

# GOOGLE GLASS TECHNOLOGY

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**Abstract** - Google glass interacts with the world through android operating system. Google glass is a new and up to date technology which includes all options in smart phones and has internet facilities. Virtual reality and augmented reality are the two most commonly used features. Google has developed wearable computer named as optical head mounted display. It works with voice commands and useful for handicapped and disabled. It consists of 4G technology, android system, eye tap, smart clothing and wearable computer.



**Key Words:** Virtual Reality, Android System, EyeTap, Wearable Computers.

## 1. INTRODUCTION

Google glass is designed in the shape of a pair of eyeglasses. It will be displayed in smart phones. People who wear this can communicate with internet through voice commands. It also had a camera attached to it. It's an alternative approach of having a software package. The memory is 2GB RAM. The storage consists of 16GB flash memory (12GB is used for this technology).

Google glass consists of four generations:

**First generation:** In this generation the use of television camera named as "analysis of glass" camera is located in the eye which will affect the eye for few hours in case of display integration.

**Second generation:** The second generation is used to define the effect of camera.

**Third generation:** This generation includes the control mechanism of focus in glass.

**Fourth generation:** The problem which arises in focusing the lens is solved in this generation.

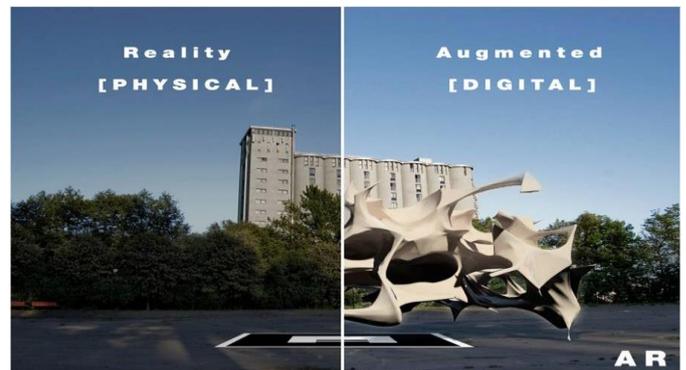
## 2. FEATURES

### Virtual Reality

The virtual reality is defined as an artificial environment to develop the software user's real thing of real world. It is mostly used in the field of education and training to experienced senses of vision and sound.

### Augmented Reality

It defines the direct or indirect living things on real world environment. This technology is also used for sound, video, graphic and internet data of navigation to global positioning of system. It is easy to handle and a useful technology that is used by all kinds of people. It is mainly used for the purpose of navigation, social and networking purposes



### Display

The Google glass utilizes a liquid crystal display, field successive colour framework, LED illuminated display. The board mirrors the light and adjusts to polarization at dynamic pixel sensor sites. The in-coupling PBS then reflects the S-polarized areas of light at 45 degree through the out-coupling beam splitter which reflects the collimated light another 45 degree and into the wearer's eye.

## Camera

Google glass can take photographs and record videos.

## Touch Pad

A touchpad is situated in favor of Google glass, which enables clients to control the gadget by swiping through a course of events like interface showed on the screen.

## 3. TECHNOLOGIES USED IN GOOGLE GLASS

### A. Wearable Computers

It is an electronic device and also known as body borne computers. This technology is specifically used in the field of media and information technologies. It provides a direct interaction between user and the computer and there is no need of any external devices to be in the mode of on and off. It has the ability of multi-tasking (i.e this system can perform one or more tasks at a time). This is particularly used for some of the advanced software and requires some hardware computations.



### B. Android Operating System

Android is a linux based operating system. It is commonly found in mobile devices and familiar in modern society. It is developed by google in open handset alliance. The approximate calculation is found to be 700,000 apps available in play store that is available in android play store. This technology can have any version of android (versions of android in keywords to be mentioned as alpha, beta, chocolate, kitkat, lollipop, marshmallow and ice cream cake).

### C. Bluetooth

Google glass has the facility of communicating through bluetooth. Google glasses can eliminate headphones because the vibrations through the headphones to the earpieces will distract or lower the level of communication.

