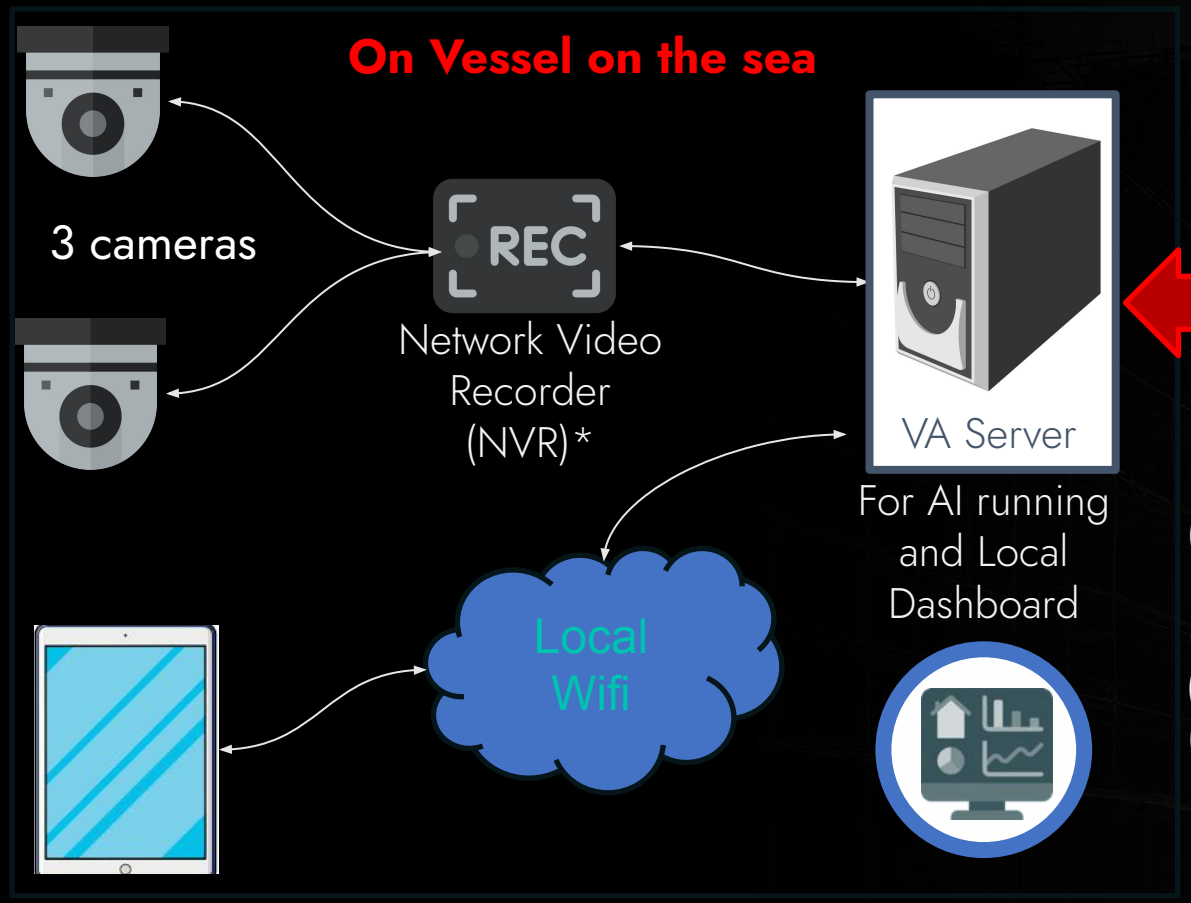
Proposal System Architecture

