RA Ecosystem Partner Solution

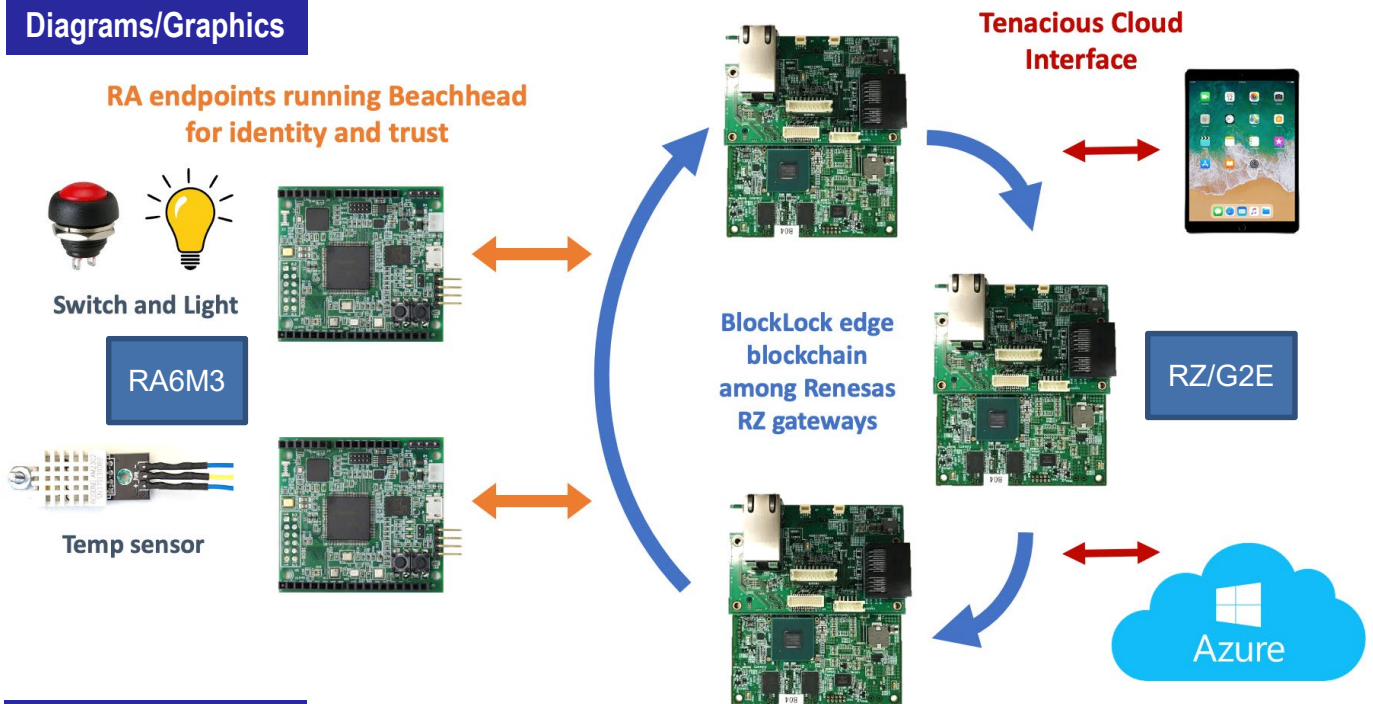# IoT Management Secured from Endpoint-to-Cloud with Blockchain Technology

Solution Summary

SmartAxiom software manages and secures IoT devices through a patented, lite blockchain technology running among those devices at the edge of the Internet – enabling them to defend themselves. Our peer-to-peer distributed ledgers improve security, latency, reliability and manageability. Now deployed on Renesas MCUs and MPUs, SmartAxiom has uniquely created the first true endpoint-to-cloud blockchain solution. SmartAxiom's IoT Smart Contracts push intelligence to the edge by securely deploying automations, permissions and updates. This RA Ready Solution is widely applicable and proven in smart buildings, production, logistics & vehicles.

Features/Benefits

- **Easy evaluation and development:** Proven on Renesas RA MCUs and RZ MPUs
- **Low latency:** Local response much faster than cloud / server based security
- **Redundant and Reliable:** No single point of failure at security server or its network connection
- **Scalable & Flexible:** Distributed ledgers enable keyless peer authentication eliminating costs and certificate management complexity
- **Secure:** To break the system the majority of the nodes have to be hacked between transactions

