AR : USE IN MILITARY SERVICE

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Abstract: Augmented Reality is a well-known task for discrepancy check. We propose an algorithm for camera (RGB-D) that is a two step depth, which fuses depth .Urban Environment many military operations expected. Many challenges were introduced from 3D-Battle field to dismounted war fighter. In urban environment, Situational Awareness required for effective operation.

Delivering Information to dismounted war fighter is quite difficult, to reduce the difficulty. The use of augmented reality and virtual reality has developed with the introduction of the smartphone. Augmented reality has come to approach only for computer vision as well as image analysis. Location based AR uses many sensors. Now days, ROMA that is ROBOTICS MODELING ASISSTANT, An Fabrication system which provides quick, accurate, practical and modelling experience. Augmented reality connect to physical world ,the user looks to overlapping scenes likely to be in locality to each other , that naturally enables cooperation and interact with themselves.

In various areas information system is applied. GIS can be used to identify the environments. The movement of head and eye can leverage so that it can improve the interaction of users for wearable display. Augmented Reality combines real world environment as well as virtual object .Computer vision as well as object recognition are some kind of technologies uses AR so that it can create an interactive as well as user experience to the real world .

Holo-BLSD is a reality learning environment method.. AR is a new technology where user increase their experience and simplicity by mixing the physical world with digital content .The rapid use of technology or information technology , learning style have been reshaped in higher education . AR has become an important and popular tool at all educational levels. The increase in use of smart devices like mobile , tablet, camera etc having many number of precise sensors as well as camera that enhance the Augmented reality service.

I. INTRODUCTION

Augmented reality is a collective escapade of a real-world domain where the entities that inhabit in the physical world are augmented by perceptual knowledge prompted by the system,sometimes across various modalities for instance somatosensory, auditory, olfactory, visual and auditory. Bringing elements of the digital world among a person's view of the real world is the key value of augmented reality and not as an unadorned display of data but the integration of captivating sensations assessed as natural segments of an environment.

II. HISTORY

The idea of an electronic spectacles that cloaks facts onto real life was first raised. A simulator called Sensorama is created and patented by a cinematographer with vibrations, visuals, smell and sound. It's named as a character maker. Head mounted display was proposed by Ivan Sutherland and was positioned as an opening to the virtual world. Video-place created by Myron krueger grants users to link with virtual objects. The first published research work by Gavan Lintern is to show the importance of a heads up display enlightening real-world flight expertise.

III. Battle field augmented reality system

We here propose the development of the BARS (Battlefield Augmented Reality System).

Battlefield Augmented Reality System consists of the following major components:

- Track-see through HMD

- Wearable Computer

- Wireless network System)

This is a project in which 3-D strategic and information tactical is been transferred in between a command centre and war fighter who are present in the urban environment .we come up with many research and technical issues in BARS. Many operations are conducted in these places so they are not recommended as residential area.

III.1 Information management system

Elucidating the environment and proclaiming the data to remote end users is what information management systems are is accountable for.

* Any sort of entity can be adequately valuable at any time that it must be featured by the system.

*Entities of certain sorts are very valuable and should be recognized by every user.

III.2 Structure of the database

Objects that have identifiable name, location and size are the basic example of entities . Some examples include

- Physical object(tree, tank, road)
- Logical object(way-points & routes)
- Spatial object(area or regions)

The city entity is called as top-level which have objects in environment. For example A building consist of walls, windows, floors, doors.

III.3 Distribution of data

The mechanism of distribution of data is guided by some important properties: finite bandwidth & robustness to network.

The network is considered a collection of software objects that have not been fully replicated.
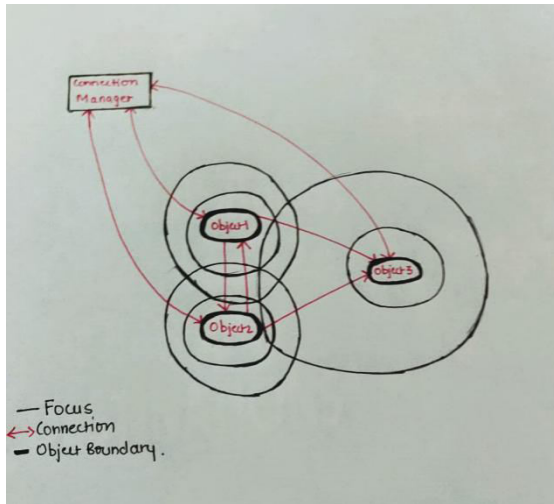

Fig:1

This figure shows the how the data distribution mechanism is carried out.

