



Architecture Diagrams

Electro-Optical Imagery Reference Architecture



Electro-Optical Imagery Reference Architecture: Architecture Diagrams

Copyright © 2026 Amazon Web Services, Inc. and/or its affiliates. All rights reserved.

Amazon's trademarks and trade dress may not be used in connection with any product or service that is not Amazon's, in any manner that is likely to cause confusion among customers, or in any manner that disparages or discredits Amazon. All other trademarks not owned by Amazon are the property of their respective owners, who may or may not be affiliated with, connected to, or sponsored by Amazon.

Table of Contents

Electro-Optical Imagery Reference Architecture i

Electro-Optical Imagery Reference Architecture 1

Electro-Optical Imagery Reference Architecture (Classified Processing) 2

Further reading 3

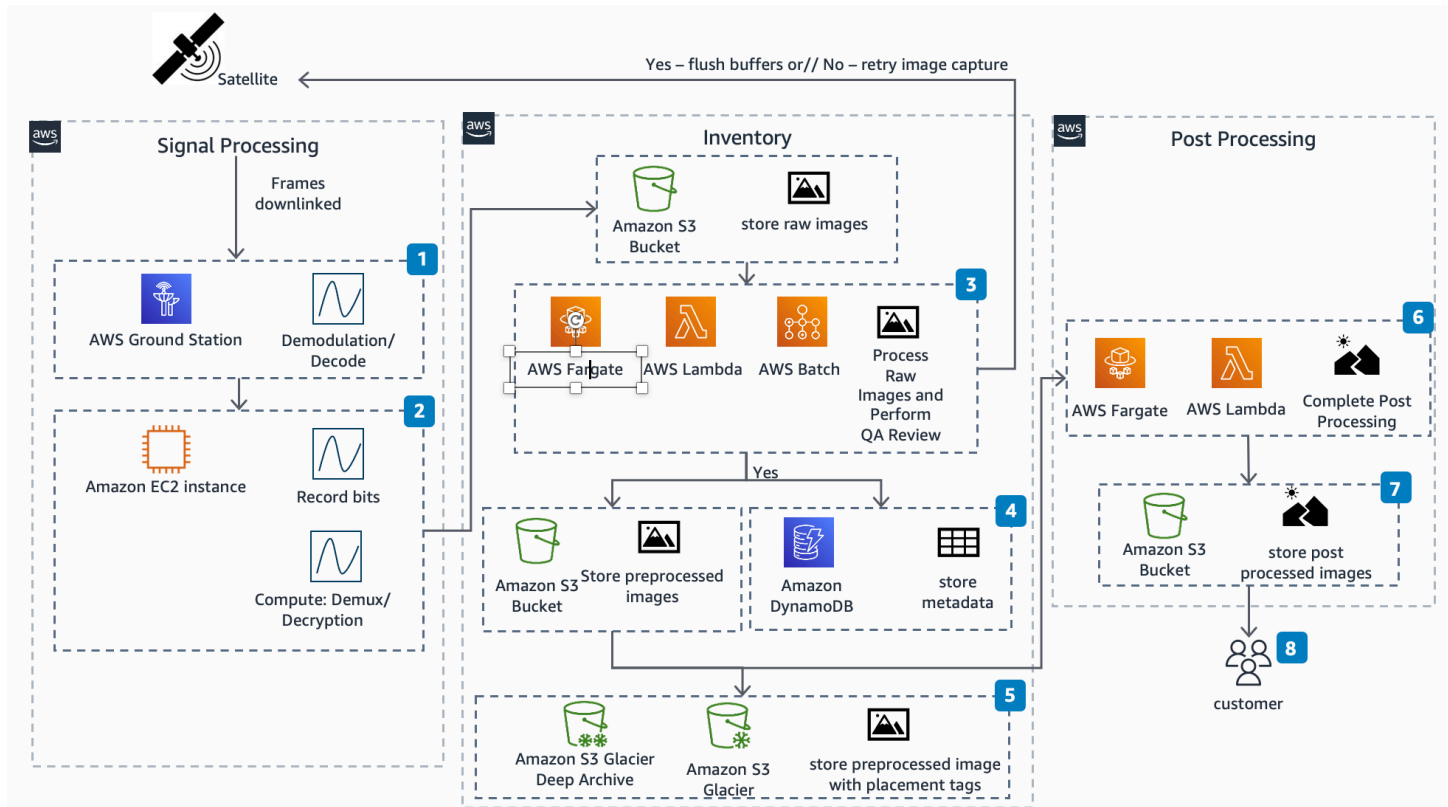
Diagram history 4

Electro-Optical Imagery Reference Architecture

Publication date: May 12, 2021 ([Diagram history](#))

This architecture enables you to process electro-optical imagery on AWS.

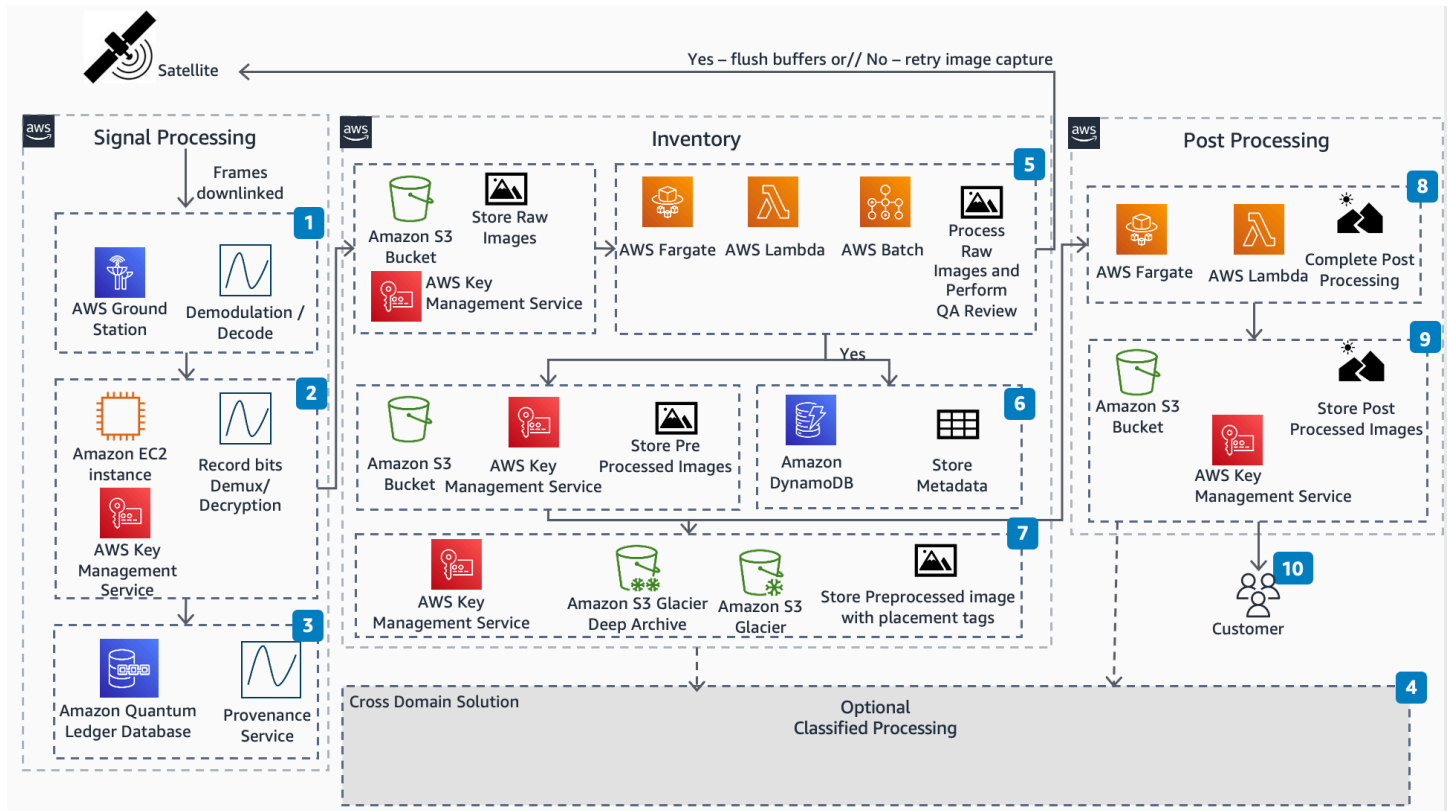
Electro-Optical Imagery Reference Architecture