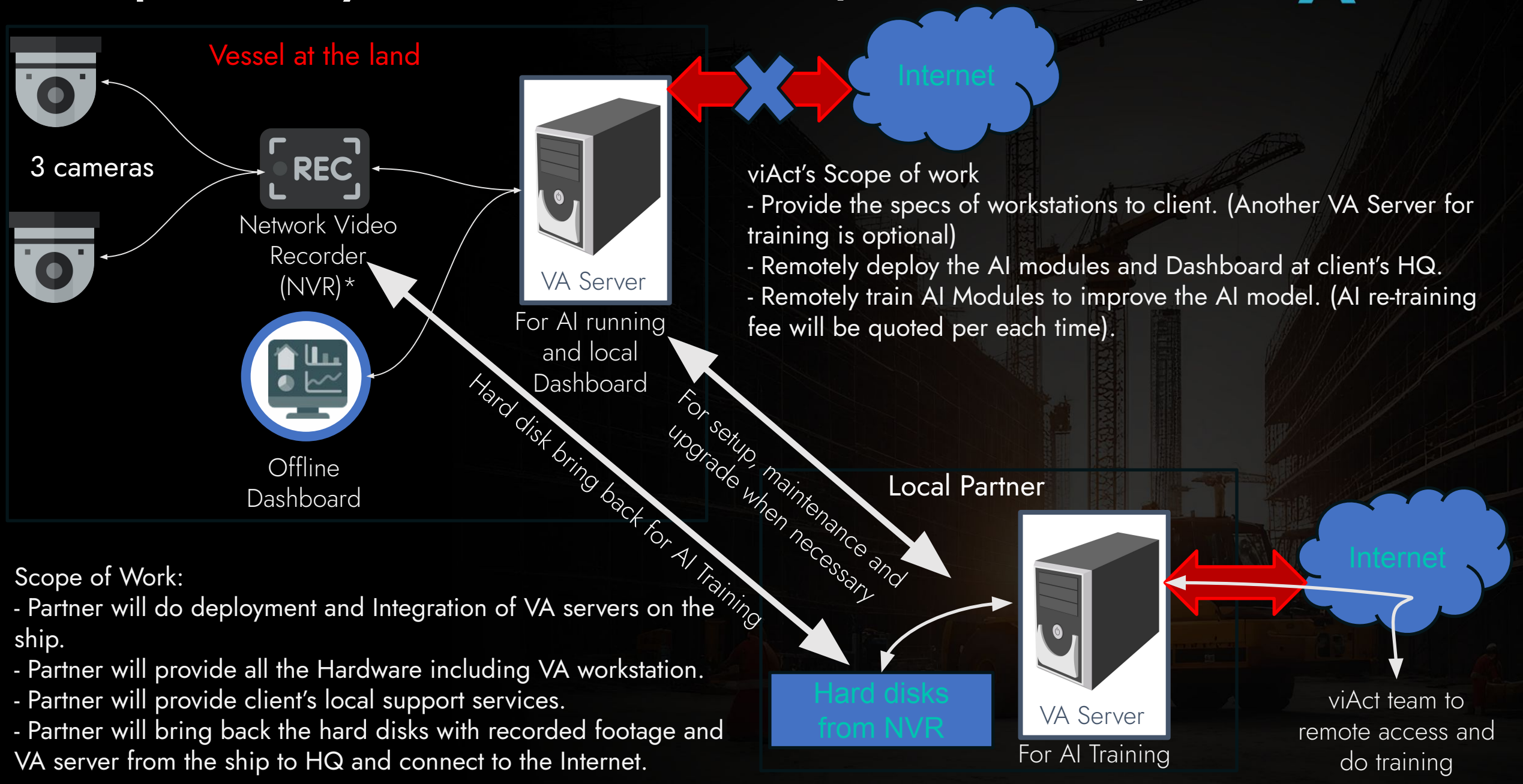
Proposed System Architecture (On-Premise)