III.4 Calibration system

Once all of the objects have been determined, they should be drawn so that they are properly aligned with the real world. User's perceiving command in virtual world is deliberated for each image utilising the z position and inclination estimated by the correspondent position and inclination sensors. Because of the display properties (e.g. field of view), tracker properties (e.g. bias), and the fact that any user easily wears the BLE display, this is an accurate CO • I calibration system to be applied during the User in the field must be used.

III.5 Experimental system

Hardware description

- A Good laptop
- Ashtech GG24-surveyor GPS receiver
- An inter Sense inertial tracker
- A freewave radio modem
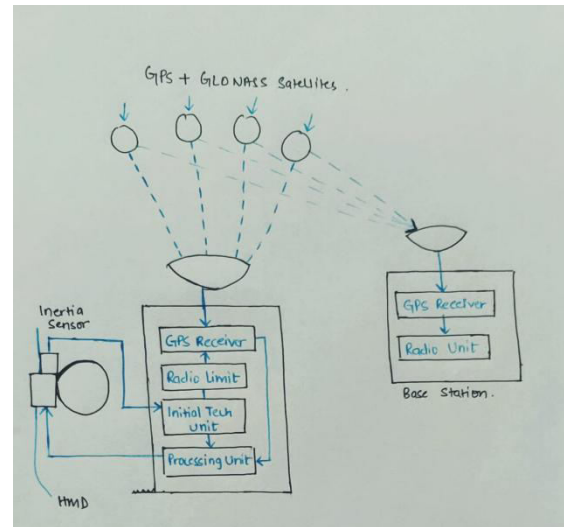- A head mounted Sony glasstron display (HMD)

Fig.2

III.5 AR Apps

App developers name 6 convenient well as common tool are:

- ARPA SDKs
  Supported platforms: Google Class , Android , iOs
- ARlab SDKs
  Supported platforms: iOsdroid AR,
- Android
  Supported platforms: Android
- Metaio SDK
  Supported platforms: Window PC, Google glass, android, iOS
- Vuforia SDK
  Supported platforms: Unity, iOS, Android
- ARlab SDKs
  Supported platforms: Android , iOS
- Wikitude SDK
- Supported Platforms: Epson Moverio, Vuzix M-100, iOS
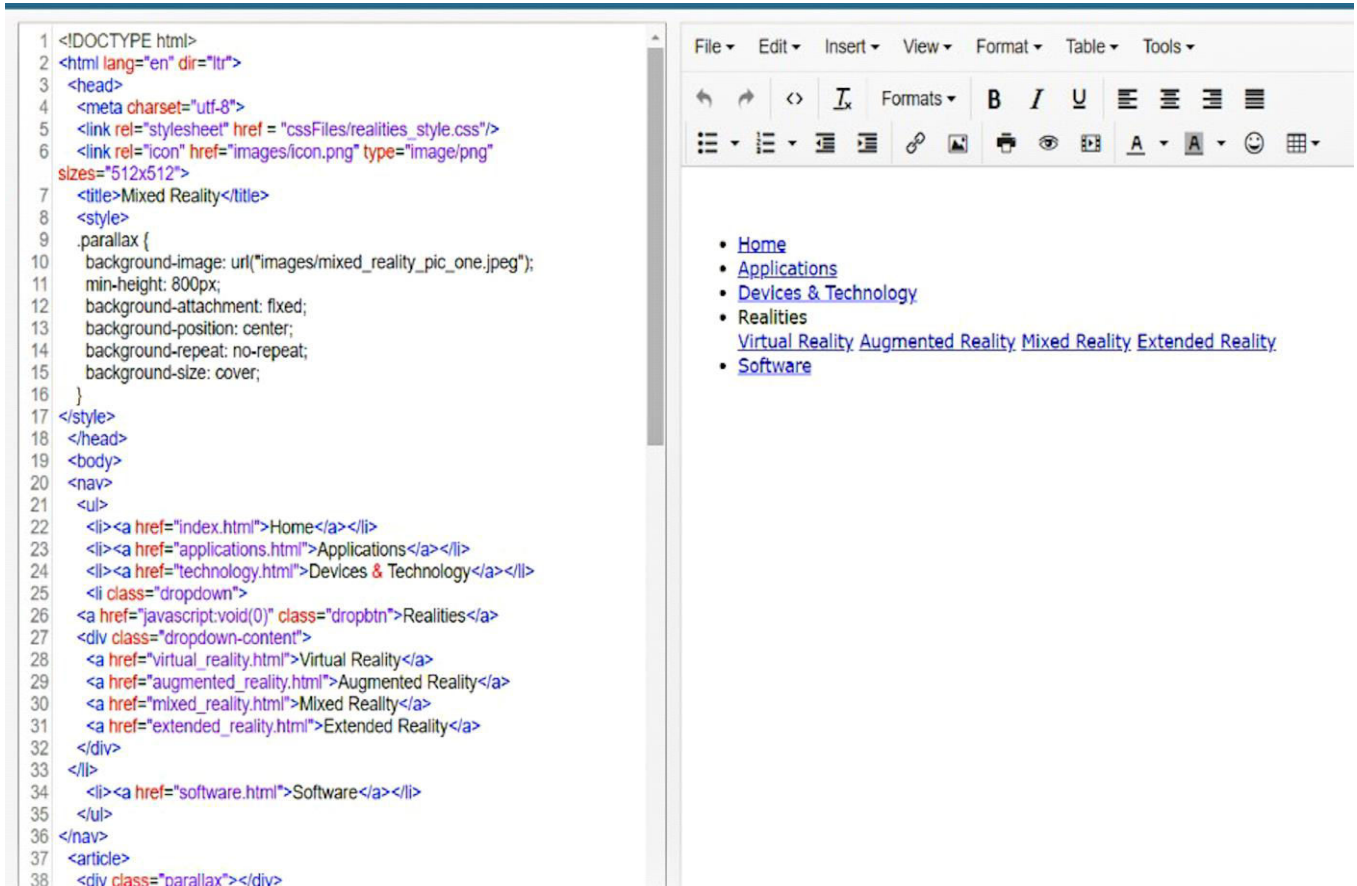- Droid AR

IV Benefits :

- AR Technologies save money
- Create safer environment for trainers
- Help soldiers to develop cognitive skills
- AR enhance warfare and training
- AR gets more vitality

- Development of smart phones and tablets
- Technology is unique and noticeable
- AR opportunities for personalization
- Content quality improvement
- Interactivity maintains the retention

V. Implementation plan

Here, we propose an implementation of the given idea of implementing augmented reality in the field of military services.

Augmented reality can be implemented using common language interfaces and here, we refer HTML interface to purpose the idea of implementing the above application of AR.

The following code of augmented reality that we referred, gives the following options when it is implemented. These options have to be chosen by the control center when being used by the warfighters.

VI. Uses of AR

- Public Safety
- Retail
- Medical Training
- Tourism Industry
- Classroom Education
- Field Service
- Repair And Maintenance
- Design and Modelling
- Business Logistics
- Entertainment Property

VII. Drawbacks

* Private control becomes an issue for these devices.

* Content that is used may be obscure or narrow a user's interest or tastes

* Information is overloaded

*Dependencies on AR technologies

*Security

VIII. Conclusion

Throughout this research, we came across about what is augmented reality and in what ways it helps us and what are the uses as well as the drawbacks when it comes to implement in the real life application.

AR also have many types of app these app are used in small scale to development .we can also use them whereas some can only use by major companies or factories, here, mainly discussing it's uses in the field of military services with proper implementation designs.

The most suitable implementation interface for augmented reality can be the commonly used languages like C++, HTML etc.

IX. REFERENCES

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