
Description: Sensors and Embedded Systems work together to provide one of the most important aspects of the Internet of Things (IoT): Detecting changes in an object (device or asset) and/or the environment, allowing for capture of relevant data for real-time and/or post-processing. Sensors are used for detection of changes in the physical and/or logical relationship of one object to another(s) and/or the environment.

Physical changes may include temperature, light, pressure, sound, and motion. Logical changes include the presence/absence of an electronically traceable entity, location, and/or activity. Within an IoT context, physical and logical changes are equally important.

Important sensor types in an Industrial IoT (IIoT) context include:
- Acoustic
- Ambient Light/Optical
- Electric/Magnetic
- Force/Pressure
- Chemicals/Gas/Radiation
- Humidity
- Leakage/Level/Flow
- Locked/Unlocked
- Motion/Acceleration
- Temperature

IoT demands a different set of microprocessors, drivers, peripherals, batteries and operating systems than conventional Embedded System used in general purpose computing systems. Conventional Embedded Systems are not competent to deliver what the IoT is expecting from an embedded device networked in IoT and it brings great challenges to develop or transform contemporary embedded system into an IoT enabled smart embedded system.

Microelectromechanical Systems (MEMS) will evolve significantly as IoT itself evolves. As IoT becomes ubiquitous, and as electronics miniaturization marches onward, Nanoelectromechanical systems (NEMS) will eventually become prevalent, ushering into existence an entirely new universe of connectivity, systems integration, and data ecosystem.

This research assesses the overall sensor marketplace for IoT, evaluates leading vendors, identifies key IoT functionality in support of sensors, and forecasts the market for sensor adoption and revenue. This report also provides analysis of the products that will be developed to support IoT, changes in traditional RTOS required to match performance with IoT, changes in hardware required to match needs of IoT, types of peripherals, and emerging tools to support processing of embedded systems in IoT.

Key Findings:
- There will be significant increase in COTS as seamless and efficient go-to-market execution is a key need for IoT
- APAC represents a fast growing region that is anticipated to generate $26 billion with a CAGR of 14.9% in the year 2021
- The majority of embedded systems will be in building automation, healthcare, automobile, Oil and Gas and Utility industries
- Use of IoT and embedded system will be high in EMEA due to positive response to Industrial IoT and growth of embedded systems in electrical grids, automobile and healthcare.
- The markets in EMEA through 2021 will reach to $112 billion with a CAGR of 19%

Target Audience:
- MEMS suppliers
- Sensor companies
- Internet of Things companies
- Wireless device manufacturers
- Computer and semiconductor companies
- Embedded hardware, software and OS providers
- Mobile/wireless network operators and service providers

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