



# SAFETY AS A HIDDEN ENABLER

of successful container terminals  
and maritime corridors

Introduction of AccuTrack



# WHO ARE WE?



- Part of
  - **Lanco Group** (est. 1969), privately owned industrial group
  - **Mi-Jack Products**, industry leader in RTG cranes
- Specialized in Terminal Optimization
- European representation of the Mi-Star portfolio

## OUR MISSION

To ensure every worker returns home safely while maximizing yard operations.



Trusted and installed worldwide by





# WHAT DO WE DO?

- Workforce and Equipment Protection
- MHE / Crane Tracking
- People Tracking
- Digital Twin
- Fleet Management
- Inventory Management
- Inventory In-Cab Navigation





Workforce Protection through RTLS

# REAL-TIME LOCATING SYSTEM (RTLS)

## Real-Time Tracking & Visibility

- **Multifunctional:** Tracks people, vehicles, and equipment
- **Any Environment:** works both indoors and outdoors
- **Reliable:** Resistant to rain, snow, dust and low visibility

## System Components

- **Tags:** Wearable (e.g., helmet tags) or mounted on vehicles/equipment
- **Anchors/Sensors:** Installed in the terminal to receive tag signals
- **Gate Access Stations:** Verify presence, functionality, and authorization





Workforce Protection through RTLS

# REAL-TIME LOCATING SYSTEM (RTLS)

## Key Customer Benefits:

- ✓ **Full Flexibility:** Customizable protection for all assets
- ✓ **Scalable:** From small-scales use cases to full terminal coverage
- ✓ **Adaptable:** Safety logic can be reconfigured at any time
- ✓ **Efficiency:** Increased equipment uptime
- ✓ **Safety:** Greater Transparency in daily operations