Internet

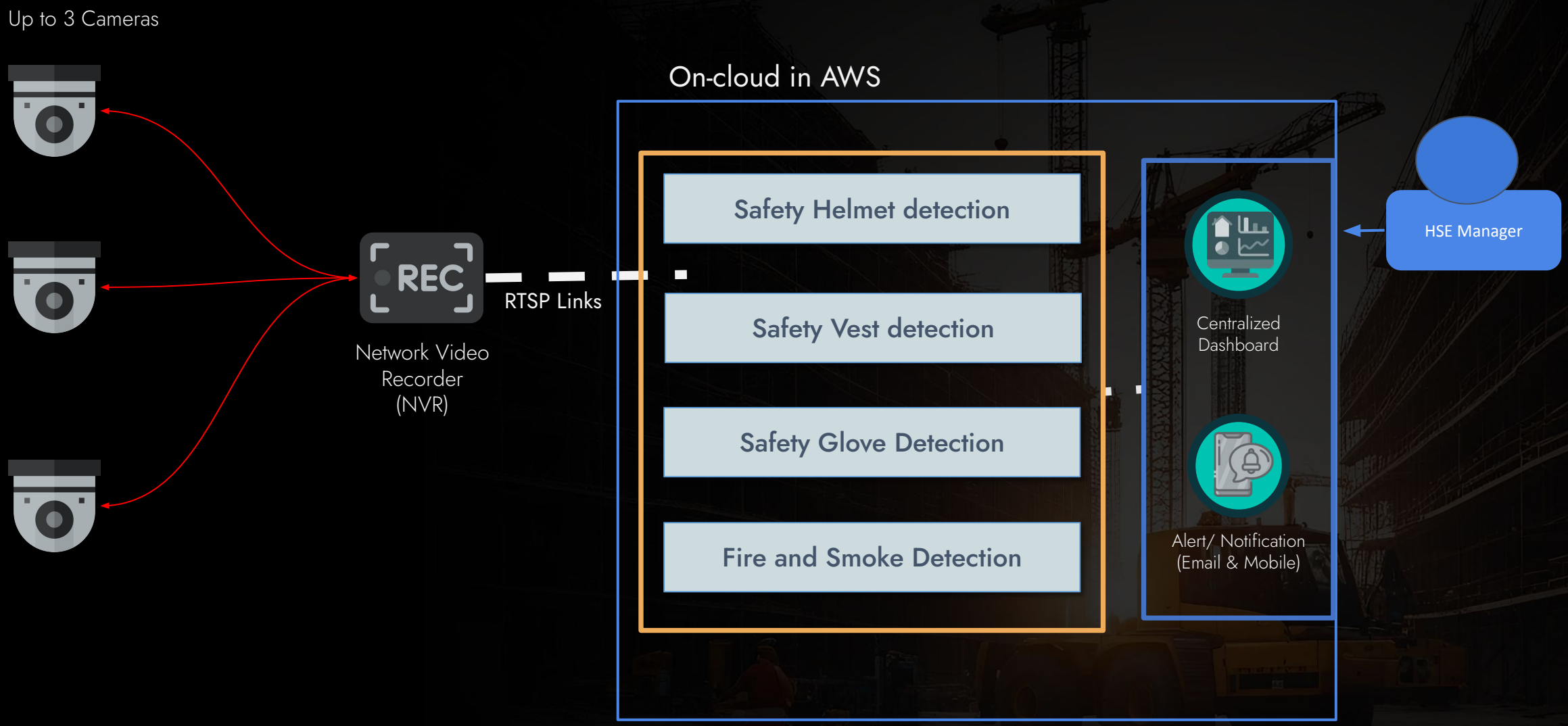
(1) viAct will put the best AI model as of deployment time.
(2) No AI retraining during the period vessel on the sea (may have missed or false alerts)
(3) Offline Dashboard to store and review alert (viAct to develop)
(4) User can use tablet to connect to Dashboard by local WIFI
(5) No remote support from viAct since no Internet Access

Proposed System Architecture (On-Premise)



Scope of Work:
- Partner will do deployment and Integration of VA servers on the ship.
- Partner will provide all the Hardware including VA workstation.
- Partner will provide client's local support services.
- Partner will bring back the hard disks with recorded footage and VA server from the ship to HQ and connect to the Internet.

