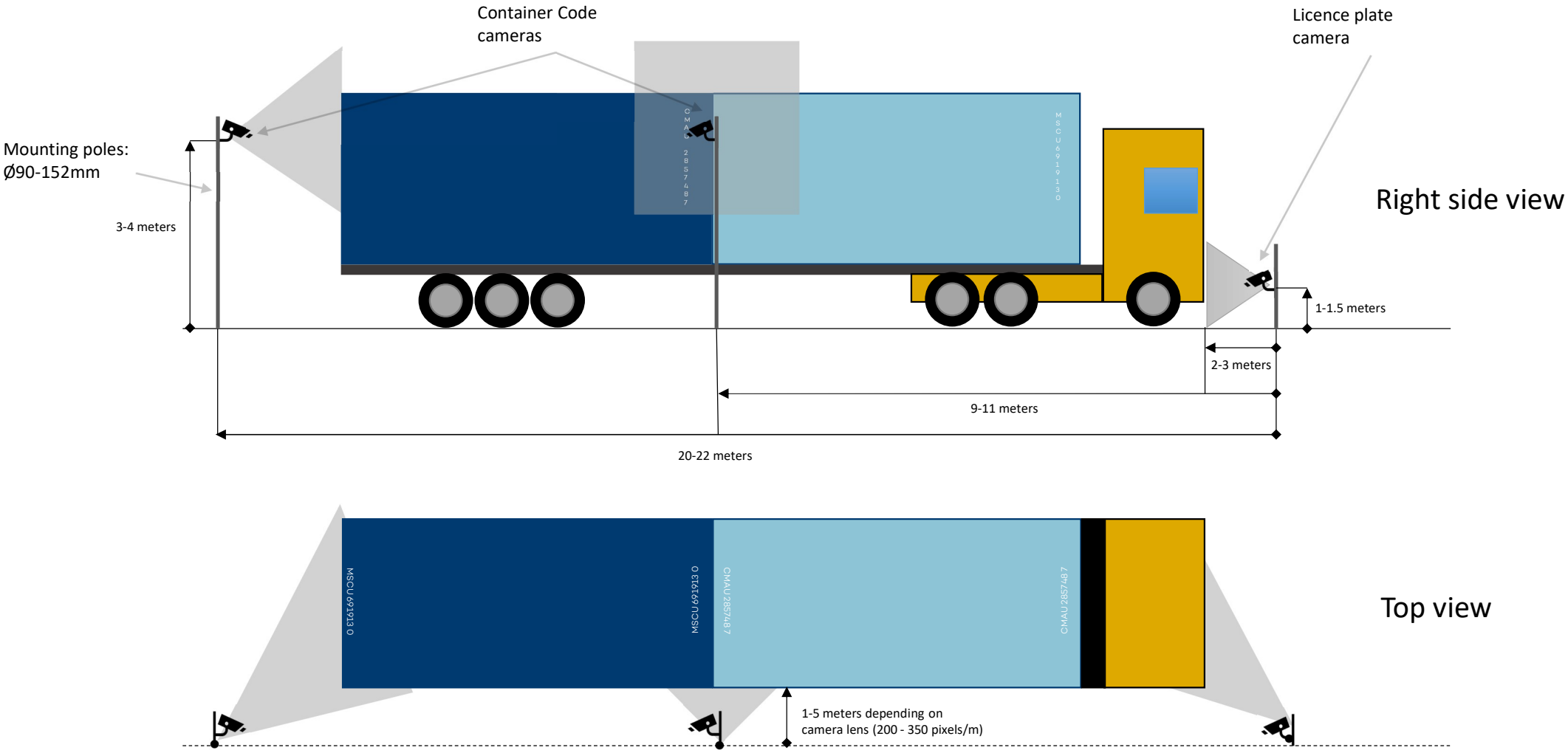
ConPDS Tracker

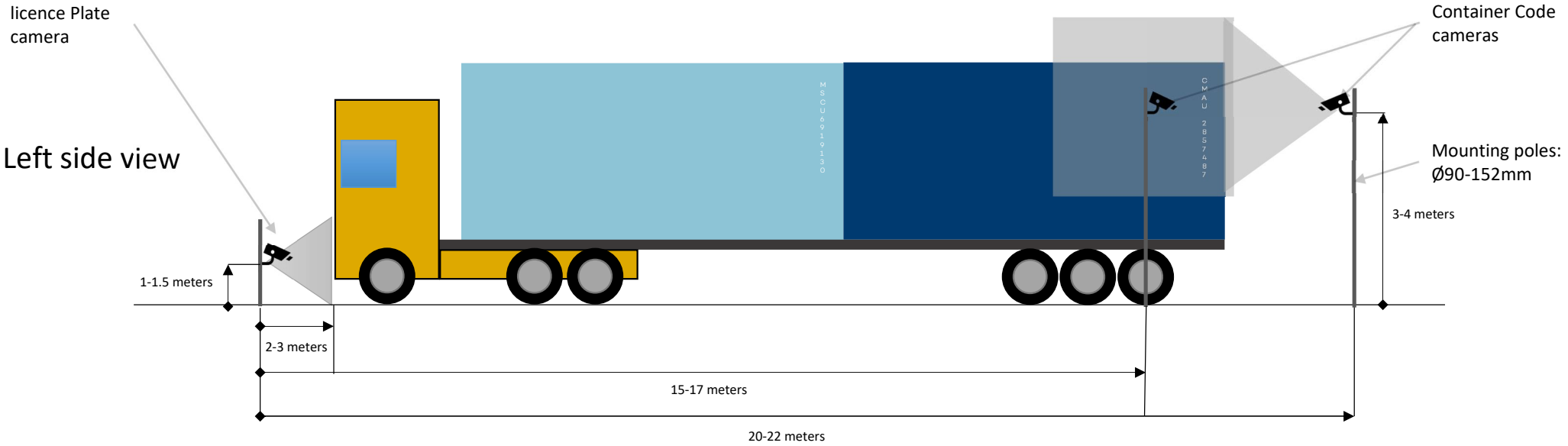
Camera positioning and mounting instructions. Version 2.3 2023/03



