Intel Provides a Foundation for the Internet of Things

The Internet of Things (IoT) is transforming our world from disconnected, isolated systems to Internet-enabled devices that can network and communicate with each other and the cloud, providing the opportunity for businesses to enhance productivity and efficiency, develop new services and improve real-time decision making.

The IoT is expected to be a multitrillion-dollar market with an install base of 50 billion connected things by the end of 2020. It's a technological transformation that will fundamentally change the way the world interacts, and Intel is working to accelerate the development and deployment of the Internet of Things by building intelligent devices, creating systems of systems by connecting legacy devices to the cloud, and enabling end-to-end analytics.

Connecting Billions of Devices

Intel brings more than 30 years of experience connecting intelligent systems and believes it is important to continue to improve and enhance the interaction of intelligent devices. Intel demonstrates its commitment to advancing the Internet of Things market through a variety of solutions and partner collaborations, including the Intel® Gateway Solutions for the Internet of Things. Intel's Gateway Solutions for IoT is a family of integrated solutions based on Intel® Quark™ SoC X1000 Series and Intel® Atom™ processors, in addition to an Intel® Galileo-based development platform. These platforms enable businesses to reduce costs and offer new services by unlocking valuable data from legacy systems that were not connected to each other or the cloud. Intel also demonstrates its development in connecting devices by working together with the city of San José to further the city's "Green Vision" initiative with the use of Intel technology, showcased at the White House SmartAmerica Challenge. San José installed a sensor demonstration platform using Intel® Gateway Solutions for the Internet of Things with an Intel® Quark™ processor and third-party sensors.

As connected devices continue to emerge, Intel's automotive sector has also delivered unprecedented capabilities of connectivity. Intel Capital created a $100 million Intel Capital Connected Car Fund to accelerate technology innovation in the automotive industry. Intel Capital has invested in hardware, software and services companies to develop technologies promoting in-vehicle applications and enable connectivity between vehicles and any connected device, including mobile devices and sensors.

Security across All Levels

As the Internet of Things market continues advance, Intel understands the significance of delivering secured software, products and capabilities in order to avoid risks of malicious intrusions from threats, including malware and hackers. Intel delivers a combination of hardware and software building blocks from edge to cloud from Wind River*, McAfee security products, and Intel processors.

Intel is also working on improving security within the car. The company created the TrustLite security architecture for flexible, hardware-enforced isolation of software modules with the ability to scale down to the electronic control units (ECU) class of device and deliver the type of security required in the vehicle. This will ensure the whole vehicle can become a trusted system operating securely and safely in the new interconnected transportation infrastructure.

Standardization for the Internet of Things

Intel is working on creating a set of interoperability standards and common architectures to connect smart devices, machines, people, processes and data. Intel joined forces with Atmel Corporation*, Broadcom Corporation*, Dell*, Samsung Electronics Co. Ltd.*, and Wind River to establish the Open Interconnect Consortium (OIC), which is focused on defining a common communications framework based on industry-standard technologies to wirelessly connect and intelligently manage the flow of information among personal computing and emerging IoT devices, regardless of form factor, operating system or service provider. In addition, Intel along with AT&T*, Cisco*, GE* and IBM*, joined to form the Industrial Internet Consortium (IIC), an open membership group focused on providing better access to big data, enabling organizations to more easily connect and optimize assets, operations and data to drive agility and to unlock business value across all industrial sectors.

Growing the IoT Ecosystem

Intel counts on an ecosystem of partners and companies to help build its connected future. Intel's ecosystem spans across a variety of areas including the automotive and industrial sectors.

Intel recently expanded its ecosystem by joining with Ford* for an automotive research project named Mobii. The new project explores applications for interior cameras, using data from existing vehicle sensors to enhance the in-vehicle experience for drivers and passengers as well as improving privacy and security features with facial-recognition software technology. Intel is also partnering with the automotive industry to develop IoT technologies to improve driving capabilities. Some automakers that Intel is working with to incorporate these new features include BMW ConnectedDrive*, Infiniti*, Jaguar Land Rover*, Kia Motors Corporation* and Toyota Motor Corporation*.

In the industrial sector, Intel integrates its technology with Daikin Applied* (formerly Daikin McQuay* and a wholly owned subsidiary of Daikin Industries Ltd.), the world's largest air conditioning, heating, ventilating and refrigeration company. Daikin Applied has incorporated Intel-based intelligent gateway solutions to deploy a complete end-to-end solution for commercial HVAC equipment. By using Intel technology, Daikin Applied has the ability to connect its Rebel rooftop units and deliver data to the cloud that is then aggregated and analyzed.

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CONTACT: Danielle Mann
973-997-1154
Danielle.mann@intel.com