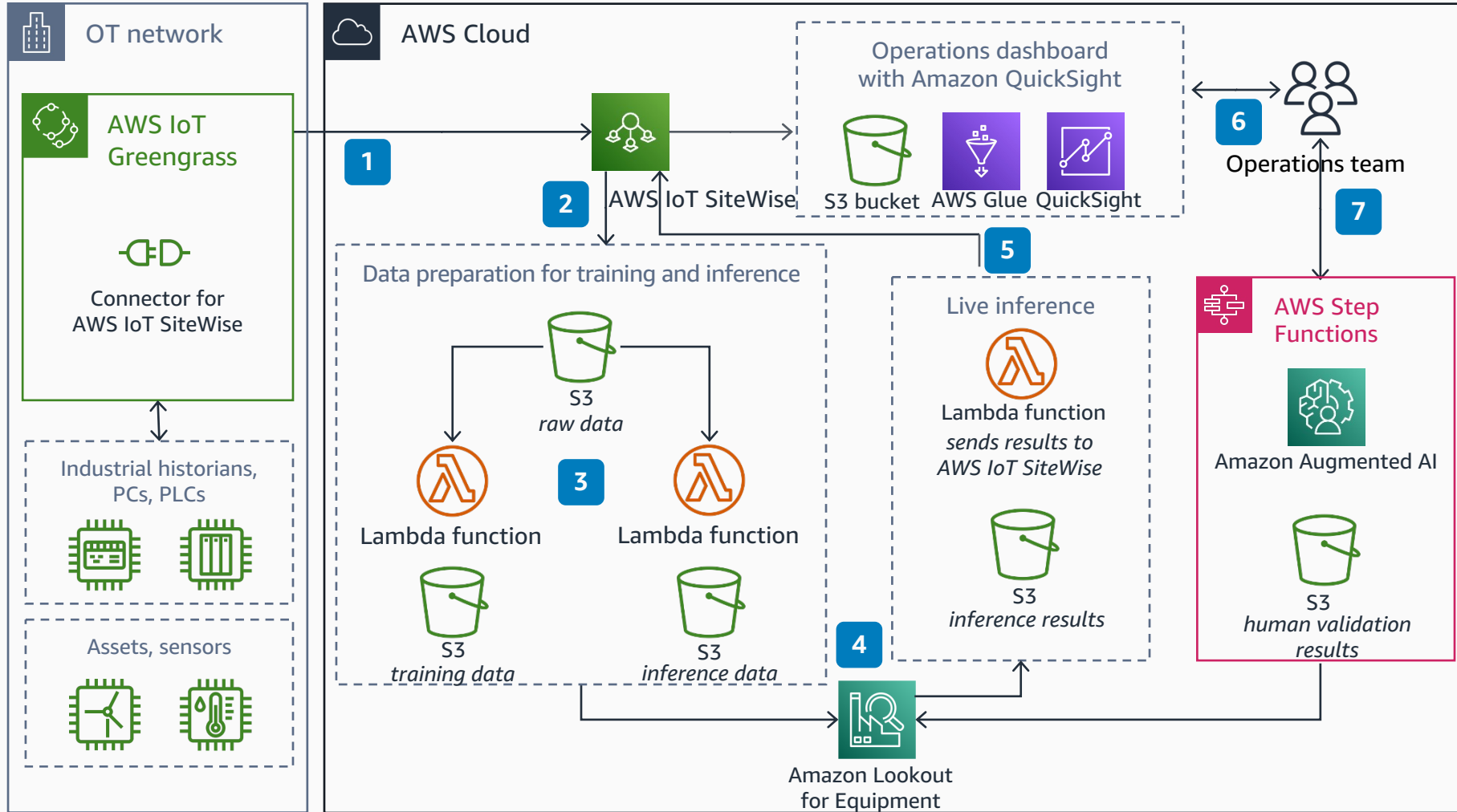# Discover Underperforming Industrial Assets
## Notify operations teams of forecasted dips in equipment performance
Combine insights from Amazon Lookout for Equipment with operational tools in AWS IoT SiteWise.



**OT network**

AWS IoT Greengrass

Connector for AWS IoT SiteWise

Industrial historians, PCs, PLCs

Assets, sensors

**AWS Cloud**

**1**

**2**

AWS IoT SiteWise

**Operations dashboard with Amazon QuickSight**

S3 bucket    AWS Glue    QuickSight

**6** Operations team

**7**

**Data preparation for training and inference**

S3 *raw data*

**3**

Lambda function

Lambda function

S3 *training data*

S3 *inference data*

**4**

**5** **Live inference**

Lambda function *sends results to AWS IoT SiteWise*

S3 *inference results*

**AWS Step Functions**

Amazon Augmented AI

S3 *human validation results*

Amazon Lookout for Equipment

**1** Telemetry from industrial assets is captured by historians, read by the **AWS IoT SiteWise** connector running on a local **AWS IoT Greengrass** core, and published to the cloud in **AWS IoT SiteWise**.

**2** Telemetry is exported to an **Amazon Simple Storage Service (Amazon S3)** bucket, where it is prepared for machine learning training and then live inferencing.

**3** Custom code deployed to an **AWS Lambda** function prepares the data to be read by **Amazon Lookout for Equipment** for training and inference.

**4** Asset performance models are trained per asset in **Amazon Lookout for Equipment**. Models are made available for batch inferencing using a scheduler.

**5** Combined with raw telemetry, batch inference results are stored as a new property in **AWS IoT SiteWise**.

**6** Using **Amazon QuickSight** on the combined exported data, the operations teams can triage underperforming assets in a dashboard.

**7** Operations teams perform human-in-the-loop validation on alerts to improve model performance.

**AWS Reference Architecture**