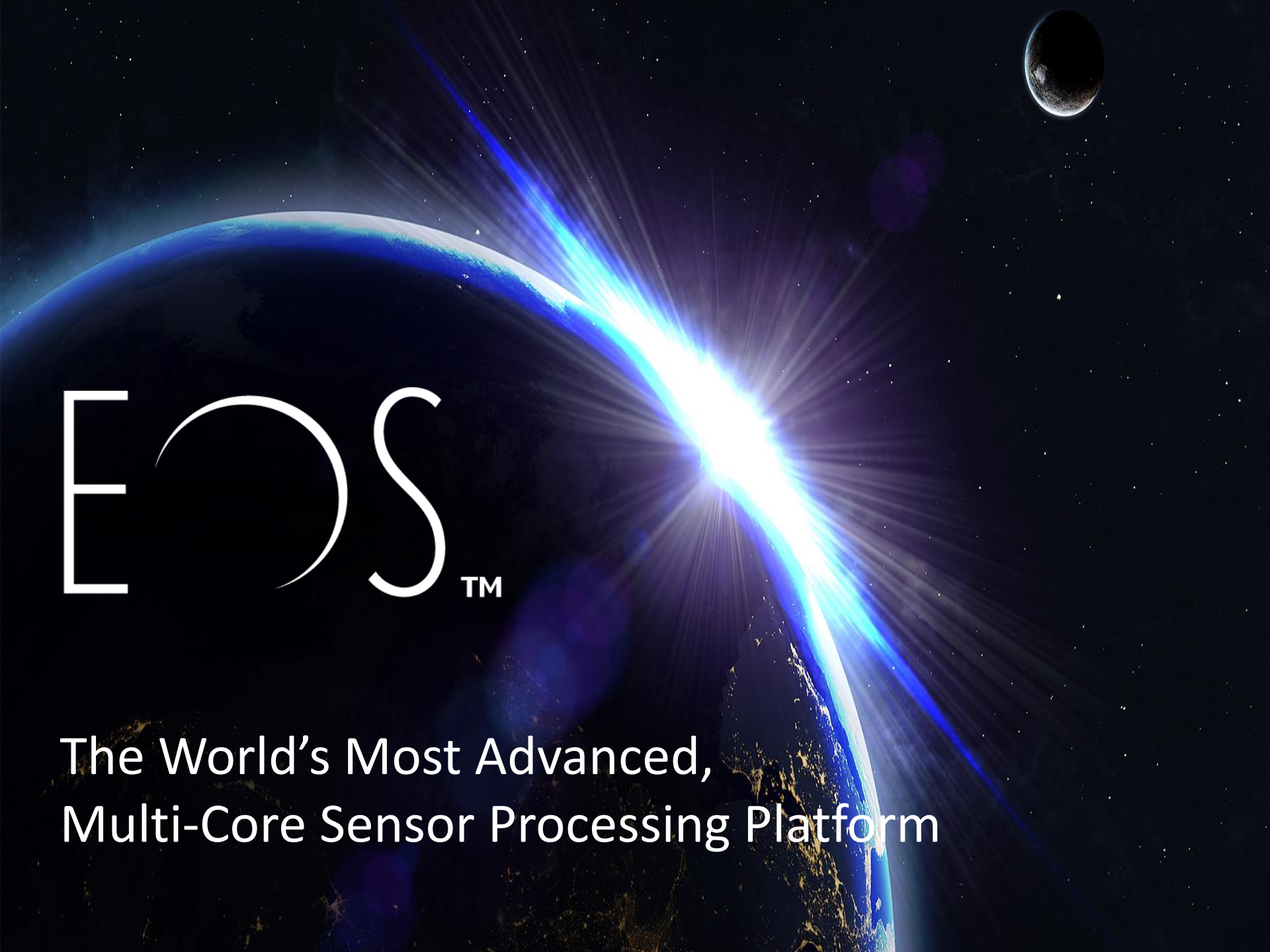