### D. EyeTap

Eyetaap acts as a camera for capturing pictures and audios that is seen by the user. This eyetaap is used to convert the

user seen and the pictures that is been captured by the user into the computer and will be useful for future reference. This is completely based on the user's eye because the eye works as a monitor for capturing or recording pictures.



### E. Smart Grid Technology

Smart grid is nothing but the technology used to assemble the informations in an automatic fashion to enhance the potentiality and the distribution of electricity.

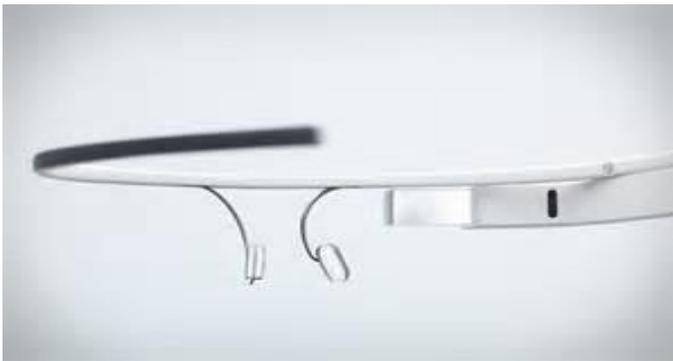


## 4. APPLICATIONS

Google glass is built by third party developers. Some of the google glass applications that can be mentioned are Google now, Google maps, Google+ and the Gmail. It also includes some of the applications such as facial recognition, manipulating the photos, exercise, translation, and sharing the informations through some of the social networks such as twitter and facebook which is being popular in this generation. On march 2013, google released the mirror API (APPLICATION PROGRAMMING INTERFACE) which allows developers to start making apps for google glass. On the same year google announced the release of seven new programs that includes evernote, fashion news from elle, and news alerts from CNN. It is to be noted that a store named as a "GLASS BOUTIQUE" allows synchronization to glass of glassware and application programming kit.

### A. MyGlass

MyGlass is an app that is offered by google regarding android and ios application.

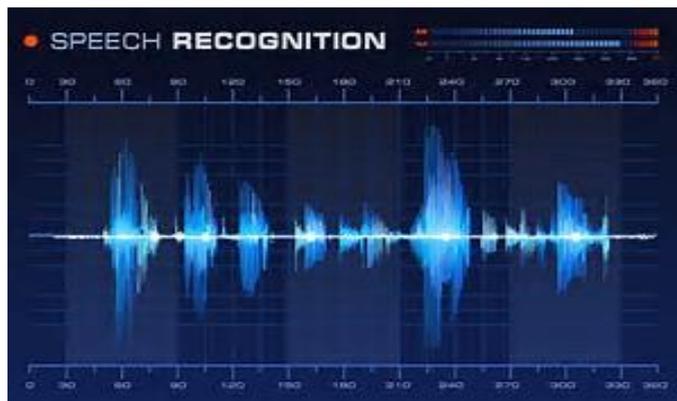


## B. Voice Activation

Google glass can be controlled by voice actions rather than touchpads. To activate the google glass the users have to turn their head to 30degree upward. Another way of activating the google glass is tap the touchpad and just say "OK GLASS". By saying the the command glass is activated and users can start to do their actions such as taking a picture or recording a video.

hours in a week and improves the quality of chart. This stream information can be passed to remote subscribes to secure rooms in which the doctor patient interaction allow the physicians to focus on the patients by eliminating the technologies which is being interruptive.

The use of Google glass to acquire images of a patient's retina named as "GLASS FUNDOSCOPY") is a technique on the cover of journal for mobile technology in medicine.



## 5. USES OF GOOGLE GLASS

### A. Health Care Applications

Drchrono, California is based on e-medical record company and has developed a new application for the device which is named as "wearable health record". This can be used by the doctors who registered the drchrono app for glass. This app is used to record a consultation with complete permission of patients. In the electronic medical record the patients videos, notes, photos are stored based on the cloud storage technique and collaboration service and it can be shared with the patient on request whenever the details are needed for the patient in order to commit in other hospitals or some other medical improvements.

