APPLICATION SERIES / 03

Sharp Vision for Logistics



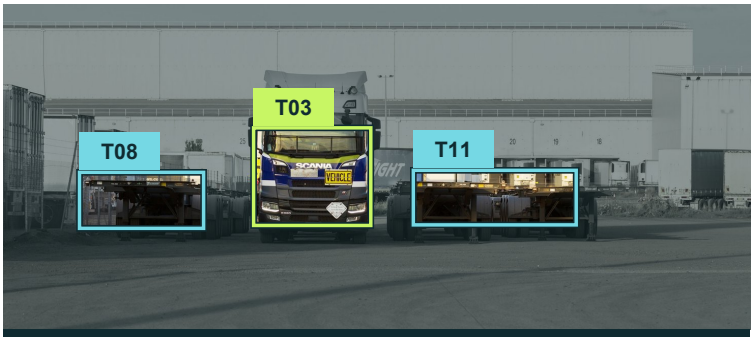
Follow the vehicle through the handoff.

Record the yard as one wide video. Keep a track history for detected foreground vehicles and link each high-resolution look to its subject and time, even as the detail channel moves to another vehicle.

01 / ADVANCED MODE: TRACK-BASED RECORDING

One video. A history for each track.

The wide camera follows detected foreground subjects as they move. The output is a lower-resolution wide video plus metadata for each track: its position over time and the high-resolution optical images captured when attention revisits it.



WIDE VIDEO / illustrative review frame

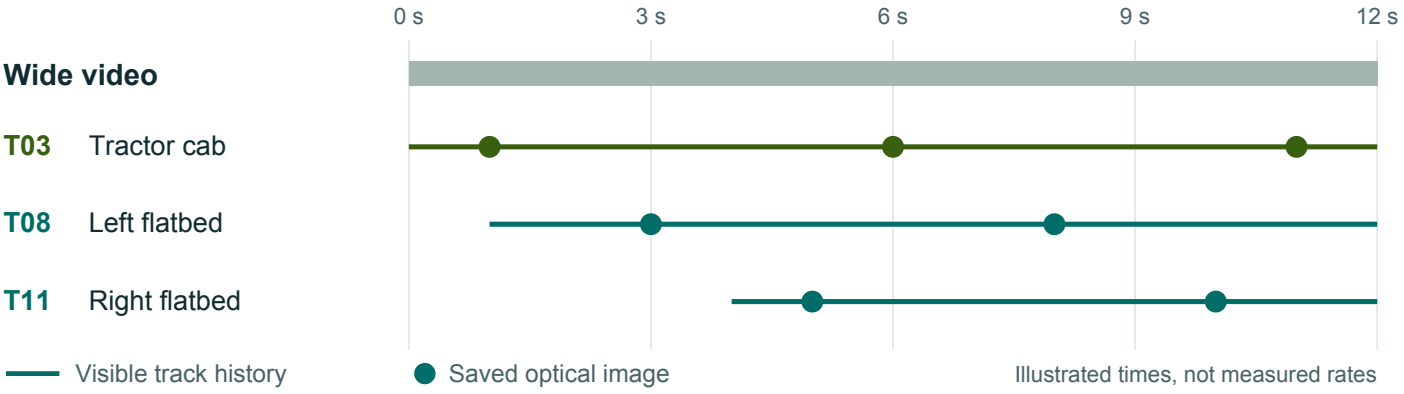
EACH TRACK RECORD

Track ID
Groups observations of one subject.

Position + time
Locates it in successive wide frames.

Linked optical images
Each keeps its own capture time.

WHAT IS SAVED DURING A 12-SECOND EXAMPLE



REPLAY AND EVIDENCE / SELECTED TRACK T03

0 s Yard entry **6 s Staging lane** **12 s Dock approach**

Which tractor reached the dock approach? Select T03, trace its passage, then open its latest saved cab view without leaving the yard timeline.

A vehicle classifier or fleet-mark reader can inspect the cab image. The timestamp links its result to the handoff, not to a shipment identity.



