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ADVANCE TECHNOLOGY- GOOGLE GLASS

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ABSTRACT- *Most* ***of the people who have seen the glasses, but may not allowed speaking publicly; a major feature of the glasses was the location information. Google will be able to capture images to its computers and augmented reality information returns to the person wearing them through the camera already built-in on the glasses. For moment, if a person looking at a landmark then he could see historical and detailed information. Also comments about it that their friend's left. If it's facial recognition software becomes moderate and accurate enough, the glasses could remind a wearer and also tells us when and how he met the foggy familiar person standing in front of him at a function or party. A computer which is spectacle based operated directly through your eyes rather than your pouch or pocket. A gifted technology for all kinds of Handicapped/disabled people.***

Key words: *Project Glass, Virtual reality, Augmented Reality, 4G, Eye-Tap etc…*

1. INTRODUCTION

1.1 Project glass

Google has given research and development about Project glass to develop an augmented reality Head-Mounted Display (HMD). The main agenda of Project Glass products would be the hands-free displaying of information that is vastly and currently available to most smart phone users [5]. Also allows interaction with the Internet via voice commands of natural voice. Glasses will feature with augmented reality and virtual reality. Google glasses are basically wearable computers that will use the Android software that powers Android smart phones and tablets.

1.2 Google Glass

Google Glass is a wearable computer with a head-mounted display (HMD) that is being developed by Google in the Project Glass research and development project,[2] with the mission of producing a mass-market ubiquitous computer. The frames do not currently have fitted lenses, Google is on the process of considering sunglass retailers partnership such as Ray-Ban or Warby Parker, wish to open retail shop to try on the device for users. People who wear prescription glasses cannot use explorer edition, but Google has confirmed that Glass will be compatible with frames and lenses [3] according to the wearer's prescription and possibly attachable to normal prescription glasses. Google X Lab developed this Glass, which has experience with other futuristic technologies such as driverless cars.

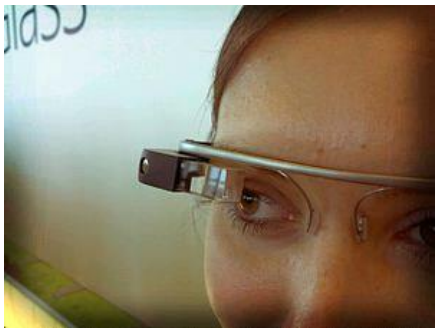

Fig: Google Glass

1.3 Virtual reality (VR)

Virtual reality is a term that applies to computer-simulated environments that can simulate physical presence in places in the real world and also well as an imaginary world.

Remote communication is covered in an environment which provides virtual presence of users with the telepresence and telexistence concepts or a virtual artifact (VA)[1]. The simulated environment can be similar to the real world in order to create a life like experience.

Virtual reality is often used to describe a wide variety of applications with highly visual, immersive, 3D environments. And also it gives development of graphics hardware acceleration, CAD software, database gloves and miniaturization head mounted displays.

It includes using computer technology to create a three-dimensional, simulated world so a user can manipulate and explore while feeling as if he were in that world.

- The ability to track a user's motions through his head and eye movements, and
- It adjusts the images correspondingly on the user's display and reflects the change in perspective.

1.4 Augmented reality (AR)

Augmented Reality is direct or indirect, a live view of a physical, real-world environment whose elements are augmented by generated input having sensors such as video, sound, GPS data or graphics[4]. It is related to a more general concept called mediated reality, which is a view of reality is modified (possibly even diminished rather than augmented) by a computer.

As a result, the technology functions by enhancing one's current perception of reality [1]. By contrast, virtual reality replaces the real world with a simulated one. Augmentation is conventionally in real-time and in semantic context with environmental elements.

2. TECHNOLOGY USED

2.1 Wearable Computing

Body-borne computers i.e. Wearable computers are miniature electronic devices that can worn by the bearer body part with, under or on top of clothing. It is wearable technology has been developed for special or general purpose info technologies and media development[3]. Applications of more complex computational support than just hardware coded logics can be given by wearable computers.

Consistency is one of the main features of wearable computers so that there will be constant interaction between the computer and user i.e. it doesn't need to turn the device on or off. Another feature as it is multi-tasking device.