In San Francisco the "robust" application is developed for wearable device which allows especially for physicians to live stream the patients visit and it will eliminate the electronic health record pain points, which saves up to 15

### B. Journalism and Mass Media Applications

A web project named as "VOA & GOOGLE GLASS" explored a technology's potential uses in journalism. This series of news stories examines the technology live reporting applications, which includes conducting interviews and covering stories from the point of reporter's view. Another term called as "GLASS JOURNALISM" which explores the device's application in journalism.

### C. Military

Google glass is being currently used by army people which is used to track the various animals and birds in the jungle and it is the first device to use in military.

### D. Sports

In international olympics committee they took google glass to the youth olympic games and put them on a number of athletes from different disciplines to explore novel point of view in case of filmmaking.

**An Example of How to Use Google Glass: Tweeting**

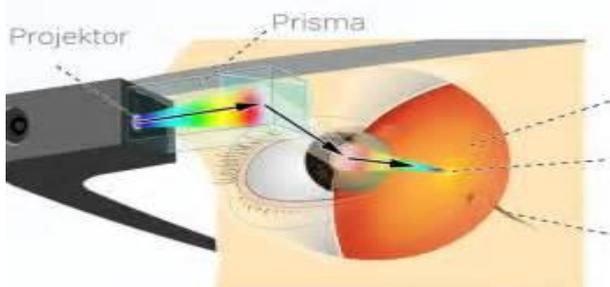
- 1 To activate: tap the touchpad or nod head to activate Glass
- 2 A menu of options projects on the floating screen
- 3 Use finger to tap touchpad to select Tweet option, or speak a command
- 4 Tap the Tweet button to post the tweet.



**6. GOALS OF GOOGLE GLASS**

This is most successful wearable technology that is used by people. Society has embraced eyeglasses to a large degree because this is the best kind of technology and there is no owner’s manual, there is no way to fight with user interface. The main goal of google glass is to take the base sensory experience of the world and to deliver to people in a better way and more livable, more enjoyable, more beautiful way. People who uses the google glass will forget that they are wearing it and it looks like wearing regular glasses. It is becoming a mainstream consumer technology. Eventhough glass is not even a real user’s product, it’s publicly tested prototype that’s in development.

**7. WORKING OF GOOGLE GLASS**



Google glass combines numerical functions and some of the features in a small unit. It is a technical masterpiece. In addition feature of mobile phones and camera it includes or offers internet and GPS (GLOBAL PROCESSING SYSTEM). The main feature of Google glass is the visual layer that is placed in augmented reality. This augmented reality layer facilitates a new amazing possibilities. In Google glass it contains a mini projector which projects a layer with semi-transparent prism which directs the retina in the eye. Due to sharp and clearness of the image it is visible closer to the eye. To optimize the focus the user can move the front part of Google glass. It completely depends on the how the user wears the Google glass and the augmented reality layer appears in the right corner. If the user wears the glass high on the nose,

then the user should place the vision by turning the eye to view the sharpness of the image. The reason is due to semi-transparent prism that places in front of pupil.

**8. ADVANTAGES**

- a) User convenience
- b) It shows even emails through voice commands.
- c) There are multiple methods used and it is easy to capture pictures and record audios.
- d) Use friendly and a neat feature to handle in easy way.
- e) The sound creation takes place in case of vibrations and is a less abrasive which is compared to earphones.

**9. DISADVANTAGES**

- a) Google glass cannot be used every people who have the defect in their eyes.
- b) Google glass cannot be used while driving.
- c) Google glass can be easily broken as it is more sensible.
- d) The face recognition may be easily misused.

**10. CONCLUSION**

Google glass is a fast developing technology. Even though it is sensible easy to use and found a easier way for wearing compared to normal glasses. This is a revolutionary technology Thai is introduced by Google. It is just an overview of Google glass. By using this people can able to understand that the technology is being developed.

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