

# Google Glass

## A Wearable Computer Model

Rinna Joy

Department of Computer Science  
St.Mary's College  
Thrissur, Kerala, India

**Abstract**—Google has developed computer with an optical head mounted display the research and development project glass .Glass displays information in a hands-free format which can interact with the internet through natural language voice commands. It can have both the two features virtual reality and augmented reality. It consists of 4G technology, android system, eye tap, smart clothing and wearable computing

**Keywords** — 4G technology, Android system, Augmented reality, Eye tap, Virtual reality, Smart grid technology ,Wearable computer .

### I. INTRODUCTION

Google glass is defined as “the program to develop optical head mounted device having wearable computer”. Google is declared the Google glass in April 2012 to use the wearable technology of head mounted display. The Google working to developed in Google glass device on the Google X laboratory. Google has started selling Google glass in US 15 April 2013 for limited period. Its functionality and physical appearance has been compared to Steve Mann’s Eye Tap ,which also referred to as “Glass”. The operating system used in glass will be google’s Android.It have two features virtual reality and augmented reality.

a) Virtual reality applies to computer-simulated environments that can simulate physical presence in places in the real world and in imaginary world.

b)Augmented reality is a view of a physical, real world environment which is live, direct or indirect.

### II. TECHNOLOGIES USED

#### A. Wearable Computing

It is an electronic device that is worn by the bearer under, with or on top of clothing. It is also known as body-born computers. This technology proves helpful in case of the applications which require hard computations . This technology have reduced the time of action and intention for example, as Google suggests possible search options on inserting few initial letters in the search box. Its main features are consistency and ability to multitask .

#### B. 4G technology

4G technology is fourth generation of mobile communication technology. A 4G system provides ultra broadband internet access for example, laptop, wireless modems also smart phone

and other phones. Voice and 3G services to communication with mobiles. It is successor of 3<sup>rd</sup> generation technology. Its data speed is 100Mbps. It provide Data security for mobile devices, computers.

#### C. Android Operating System

Android is mobile operating system consist of the Linux base OS. It is developed by Google. It is open source and its code is released under the Apache License. Almost every smart phone now a days is designed on Android operating system . The android operating system consist of different version which are Astro, Cupcake, Donut, Eclair, Froyo, Gingerbread, Honeycomb, Ice cream sandwich, Jellybean and latest version is Kit-Kat.

#### D. Eye tap

Eye tap is head mounted display which acts as camera for recording pictures and scene present in front of eye. The image is reflected digital Camera (eye tap) this image is captured and send to the computer. It simply the capture image and scenes to use eye tap. The user’s eye operates as monitor and camera

#### E. Smart grid technology

An electrical grid which uses communication technology together and act on information ,such as information about the behaviours of suppliers and consumers in an automated fashion to improve the efficiency , reliability, economics, and sustainability of the production and distribution of electricity is called as smart grid.

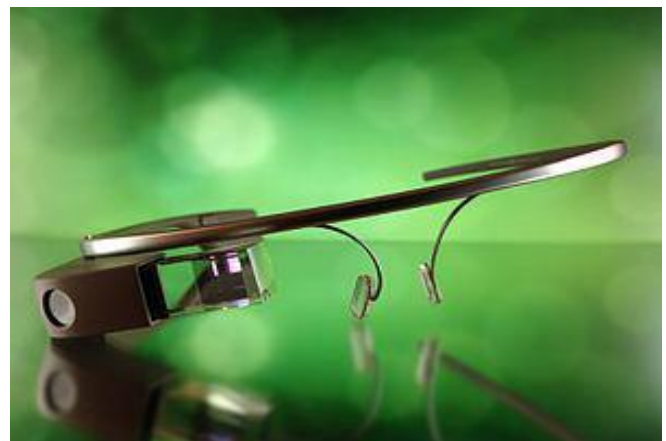


Fig1. Google glass

### III.HOW IT WILL WORKS?

Google glass’s design is embedded with small chips camera, video display, battery, and speaker. It hand free display works on the android and connects a phone through Wi-Fi and Bluetooth. Small chips cameras are used to capture the images and scenes in front of the eyes. Hand free information is displayed in pop up manner using video display.

Google glass’s working steps are as follows:

- i. The mini project on the glass projects the image in it.
- ii. Then the image is redirected to eye.
- iii. The information is displayed over the wearer field of vision.
- iv. If the uses wants to transmit the data that can be photo or videos of what wearer it seeing, can be done through the build camera.
- v. To transfer the information between devices the device can be connected to smart phone.

#### Voice Commands

Enlisted with the commands which can be used while handling Google glass.