ORIGINAL REVIEW INTERFACE

Watch the recording review

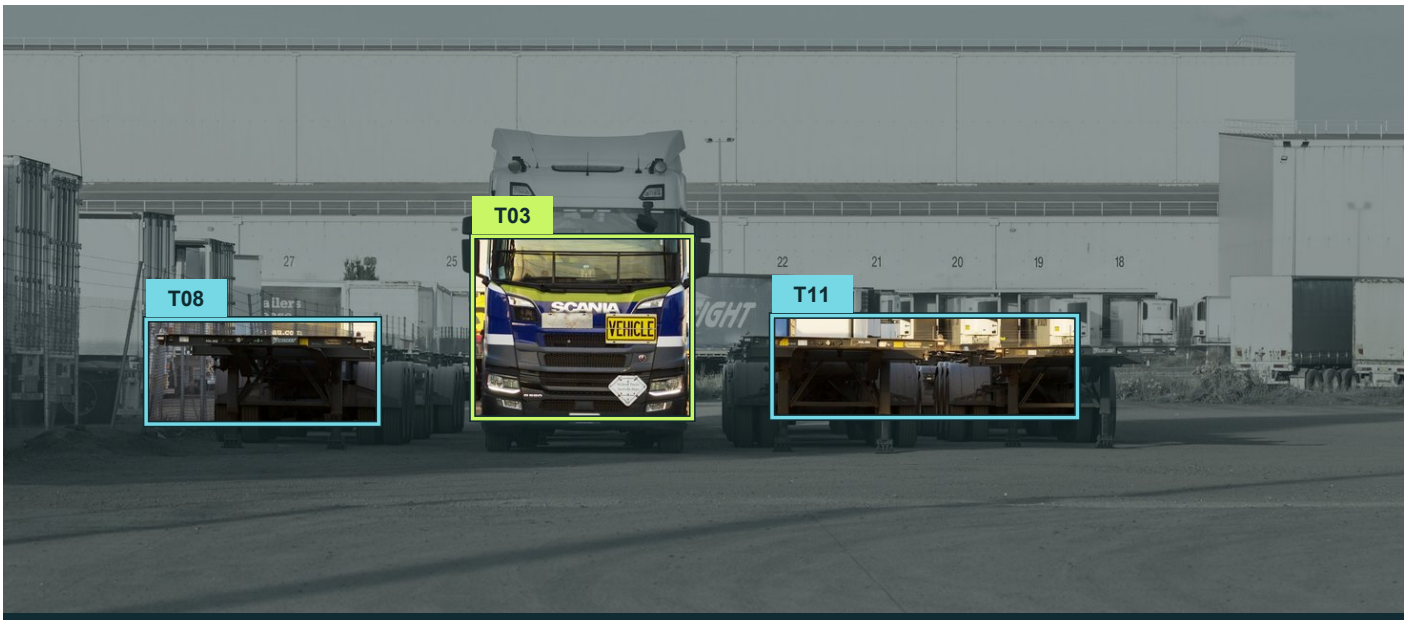
Choose a time range, select a tracked subject and open or save its detail images. A track ID is not a verified identity; only captured detail is available.

Open Wamda's recording demo >

02 / INSIDE AN ATTENTION CYCLE

Follow the tractor across the yard.

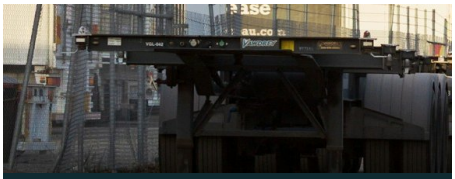
Revisit the arriving tractor more often than the parked flatbeds. All three have tracks in the wide view. A saved sample stays with its vehicle even after attention turns to another one.



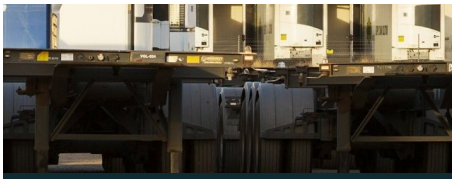
Current attention Previously sampled Continuous wide context



T03 / Tractor cab
Last sample +0.4 s



T08 / Left flatbed
Last sample +0.0 s



T11 / Right flatbed
Last sample +0.2 s

ONE DETAIL CHANNEL / FIVE EXAMPLE VISITS

+0.0 s	+0.1 s	+0.2 s	+0.3 s	+0.4 s
T08	T03	T11	T03	T03

The controller chooses a location; a fast-steering mirror directs the narrow sensor before exposure. These are optical samples, not AI-enlarged overview pixels.

