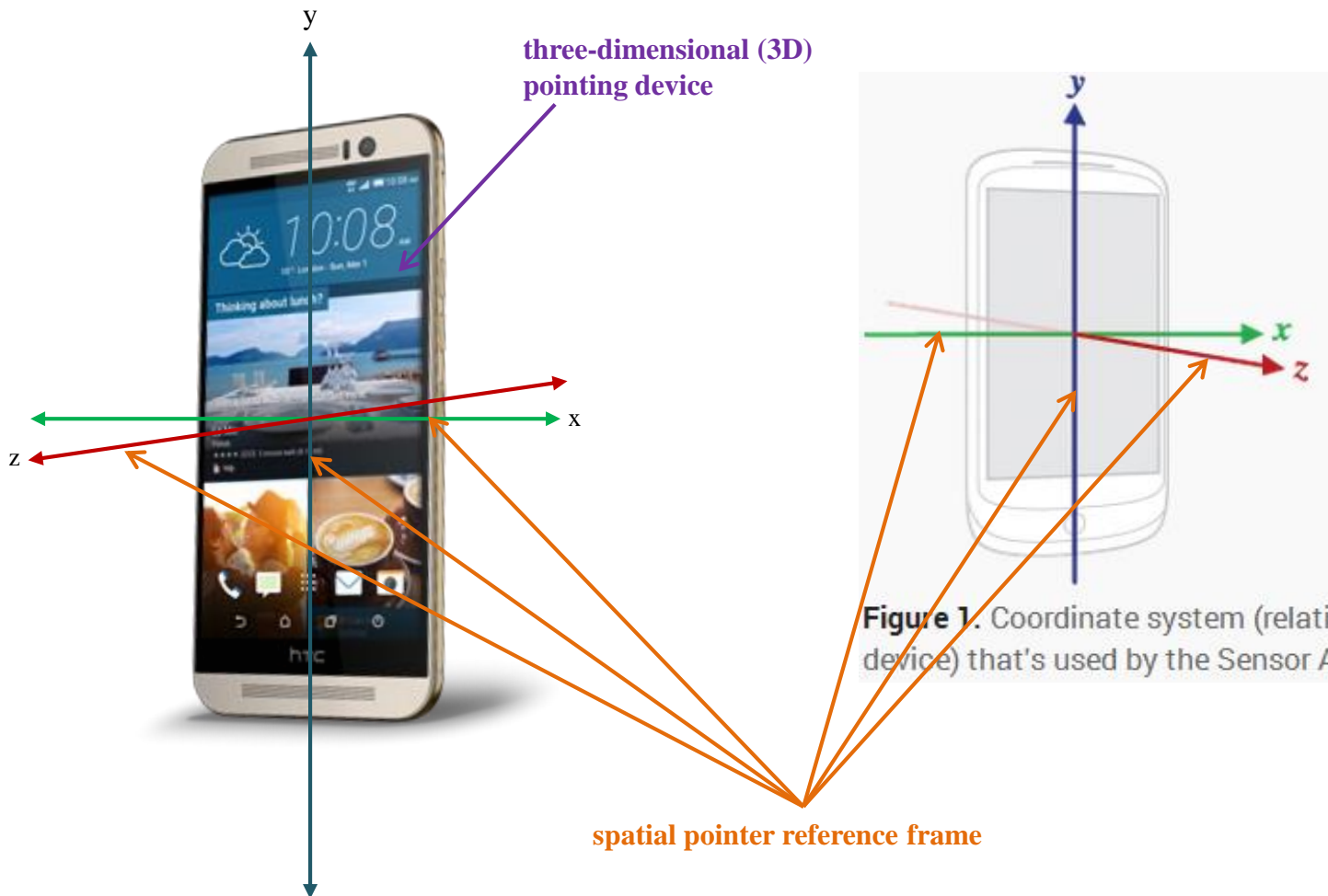# EXHIBIT A

U.S. Patent No. 8,441,438

HTC One M9

U.S. Patent No. 8,441,438 – HTC One M9

Claim 14

A method for obtaining a resulting deviation including resultant angles in a **spatial pointer reference frame** of a **three-(3D) pointing device** utilizing a six-axis motion sensor module therein and subject to movements and rotations in dynamenvironments in said **spatial pointer reference frame**, comprising the steps of:

three-dimensional (3D) pointing device

spatial pointer reference frame

Figure 1. Coordinate system (relati device) that's used by the Sensor A

Source: http://developer.android.co

Claim 14

A method for obtaining a resulting deviation including resultant angles in a spatial pointer reference frame of a three-di... (3D) pointing device utilizing a **six-axis motion sensor module** therein and subject to movements and rotations in dyna... environments in said spatial pointer reference frame, comprising the steps of:

six-axis motion sensor module

Technical Specifications

Size
144.6 x 69.7 x 9.61 mm

Weight
157g

Display
5.0 inch, Full HD 10...
Corning® Gorilla® G...

CPU Speed
Qualcomm® Snapdragon™ 810
octa core 64-bit
4 x 2.0GHz + 4 x 1.5GHz

Platform Android
Android™ with HTC Sense™

SIM card Typ...
nano SIM

Memory^2
ROM: 32GB / RAM: 3GB
Extended memory: microSD™ up to 2TB

Sensors
Ambient light senso...
Proximity sensor
Accelerometer
Compass sensor
Gyro sensor
Magnetic sensor
Sensor Hub

Network^1
2G/2.5G/GSM/GPRS/EDGE - 850/900/1800/1900 MHz
3G UMTS - 850/900/1900/2100 MHz
4G LTE - FDD: Bands 1,3,5,7,8,20,28
TDD: Bands 38, 40, 41

Sound
HTC BoomSound™ with Dolby Audio™

Connectivity
NFC
Bluetooth® 4.1
Wi-Fi®: 802.11 a/b/g/n/ac (2.4 & 5 GHz)
DLNA®
HDMI MHL 3.0
CIR
3.5 mm stereo audio jack
micro-USB 2.0 (5-pin) port

Battery^3
Capacity: 2840 mAh
Talk time:
Up to 25.4 hours for 2G
21.7 hours for 3G

Standby time:
Up to 391 hours for 2G
402 hours for 3G

Camera
Main camera:
20MP with sapphire...
auto-focus, BSI sens...
f/2.2, 27.8mm lens
4K video recording

Front camera:
HTC UltraPixel™
BSI sensor
f/2.0
26.8mm lens
1080p video record...

Additional Features
Dual-tone metal unibody, Themes, HTC Sense™ Home,
One Gallery, >Photo Editor

Multimedia
Audio supported formats:
Playback: .aac, .amr, .ogg, .m4a, .mid, .mp3, .wav, .wma, .flac,
ac3, ec3, eac3
Recording: .aac
Video supported formats:
Playback: .3gp, .3g2, .mp4, .wmv, .avi, .mkv
Recording: .mp4

Source: http://www.htc.com/us/smartphones/htc-one-m9/buy-b/#!carrier=spr&color=silver

U.S. Patent No. 8,441,438 – HTC One M9

Claim 14

obtaining a **previous state** of the six-axis motion sensor module; wherein the **previous state** includes an initial-value se
with **previous angular velocities** gained from the motion sensor signals of the six-axis motion sensor module at a previ

The previous state is obtained through an update program that includes a `predict()` function and an `update()` functio
functions that are used to update the global variable x0 based on x0 (the **previous state**) associated with **previous angu**
w gained at a previous time T-1 to obtain an updated state x0. The updated state x0 becomes the previous state x0 at tim
iteration) of the update program to obtain the updated state x0 at time T.

```
430    void Fusion::predict(const vec3_t& w, float dT)
431        const vec4_t q  = x0;     ←———————— previous state
```

```
485            x0 = O*q;
```

```
495   void Fusion::update(const vec3_t& z, const vec3_t& Bi, float
496        vec4_t q(x0);
```

```
529            const vec3_t e(z - Bb);
530            const vec3_t dq(K[0]*e);
531
532         q += getF(q)*(0.5f*dq);          next iterat
533         x0 = normalize_quat(q);
```

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