2.2 Eye Tap Technology

Eye Tap is also the name of an organization founded by inventor Steve Mann to develop and promote Eye Tap-related technologies such as wearable computers. An Eye Tap is a model that is to worn in front of the eye which acts as a camera to capture the scene available to the eye also displays it to superimpose a on the original scene available to the images generated by computer[7] . The structure acts as a monitor and a camera for user's eye as the Eye Tap. The Eye tap uses beam splitter to send same scene to both eye and camera [4]. It is a hard technology that categorize into three main headers for wearable computing (i.e. Augmentation, Constancy, Mediation) for reality of the user perceives.

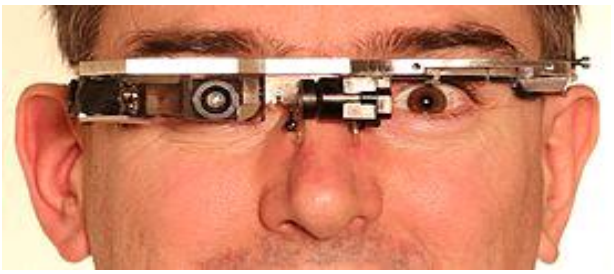

Fig: Eye Tap Technology

2.3 4G Technology

4G is the fourth generation of cell phone mobile based on communications standards. It is a advance version of the third generation (3G) standards. It provides mobile the ultra-broadband Internet accessing, for example to smart phones, to laptops with USB wireless modems and to other mobile devices.

3. DESIGN

3.1 Video Display, Camera, Speaker, Button:

It has features with the small video display which is used to display the hands free information by pop up. It also has the video camera with front facing through which we can take photos and videos in a glimpse [3]. Google glasses are designed to be hands free wearable device that can be used to make or receive calls via a bone conduction transducer. Single button on the side of the frame sophisticates the glasses to work with the physical touch input.

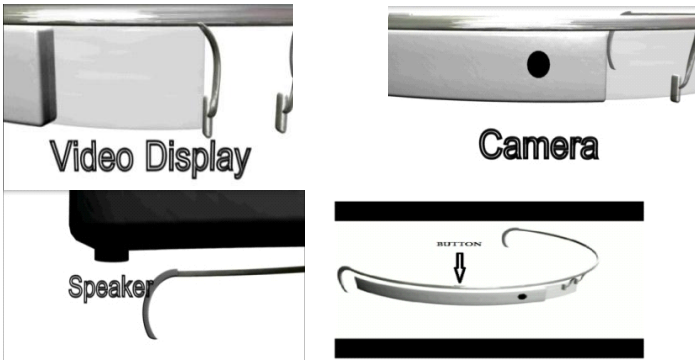

Fig: Video display, camera, speaker, button of Google Glass

3.2 Other components

- A facility of microphone is there, that can take the voice commands of user with telephonic communication.
- It's possible that a 3G / 4G module could end up in production devices, Wi-Fi hotspots or relying on a wireless tether with Smartphone will be provided.
- Recognization of voice commands cues from the right sidebar. Gestures will be understands by touch sensitive pad. Glass has an Accelerometer and a Gyroscope, enabling wearers to tell the glass what to do by nodding, shaking one's head, etc.
- Behind the ear on the right side internal battery is fitted, the capacity and longevity will last a day.
- The recording facility available locally, but the idea is to have 'most everything' streamed live to the web.

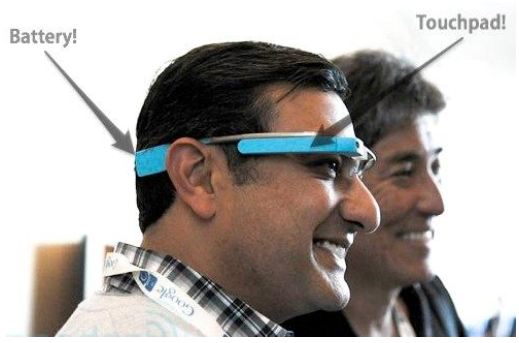

Fig: Battery and Touchpad of Google Glass

4. HOW DOES IT WORK?

Communication is probably done with the mobile phone through Wi-Fi and displays of contents on the video screen as well as the voice commands responding of the user. Google put together a short video demonstrating the features and apps of Google glasses. It mainly focuses on the social networking, communication and navigation. The video camera senses the environment and memorizes the people and objects around. Google glasses depends upon the user voice commands itself for the whole working.