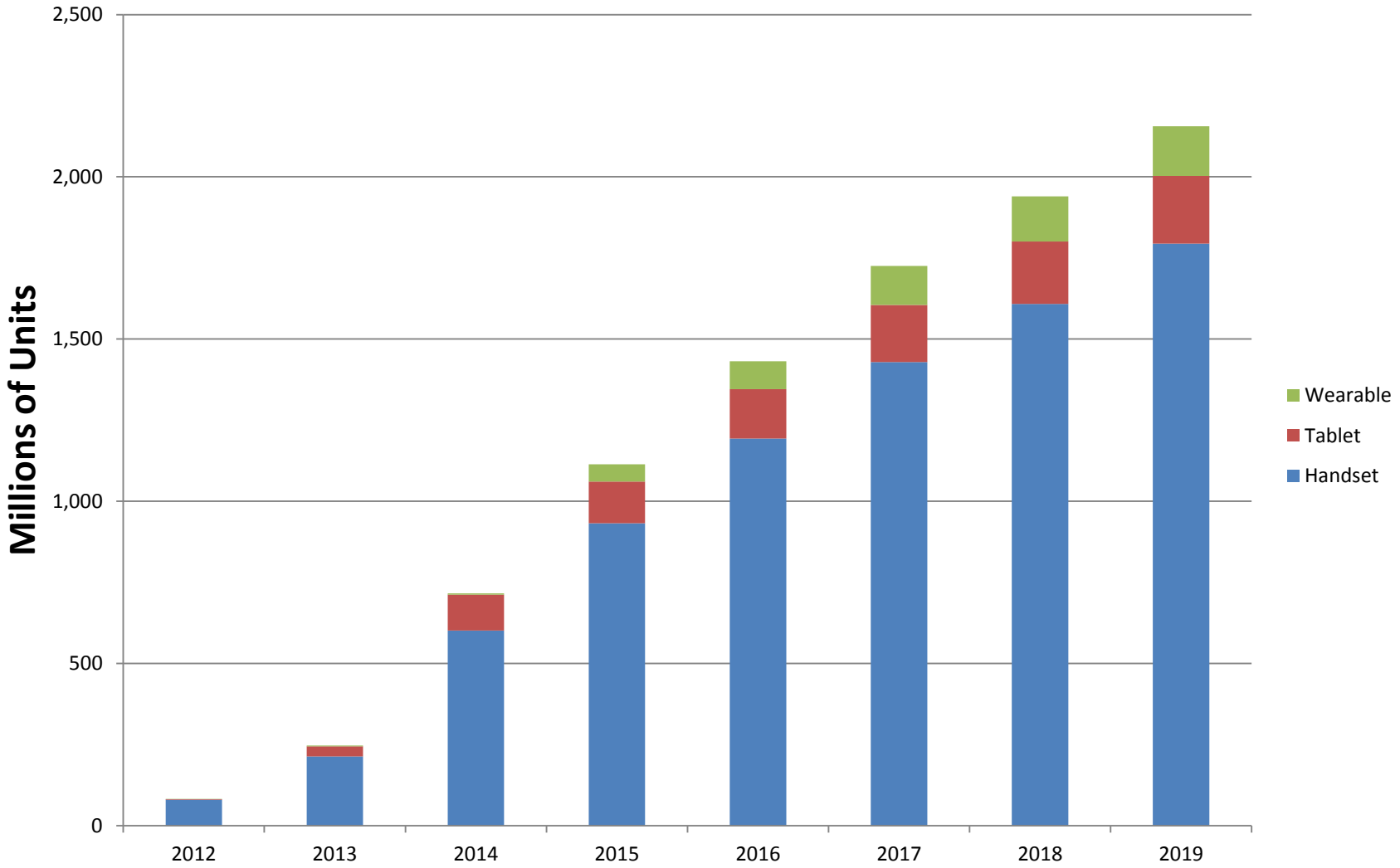