1. Demodulate and Decode: Extract baseband waveform from modulated carrier; remove forward error correction.
2. Convert into raw sensor data: Decommutate signal frames; decrypt data .
3. Process Raw Images: Process Raw Images and Perform QA Review
 - QA Review: Confirm Images are sufficient for processing
 - **AWS Batch**: Run multiple jobs in parallel
 - **AWS Fargate and AWS Lambda**:
 - Sensor Correction: Apply corrections for optical distortions
 - Orthorectify: Sensor perspective

- Georeference: Apply image to spatial grid and assign known coordinate system
 - Generate Thumbnails: Create post-processed thumbnails for customer purchase
4. Store metadata: Store information on latitude/longitude collection, region collection, time and date of retrieval .
 5. Storage: Store preprocessed images in a variety of **Amazon S3** services by balancing cost savings and time of retrieval.
 6. Post Processing and Analysis: Complete imagery processing.
 - Feature Extraction: Identify features in images (such as ships)
 - Naming/Tagging of Features: Tag features by name/identification system
 - Time Series Creation: Tag images to sort
 7. Storage and Dissemination: Final storage of images and analytics for end customer.
 8. Customer Delivery: Deliver final images to end customers

Electro-Optical Imagery Reference Architecture (Classified Processing)



1. Demodulate and Decode: Extract baseband waveform from modulated carrier; remove forward error correction.
2. Convert into raw sensor data: Deconvolute signal frames; decrypt data .
3. Immutable transaction log: Cryptographically establish provenance and fidelity .
4. Optional Classified Processing: Throughout the image processing, move data to the appropriate regions for classified processing.
5. Process Raw Images: Process Raw Images and Perform QA Review
 - QA Review: Confirm Images are sufficient for processing
 - **AWS Batch**: Run multiple jobs in parallel
 - **AWS Fargate** and **AWS Lambda**:
 - Sensor Correction: Apply corrections for optical distortions
 - Orthorectify: Sensor perspective
 - Georeference: Apply image to spatial grid and assign known coordinate system
 - Generate Thumbnails: Create post-processed thumbnails for customer purchase
6. Store metadata: Store information on latitude/longitude collection, region collection, time and date of retrieval .
7. Storage: Store preprocessed images in a variety of **Amazon S3** services by balancing cost savings and time of retrieval.
8. Post Processing and Analysis: Complete imagery processing.
 - Feature Extraction: Identify features in images (such as ships)
 - Naming/Tagging of Features: Tag features by name/identification system
 - Time Series Creation: Tag images to sort
9. Storage and Dissemination: Final storage of images and analytics for end customer.
10. Customer Delivery: Deliver final images to end customers

Further reading

For additional information, refer to

- [AWS Architecture Icons](#)
- [AWS Architecture Center](#)
- [AWS Well-Architected](#)

Diagram history

To be notified about updates to this reference architecture diagram, subscribe to the RSS feed.

Change	Description	Date
Initial publication	Reference architecture diagram first published.	May 12, 2021

Note

To subscribe to RSS updates, you must have an RSS plugin enabled for the browser you are using.