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.

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 inferencing 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.


**Diagram Notes:**
- **AWS Cloud**
  - Operations dashboard with Amazon QuickSight
  - S3 bucket
  - AWS Glue
  - QuickSight

- **Data preparation for training and inference**
  - Lambda function
  - S3 bucket
  - AWS IoT SiteWise
  - Learning training data
  - Inference data

- **Live inference**
  - Lambda function sends results to AWS IoT SiteWise
  - S3 bucket
  - AWS Lambda function
  - S3 bucket
  - AWS Step Functions

- **Asset performance models**
  - Training data
  - Inference data

- **Operations team**
  - Human validation results

- **Amazon Augmented AI**
  - AWS Step Functions
  - Amazon QuickSight on the combined exported data

- **OT network**
  - Connector for AWS IoT SiteWise
  - Industrial historians, PCs, PLCs
  - Assets, sensors

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