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# SENSOR BASED DISPLAY CONTROL IN PORTABLE COMMUNICATION DEVICES

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## ABSTRACT

*A special orientation sensor within portable communication devices offers a drive of a display pointer in response to changes in the three-dimensional orientation of portable communication devices. The sensor offers multiple output signals that are sensitive to next generation multi sensor network strength in multiple directions, and those signals contribute in determining the three-dimensional orientation of the portable communications device and in determining position of the display pointer. The drive sensing mechanism offers a pair of multiple performance enhancement drivers that provide a signal corresponding to the next generation multi sensor network strength applied to the multiple performance enhancement drivers. A sensor responsive to the signals of the multiple performance enhancement drivers converts those signals to display pointer signals.*

**Key words:** Sensor, Multi sensor network strength, Three-dimensional orientation of portable communication devices, Multiple performance enhancement drivers.

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## 1. INTRODUCTION

In the present scenario of electronic devices such as desktop personal computer, laptop, IPad, IPod, smartphones, personal digital assistants. Users communicate with all these devices by connecting them to a trusted network; all communications are visible on the screen. The screen pointer is so essential in the communication or in operation of stand-alone devices. This requirement has raised the scenario of movement of screen pointer on the electronic devices.

## 2. RELATED WORK

Sensor is defined as an element which produces signal relating to the quantity being measured [1]. As per the Instrument Society of America, sensor can be defined as an instrument that gives correct output accordance to a specific quantity to be measured. The output is in the form of an 'electrical quantity' and the quantity to be measured is a 'physical quantity'. Therefore, say, in the case of a variable inductance displacement element, the quantity being measured is displacement and the sensor gives the output as the change in inductance.

Sensors are divided in two categories: discrete event sensors and continuous sensors. Discrete event sensors can change their state based on the impact of some external event. These sensors typically only give knowledge of two states based on the condition being sensed. They are based on mechanical, electrical or optical technology. Continuous sensors provide information over the continuous range of operation of the process and are commonly used in continuous control applications, where the process is being regulated based on continuously sensed attribute data. They are based on electrical, optical and acoustical technologies [2], [3].

Robert Milton Underwood, Jr,[2000]: A device driver is a program routine that links a peripheral device to an operating system of a computer. It is essentially a software program that allows a user to employ a device, such as a printer, monitor, or mouse (Levenson & Hertz, 1994). The device drivers present a uniform device-access interface to the I/O subsystem.

Silberschatz, Galvin [1999]. Each of the different types of I/O devices is accessed through a standardized set of functions--an interface. The tangible differences are encapsulated in kernel modules (i.e., device drivers) that internally are customized for each device, but that export and utilize one of the standard interfaces. A device driver sets the direct memory access (DMA) control registers to use appropriate source and destination addresses, and transfer length.

Langer [2000], The DMA controller is then instructed to begin the I/O operation. Device drivers are saved as files, and are called upon when a particular peripheral or hardware device is needed. On the Macintosh, for instance, they are stored in the Extensions folder. Like extensions, their features are preset and cannot be modified. Once they are installed, the devices they control become available for use.

Portable Information Devices are changing the face of communication, entertainment and healthcare and are also influencing how business is conducted and information is managed. Technological innovation has allowed information devices to become portable due to reduction in size and weight. Advances have also led to increased power in terms of processing speed and storage. The spread of wireless environments has been another factor in making computing mobile. There are currently over two billion cellular phone users in the world and as the number of users increases, the capabilities of phones increase as well. [5]

Many cell phones are outfitted with digital cameras, short messaging service (SMS) or text message capability, audio and video capabilities, address book, calculating and alarm functions, games, and scheduling [4].

### 3. PROPOSED SYSTEM

The proposed system offers a movement of a display pointer in response to the three-dimensional orientation of portable communication devices. This is achieved with a drive sensing mechanism that is built into the portable communication devices which, by sensing the next generation multi sensor network strength, assists in determining the three-dimensional orientation of the portable communication device by sensing the net strength that is applied, and assists in determining the position of pointer. The system comprises of a multiple performance enhancement drivers that provide a signal corresponding to the next generation multi sensor network strength applied to the multiple performance enhancement drivers. A processor responsive to the signals of the multiple performance enhancement drivers converts those signals to cursor position signals.