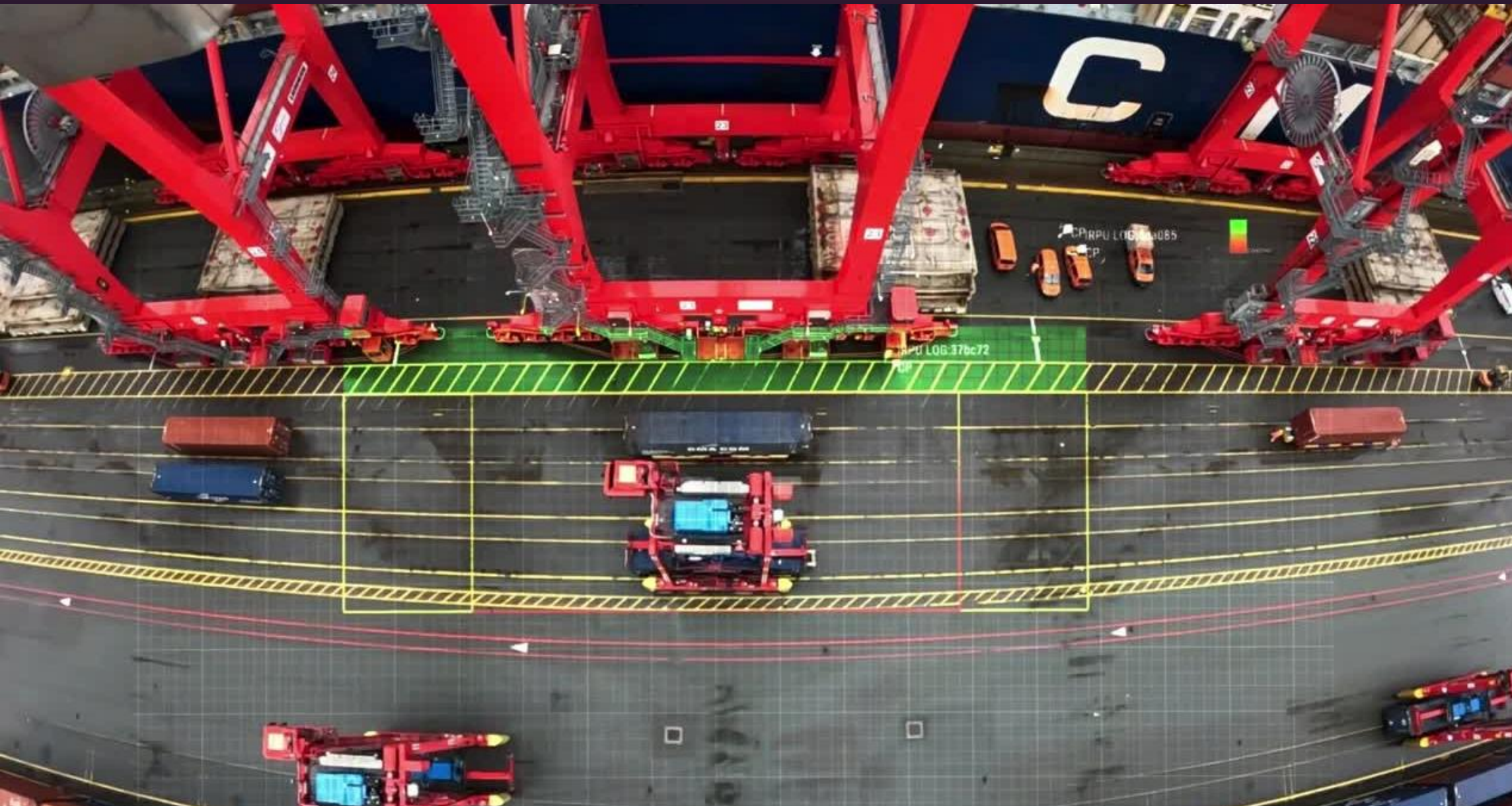


# PROTECT PERSONNEL

in manual operations

## Safe and Unsafe Zone Concept

- Division of the working area into safe (green) and unsafe zones (red)
- Personnel equipped with helmet tags and tracked in real time.
- Straddle carriers receive a signal indicating the zone personnel are located.
  - Red signal: straddle carriers not allowed to enter
- ✓ Crane and straddle carriers can operate safe and simultaneously with personnel present

