

# Industrial Edge-to-Enterprise Integration Using the Reekoh Product Suite

An overview of common patterns when integrating industrial data from the Edge to IT and business applications using the Reekoh Industrial IoT Integration Cloud and Reekoh Outpost Edge.

# Glossary of Components

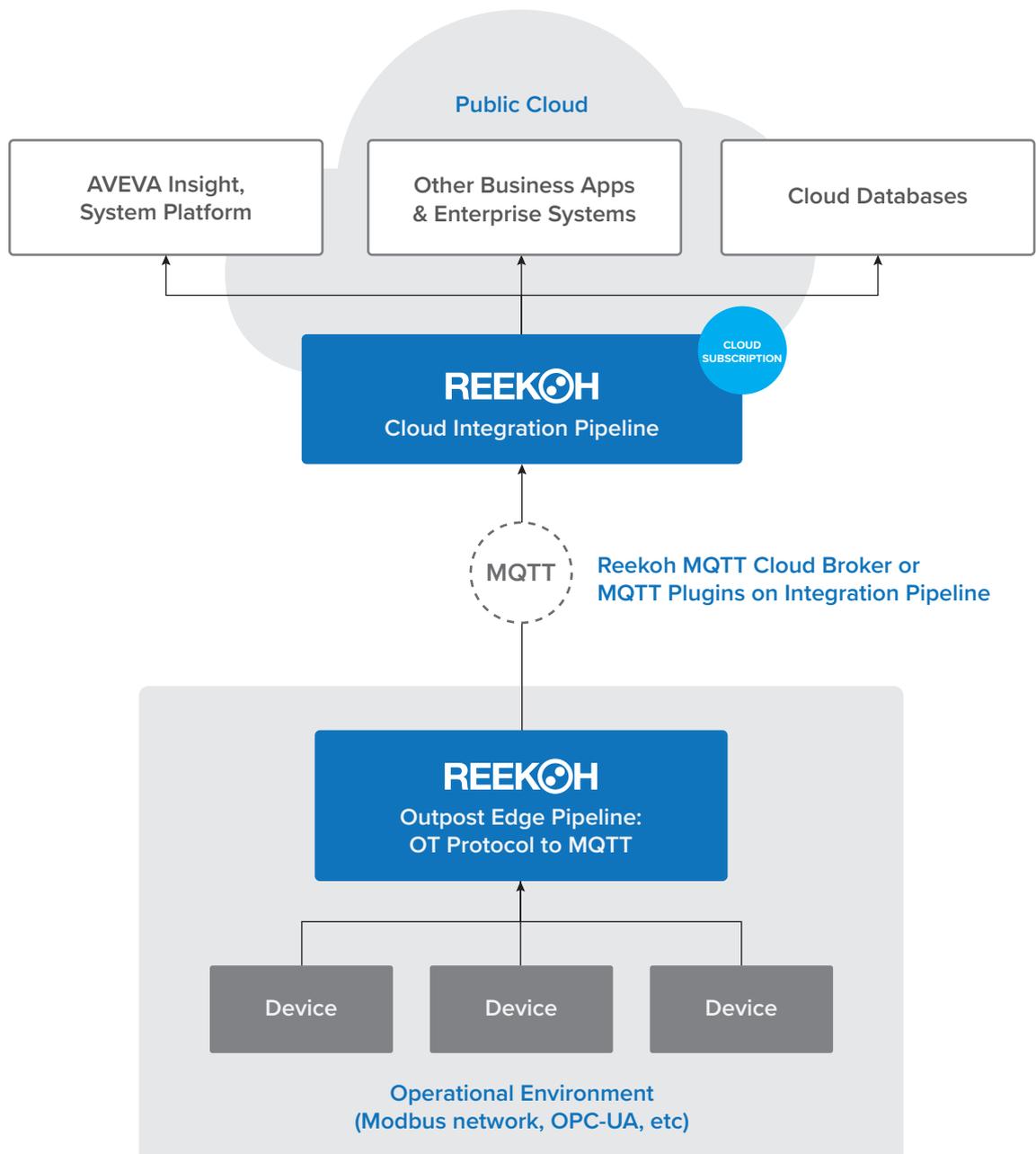
The architectures contained in this guide are designed using a number of elements of the Reekoh product suite. The following table outlines the functionality of each of the key solution components:

Component	Description
Outpost Edge Pipeline	Using plugins from Reekoh's library, an integration pipeline can be built and containerised as a Reekoh Outpost Edge application. This application can then be deployed to an edge device. This pipeline can perform the same functions as a normal Reekoh pipeline, including data ingestion, transformation and orchestration. For more information visit <a href="https://reekoh.com/outpost-iot-edge">https://reekoh.com/outpost-iot-edge</a>
Outpost Edge MQTT Bridge	An Outpost Edge MQTT Bridge is simply a pipeline that has been designed with MQTT Gateway and Stream plugins. This permits MQTT to be transferred across networks, potentially post-aggregation.
Outpost Edge MQTT Broker	An Outpost Edge MQTT Broker is simply a pipeline containing just a single MQTT Broker. It can be utilised to facilitate outbound only communication between producers and consumers with minimal configuration.
MQTT Cloud Broker	This is a standalone enterprise MQTT Cloud Broker that can be provisioned through the Reekoh console independently of an integration pipeline. They are highly scalable and resilient brokers, managed in the Reekoh cloud infrastructure. For more information visit <a href="https://reekoh.com/mqtt-cloud-brokers">https://reekoh.com/mqtt-cloud-brokers</a>
Cloud Integration Pipeline	Integration pipelines are core to Reekoh's Integration Platform-as-a-Service (iPaaS) that runs in Reekoh's managed cloud. Using plugins from Reekoh's library, an integration pipeline can utilise extensive data ingestion, transformation and orchestration, as well as other core modules in the Reekoh platform such as Data Schemas, Mapping and Business Rules. For more info visit <a href="https://reekoh.com/accelerate-integration-platform">https://reekoh.com/accelerate-integration-platform</a>
Integration Pipeline - Enterprise License	The entire Reekoh iPaaS can be deployed on customer infrastructure under an Enterprise License. Pipelines deployed onto these private instances of the Reekoh platform are running in the customers private infrastructure.

# Integration Architectures

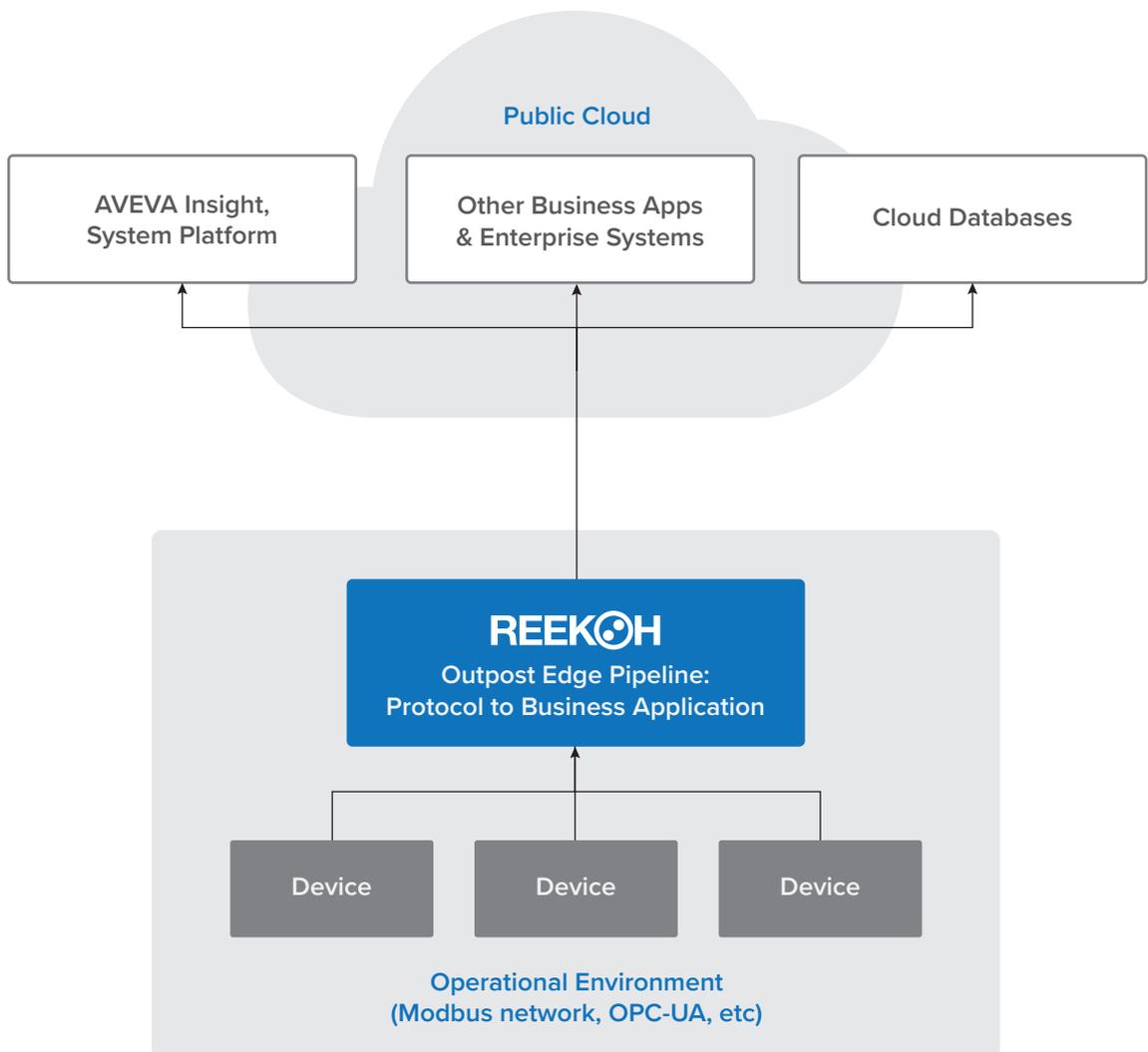
## 1. On-Site OT to Public Cloud using Reekoh iPaaS