The World's Most Advanced,
Multi-Core Sensor Processing Platform

SENSOR HUBS: RAPID GROWTH, HIGH VOLUME MARKETS



Source: IHS iSuppli Q2 2015

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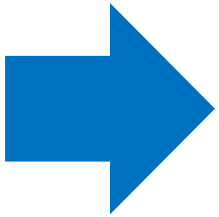
NEW APPLICATIONS AND USE CASES

Today's sensor processing tasks are considered "fundamental"

OEMs are targeting significant capability improvements and applications in order to meet consumer demands

Pedometer and User Activity

User Transport



Motion-Compensated Heart Rate

Voice Trigger and Commands

Sensor Calibration

User Gesture

Indoor Navigation

Advanced health and wellness, environmental monitoring, new ideas and concepts….

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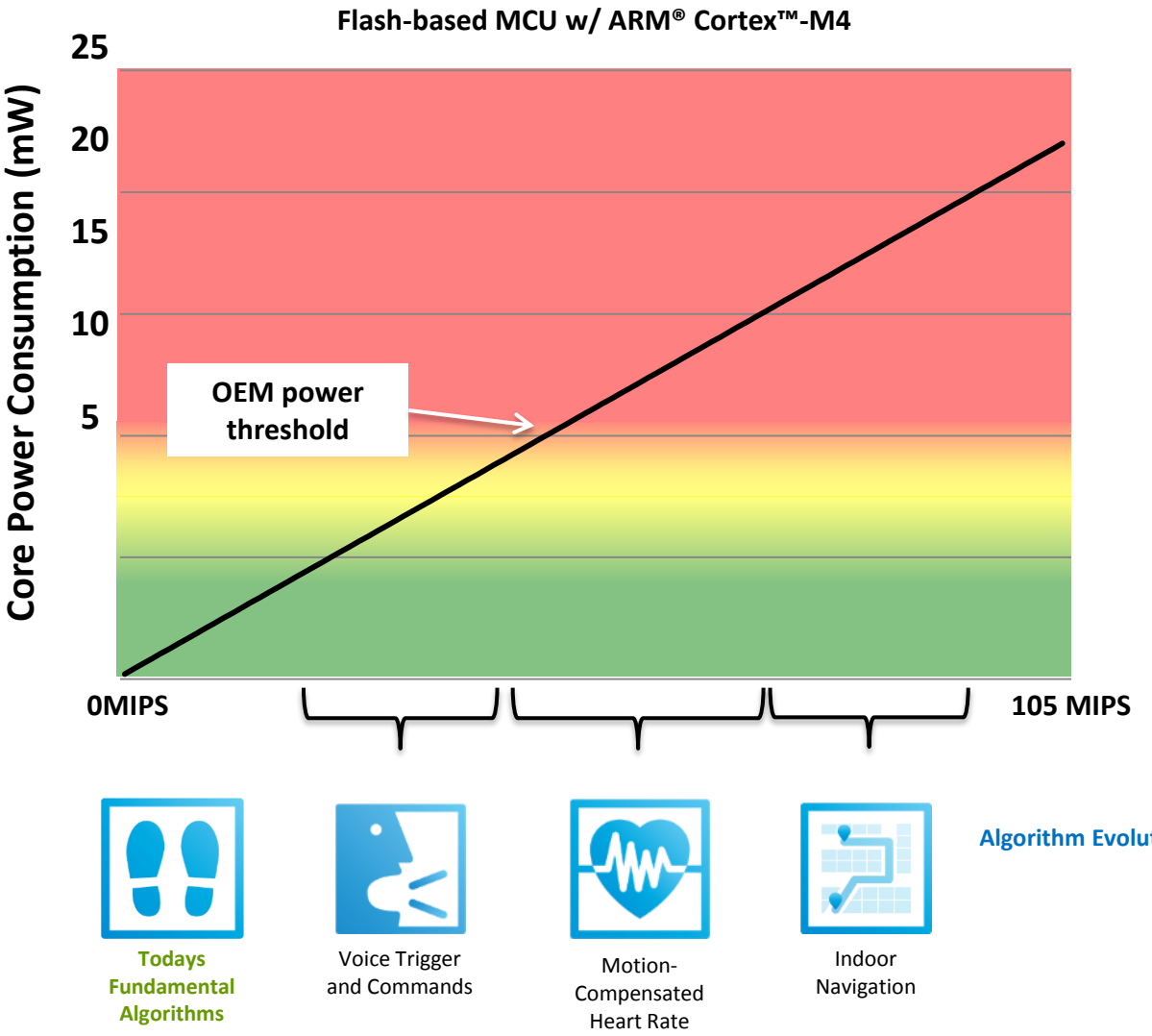
ALGORITHM EVOLUTION DEMANDING MORE MIPS