Diagrams/Graphics

RA endpoints running Beachhead for identity and trust

Switch and Light

RA6M3

Temp sensor

BlockLock edge blockchain among Renesas RZ gateways

Tenacious Cloud Interface

RZ/G2E
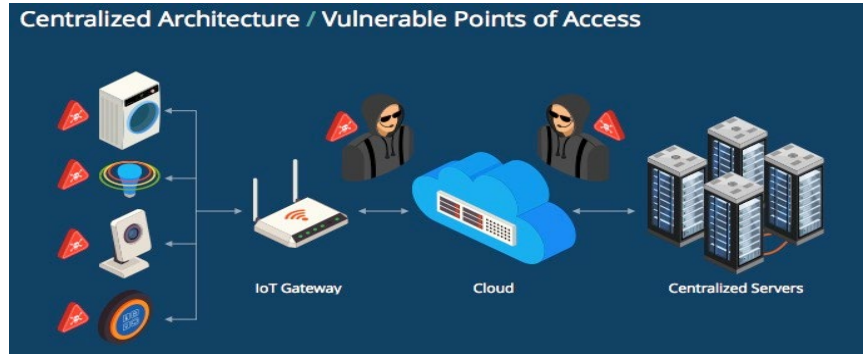
Azure

Target Applications

- Smart Buildings and Cities – secure control and automation
- Logistics – raising trust in tracking devices and accelerating the supply chain
- In and between vehicles – a car can defend itself and be an endpoint in a larger system
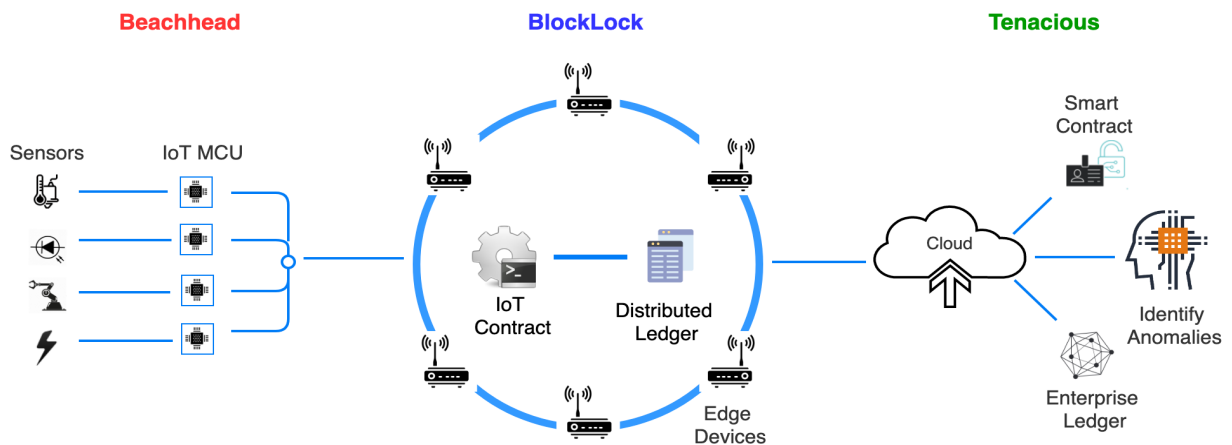- Industrial IoT – securing the smart factory

2020.06

SMARTAXIOM

Managing and Securing IoT with Edge Blockchain Tech

Today's server-based, keyed-trust solutions are not cost effective, responsive or inherently secure at IoT scale. **They are especially lacking for systems like smart buildings requiring fast response and mobile assets like vehicles.**

Centralized Architecture / Vulnerable Points of Access

IoT Gateway — Cloud — Centralized Servers

Comprehensive Protection from Endpoint through Edge to Cloud

SmartAxiom has developed a blockchain-based, decentralized platform that is uniquely situated to solve today's IoT management and security challenges. Through synchronized distributed ledgers, smart contracts and strong encryption, the platform facilitates trusted IoT transaction processing. It caters to the five major security areas: **identity, authentication, authorization, encryption and compliance**. Our Products:

Beachhead · BlockLock · Tenacious

Sensors — IoT MCU — IoT Contract — Distributed Ledger — Edge Devices — Cloud — Smart Contract — Identify Anomalies — Enterprise Ledger

Features:

- **Peer-to-peer consensus** replaces central trust authority
- **Distributed ledgers** are replicated, shared, synchronized and permanent copies of transaction information
- **IoT Smart Contracts** push intelligence to the edge by securely deploying automations, permissions and updates

Key Benefits:

- **Responsive and Available:** Distributed ledgers give fast local response with no single point of failure
- **Scalable & Flexible:** Distributed ledgers enable **keyless peer authentication** eliminating costs and certificate management complexity for commissioning
- **Secure:** To break the system the majority of the local nodes would have to be hacked between transactions
- **Data Integrity:** permanent, time-stamped records

SmartAxiom software is broadly applicable and is managing and securing smart buildings, vehicles, shipping containers & production lines today.
…Ask us about how we can improve your IoT system.

www.smartaxiom.com