Sixth Sense Technology

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Abstract - *Every day we encounter new objects around us hence we become curious about that particular object .This make us to Surf through the Internet or ask any expert in that field. Instead Sixth Sense Technology can be used to get the information as soon as you see that object. Sixth Sense Technology gives us the feeling that we are dealing with real world object. Thus making entire world your computer integrating information into our daily life to reduce gap between physical and digital world and Goal is to bring part of the physical world to digital world. Natural Hand Gestures are used to communicate with the Sixth Sense Device. This paper explains the working of Sixth Sense Technology, component, history. This paper also focuses on the Security issues of the Sixth Sense Technology and how effects of these issues can be minimized, usefulness of Sixth Sense Technology to disabled human beings, advantages, future vision and conclusion.*

Key Words: **Digital World, Natural Hand Gestures, Sixth Sense Technology, Sixth Sense Device, Security Issues.**

1. INTRODUCTION

We all know that sixth sense is a simple wearable gestural interface device but it can also interact with the world using our five senses. Sixth sense technology is an extra sense to human being. Sixth sense technology bridges the gap between physical and digital world with the help of hand gestures.

It is a Pendent like device which has projector, camera, and cell phone. Every new device is almost a touch screen device hence Sixth Sense Technology also accepts the input in touch only which makes ease of operation and saves utilization time, using simple hand gestures, touch screens can be obtained from any surface for various applications.

The inception of this concept of a wearable devices was before done by Steve Mann in 1990.Pranav Mistry, further took this idea of sixth sense technology was developed at Media labs in MIT and it was called as Wear Ur World (WUW).

The various applications can be performed such as drawing with index finger, reading newspaper, mapping, checking time by drawing a wrist watch etc.

2. OBJECTIVES OF BLUE EYES

The main objectives of the research paper are as follows:

[1] The basic objective is to understand the Sixth Sense Technology's working and it's all components. This includes study of what all devices are required to use this Sixth Sense Technology. The Work of individual devices.

[2] The main objective is to focus on the Security Issues of the Sixth Sense Technology. We all know that Sixth Sense Technology is being for a while but not been used in daily usage because of its security issues. The security issues will be taken into consideration.

[3] As there are security issues in Sixth Sense Technology, it is required to Minimization of those issues so that it can be used in our daily lives.

[4] We are human beings and the technology needs to be in such a way that is Useful all people .Here it is discussed how this Sixth Sense Technology is useful for disabled people.

[5] The Advantages is also mentioned further.

3. LITERATURE OVERVIEW

As mentioned earlier Steve Mann invented wearable device in 1990's. Firstly this device was worn on head with helmet but later designed the device to wear around the neck.

The mind behind Sixth Sense technology was started late in 1990's by Steve Mann at MIT who actually proposed first wearable computer.

In 1994, He came up with idea to put projector on head and camera. He is also known as "father of emergence Sixth Sense" technology. It was not easy design to wear and use it daily hence modified the design and made it neck wear device. Further, an Indian scientist Pranav Mistry took the concept ahead and was inspired by the movies like Robocop. The vision was to create communication with computers easy.

It becomes easy to get information anywhere with few seconds and on any screen .The great ability of the device is to scan any object and get the information about that object.
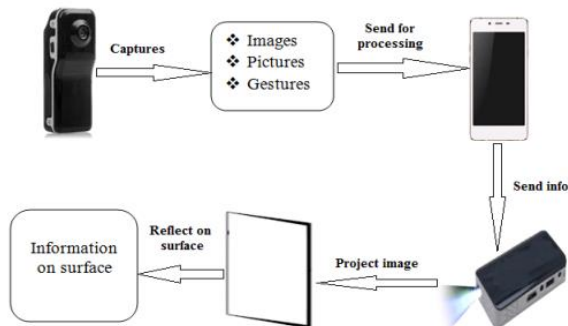
4. SYSTEM OVERVIEW

4.1 Working and Components

Fig -1: Working of SST

Camera:
It is a digital eye of the system. Camera captures the behavior and hand gestures and photo is clicked making framing gestures.

Mobile Component:
Mobile is used a processing device which is kept in pocket. All other component is connected to the mobile. This computing device is connected to high speed network or wireless connection.

Projector:
It augments the physical object, wall or any other thing. The Projector is used to project digital information and it is used as user interface. This is the projector which has a battery to provide an electric power.

Mirror:
The mirror reverses the effect of projector hence it becomes easy to project on any surface. The mirror can be relocated to change the projections direction.

Microphone:
Microphone is not compulsory component when we use paper interface then we use microphone and it senses the audio signal of touch of user.

Color Markers:
Colored markers placed at the tip of the user's fingers using simple computer vision techniques. Webcams captures the movement of fingers and these movements are interpreted into gestures that act as instructions to the projected interface.