System Architecture for POC On cloud

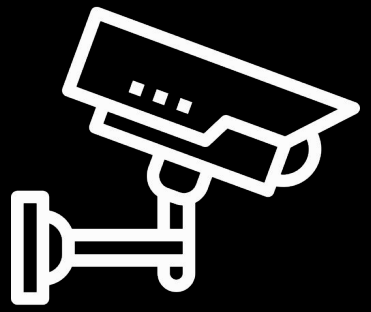


***Camera minimum requirement: 1080p@25 fps*

System Requirement for POC

Internet Bandwidth

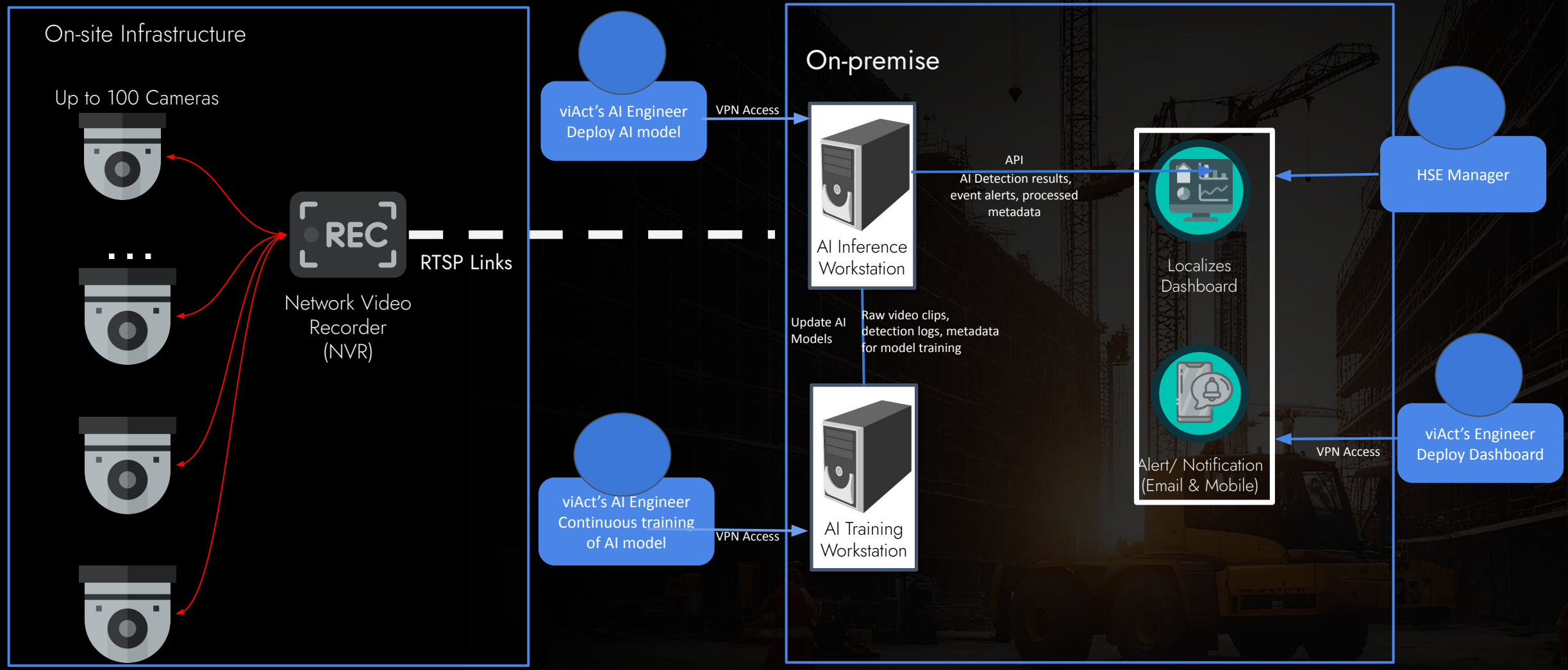
- External bandwidth: 10Mbps for 1 cameras, 30 Mbps for 3 cameras
- Static IP
- Router with Port Forward settings



Camera

- IP camera (connected to internet and can provide RTSP link)
- Resolution 1080p@25 fps
- Each Camera must have Fixed Public IP RTSP link for integration

System Architecture for CCTV



***Camera minimum requirement: 1080p@25 fps*

System requirement for Deployment On Premise

viAct

Inference Workstation

- CPU: Intel Core i9 14900K or equivalent.
- RAM: 64 GB.
- GPU: RTX 5080 or equivalent.
- Storage: >=1TB.
- Operating System: Ubuntu 24.04 (5080)

Training Workstation

- CPU: Intel Core i7 14700K or equivalent.
- RAM: 32 GB.
- GPU: RTX 4080 or equivalent.
- Storage: >=3TB.
- Operating System: Ubuntu 22.04(4080)

