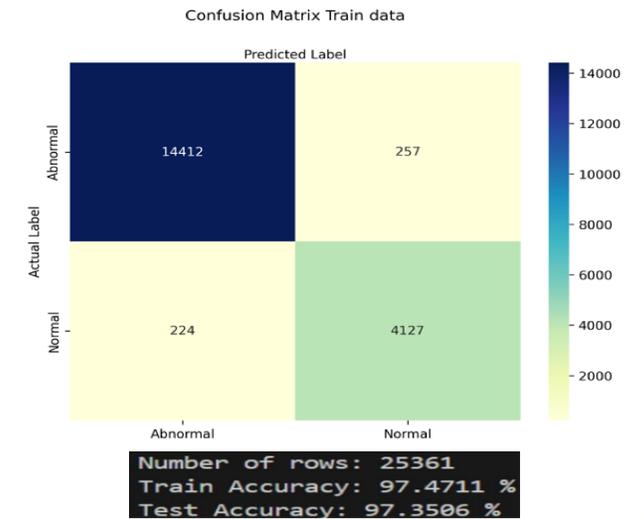
## Website Prototype



## Physical Prototype



## Testing & Validation



## Conclusion

In conclusion, our project measured vital signs without the need for external assistance. It combined mechanical and electrical components to ensure efficient operation. Additionally, the system integrated data analysis and face recognition to enhance reliability and personalization in patient monitoring.