On-premise devices (e.g. OPC-UA or connected over a Modbus network) communicate with a local Edge gateway running a Reekoh Outpost application that ingests the data in the appropriate OT protocol and translates to MQTT with any necessary data transformation. The MQTT stream securely connects with an MQTT Stream plugin running on a Reekoh Accelerate pipeline in the cloud, or using a standalone enterprise Reekoh MQTT Cloud Broker. From there, data can be transformed, mapped and integrated with business applications and enterprise systems, or stored in customer databases.



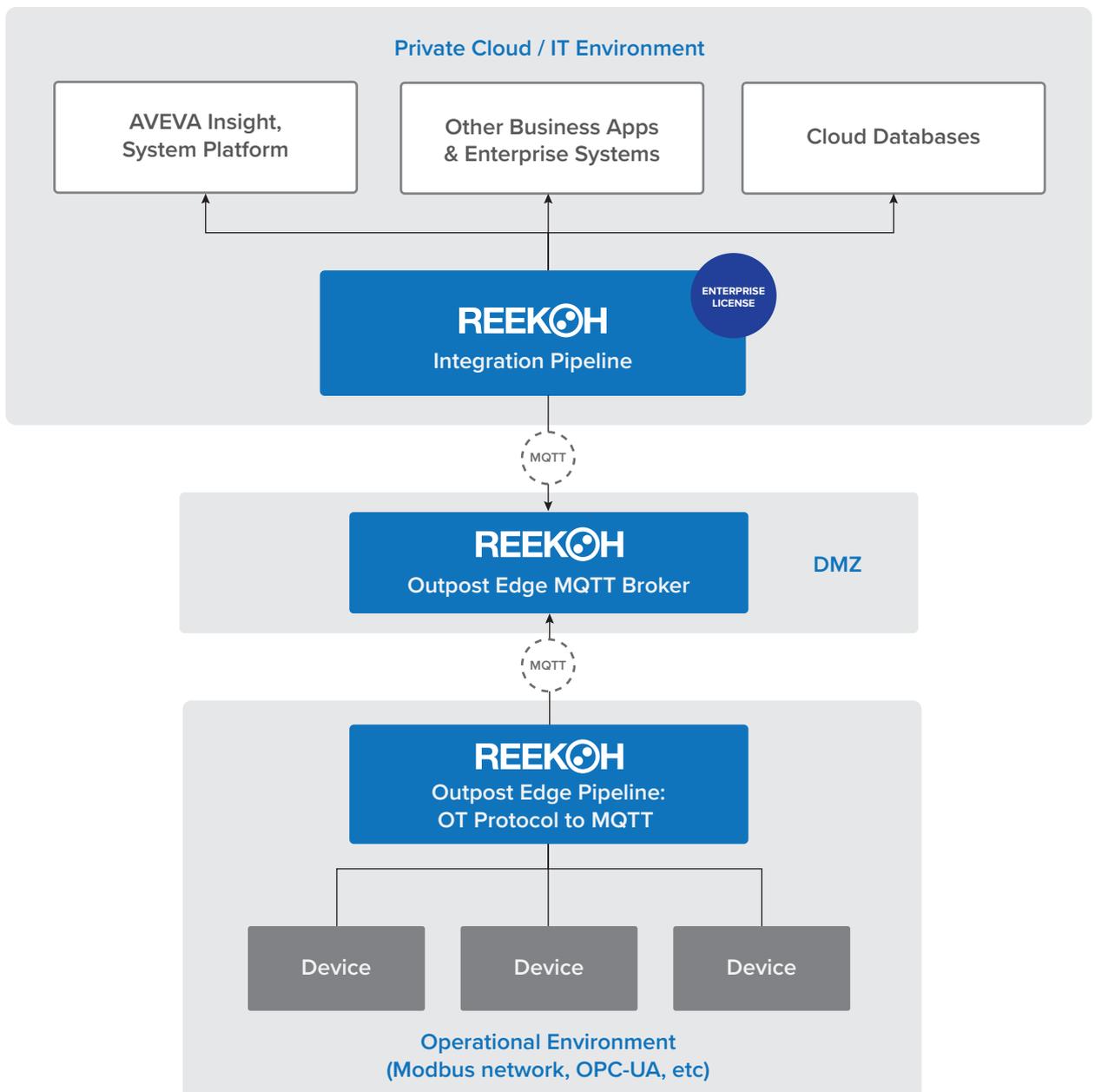
## 2. On-Site OT Direct to Public Cloud

If data can be easily transformed on the Edge with no further orchestration required, and the Edge application is designed for a single purpose, the Reekoh Outpost Edge Pipeline can be designed to take OT data and integrate the IT/business application endpoint directly. This requires Internet connectivity from on-site to reach a public cloud endpoint.



