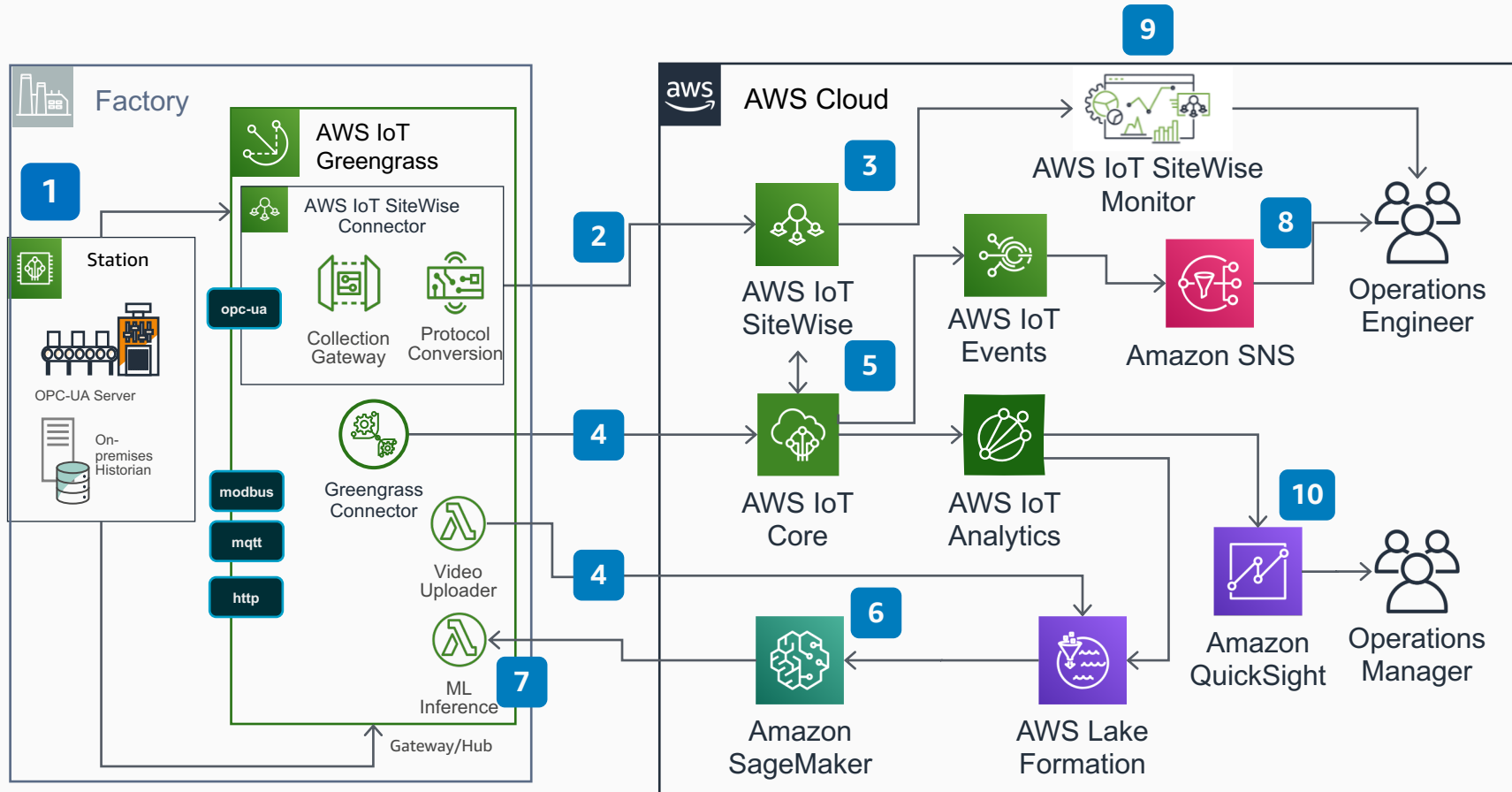# AWS Industrial IoT
Predictive Quality Reference Architecture

Create a computer vision predictive quality machine learning (ML) model using Amazon SageMaker with AWS IoT Core, AWS IoT SiteWise, AWS IoT Greengrass, and AWS Lake Formation.

Description

1 Configure **AWS IoT Greengrass** to communicate with industrial equipment to capture data and video on the factory floor.

2 Configure the **AWS IoT SiteWise Connector** on **AWS IoT Greengrass** to connect and collect data from factory machines using OPC-UA.

3 Use **AWS IoT SiteWise** to model assets that represent on-premises devices, equipment and processes, and ingest historian data into AWS.

4 Use **AWS IoT Greengrass** to exchange messages with **AWS IoT Core** and send processed images to **Amazon S3** in your **AWS Lake Formation**.

5 Configure rules within **AWS IoT Core** to trigger events and send data to **AWS IoT Events** and **AWS IoT Analytics**.

6 Build your predictive quality Machine Learning (ML) model with **Amazon SageMaker** based on images stored in **AWS Lake Formation**.

7 Deploy your Machine Learning model onto your **AWS IoT Greengrass** Edge Gateway.

8 Create a topic for quality alerts in **Amazon Simple Notification Service (Amazon SNS)** to notify an Operations Engineer.

9 Create a custom web portal using **AWS IoT SiteWise Monitor** to visualize factory data and industrial KPIs in near real-time.

10 Derive insights from analyzed data using **Amazon QuickSight** on the **AWS IoT Analytics** data source.

AWS Reference Architecture