Internet

- External bandwidth: 30 Mbps for normal deployment method. Can further reduce in the event of limited internet
- Local bandwidth: 100Mbps

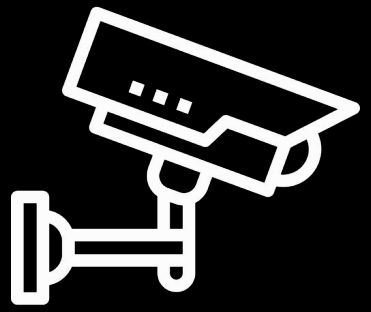
Dashboard Workstation

- CPU: Intel Core i7-14700K or equivalent.
- RAM: 64GB
- Storage: 2TB SSD
- Network card: 1Gbps

System Requirement

Internet Bandwidth

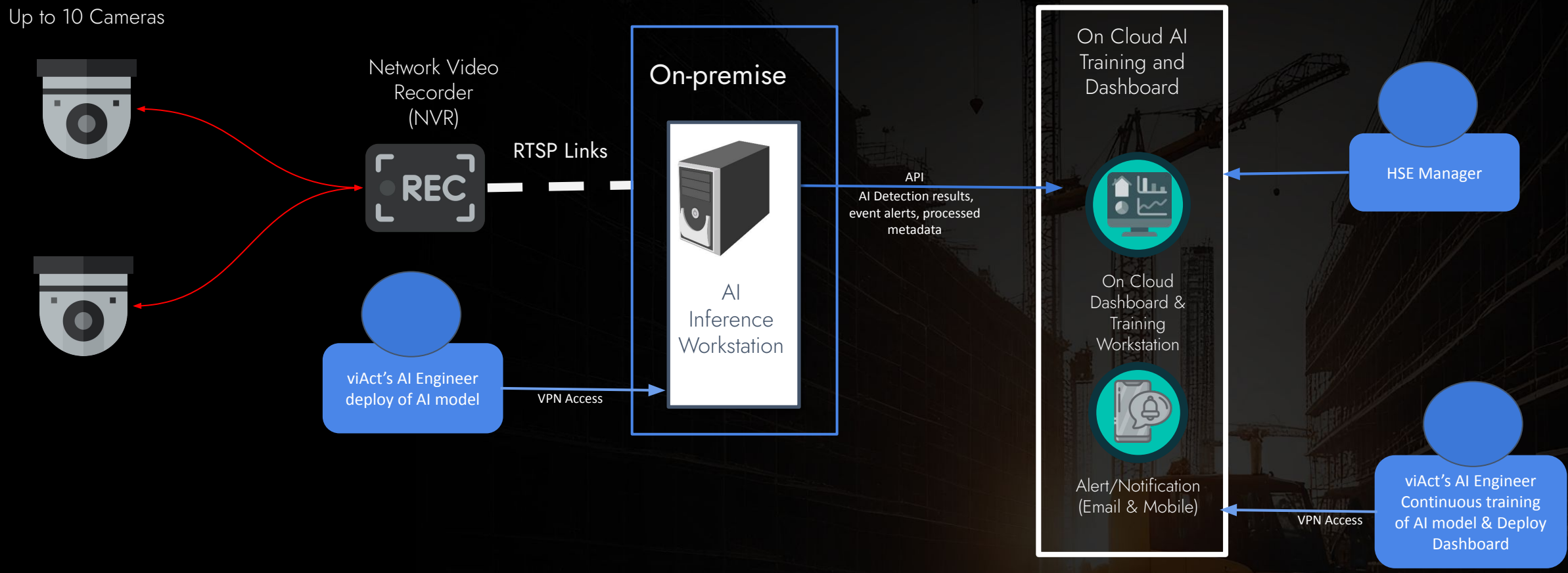
- Internal bandwidth: 10Mbps for 1 cameras, 200 Mbps for 20 cameras
- External bandwidth: 30-50Mbps (if remote access for training/update)