FEATURES	VOICE ACTIVATION TEXT
RECORD VIDEO	“OK, GLASS, RECORD A VIDEO”
TAKE PICTURE	“OK, GLASS, TAKE A PICTURE”
USE GOOGLE NOW	“OK ,GLASS,[QUESTIONS]”
SEARCH PHOTO	“OK, GLASS, GOOGLE PHOTO OF SEARCH [QUERY]”
TRANSLATION	“OK, GLASS, SAY [TEXT] IN [LANGUAGE]”
GIVE DIRECTION	“OK, GLASS, GIVE THE DIRECTION[PLACE]”
SEND MESSAGES	“OK, GLASS, SEND MESSAGE TO [NAME]”
	“OK, GLASS,[SEND] NAME THAT [MESSAGE]”
	“OK, GLASS, SEND[MESSAGE] TO[NAME]”

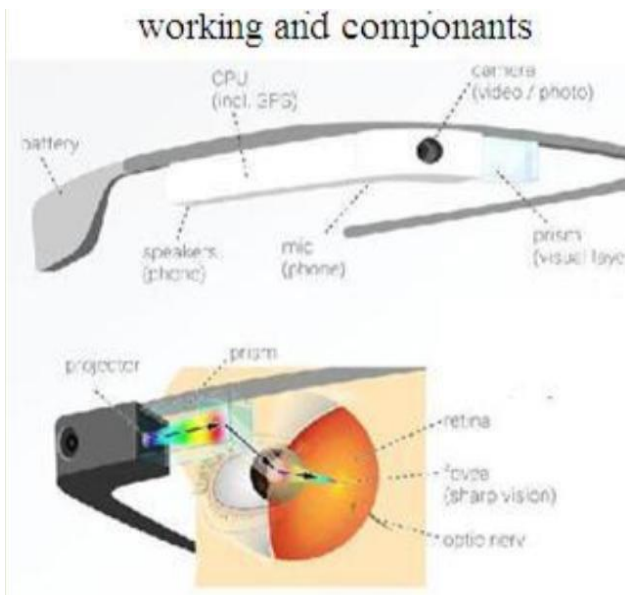


Fig2. Working and components

### IV .DESIGN

- A. *Video Display:*  
Its options with the tiny video display screen that’s display the crop up hands free data.

- B. *Camera:*  
It additionally has the front facing video camera with that photo and video is taken in it.
- C. *Speaker:*  
Google glasses are designed to be hands free wearable device which will be build or receive calls too. Therefore a speaker is additionally designed by the ear.
- D. *Button:*  
A single button on the spect of the frame the glasses to figure with the physical bit input.
- E. *Microphone:*  
A mike is additionally place in, which will take the voice commands of the user. This mike is a additionally used for having telecom communication.

### V.BENEFITS AND LIMITATIONS

Benefits:

- Easy to wear and use.
- Google glass responsive and sensitive to presence of people.
- It provides fast access of maps, videos, chats ,documents and much more
- It is a new trend for fashion lovers within an innovative technology.
- It is a useful technology for handicapped and disabled people.

Limits:

- Users wearing spectacles won’t be able to wear Glass.
- Privacy of people may be violated with Glass
- Glass shows data in front of user’s eyes. So it will be a tough experience for him/her.

### VI. APPLICATIONS

A. *you'll be able to build calls via Glass:*  
Google Glasses can be build calls by merely speech the device. If you wish to call a friend, simply say"OK, glass, call my friend, Karen" and it initiates a call. It’s that easy.

B. *The translation is simple, sensible and fun:*  
Imagine the potential of having the ability grasp and determine street signs in foreign languages, languages being spoken around you and having the ability to drag up connected information just by Google Glasses looking at objects. that's the ability of Glass to shrink the planet.

C. *Say "take image" to capture a picture:*  
The Glass unit responds to voice commands like "take a picture" and takes snapshots of no matter object you're staring at. The photographs are mechanically uploaded on to your Google+ in period . This can be a superb thanks to take shots of

these rare moments while you're engaged in associate degree activity while not distraction from it.

- D. With Google Glass you'll be able to record hands free, just like taking snapshots , recording works in an exceedingly similar method by telling glass to record the activity you're engaged or starting at. what's even additional wonderful is that the ability to share what you're seeing on a Google resort lives?
- E. If you are lost Google glass can come back to your rescue .Glass give directions to your destination from wherever you're.

#### VII. CONCLUSION

Google Glasses are wearable computers which use the familiar technologies. It provide ease of communication and information access even for the physically challenged class of people who cannot use palmtops and mobiles.

#### ACKNOWLEDGMENT

I would like to acknowledge the contribution of all the people who have helped in reviewing this paper. I would like to give sincere thanks to Mis. Betsy Binu our head of department for her guidance and support throughout this paper.I would also like to thank our families and friends who supported us in the course of writing this paper.

#### REFERENCES

- [1] Miss shimpali Deshpande , Int.J of scientific Research,Volume 4,Issue 12.
- [2] Narmatha s.pathkar ,Neha s.Joshi ,Int J of Application or Innovation in Engineering and Management (IJAIEM)
- [3] Pallavi N.Holey ,Vishwas T.Gaikward, International Journal of Advance Research in Computer Science and Management Studies.(ijarcsms)
- [4] <http://www.google.com/glass/start/>
- [5] [http://en.wikipedia.org/wiki/Project\\_Glass](http://en.wikipedia.org/wiki/Project_Glass)
- [6] [http://en.wikipedia.org/wiki/Virtual\\_reality](http://en.wikipedia.org/wiki/Virtual_reality)
- [7] [http://en.wikipedia.org/wiki/Eye\\_tap](http://en.wikipedia.org/wiki/Eye_tap)
- [8] [http://en.wikipedia.org/wiki/Google\\_Glass](http://en.wikipedia.org/wiki/Google_Glass)
- [9] <http://en.wikipedia.org/wiki/4G>
- [10] [http://en.wikipedia.org/wiki/Wearable\\_computer](http://en.wikipedia.org/wiki/Wearable_computer)

$$(1) \quad \alpha + \beta = \chi. \quad (1)$$