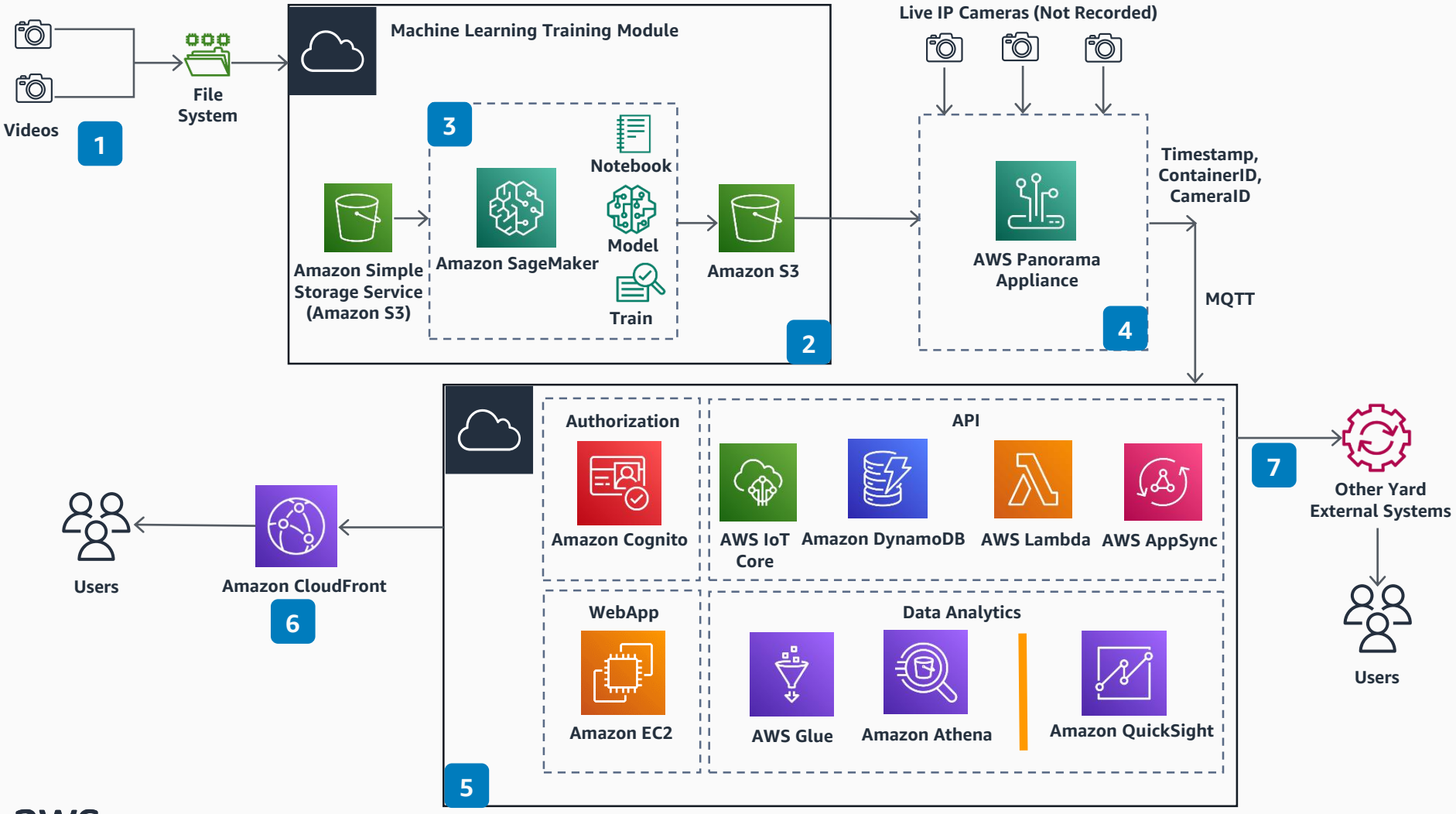
# Guidance for Intelligent Yard Management on AWS

## AWS Panorama and GSI/Professional Services Deployment Model

This architecture optimizes ground operations and expedites yard throughput.




1. Recorded videos are used as input to create annotated data. The data is stored in a file system for later use.
2. A computer vision (CV) model is trained in the ML training module using annotated data.
3. In the ML training module, **Amazon SageMaker** infrastructure is critical for training custom CV models. The models are trained to detect physical assets using optical recognition.
4. The trained model and business logic application is deployed to the **AWS Panorama Appliance**. Live internet protocol (IP) cameras send a feed to this appliance. Feeds are used for inference at the edge and are not recorded.
5. The output from the **AWS Panorama Appliance** is used to create a web application hosted on an **Amazon Elastic Compute Cloud (Amazon EC2)** instance.
6. End users access this web application through **Amazon CloudFront**. The web application presents a view of assets in the facility and a dashboard interface powered by **Amazon QuickSight**.
7. *Optional:* **Amazon Virtual Private Cloud (Amazon VPC)** peering connects data to other external yard systems for enhanced functionality of asset tracking and monitoring.

*Reviewed for technical accuracy December 12, 2022*



**AWS Reference Architecture**