Advanced sensor processing algorithms often exceed the OEM power budget

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"Power efficient sensor hubs, such as QuickLogic's EOS platform, will be the enabling hardware that allows device designers to quickly and easily incorporate multiple advanced features without increasing power drain."

Tom Hackenburg, Principal Analyst, IHS iSuppli July 2015

EOS™

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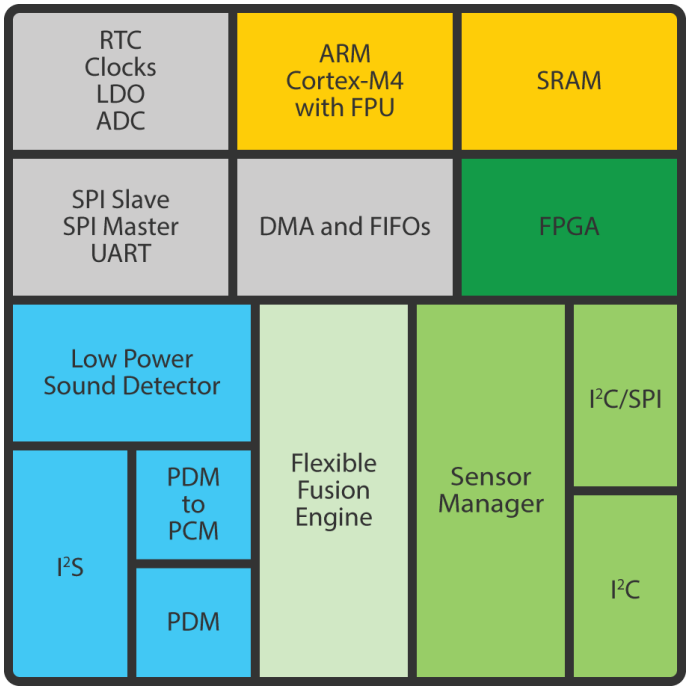
EOS S3 MULTI-CORE SOC PLATFORM



- **Sensor Manager** — Autonomously handles management and control of all sensors
- **Flexible Fusion Engine** — 20 MHz µDSP-like processor for always-on, real-time sensor data
- **FPGA** — Allows implementation of additional FFE and other customer-specific IP
- **Voice Processing** — Digital mic interfaces and Low Power Sound Detection* (LPSD)
  - * LPSD optimized for Sensory TrulyHandsFree™ Voice Control
- **ARM Cortex-M4 with FPU** — 80 MHz and 512 KB SRAM for general purpose processing and running O/S
- **Serial I/O** — SPI Master/Slave, I²C, UART
- **System** — DMA, Integrated RTC, Oscillators, ADC and LDO