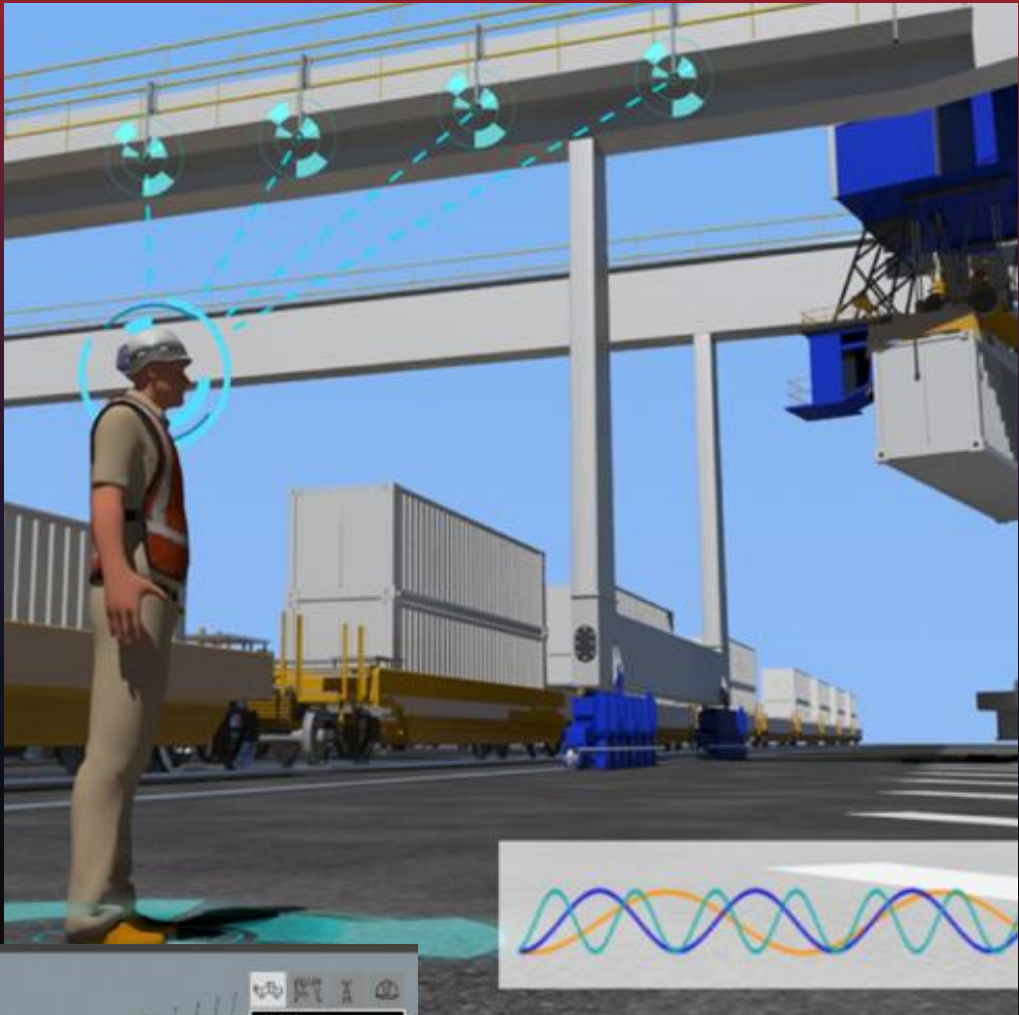




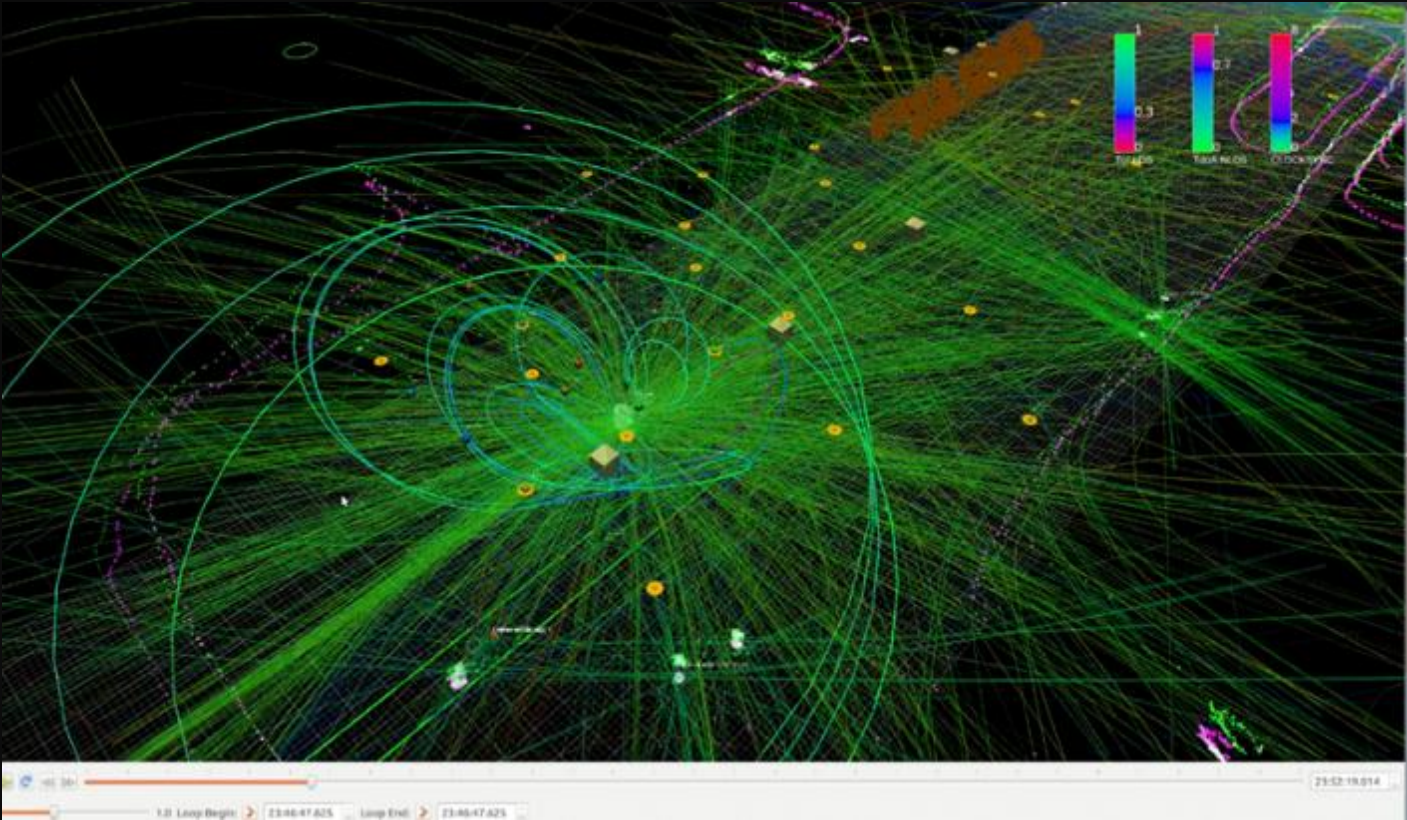
# HARDWARE EXAMPLE PERSONNEL TRACKING



Personnel Tag



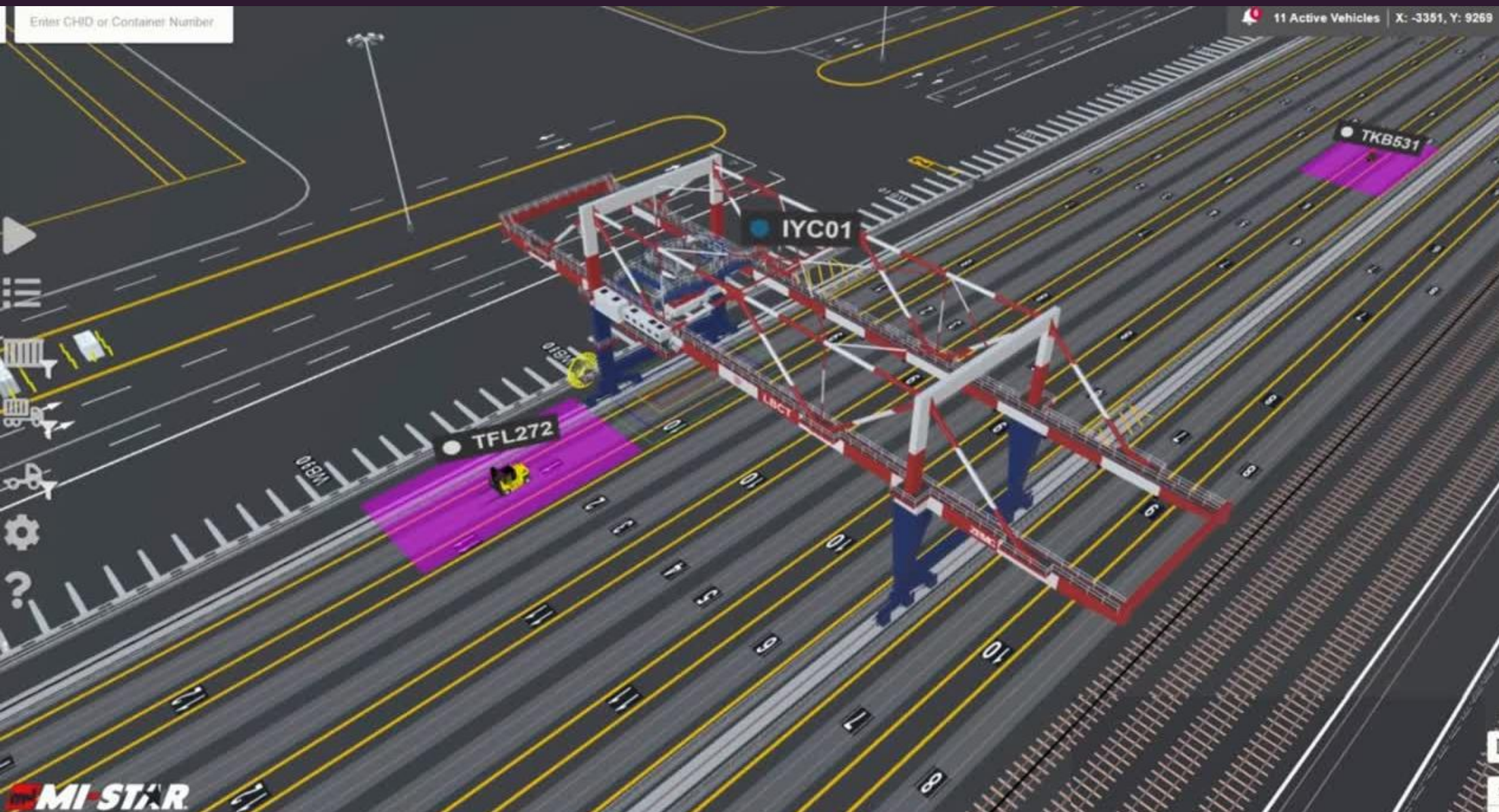
Anchors







Long Beach  
Container  
Terminal



# ENABLE SIMULTANEOUS OPERATION

of automated and manual equipment

## Collision Avoidance MHE vs. Crane

- Safety zones around the vehicle and beneath the spreader
- Depending on zone overlap, the crane triggers:
  - automatic slowdowns
  - automatic safety stops
  - followed by controlled obstacle avoidance
- During loading and unloading, safety zone is reduced to the vehicle cabin
- Safety redundancy: Vehicles are actively alerted, increasing driver awareness