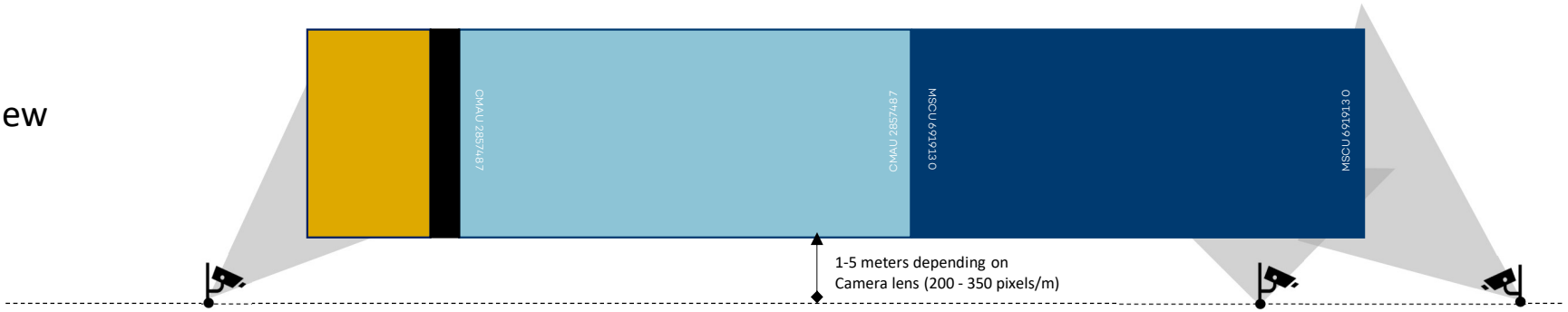
© ConPDS 2023

ConPDS Tracker

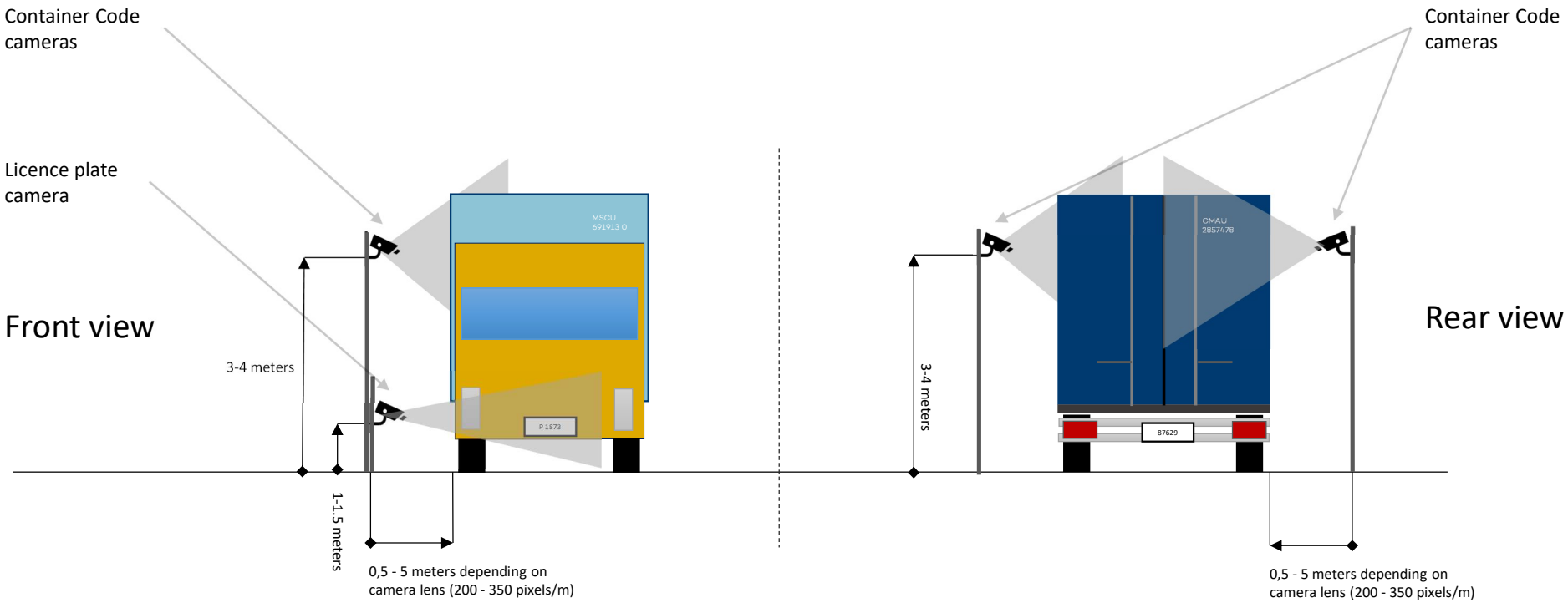
Left side view



Top view



© ConPDS 2023


Container Code cameras
Licence plate camera
Front view
3-4 meters
1-1.5 meters
0,5 - 5 meters depending on camera lens (200 - 350 pixels/m)
Container Code cameras
Rear view
3-4 meters
0,5 - 5 meters depending on camera lens (200 - 350 pixels/m)

© ConPDS 2023

ConPDS Tracker

Version 2.3 2023/03

Supported character resolution, angle ranges and speed of objects

Moving object speed limitations

Rear-pointing camera
Given a camera resolution of 1920x1080 pixels and the width of a container (2438 millimeters) representing 1000 pixels, we have around 400 pixels/m. At 10 km/h, the container moves away from the camera at ~3 meters per second, and we don't recommend a speed higher than that.

Examples: If the container moves away from the camera at 10 km/h, the pixels/m is reduced at the following rate:

- 1 second = 325 pixels/m (good)
- 1.5 seconds = 219 pixels/m (good)
- 2 seconds = 162 pixels/m (not optimal)

Side-pointing camera
If the camera point at the side of the container, we will have almost the same pixels/m, but the speed at which the container moves should be limited to less than 5-7 km/h. This is because if the container moves too quickly, the container code will be in the field of view for too short a time, and the system may not recognize it accurately, or there is no recognition at all.

Given a horizontal field of view of 3 meters and the container is moving at 5 km/h, the container code is in the field of view for around 2 seconds, which is enough in most cases.

