REAL TIME DISPLAY STABILIZATION

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Real Time Display Stabilization

Abstract:
This publication disclosed a great usability of display screen for unstable environment. System shaking level in different environment are different. System can detect device movement and set a direction as an aligned view angel and to display stabled screen.

Design Construction:
The design constituted with electronic devices. The electronic devices could be mobile phone, tablet, AIO, smart display, notebook computer, smart-watch or accessory, etc. The electronic devices are equipped with movement sensor which can detecting shaking, angle, direction changing.

In order to perform lower latency on showing adjusted screen, to implement GPU for image processing in Device would be helpful.

Software Application:
After getting movement data, device can calculate movement difference from aligned angle and adjust screen display angle to making screen stabled. Adjusted screen can be resize for different shaking level by request.
<Block Diagram of Device>

```
Movement
Sensors

System

GPU

Display
```

<Drawings>

**General unstable environment**

- Center Aligned
- Original For Calibration
- Unstable Environment
- Resize screen be smaller for different shaking level needs
- To adjust display angle by the difference to Original

**More worse unstable environment**

- Center Aligned
- Original For Calibration
- More worse unstable Environment
- More worse unstable Environment
- Resize screen be smaller for different shaking level needs
- To adjust display angle by the difference to Original

<Flow Chart>
• Real Time Display Stabilization

Auto or Manually trigger “Real Time Display Stabilization”
Note in Next Page

Get device current direction and angle for reference

Start to adjust display angle by the difference to Original

Auto or Manually exit “Real

End
• Auto trigger “Real Time Display Stabilization”

Lot of jitter detected by unstable environment

Show Dialog: Do you want to open “Real Time Display Stabilization”

Yes

End

No
• **Business Strategy/Advantages**

1. Good for mitigate eye fatigue symptom

2. Convenient for read/watch screen in unstable environment, especially the trend of people using portable device are much higher now.

3. It’s much cheaper solution instead HW solution (3-axis Grip)

Disclosed by **Matt Lin, Brains Lai, Morris Hu, HP Inc.**