Camera

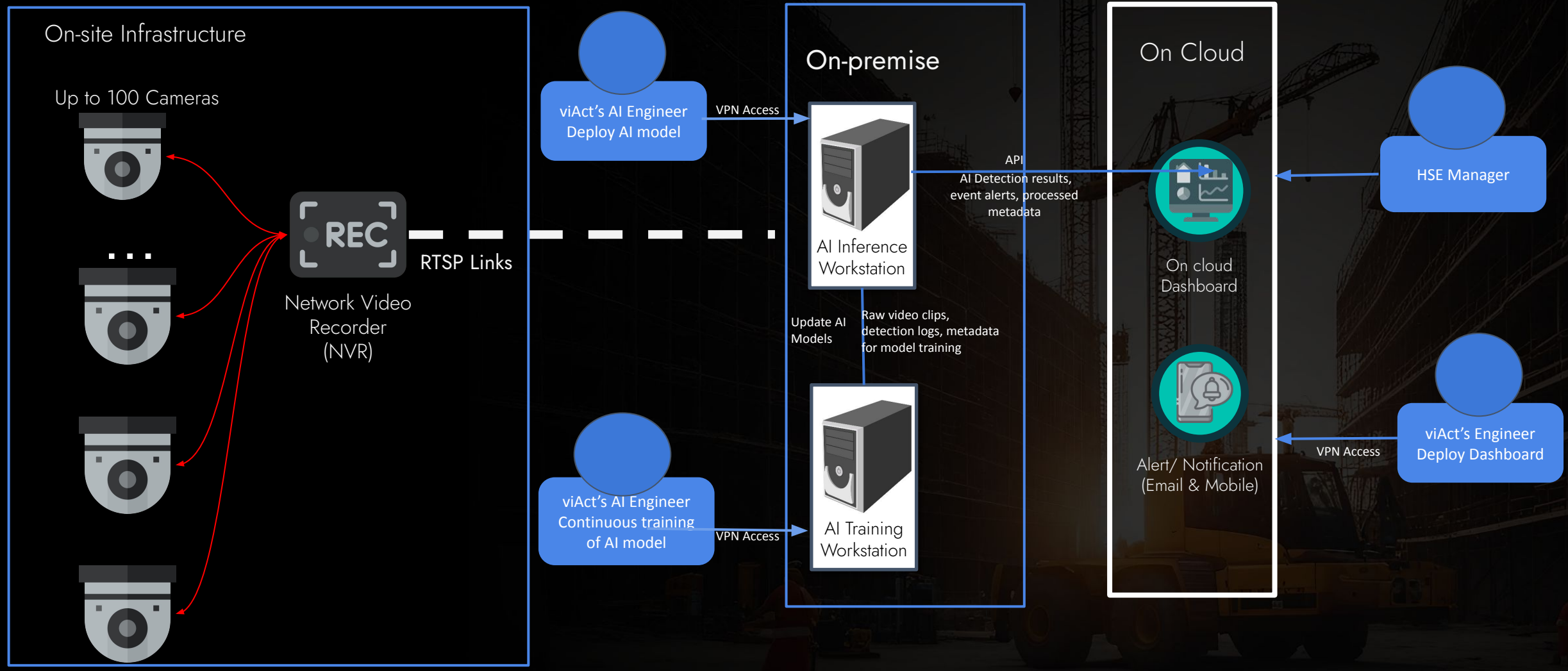
- IP camera
- Resolution 1080p@25 fps
- Each Camera must have Fixed IP RTSP link for integration (or connect directly by LAN cable)

Hybrid with AI inference on site, On cloud Training and Dashboard



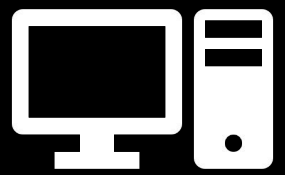
***Camera minimum requirement: 1080p@25 fps*

Hybrid



***Camera minimum requirement: 1080p@25 fps*

<u>Option 2:</u> AI processing on 1 WS & Dashboard and Training on 1 WS



Inference Workstation

- CPU: Intel Core i7 14900(k) or equivalent.
- RAM: 64 GB.
- GPU: RTX 4080 or equivalent.
- Storage: >=4TB.
- Operating System: Ubuntu 24.04 (5080), Ubuntu 22.04(4080)

Training & Dashboard Workstation

- CPU: Intel Core i7-14700K or equivalent.
- RAM: 64GB
- GPU: RTX 4080 or equivalent.
- Storage: 2TB SSD
- Network card: 1Gbps
- Operating System: Ubuntu 24.04 (5080), Ubuntu 22.04(4080)