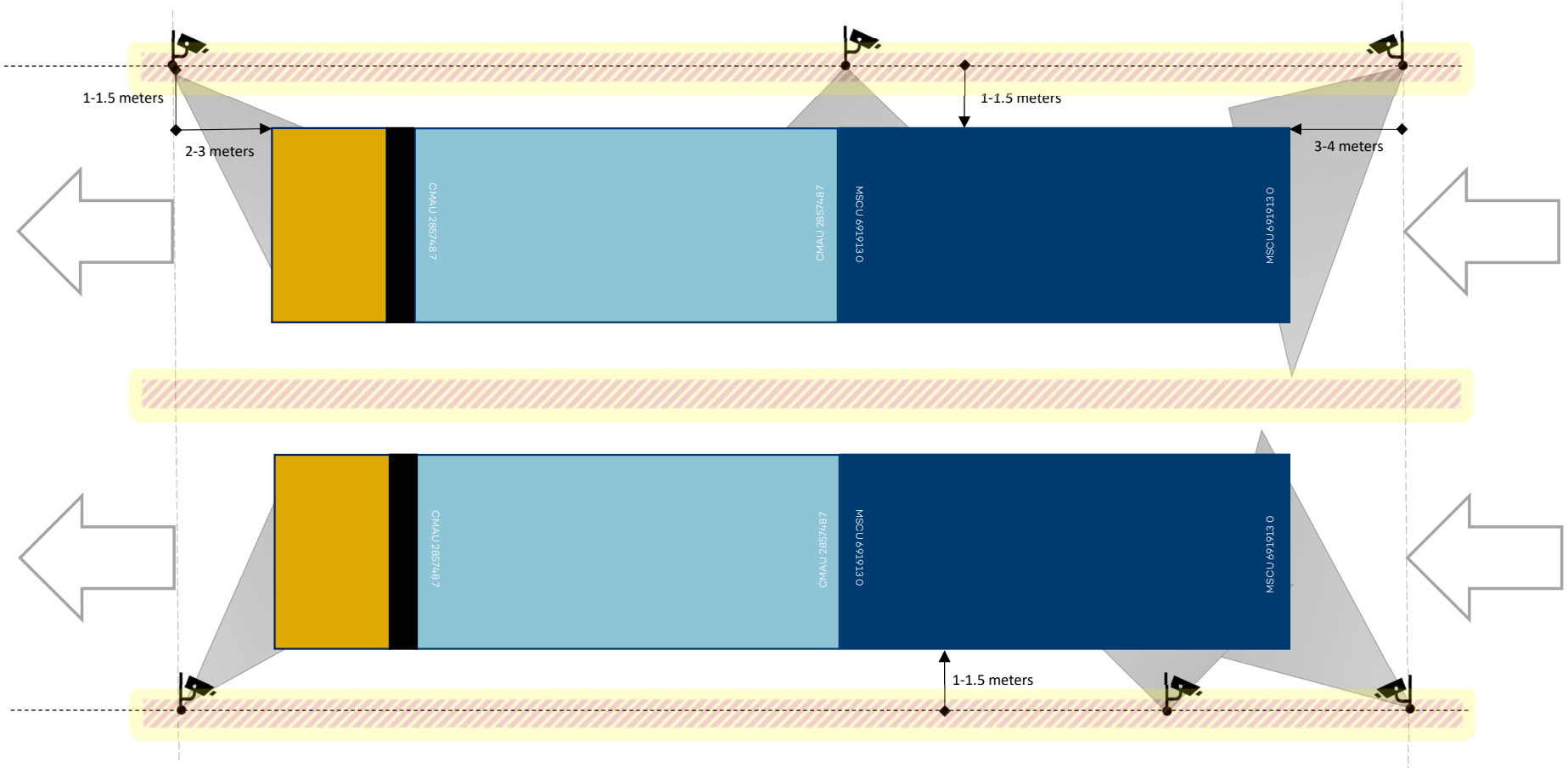
Note! If recognitions are inaccurate or non-existing, it may be necessary to add speed-slowing measures. This is because, at higher speeds, the container code time in view is too short, making it difficult to recognize the code accurately.

© ConPDS 2023

ConPDS Tracker

Example 1: Two lanes with cameras on opposite side of each lane

Note! Cameras are asymmetrically placed to recognize the container codes on the upper-right side of the containers. Only one camera will recognize the container code on the front 20-foot container.