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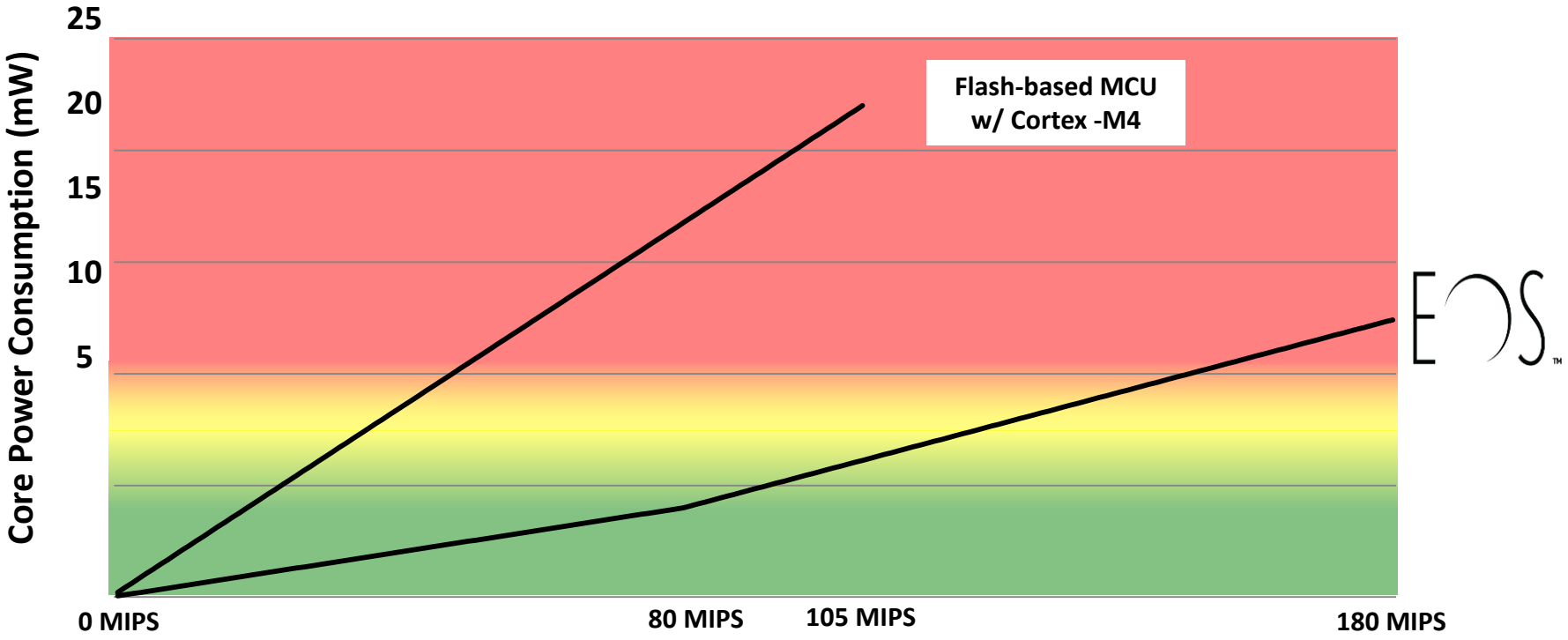
ALGORITHM EVOLUTION DEMANDING MORE MIPS



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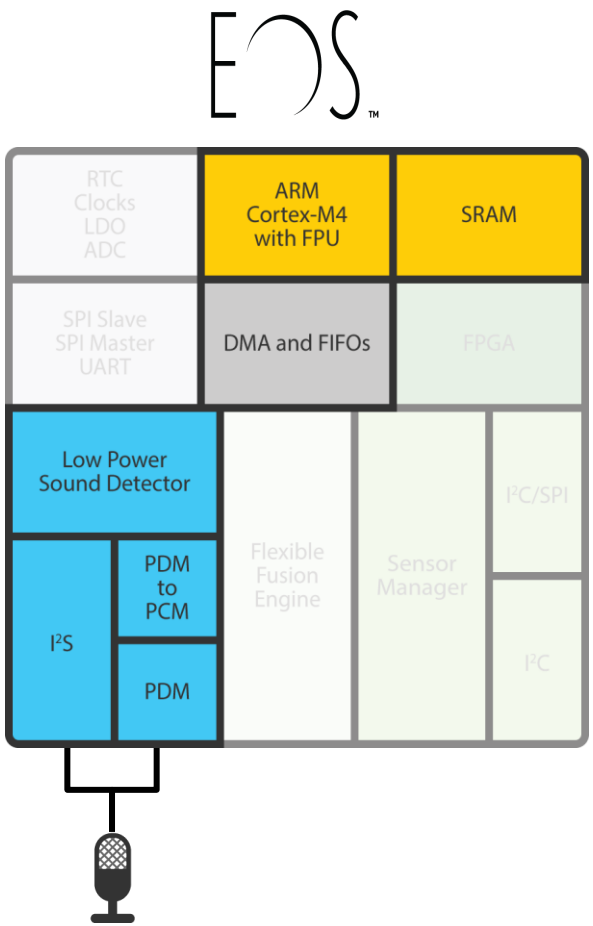
ALWAYS-ON, ALWAYS-LISTENING AT LOWEST POWER



