

Context: Moving Beyond Motion

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Bridging the Gap between Sensing and Knowing in Mobile Devices.

Gestures and Interfaces



- Using motion to control our world
 - Pressing buttons
 - Moving mouse
 - Pointing a remote
 - Touch a screen
 - Wiggle for a game
- Gestures ...are commands triggered from a memorized motion or action.



Software as the Interface



SENSORS

Accelerometer

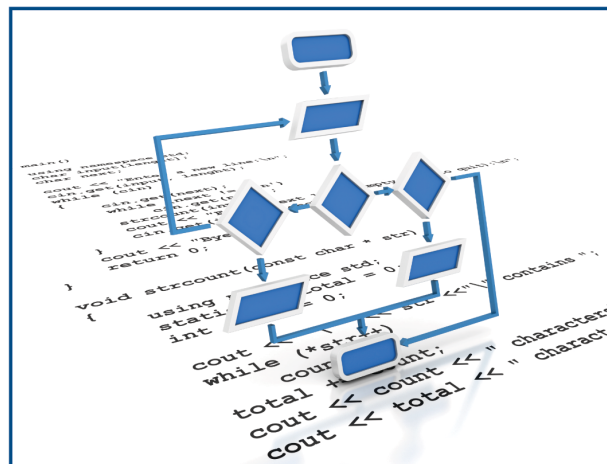
Magnetometer

Gyroscope

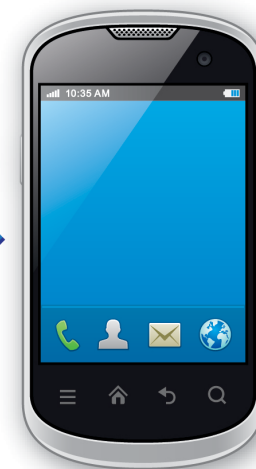
Barometer



SENSOR PLATFORMS' FreeMotion™ LIBRARY



CONTEXT AWARE SMARTPHONE



FreeMotion Library

SENSOR PLATFORMS

Supports Android and Windows 8 using the same code base

Supports sensors from all leading vendors

Improves app performance and lowers power consumption

Library Deliverable

FreeMotion daemon for Android	Software Development Kit
FreeMotion embedded library for sensor hubs	Reference implementation test report
Sensor component device drivers	Integration guide
Sensor evaluation/characterization reports	Sensor component alternate sourcing guide

Supporting sensors from

- Aichi Steel
- AKM
- Bosch
- Freescale
- Honeywell
- InvenSense
- Kionix
- MEMSIC
- ST Microelectronics

Library Functions:

Sensor fusion for inertial sensors
Exceeds Android, Win 8 fusion requirements
Allows variable sampling rates
Continuous cross-sensor auto calibration
Magnetic anomaly detection and mitigation*
Virtual gyroscope*

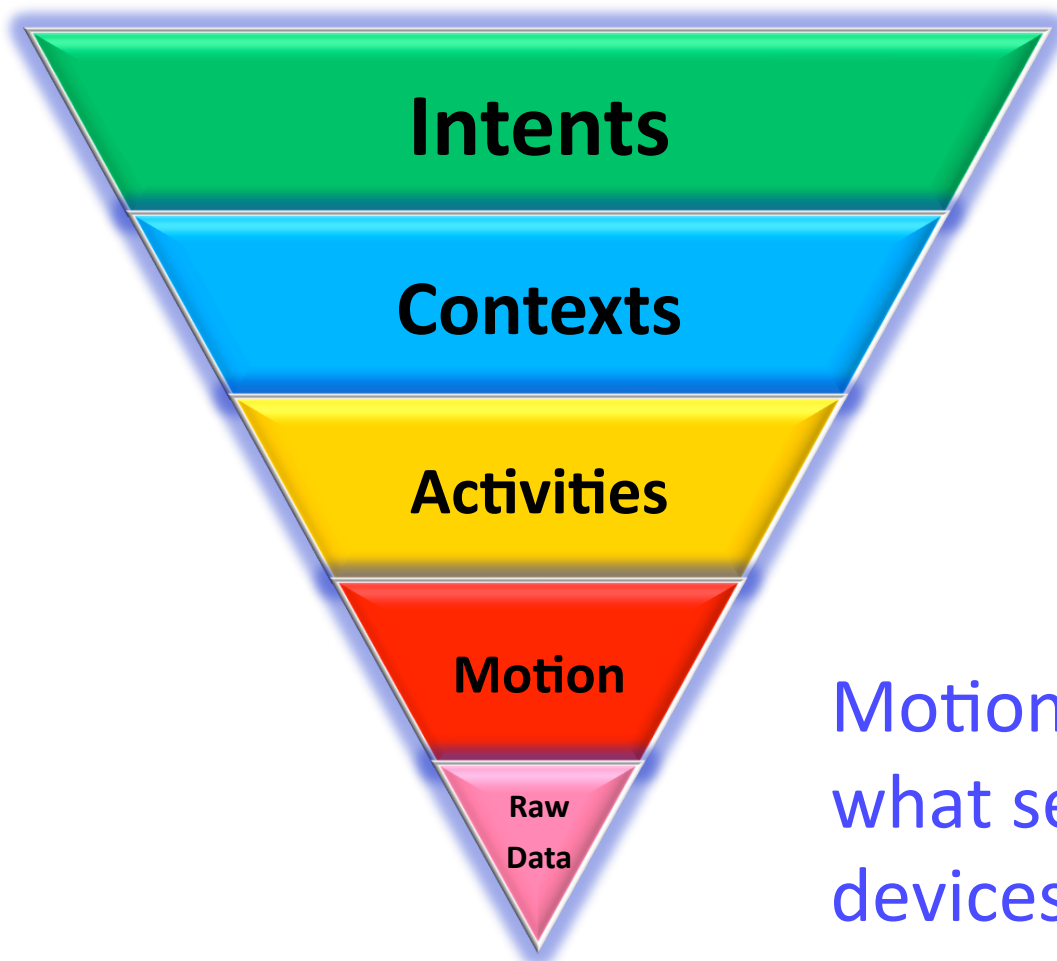
* Proprietary advantages

Auto configuration*
Power Management*
Runs under 10 MIPS
Sensor specific extensible functions*
Platform performance validation utilities
Record and playback utilities

Context: Activity Based Services



Roadmap: Awareness beyond Motion

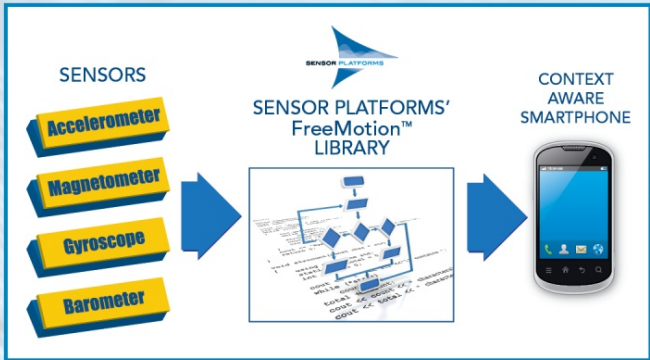


Motion is just a part of what sensors in mobile devices measure



SENSOR PLATFORMS

Foundations of Context Awareness



Bridging the gap between **Sensing** and **Knowing** in Mobile Devices

Summary



- FreeMotion Library provides best-in-class Sensor Fusion
- FreeMotion Library advantages
 - improved app performance
 - sourcing independence
 - longer battery life or lower BOM cost
- FreeMotion context detection provides