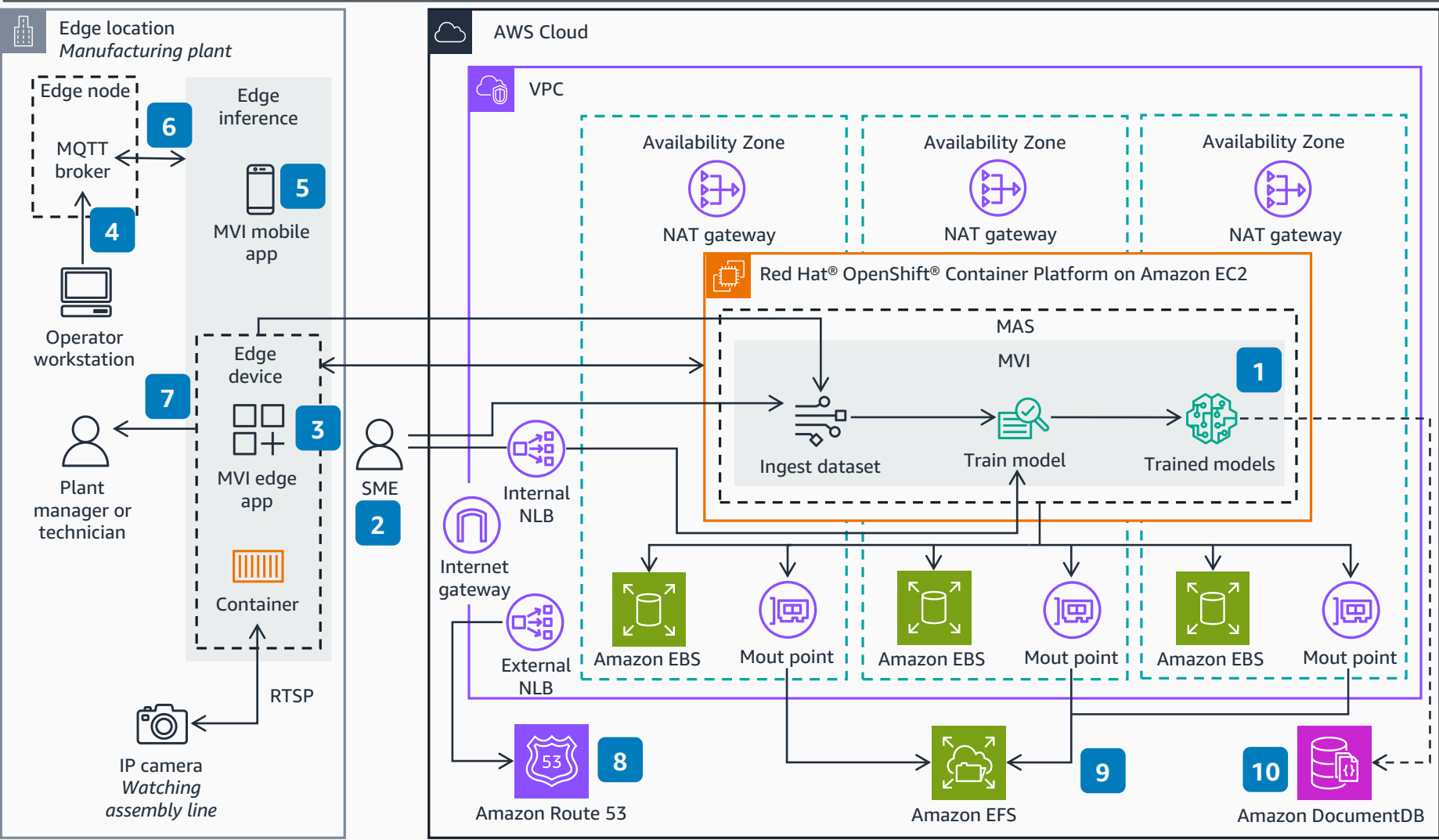# Guidance for Computer Vision for Quality Insights with IBM Maximo® Visual Inspection on AWS

This architecture diagram demonstrates how to detect and classify defects in the manufacturing industry.

1. The Maximo® Visual Inspection (MVI) mobile app or edge device sends training datasets, such as images and videos, to the MVI training server running on Red Hat® OpenShift® Container Platform in your virtual private cloud (VPC) on **Amazon Elastic Compute Cloud (Amazon EC2)**. A subject matter expert (SME) can also send data to be ingested using a web application.

2. SMEs annotate dataset images and train models in the MVI training server.

3. Use the MVI edge or mobile app to create inspections and download products or models for specific use cases and deploy them. Use Real Time Streaming Protocol (RTSP) for video data.

4. Operator workstations send messages, such as Internet of Things (IoT) sensor data, to MQTT topics on an MQTT broker. The MVI edge or mobile app subscribes to the topic and receives the message.

5. Take a photo and perform inference at the edge, then send images with the inference results to MVI.

6. Send the alerts and inference results to the MQTT topic on an MQTT broker.

7. Plant managers and technicians review the inference results in the MVI edge user interface, mobile app, or training server.

8. **Amazon Route 53** provides domain name system (DNS) services. **Network Load Balancers** (NLBs) provide network traffic to the Red Hat OpenShift Container Platform cluster through the gateway.

9. The Red Hat OpenShift Container Platform connects **Amazon Elastic File System (Amazon EFS)** as the network file system to the MVI training server. Red Hat OpenShift Container Platform uses **Amazon Elastic Block Store (Amazon EBS)** as block storage.

10. The Maximo® Application Suite (MAS) uses **Amazon DocumentDB** for a data dictionary and local user management.

AWS Reference Architecture