5. SPECIFICATIONS

- It runs Android 4.0.4 Ice Cream Sandwich. It has a Texas Instruments OMAP 4430 chipset. The OMAP 4430 was been used in devices like Samsung's 7-inch Galaxy Tab 2.0, the original Motorola Droid RAZR, solid devices during their prime, but now the chipset is far from new that powered them.
- The Glass has 1GB ram and 16GB of flash storage on-board, with 12GB actually usable, and it will sync with "Google cloud storage", presumably Google Drive.
- Google states that the "equivalent of a 25-inch high definition screen from eight feet away" given by Glass features a 640 x 360 display.
- It has a 5-mp camera features 720p video.
- Bone conduction transducer projects audio
- Adjustable nose pads in a frame that Google says will "fit any face," +- is featured by Glass.
- Connectivity-wise, it is compatible with any Bluetooth-capable phone and supports 802.11b/g Wi-Fi, though functionality will vary.
- The Glass will enable GPS and SMS support through an app called "MyGlass" for phones with Android 4.0.3.

6. ANALYSIS OF PROBLEM

6.1 Google needs to avoid "The segway problem"

There is a reason that video glasses haven not taken off yet. And, for lack of a better term, we will call it "The Segway Problem". The Segway failed in part for its cost. For future-forwardness this technology can be a symbol, or on other

hand it can be exact opposite that's a sign of the ridiculousness. For the fact that the humanity is not quite lazy, but there was a deeper reaction to the core term of the product which signified a silly future rather than an inspiring one. So far we can say that these Glasses are not much inspiring that Google is showing off. So Google need to choose different way such as the stylishness or the invisibility of video glasses to sell us and to get succeed.

7. PROPOSED WORK:

GOOGLE NEEDS TO FIND A KILLER USE-CASE

Google is digging new ground; they are working apart from their comfort zone. Google has no data mine for how much notification. If ever there's is been a product develops for Google Labs field testing, it is Project Glass.

A better counter-example is the iPad. Many people dismissed it when firstly it came out, saying, "No doubt, it is cool, but for what anyone need another computer?" Well, it turns out, people did not *need* another computer to handle so much as they *wanted* one, people will love a computer that would make surfing the web from your couch or bed a lot with less efforts, clunky and more fun. No one is sure that they have that use-case yet with Project Glass i.e. the perfect scenario where it could make a sense in people's lives. There may be possibility that some set of features, applications and interactions that have not quite appeared yet.

8. ADVANTAGES & DISADVANTAGES:

ADVANTAGES

- Easy to handle, use and wearable.
- Responsive and sensitive into the presence of people.
- Fast accessing of documents, chats, maps, videos and much more.
- An innovative technology will bring the new trend of fashion.
- A computer which is spectacle based operated directly through your eyes rather than your pouch or pocket[6].
- A gifted technology for all kinds of Handicapped/disabled people.

DISADVANTAGES

- Broken or damaged chances are more. Though Google is expecting these glasses to be as modest as achievable, they are kind of breakable. Users will have to handle it with care.
- Retrieved data can be shown in front of user's eyes so while user is focusing on data, user will eventually miss the surroundings and it may lead accidents while driving.
- Privacy of people may fissure with new glasses.

9. FUTURE SCOPE

Google Glass is as futuristic, nowadays a gadget we have seen. Its scope is right now, but Google believes in the future it, is bright and the incredibly compelling device.

Google is trying their hardest to push the Project Glass through the FCC this year. Reports show that Google is trying to get the approval by the FCC this year but there are already several hundred glasses made for testing internally.

10. CONCLUSION

Google glasses are basically wearable device computers which uses the evolving familiar technologies. Also brings the ease of communication, sophistication and information access even for the physically challenged or handicapped class of people those literally could not use general way of palmtops and mobiles. It will bring relief and stress less life to human kind with the help of new technology.

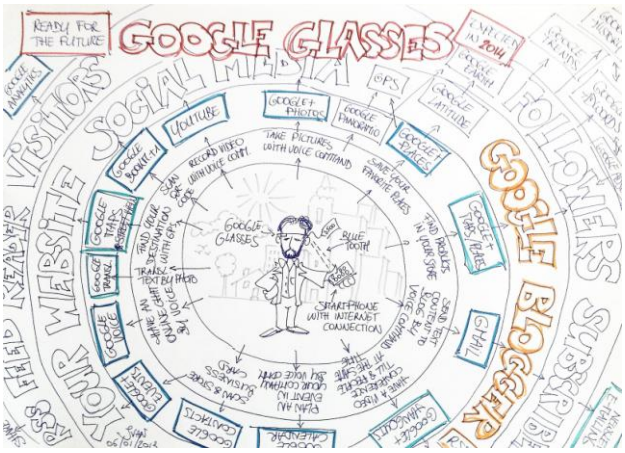

Fig: Conclusion of Google glass

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