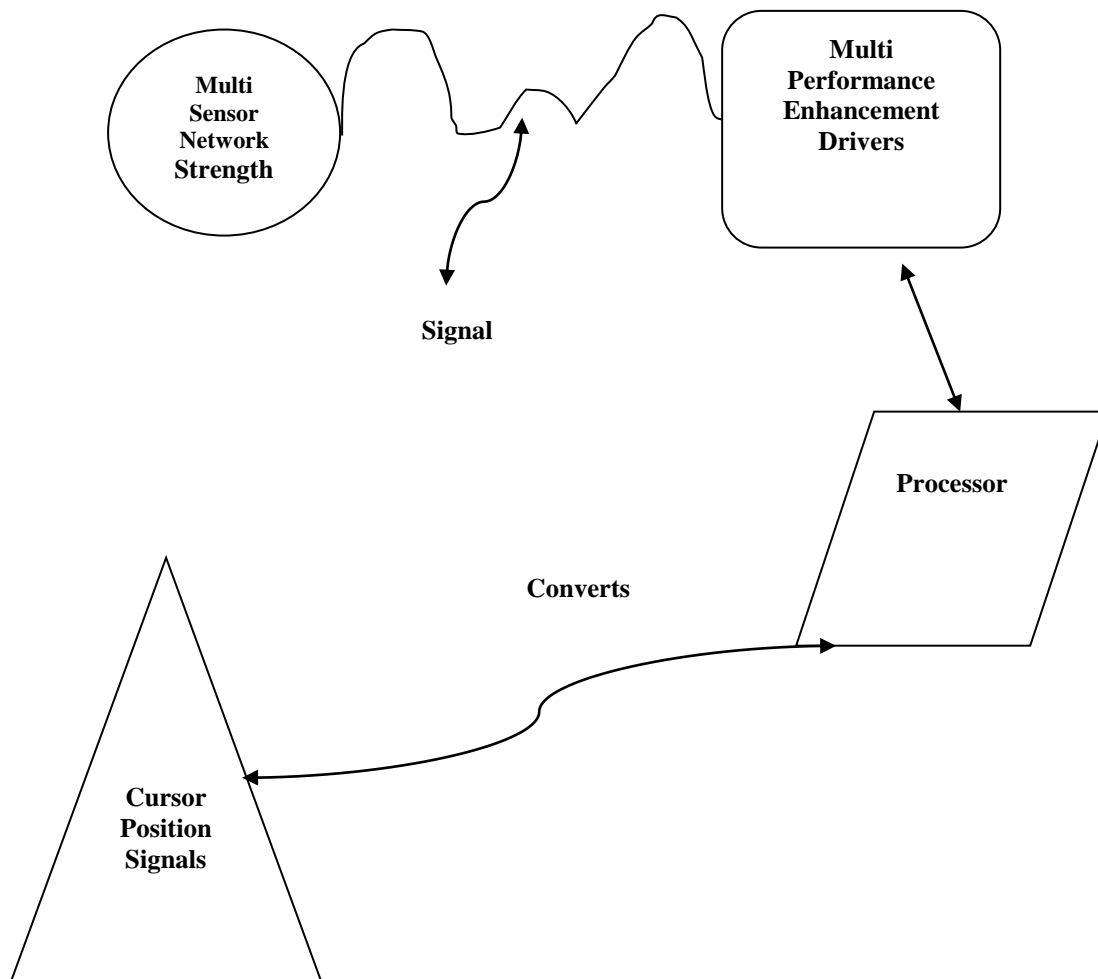


Figure 1 Diagrammatic Representation of proposed System

#### 4. CONCLUSIONS

The proposed system produces output accurately with the repositioning of the display pointer. The pointer changes its movement according to the three- dimensional change in orientation of the portable communication devices. There is a drive sensing mechanism inbuilt into the portable communication device. This sensing device senses the signal of the next generation multi sensor network strength. This network helps to change the three dimensional orientation of the portable communication device.

There are multiple performance enhancement drivers that determines the signal of the next generation multiple performance enhancement drivers. A processor in response to the signals of the multiple performance enhancement drivers changes the cursor position signals of the portable communication device.

#### REFERENCES

- [1] Boltan, W., Mechatronics: electronic control systems in mechanical and electrical engineering, Longman, Singapore, 1999.
- [2] Regtien, P. P. L., Sensors for mechatronics, Elsevier, USA, 2012.
- [3] Tonshoff, H.K. and I. Inasaki, Sensors in manufacturing, Wiley-VCH, 2001.
- [4] Bichlien Hoang Ashley Caudill,” Portable Information Devices”, Originally published on the IEEE Emerging Technology portal, 2006 – 2012.
- [5] Cellular.co.za. “Stats Snapshot.”
- [6] Howstuffworks.com. “What PDAs Do.”
- [7] Red Herring. “Smart Phones Face Challenges.” Red Herring, July 31, 2006.
- [8] Turban, Efraim. Dorothy Leidner, Ephraim McLean, James Weatherbee. Information Technology for Management: Transforming Organizations in the Digital Economy. John Wiley & Sons, New York, Fifth Edition, 2006.
- [9] Kushner, David. “Location, Location, Location.” IEEE Spectrum, January 2006.
- [10] Konduru Uday Kumar, Shaik Niha Bobby, Subratha Ghoshal and SS. Asadi , An Experimental Study of Sensor Based Smart Structure Design: A Modal Study . International Journal of Civil Engineering and Technology, 8(4), 2017, pp. 862-867.
- [11] R. Sundar and A.T. Madhavi Madan, Sensor Based Spectacles, Waist-belt and Footwear for Visually Impaired People. International Journal of Civil Engineering and Technology, 8(6), 2017, pp. 876–881.