Photo and times illustrate an attention policy, not footage of a deployment. The team's 10 actions/s is a shared rate, not 10 new close-ups/s for every subject.

Scene: Troy Mortier / Unsplash

Try the attention demo >

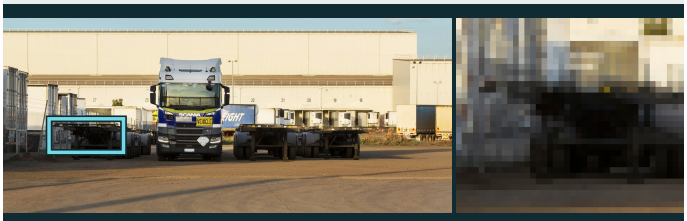
03 / SAME SCENE, FOUR RECORDING CHOICES

What would each camera keep?

Which tractor approached the dock, and what was parked beside it?

Each right-hand inset inspects the same left flatbed (T08).

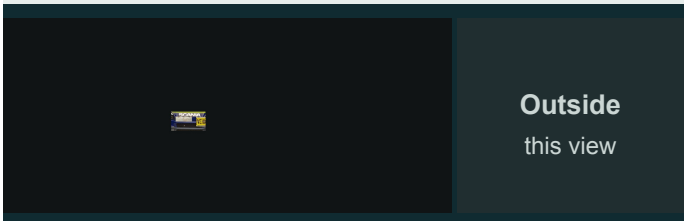
Fixed wide camera



SCENE FOOTPRINT — Digital crop

The cab and both flatbeds share a timeline. A digital crop has only the pixels recorded on that vehicle.

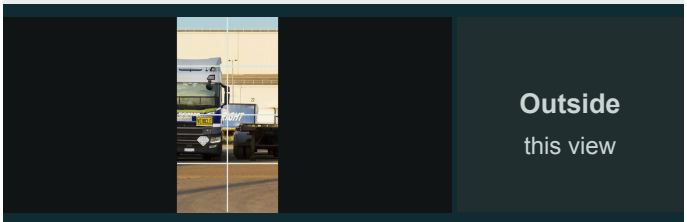
Zoomed PTZ



SCENE FOOTPRINT — Not recorded

Zoom onto the cab and the left flatbed is outside the current optical window.

Fixed multifocal / 30°



SCENE FOOTPRINT — Not recorded

The central sector can see the cab. The left flatbed is outside this fixed unit's field.

Sharp Vision

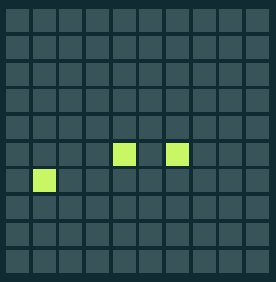


SCENE FOOTPRINT — Saved optical

Open the earlier image of the left flatbed while the detail channel revisits the cab. Both retain their own track and time.

Illustrative zoom: digital crop reduced to 40 pixels across; saved optical uses the same crop at source detail.
Not a measured camera test. Black = outside the optical field; the 30° sector models one unit.

100 possible places to look



10 x 10 conceptual grid

One detail channel serves several vehicle tracks. A reviewer can retrieve the flatbed image without giving up the history of the tractor's approach.