# AUTOMATED PROTECTION

against operations above personnel

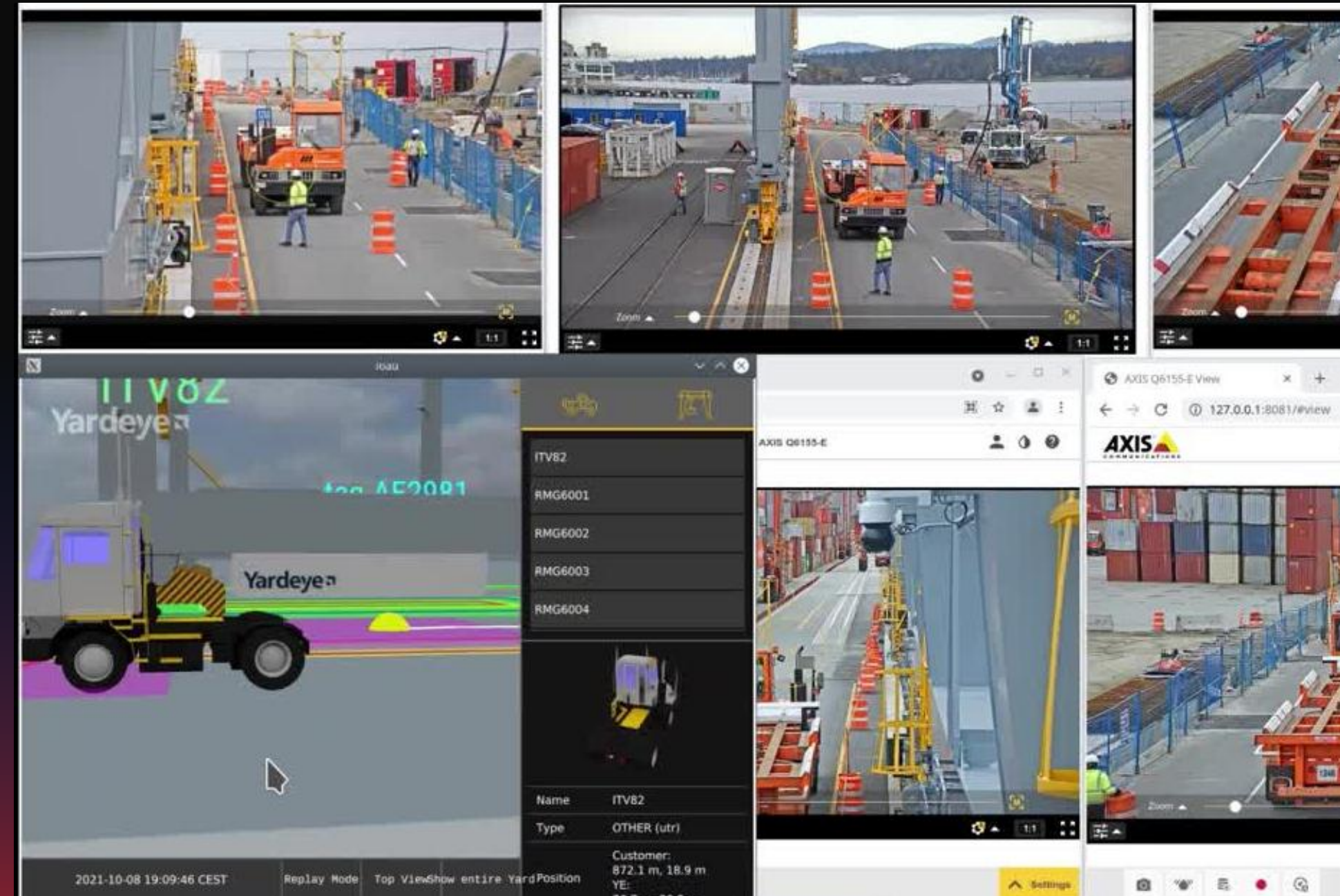
## No line of sight required

- Personnel equipped with a helmet tag = tracked
- Safety zone is placed around the person
- Depending on zone overlap, the crane triggers:
  - automatic slowdowns
  - automatic safety stops
  - followed by controlled obstacle avoidance
- Requirement: Personnel without a tracking tag are not permitted to enter the terminal (test situation shown in video)
- Tractor position transmitted to TOS; driver's cab protected by a safety zone during loading and unloading.