4.2 Security Issues

Almost all new technology of current time has some security threats. With sixth sense device also there are some security concerns due to which it is still not in the market. These threats are causes the device to reduce the accuracy of data. Let us study in depth all the security issues:

No Privacy:
In Sixth Sense Fingers are only used to take a picture hence clicking the picture without telling to other object or people where people do not want to be clicked randomly and object may be private property. This is privacy violation hence it is a huge problem. Hackers can also get peoples personal information without getting caught.

Tool for Hackers:
A hacker could use this device to attack an online environment using functions on the device to break in building. It can lead to Hacktivism which is closer to cyber terrorism. Hackers or Hacktivist will use this device as a weapon to feed or can provide information　　　to Hacktivist army.

Cyber Security:
Sharing information with other device could lead to a real problem that means information can be manipulated and infected with virus and malwares. Malwares are not good to be in computer system because it take can take personal information and mislead it.

Health Issues:
When the device is projecting on hard surface, it is not private only for the user using it rather people around him can see the projection very easily since it is very definite and exact. As we all know that projection is better at night time and dark areas than morning and bright areas. This is a bigger issue from health prospective that vision of the user can be damaged.

Sixth Sense can create problems in daily lives. We cannot use it in Medical Environment. Though this device will allow us to recognize people but it is an infringement on our privacy. Pranav Mistry said-"This prototype needs some serious engineering and programming."
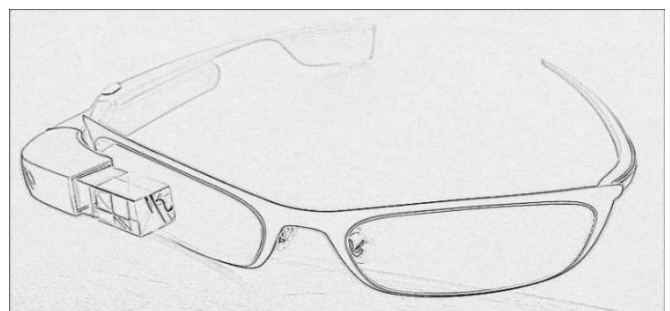
4.3 Proposed system

Fig -2: Gear Virtual reality device

Device like Virtual reality can use so that only the person who wish to see information can use it. This device will also give the same effect of projector. This implies the elimination of projector which is used to wear for projection. All the wires or cables which are connected to the projector can be connected to Virtual reality device. This ensures the privacy of information and it won't be seen by any other person. Microphone is used for recording audio and this device looks like glass can be connected to Bluetooth.

Sharing:

If above solution is implemented successfully then we can look forward for sharing information among two Sixth sense devices. Method of Encrypted authentication can be implemented to sharing data or information.

Pendant like projectors screen was visible to all hence using the 3D infrared laser we can interact with the screen that is not visible to others. The Glass has small display which displays photos and can communicate with screen. Laser will detect the gesture and accordingly pass the signal to computing devices. If she/he wants to show what he is watching to anyone with the help of this application it can be done. Thus the augmented reality had gone in to a different dimension. It can also use as a night vision device and can be used by militaries. Also it can help the disable people. Thus not only economic but also it can be used for wellbeing of humans.

4.4 ADVANTAGES

The digital information and its objects are integrated into the physical world by using the Sixth sense interface, thereby making the entire world as our own computer.

[1] Sixth Sense makes machines like computers to adapt to human needs and not the other way round.
[2] Hand gestures are used to interact with digital information, multi-touch and multi-user interaction is also supported.
[3] Useful for people who can't speak and can make possible to understand by others what he is try to say with his sign movement's recognition into text.
[4] Comparatively easy to carry as can be worn in our neck Even a naïve man with little or no knowledge of mouse and computer can use this device.
[5] It is portable.
[6] The cost that arose for the making of the sixth sense technology proto type is exceptionally low. This device costs around $300.

4.5 DISADVANTAGES

[1] While using this device the user can not see any other thing than the projected screen like head phone if we listen songs we can't listen any other thing.

[2] It is dangerous to eye because of direct projection to the eye.
[3] It is less useful for eye disabled people.

5. FUTURE SCOPE

[1] Connect the device to cloud for storing information.
[2] HD projection.
[3] High speed processor connected to device.
[4] Camera can act as eye for blind people as a fifth sense for them.
[5] Making this device a part of body with elimination of all health issue.
[6] Sixth sense framework implements several applications that demonstrate usefulness, availability and flexibility of the system.

6. CONCLUSIONS

The Sixth sense technology is near future technology. If its security threats are handled efficiently then it will be the most popular technology amongst all. It will definitely be one the best technology to use in daily lives but a serious work has to be done on this technology to make it possible. It is the real example of how we can greatly communicate with the technology to make our life easy and as the name suggests it is definitely an extra sense to disable people

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