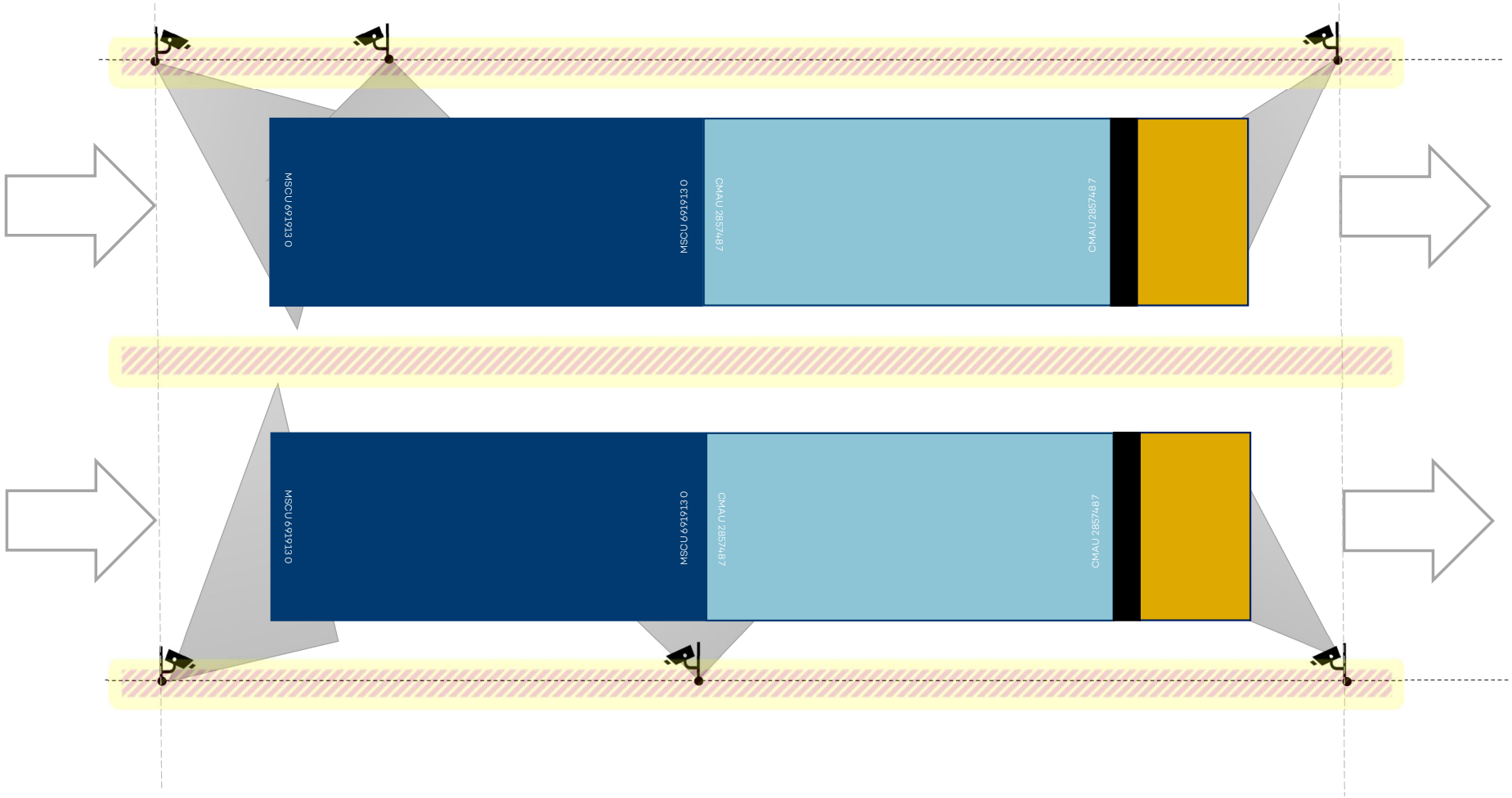


© ConPDS 2023

ConPDS Tracker

Example 2: Two lanes with cameras on opposite side of each lane

Note! Cameras are asymmetrically placed to recognize the container codes on the upper-right side of the containers. Only one camera will recognize the container code on the front 20-foot container.

