Emerging "Smart Glasses" Technology

Virtual Reality Yields Practical RM Applications

by Manuel Bulwa, President, Integrated Scanning of America, Inc.

Smart glasses, although still experimental in some areas, are exciting and very promising beyond games and leisure. Huge names such as Sony, Google, Apple, and Samsung have invested heavily in positioning themselves among other pioneering firms. According to a Gartner report, in 2017 Smart Glasses may save the field service industry $1 Billion per year.

Evolution of Virtual Technology

Human evolution and survival would have been severely impacted by the absence of any of our five senses. Now virtual reality software has morphed into Smart Glasses that augment our human senses to help accomplish unprecedented results. Add human creativity to this and the sky is the limit. Smart Glasses and Smart Helmets are already capitalizing on features such as accelerometer, gyroscope, compass, image sensor, camera, microphone, speaker, touch sensor, display, GPS, inertia measurement unit, depth sensor, motion sensor, wireless communications and more to come. Depending on the objectives, human perception ("reality") of wearers could be made virtual (wearer only perceives what the device shows), augmented (wearer sees both virtual and real worlds) or restricted (certain objects are removed or faded). Advanced image analysis combined with light source control can work small miracles.

How it Works

The sensors in the device, if combined with sensors on the wearer, can analyze cause-effect reactions and make real time decisions based on heart rate, breathing patterns, body temperatures, eye movement, operator " hand gestures", etc. These interactions can prove very valuable not only to protect the wearer, but also to dramatically enrich the information captured. Some devices can project images and video on regular paper or screens, which among other benefits, facilitates sharing visuals with other people.

Broad Spectrum of Applications

A surprisingly large number of applications already exist spearheading an avalanche of new ones coming soon "to your local theater." To name a few: strength of materials, equipment inspection, hands-free instrument data logging and recording, education (learning and training), real-time maintenance assistance, 3D modelling, navigation, sports, work safety, tourism, inventory management, military, marketing, entertainment, healthcare/medical, law enforcement, legal, homeland security, historical/archaeological, engineering, architectural, manufacturing and many, many more. The following illustrate just a few of a virtually unlimited list of potential applications:

• **Hands-free creation of box manifests** makes possible and affordable to keep accurate control of documents still kept on paper: (See video at http://www.isausa.com/specialty-lines.asp). Inaccurate, unreliable and/or outdated box inventories can create serious compliance and operational liabilities. There is virtually no indexing required, yet records are still easy to locate. An operator using smart glasses captures hands-free a video stream where every folder tab in every box is exposed to the camera. Still image frames are automatically extracted off the video streams to populate a visual catalog. Users can locate any record in any box (or determine that it does not exist) in just a number of clicks.

Other emerging applications with this technology include:

• **Adaptive Binary Search Technology.** A lower-cost alternative to smart glasses is the use of wearable cameras capable of Bluetooth or Wi-Fi streaming to a tablet or cell phone strategically mounted. Cameras could be mounted on helmets, chest harnesses, head straps, forearms, or belts. These cameras may have a restricted set of features when compared to smart glasses.

• **Strength of Materials Analysis:** Periodic capture of critical parts can help detection of elastic and plastic material defects. This can now be performed by non-experts, as captured video and images are sent for automatic and human analysis.

• **Tele-Expertise:** Volunteers around the world are remotely assisting vision impaired people in chores as simple as reading the expiration date of food and medication. Hearing impaired can benefit from speech recognition displaying text under augmented reality. Medical doctors and surgeons can assist in telemedicine and telediagnostic and specialized or emergency surgical procedures. Used during disaster and crisis management can dramatically improve assistance to victims. As baby boomers age, much valuable human expertise that has not been harnessed by expert systems such as Artificial Intelligence is being lost to retirement, physical

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impairment and end of life. Retired and impaired experts can now make valuable contributions remotely. Time is of the essence to capture this.

• **Business:** Consumers can improve their shopping experience with real-time advice. Retailers can utilize face recognition of known customers to apply customized incentives based on their buying history and patterns.

• **Security agents** use them to roaming on patrol so that face recognition software can detect, in real time, the presence of suspicious or unauthorized persons in controlled areas. (www.isausa.com/nvid/3.mp4). Although some may feel this usage invades privacy, this concept is used in various countries for law enforcement, crowd security in public places, access control and more.

Future Savings

Despite Gartner's estimate on the substantial amount smart glasses can save industries, currently less than one percent of US companies have adopted it. We all owe it to our organizations to break away from the 99% slot by exploring practical applications. *For more information visit contact Manuel Bulwa at mbulwa@isausa.com or visit www.isausa.com.*

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Nuclear Information and Records Specialist (NS) Recognition

The Institute of Certified Records Managers (ICRM) and NIRMA established a formal relationship in 1990 to develop an advanced certification. The concept was to develop an advanced industry specific examination module, the nuclear energy industry in this case. From those early steps, thirty CRMs have achieved the advanced designation of Nuclear Information and Records Specialist (NS) with thirteen currently active. These CRMs are

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entitled to use the designator 'CRM/NS' as a professional indication of advanced certification.

As noted in the winter 1998 ICRM newsletter, "this is the first and most fully developed industry-specific certification for the ICRM." Today, the Nuclear Specialist designation remains the ONLY advanced designation sanctioned by the ICRM.

At the 2015 Conference, the Board of Directors honored those who had earned the NS designation with a specially designed NS pin to wear with pride. Those in attendance included: Denise Pickett, Cheryl Susner, Steve Adams, Margie Janney, Andy McGavin, Bettie Moore and Mary Binkholder. We are very proud of this special relationship with the ICRM and particularly proud of those who have earned this designation.