BLUE EYES TECHNOLOGY

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Introduction

In future, you can interact with your computer and you can talk, listen and even scream aloud with your computer. It can be done with the help of speech and face recognition techniques. If you ask your computer to dial to your friend or relative at his home or office then it does this with the help of mouse and dials your friend or relative at his home or office and establishes a connection. So Blue Eyes technology creates computational machines that have perceptual and sensory ability like those of human beings. It uses non-obtrusive sensing method employing most modern video cameras and microphones to identify the user's actions through the use of imparted sensory abilities.

Blue Eyes

- Creates computational machines which have sensory and perceptual abilities.
- It has ability to monitor and record human beings physiological condition.

1. Why we call it blue eyes?

We call it as blue eyes technology because it emphasis on Bluetooth and movements of eyes. Where Bluetooth provides wireless communication and the eye movements allow us to attain a lot of exciting and vital information.

2. Key feature of the system:

- Wireless data acquisition using Bluetooth technology
- Visual attention monitoring
- Operator's position

- Physiological condition monitoring that is pulse rate, blood oxygenation etc.

- User defined alarm triggering

3. Working of Blue Eyes system:

Blue eyes technology checks the status of the operators' visual attention through measurement of saccadic activity. The system checks heart beat, pulse rate and blood oxygenation and triggers user defined alarms. Blue Eyes technology has two components: mobile measuring device (Data Acquisition unit) and a central analytical system.

The mobile device is integrated with Bluetooth to establish connection and send messages to the operator which comes from central unit and also handle ID cards that are assigned to each operator. Central unit controls other functions like Bluetooth connection, buffering of incoming sensor data and also provide visualization interface.
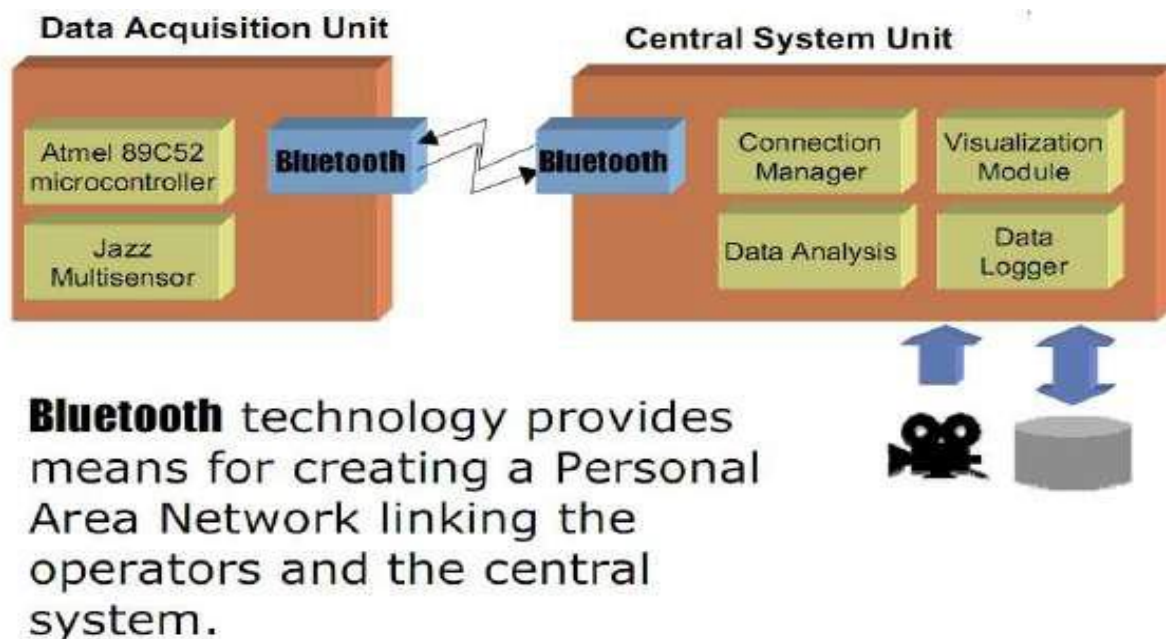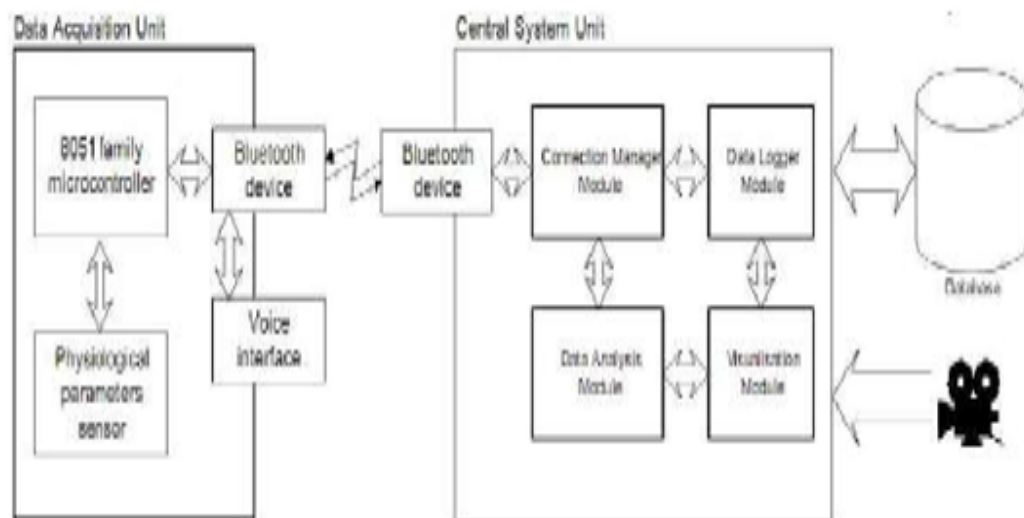