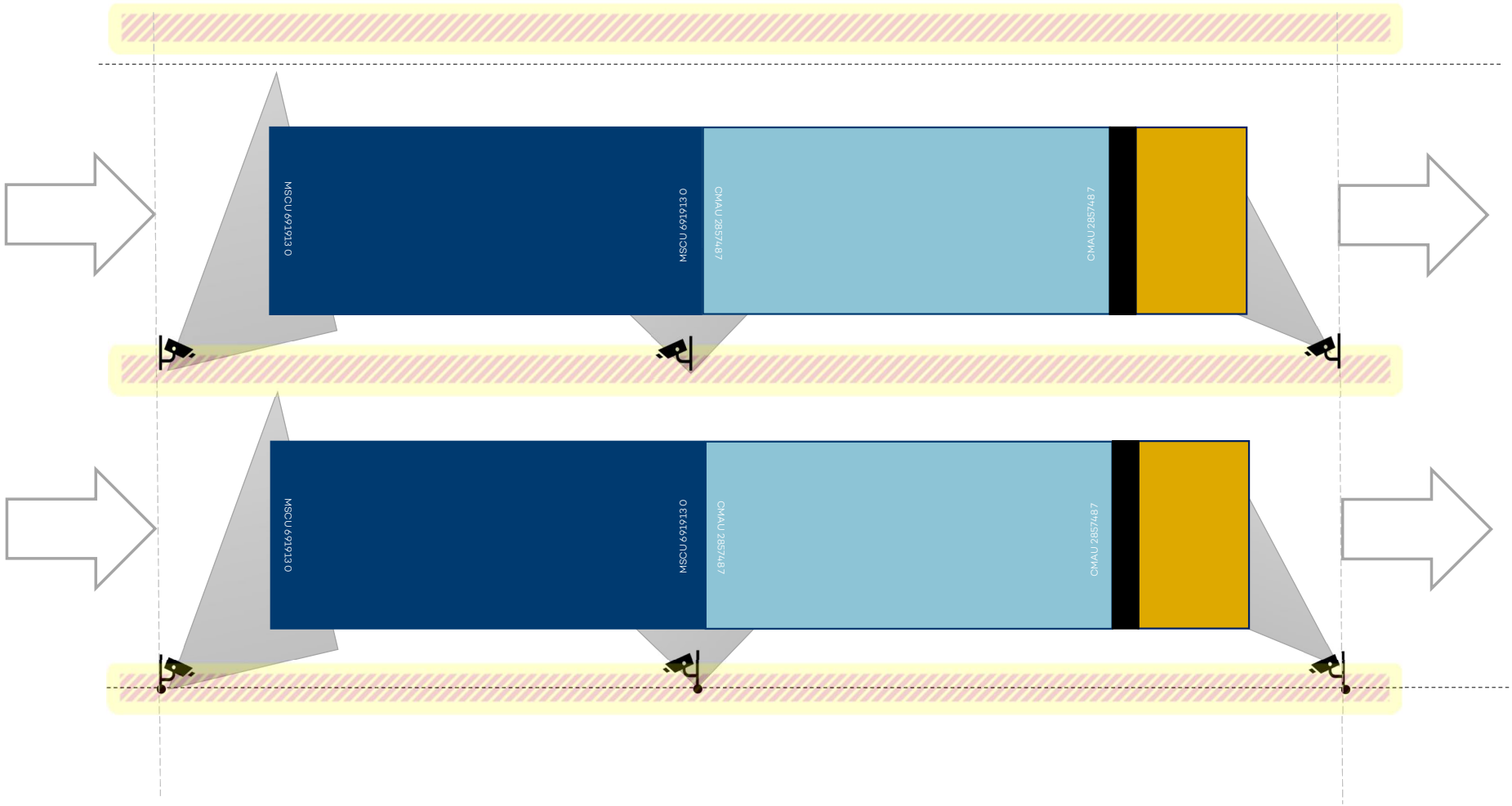


© ConPDS 2023

ConPDS Tracker

Example 3: Two lanes with cameras on the same side of each lane

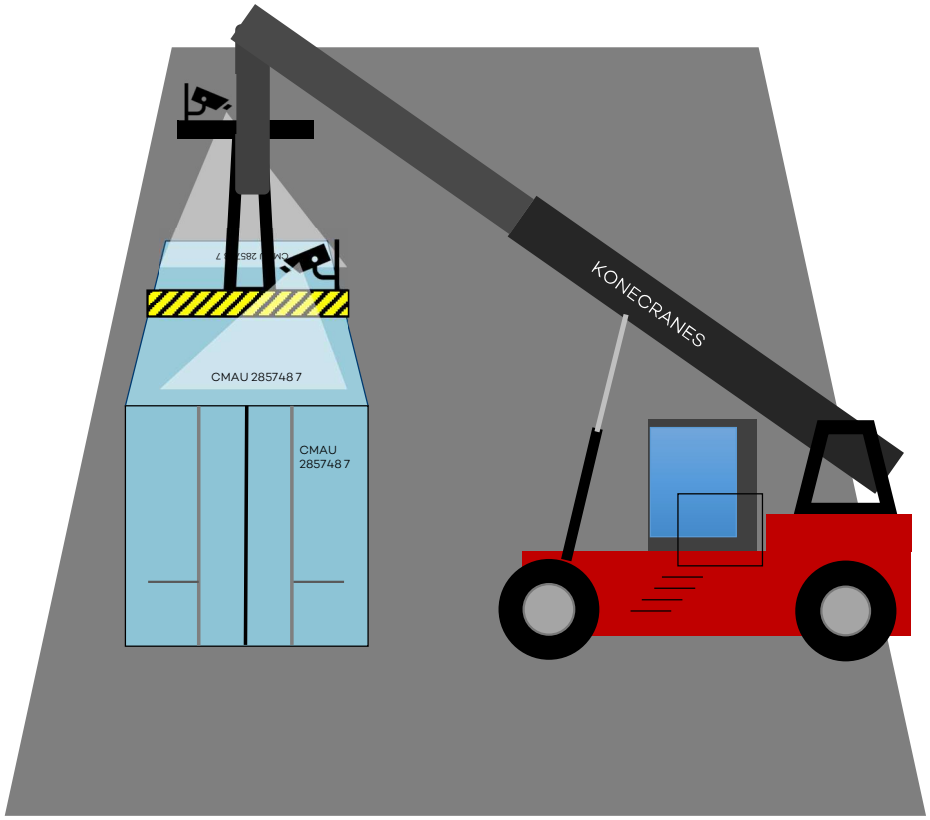
Note! Cameras are symmetrically placed to recognize the container codes on the upper-right side of the containers. Only the middle camera will recognize the container code on the front 20-foot container.



© ConPDS 2023

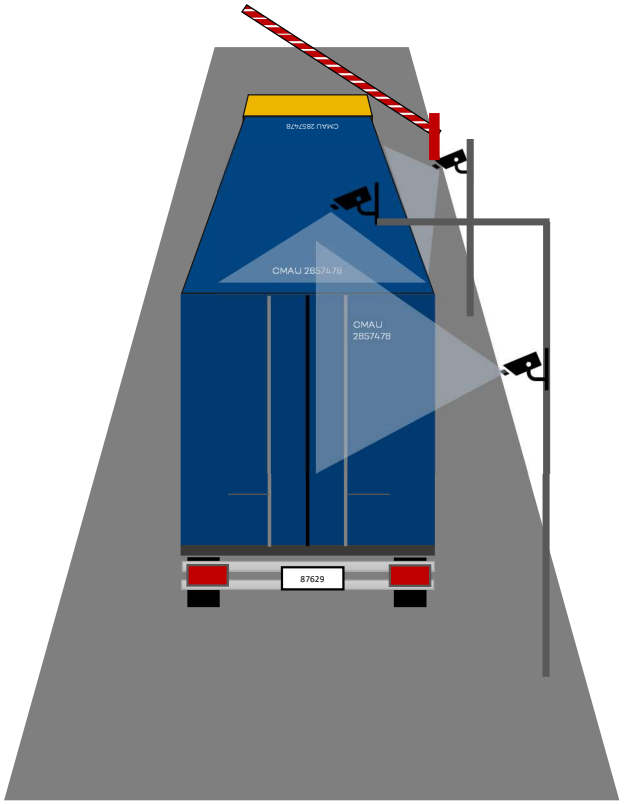
ConPDS Tracker

Example 4: Cameras mounted on the spreader on Reach stacker, Straddle carrier or crane



The cameras, located on the spreader of the heavy machinery, are connected to a computing device in the driver's cabin. This enables recognition of container codes during pickups, which can be transmitted to an external system using wireless or mobile data connections.

Example 5: Cameras from multiple sides Right side, rear and top viewing cameras



ConPDS Tracker supports Automated Container Code Recognition of container codes placed anywhere on the container. Adding multiple cameras pointing at the container from different angles, will increase the accuracy of the OCR results.

© ConPDS 2023