Smart Axiom

Security-as-a-Service

INTERNET OF THINGS:

SMART INDUSTRIAL AUTOMATION

As the Industrial Internet of Things gains broader adoption and acceptance for it benefits and uses, businesses are shifting from products to outcome-based services and competing on their ability to deliver measurable results to customers. Such outcomes may range from guaranteed machine uptimes on factory floors, to better understanding the actual amounts of energy savings obtained within commercial buildings, to guaranteed crop yields from a specific parcel of farmland.

Machine-to-machine (M2M) communications and cloud-connected smart devices are as disruptive today as the steam engine and electricity were in the 19th century. The connected factory—and interconnection among multiple factories—is becoming today's reality. Delivering such outcomes will require new levels of collaboration across entire ecosystems of business partners and suppliers. This alignment combines products and services to meet customer needs, accelerating the movement toward smart manufacturing. Smart Axiom's solution is tailored to facilitate data capture, aggregation and exchange across the entire ecosystem, enabling manufactures to better create, distribute and monetize new products and services at unprecedented speed and scale.

New developments in smart manufacturing now allow manufacturers to rapidly change a process that used to take weeks. Automation is bringing unprecedented flexibility, agility, and cost savings. Manufacturing-on demand enables customization to an individual customer's specifications in real time.

Systems which were once isolated and focused on discrete tasks are now converging and communicating, both within the factory floor and to enterprise IT systems. From real-time logistics and supply chain management, to production planning and automated quality control, converged networks deliver visibility across the entire process and enable centralized control.

The Industrial Internet of Things will drive growth in productivity by presenting new opportunities for people to upgrade skills and take on new types of jobs and careers - known as “digital labor,” new opportunities exist to create efficiencies while regenerating the workforce.

IOT concepts enable industrial operators to continually optimize production processes with intelligence at all levels:

- **Edge intelligence (M2M):** Each machine “knows” what the others are doing. Moreover, they can recognize signs of stress and wear, and can automatically rebalance workloads via what-if-analysis. M2M communication enables predictive maintenance, significantly reducing failure and downtime.

- **Central Intelligence:** Data on all moving parts is continually reported to cloud-based central control systems. There, algorithms analyze this data to identify factors affecting overall performance—for example, excessive heat or vibrations. They can then make the adjustments necessary to keep production running at optimal capacity while maintaining quality.

- **Enterprise intelligence:** From centralized control systems for individual factories, industrial enterprises can collect data from multiple factories. This enables them to analyze and compare performance, build smarter algorithms, and drive process improvements based on lessons learned.

Addressing Challenges

Security: Security and data privacy, which are already rising in importance given increased vulnerabilities to attacks, espionage and data breaches, are driven by increased connectivity and data sharing. This requires a decentralized horizontal security approach at the device, operation and transport levels. Security must be integrated into every device from the initial design phase, through to the hardware and operating systems.

Interoperability: A lack of interoperability among existing systems significantly increases complexity and costs in industrial internet deployments. Today's operational technology systems work largely in silos. However, in the future, a fully functional digital ecosystem will require seamless data sharing between machines and other physical systems from different manufacturers. The drive towards seamless interoperability will be further complicated by the long-life span of industrial equipment, which will require costly retrofitting or replacement work to adapt with the latest technologies.

Safety: Devices that control heavy machinery must have built-in safeguards to prevent accidents and protect workers

Connecting and protecting brownfield systems: Systems that were not connected before need to be migrated securely to interconnected networks. This can be accomplished by building secure Internet gateways that enable cloud-based central control systems to collect local intelligence data from the systems while blocking attacks.

Smart Axiom Solutions

Smart Axiom is an innovative emerging company providing unmatched IoT products and solutions for industrial automation, and the only company delivering a Blockchain solution powered by decentralized, peer-to-peer communications and no-single failure automated systems.

Smart Axiom provides the IoT systems and software that deliver the underlying intelligence—including decentralized networks and Blockchain security functionality— enabling smart manufacturing networks and devices to perform safely and reliably. This Intelligent Device Platform enables developers of industrial applications to jump-start development, with pre-configured software components.

Smart Axiom's decentralized horizontal security and IoT platform delivers underlying intelligence—including Blockchain security and context-aware features—enabling smart manufacturing networks and devices to perform safely and reliably. The Intelligent Device Platform enables developers of industrial applications to jump-start development, with pre-configured software components leveraging Smart Axiom's innovative industrial manufacturing solution.