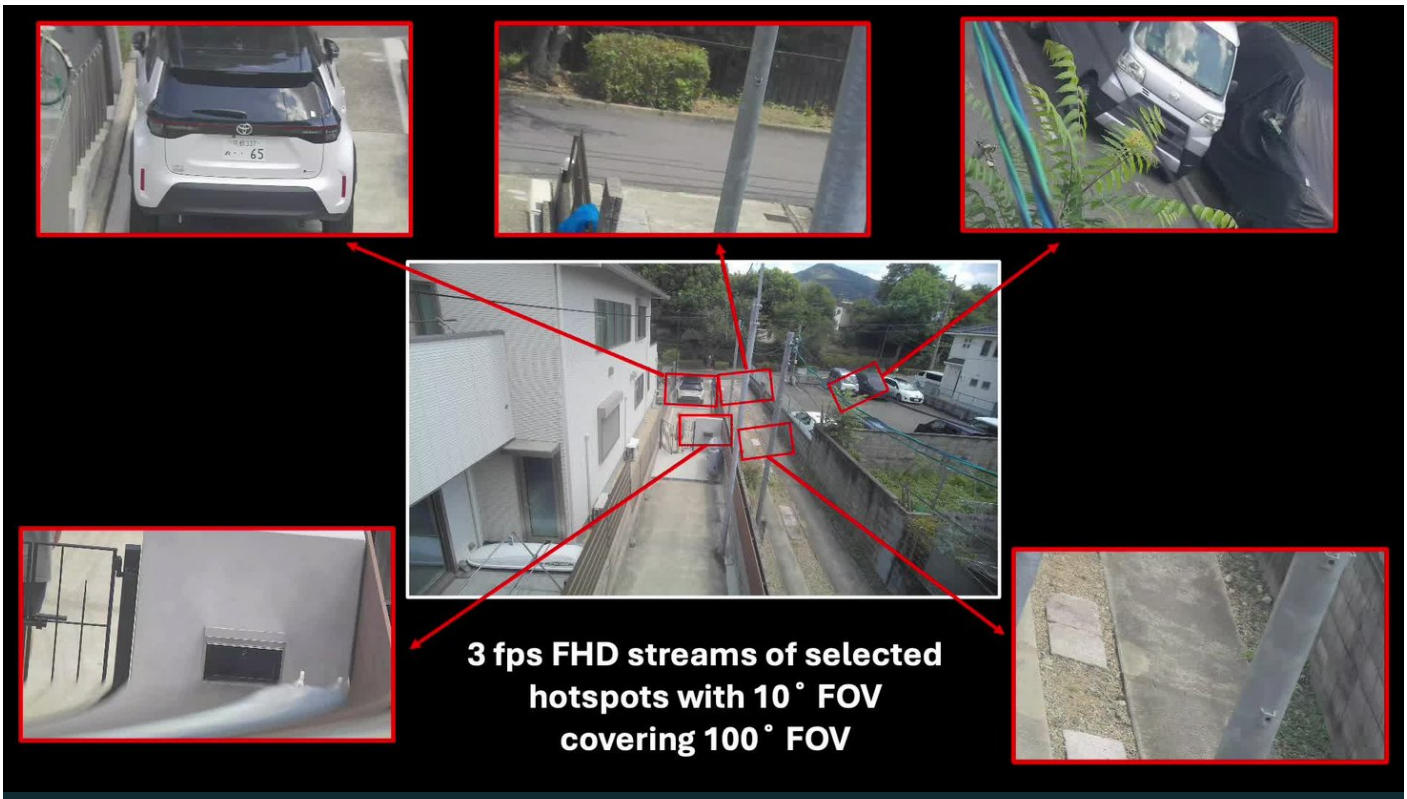
The grid represents candidate locations from one viewpoint, not 100 simultaneous camera feeds. Equivalence depends on getting the required detail in time; an unsampled event has only the wide recording.

Pilot measure: Check how many gate-to-bay journeys retain the same track and a usable cab image at the handoff.

04 / BASIC MODE: FIXED HOTSPOTS

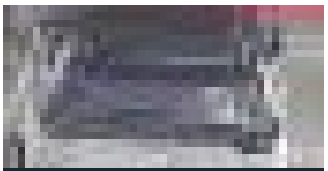
One wide view. Five optical hotspots.

This is a still from Wamda's original Sharp Vision recording. The middle image is the overview. The five surrounding images are focused views of the marked locations, not details generated from the middle image.



WAMDA AI / ORIGINAL HARDWARE DEMONSTRATION

The 3 fps FHD label applies to this hotspot recording, not to every track or site.



Enlarged overview



Optical hotspot

Same car, different captured detail

Look at the rear window. Enlarging the wide view does not reproduce the contours gathered by the narrow optical channel. Both crops are from the original demo frame.