DP WORLD

**MI-JACK**  
EUROPE



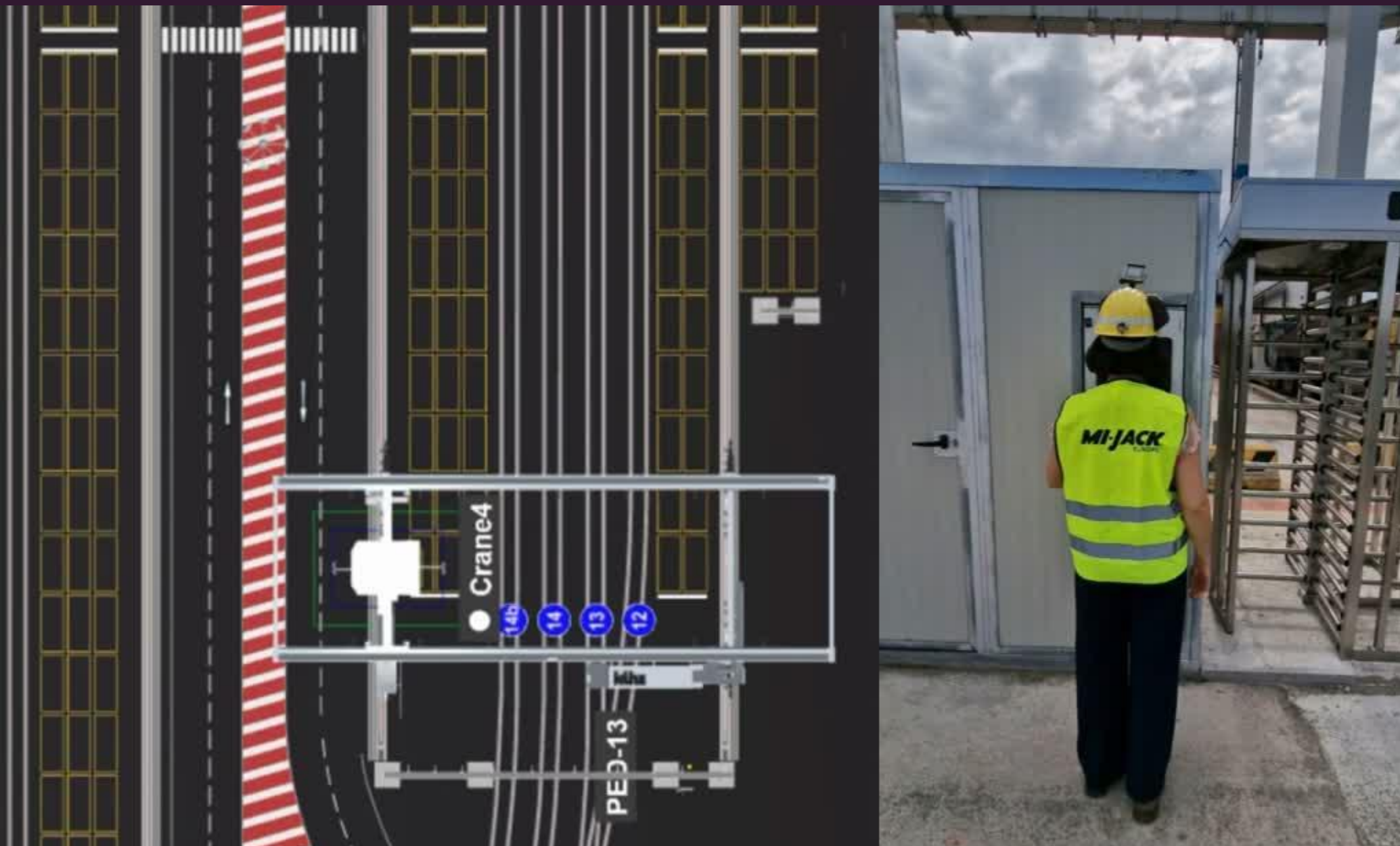


# ALLOW TERMINAL ACCESS

only for tracked and authorized personnel

## Personnel working next to 6 new automated cranes

- Personnel are equipped with tracking tags#
- The Gate Access Station verifies:
  - helmet tag functionality
  - authorization, granting access via the selected access system (e.g. turnstile)
- Tag is registered in the digital twin, creating a dynamic safety zone around the person
- ✓ This safety zone prevents spreader operations above personnel, enabling human-machine interaction without stopping operations