Pros:

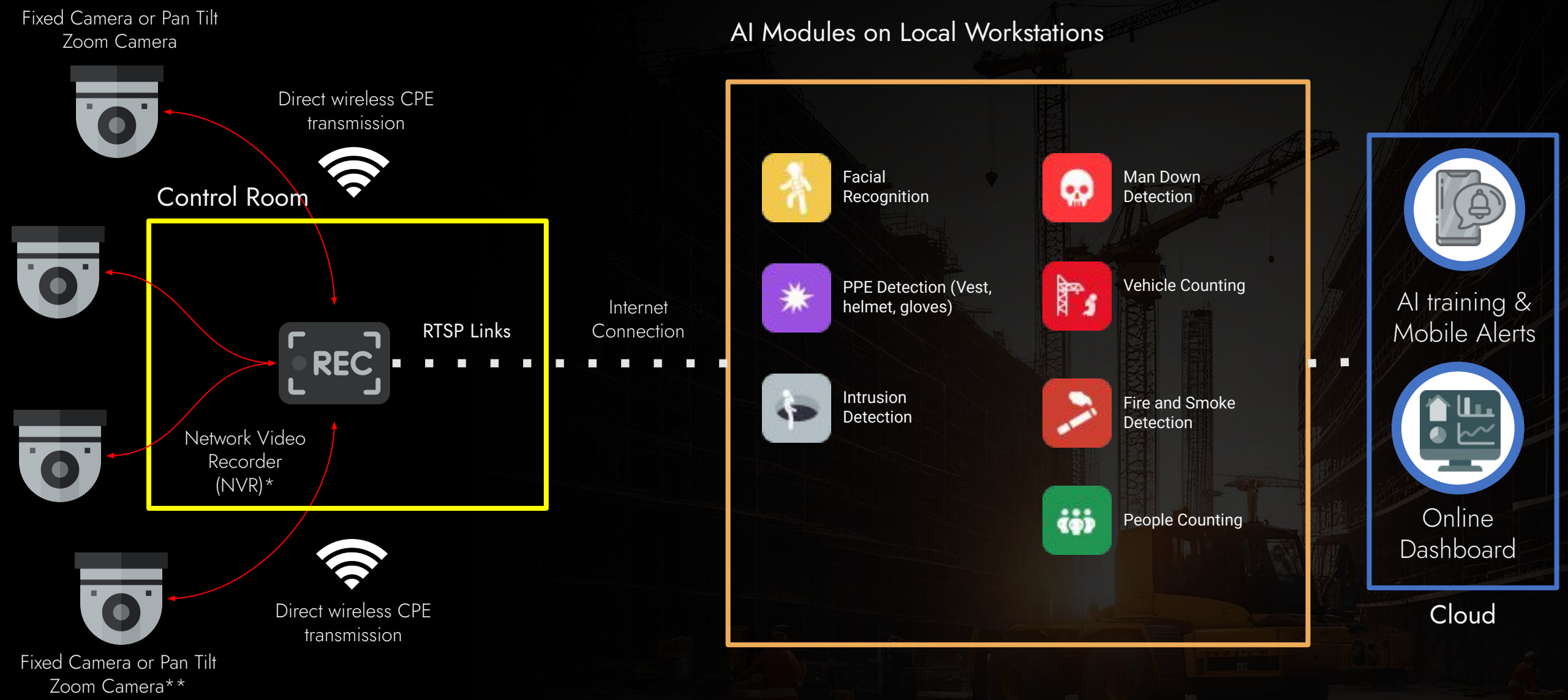
- More cost-efficient due to reduce the cost & effort for purchase, set up & maintain workstation.

Cons:

- Combining AI training and dashboard on a single workstation can lead to performance bottlenecks, resource contention, and reduced system stability.

System Architecture (Cloud, Hybrid, On-premise)

viAct



***Camera requirement: 1080p@25 fps; 5Mbps BW (min)*

**Cameras, NVR, wireless connection are provided by CCTV vendors. Power supply and stable 4G/5G Internet connection are provided by client*

Implementation Plan