QuickLogic + sensory Truly Handsfree™ Voice Control

- EOS S3 platform supports broad spectrum of digital microphones
- Dedicated PDM-to-PCM block eliminates need for expensive, power hungry voice CODECs in wearable applications
- Enables industry-leading voice sub-system power of **350 µA** for always-on voice processing

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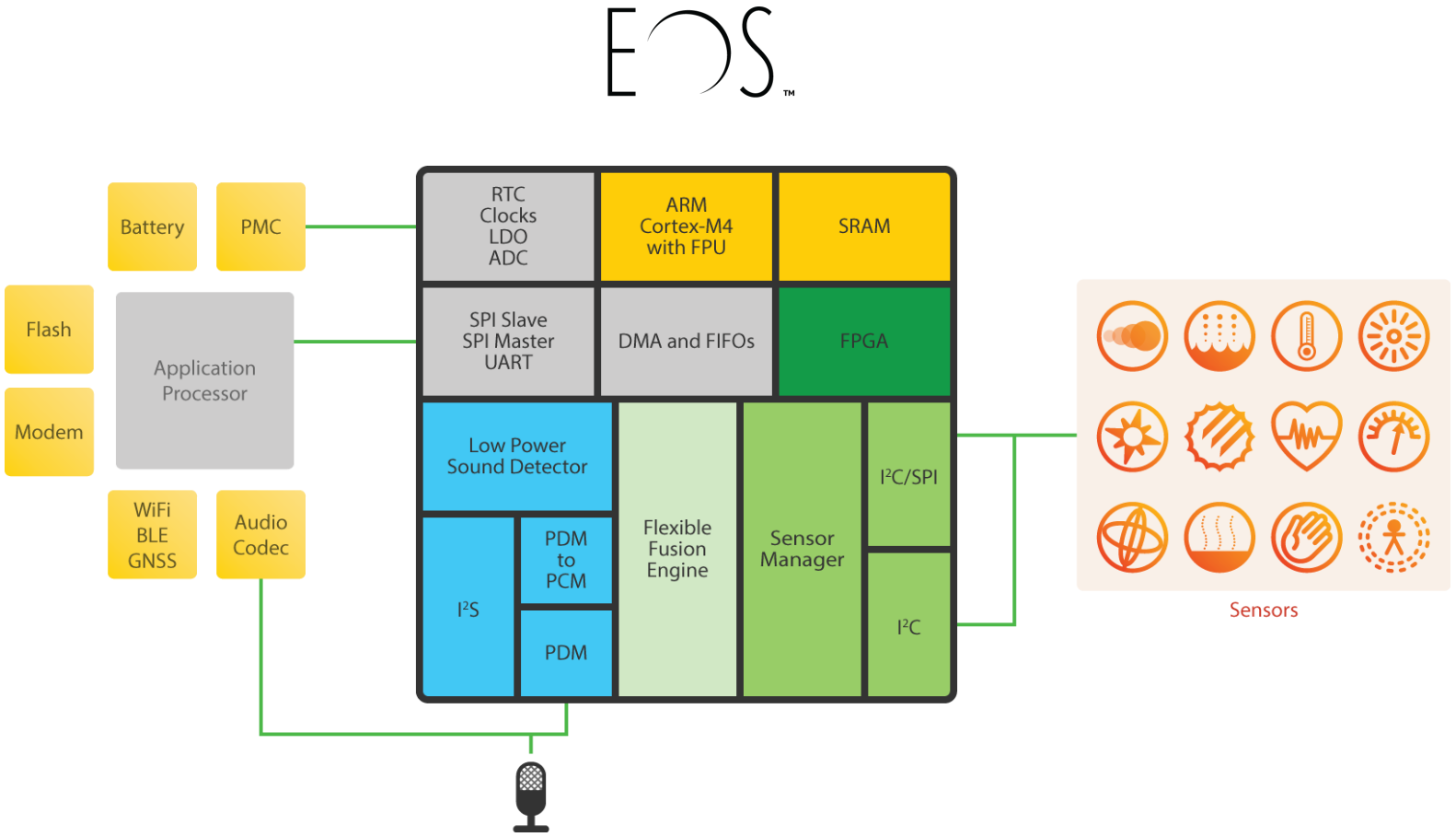
EOS S3 SMARTPHONE SYSTEM IMPLEMENTATION