- ✓ All events will be reported to the TOS



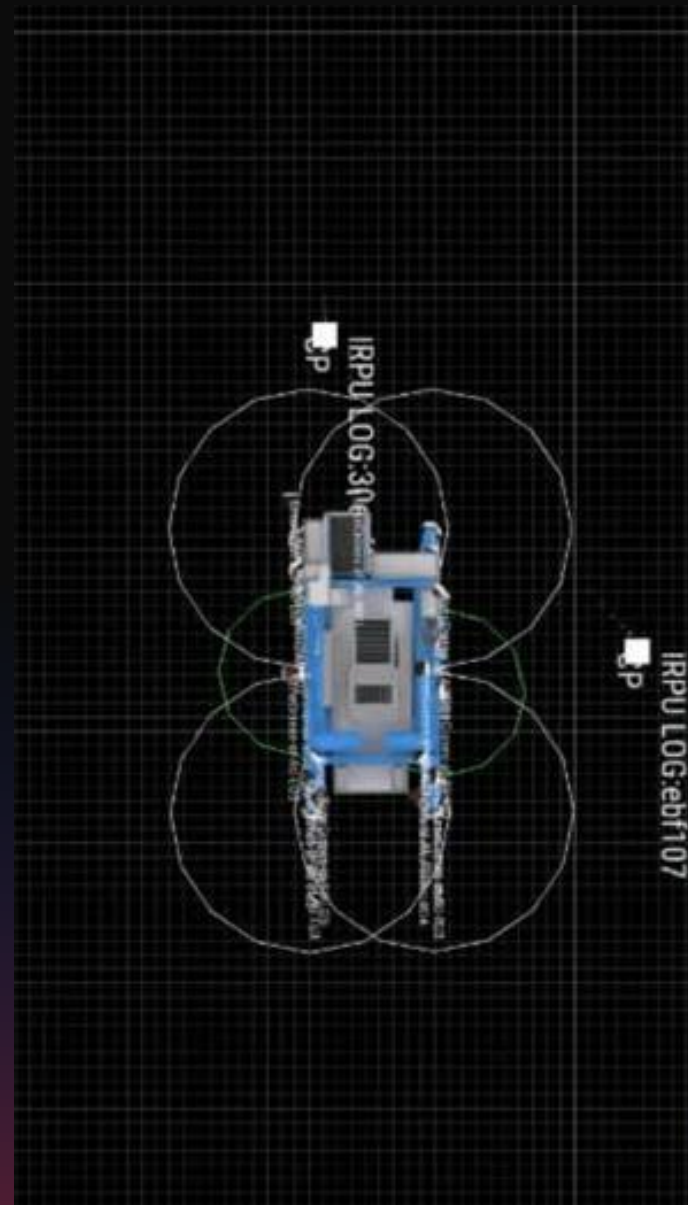


# SEE YOUR PERSONNEL

beyond line of sight

## No line of sight required

- Early detection of personnel in the vicinity of automated equipment using personal tags
- Automatic stopping of the straddle carrier as soon as a potential hazard is detected
- ✓ Protection even without line of sight
- ✓ Prevention of hazardous situations before personnel enter the vehicle's driving path





# ACCU TRACK



ONE SYSTEM. MULTIPLE USE CASES.