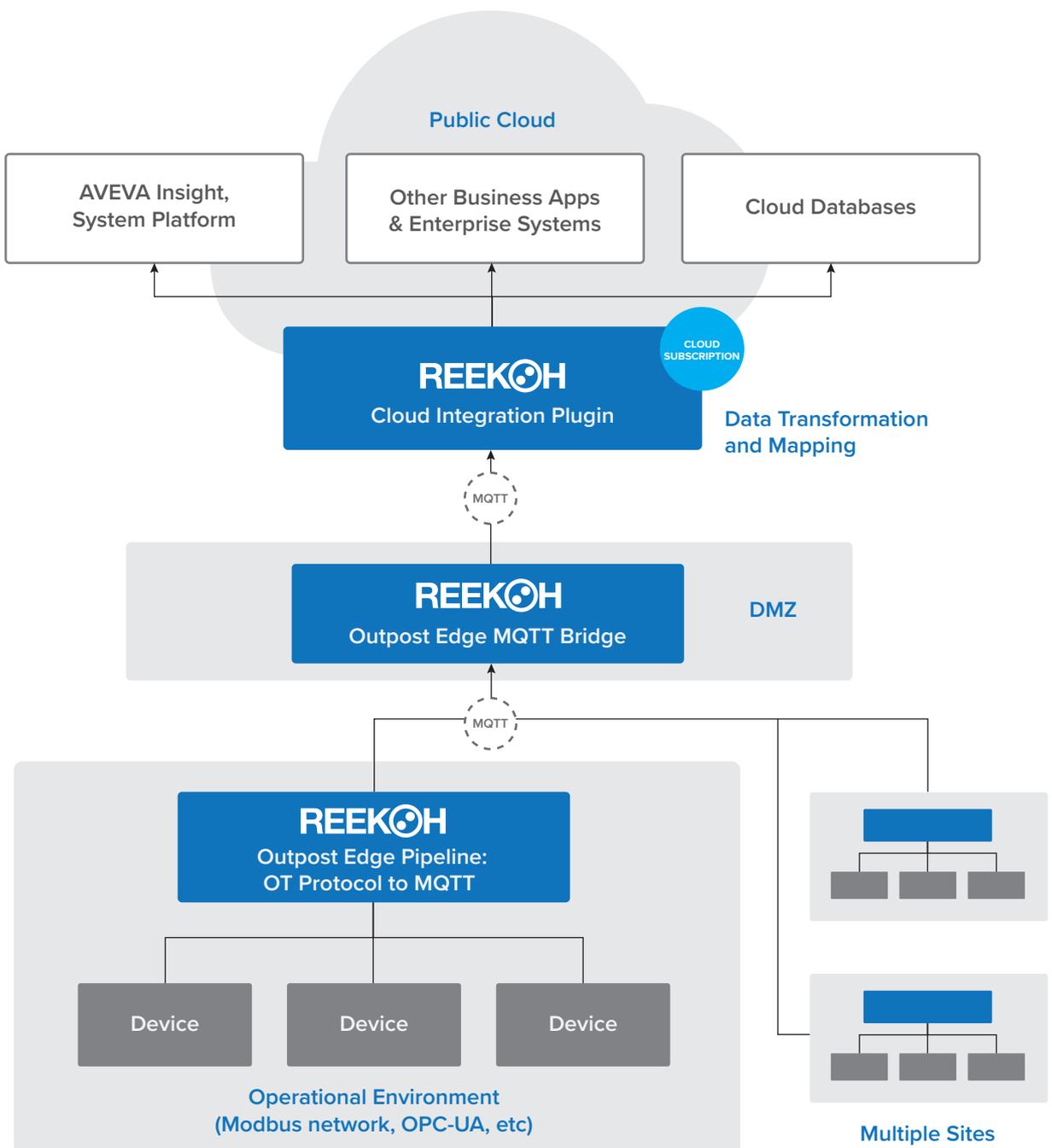
### 3. On-Site OT to Private Cloud

The same on-site architecture can communicate through a Reekoh Outpost Edge MQTT Broker running in a DMZ, which is an MQTT Broker deployed within a containerised Outpost application. A private instance of the Reekoh Accelerate Integration Platform, running on private on-premise server infrastructure or a customer-owned private cloud environment (Azure, AWS, Google, Alibaba) communicates with the same MQTT Broker with connectivity to the DMZ via internal networking.