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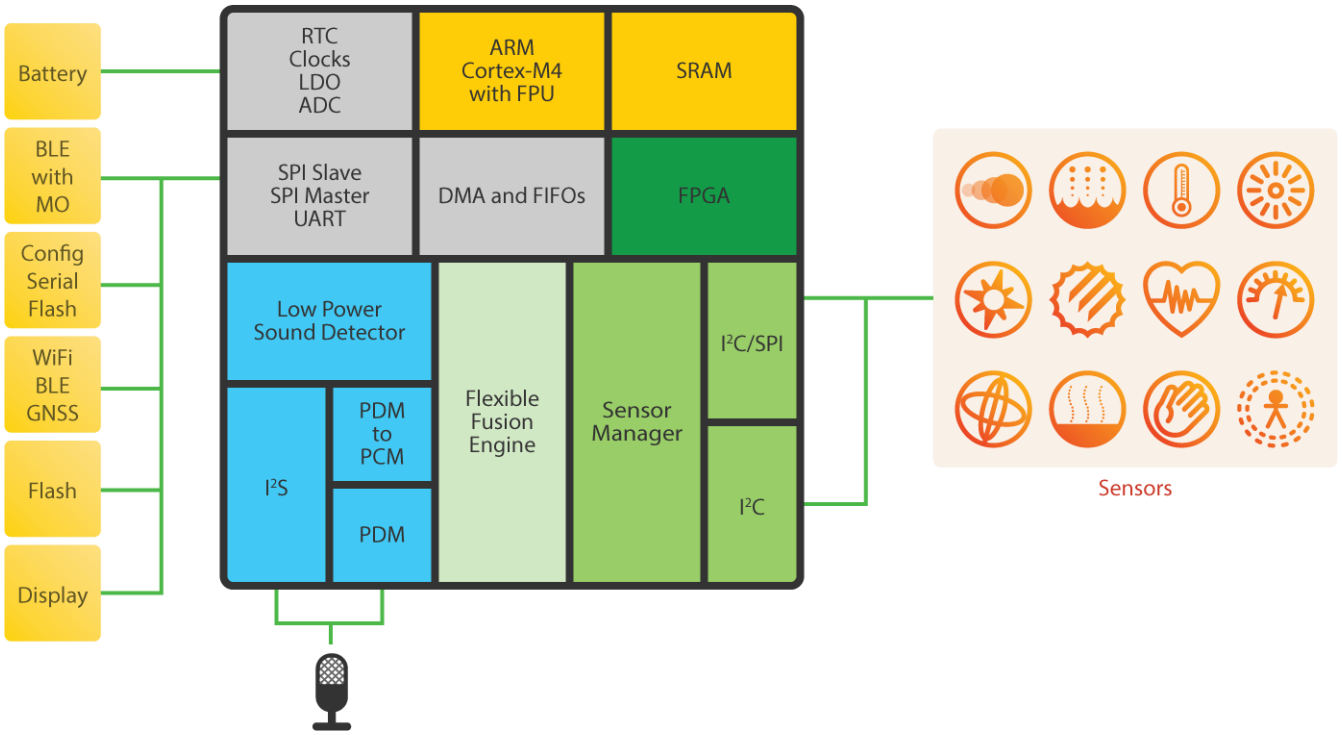
EOS S3 WEARABLE & IOT SOC SYSTEM IMPLEMENTATION



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