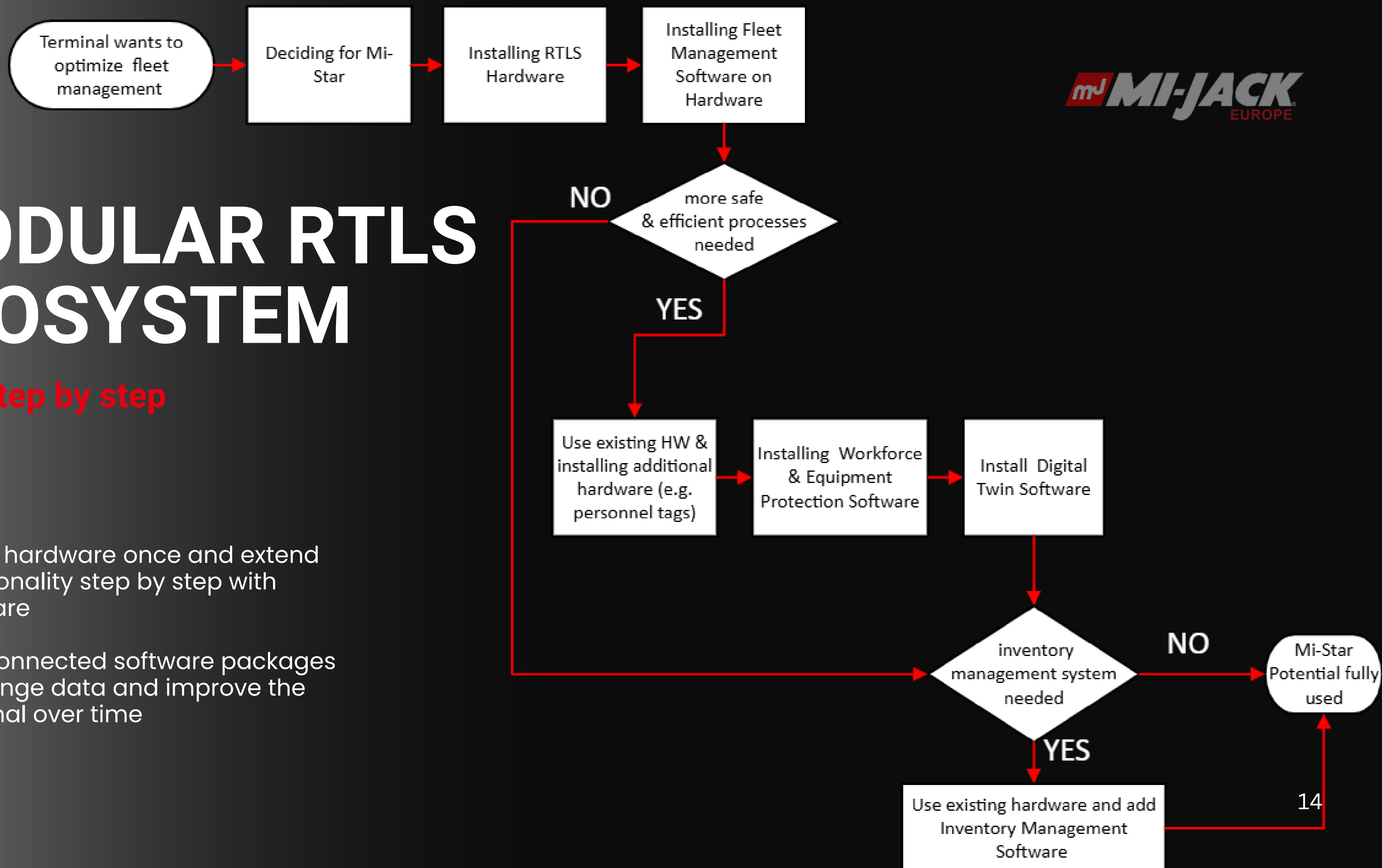
- Enables safe operation from manual to automated environments, including mixed-traffic.
- Detects and warns of personnel and vehicle near cranes and material handling equipment (MHE)
- Prevents collisions between personnel and MHE/Crane
- Prevents MHE-to-crane & MHE-to-MHE collisions



# MODULAR RTLS ECOSYSTEM

Grow step by step

- Install hardware once and extend functionality step by step with software
- Interconnected software packages exchange data and improve the terminal over time







# THANKS FOR YOUR ATTENTION!

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