Hotspot: revisit a place

Two dock doors and the yard entrance

Track: revisit a subject

A tractor moving from staging to a bay

Research basis: the team's ICLR 2018 workshop study tested visual hierarchies on gaze and digit tasks, not equivalence to a 100-camera installation.

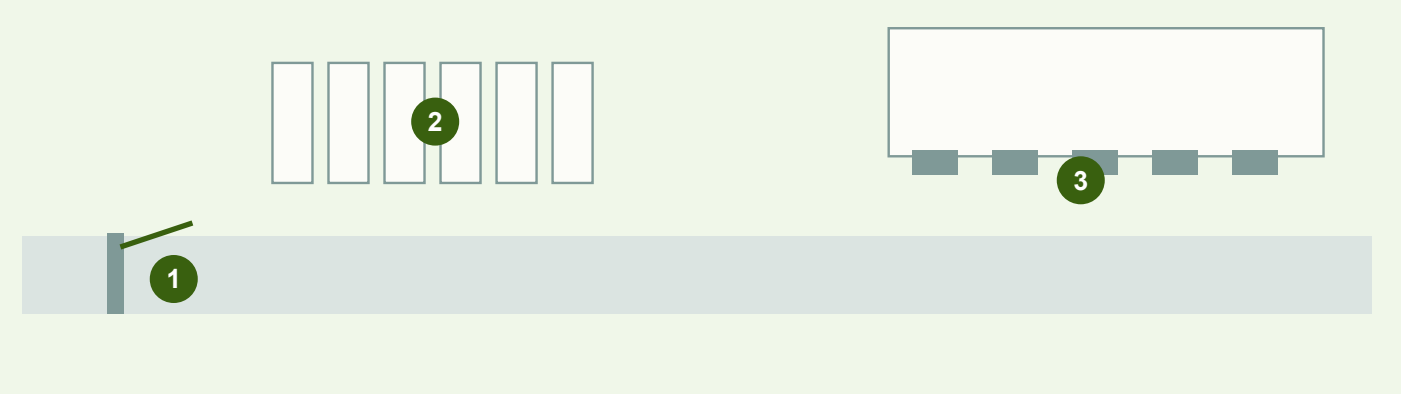
Watch the hardware recording >
Read the study >
Compare camera modes >

05 / OPERATIONAL QUESTIONS

Reconstruct the yard handoff

Example site layout

SCHEMATIC / NOT TO SCALE



1 Gate approach
2 Staging lanes
3 Dock doors

01 Arrival to staging

Which lane did a vehicle take after entry? Follow its path in the overview and inspect available detail from the approach.

02 Dock handoff

Did the vehicle remain at the bay or leave before the next move? Use the timeline for order and the saved detail for visual context.

03 Damage enquiries

Which movement merits a second look? Narrow the review to the time and location of the handoff instead of searching unrelated dock footage.

SCOPE OF USE

Track IDs are camera references, not consignment IDs. Linking a warehouse system is a separate integration.

06 / PLANNING A PILOT

Start with a gate-to-bay route



WAMDA AI / CAMERA PROTOTYPE

ORIGINAL SHARP VISION CONFIGURATION

100°
horizontal wide view

10°
horizontal optical detail window

Two sensors
wide context and directed detail

WHAT THE PROTOTYPE DEMONSTRATED

In a 30-minute daytime trial on a two-lane road, Wamda documented vehicle images at 10, 20, 40 and 80 metres. These were vehicle observations, not a guaranteed range for every subject, site or lighting condition.

WHAT TO CHECK ON YOUR SITE

1. Select a vehicle feature that must be legible at the furthest bay.
2. Test truck overlap, reversing moves and the night lighting at dock doors.
3. Compare time to retrieve a handoff against the existing review workflow.

Selective detail can reduce bandwidth and storage

Planning example: two Full HD equivalents at 4 Mb/s each, plus 0.5 Mb/s for track data and stills, total 8.5 Mb/s, or about 2.75 TB per unit over 30 days. Encoding and capture frequency affect actual costs; backup storage is extra.

Explore the camera demo >

Discuss a site pilot >

Sector photo: LEDC / Unsplash. Product image: Wamda AI.