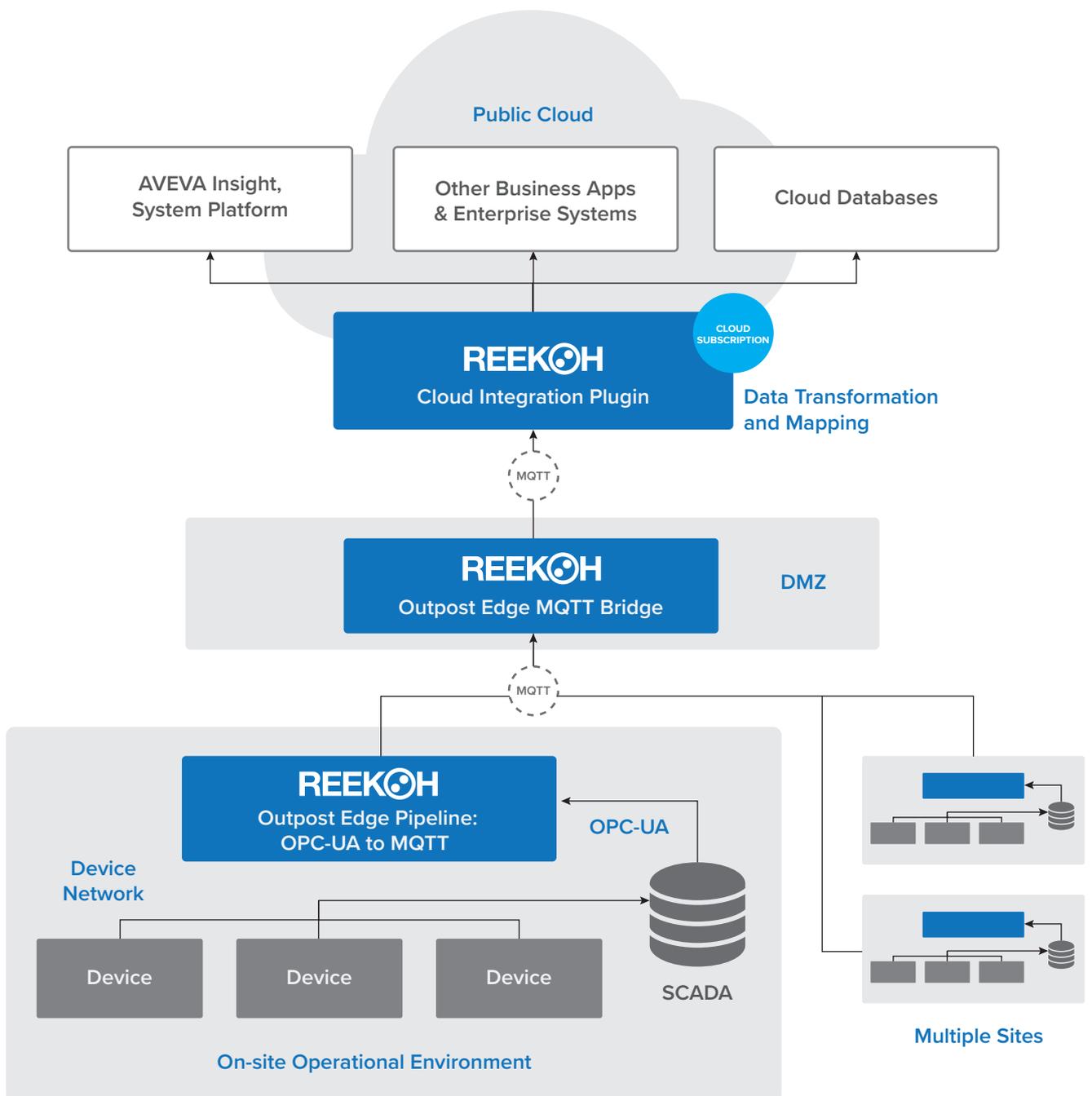
## 4. Multiple On-Site OT to Public Cloud

Multiple OT networked sites can connect to a single Reekoh Outpost Edge application acting as an MQTT Bridge in a centralised DMZ before communicating securely via MQTT to a Reekoh Accelerate pipeline in the cloud.



## 5. SCADA/OPC-UA to Public Cloud

OPC-UA networked devices communicate securely with an Outpost Edge Pipeline, which then connects via MQTT to a Reekoh Outpost Edge MQTT Bridge running in a centralised DMZ. Each on-site Outpost Edge Pipeline across multiple locations connect to the same MQTT Bridge. From there, the Bridge communicates via MQTT with a Reekoh Accelerate pipeline running in the cloud. From there, the Bridge communicates via MQTT with a Reekoh Accelerate pipeline running in the cloud.



# Reekoh. The Industrial IoT Integration Cloud

Reekoh's core technologies focus on bringing well-known and proven integration methodologies and approaches to the unique requirements of industrial operational networks and technologies.

Our platform and tools can be applied as a comprehensive IIoT Integration Cloud.

Comprised of attributes that touch on technology, delivery, scale and go-to-market, the IIoT Integration Cloud is a framework for achieving agile, repeatable and scalable success when driving business outcomes from data-driven insights and actions.

While there will be degrees of overlap within various systems and technologies that are part of these business solutions, it's the ability to provide system integrators and internal teams with a clear architecture of how and where particular logic and workloads are deployed to provide the best outcome from pilot to production.

For more information, visit <https://reekoh.com>

## The Industrial IoT Integration Cloud