Fig 1: System Overview

Fig 2: Overall system

4.1 Hardware and software part of the blue eyes system:

- Data Acquisition Unit (DAU)

- Central System unit(CSU)

1. Data Acquisition unit: it is mobile device of the system. Its main part of the blue eyes system. Its main task is to fetch physiological data from the sensor and send to the central system to be processed. For this device has to establish wireless Bluetooth connections. for operators authorization , ID cards and Pin numbers are used. For communication with operator, 5-key keyboard, a small LCD display is used.

Hardware parts of the DAU:

- Atmel 89C52 microcontroller –system core

- Bluetooth module

- HD44780-LCD display

- 24C16-12C EEPROM

- MC145483-13bit PCM codec

- Jazz multiuser interface

- Beeper and LED indicators, 6 AA batteries and voltage level monitor

2. Central system unit: this is the second peer part of the blue eyes system. It contains Bluetooth module and PCM codec for voice data transmission. The module is interfaced to PC with Parallel, serial and USB cable.

The CSU has four main parts that are Connection manager, Data Analysis module, and Visualization module and data logger.

Connection manager maintains wireless communication between the mobile DAU and Central system.

Data analysis module performs the analysis of the raw sensor data in order to obtain information about the operator's physiological condition.

Visualization module provides a user interface for the supervisors. it enables them to watch each of the working operator's physiological condition along with a preview of selected video source and related sound stream.

4. Types of Users: three types of users are available in blue eyes system:

- Operators: the person whose physiological conditions are checked. They wear DAU.

- Supervisors: he supervises or analyses operator's conditions and performance.

- System Administrator: maintains the system and add new operators etc.

Advantages

- Prevention from unsafe incidents

- Minimization of ecological consequences financial loss a threat to a human life

- Blue Eyes system provides technical means for monitoring and recording Human-operator's physiological condition.

- Room recording

- Recorded data playback

Disadvantages

- Doesn't guess nor get in the way with operator's thoughts.

- Cannot force directly the operator to work

Conclusion

Blue Eyes technology is a very convenient technique that easy our life by providing more user friendly environment. In future, may be Blue eyes device reach in the market as our hand held device. Blue eyes technology makes a computer that interacts with us as we interact with each other or understand our feelings. Ordinary household device like refrigerators, ovens etc. may be does their own job when we look at them or speak to them. Any way this is only the technological forecast.

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