

# Safety That Keeps Operations Moving

Supporting Safe Mixed Operations at LBCT



#### Who we are

- Subsidiary of Mi-Jack
   Products (USA) Focus: Heavy-duty cranes (RTGs), terminal automation
- Expertise in port automation and terminal safety
- Global operations with installations in several terminals
- Strong focus on quality, reliability and operational efficiency



#### Mi-Jack Europe - What we do

#### REAL-TIME LOCATING SYSTEM (RTLS/PDS)



Redundant tracking system



Movements monitoring



 Localize and identify all personnel, machines, cranes and vehicles in the yard



#### Hardware Components

- D-GNSS-RTK
- Radio / UWB



#### Software Applications

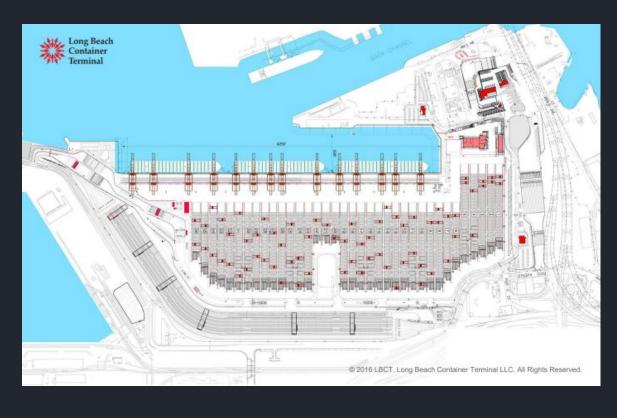
Workforce protection
Digital Twin
Fleet management
Auto steering
Inventory management
In-cab navigation



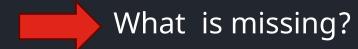


### Long Beach Container Terminal – initial situation

#### Long Beach Container Terminal



- 8 tracks (≈1,3 km each) with rail curvature considerations
- Motorized access gates
- 37 different vehicles
- person is required by process to remain inside the vehicle at all times while in the terminal
- 6 automated RMGs





# Efficiency without safety is impossible



Agree - efficiency needs safety



Disagree – efficiency works without safety

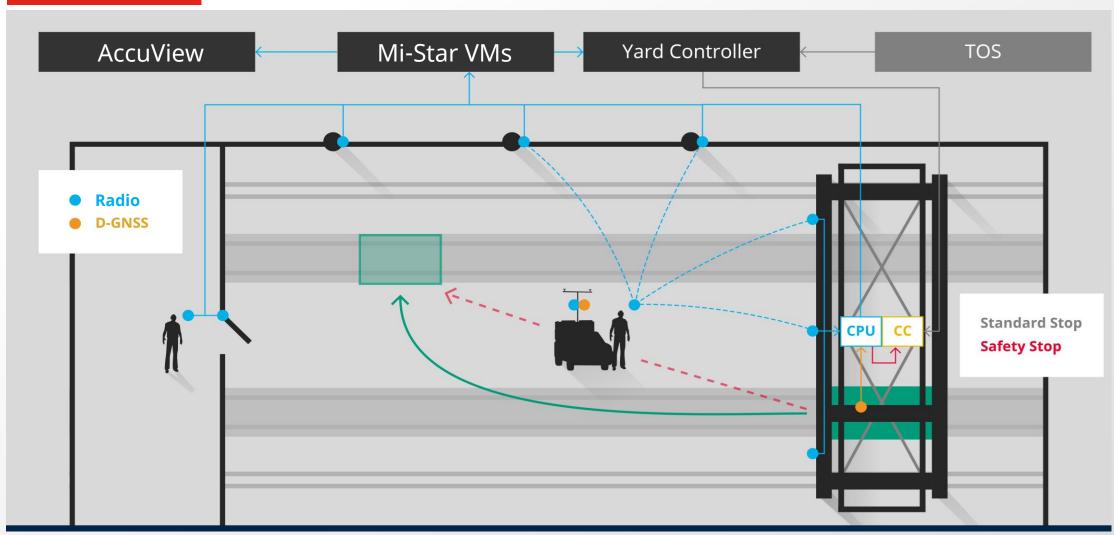


Depends - true in some contexts



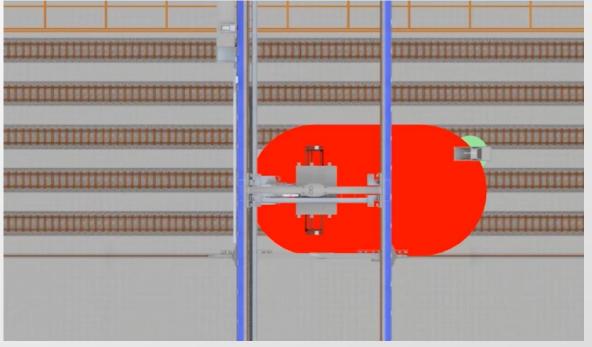


#### CCUTRACK Solution

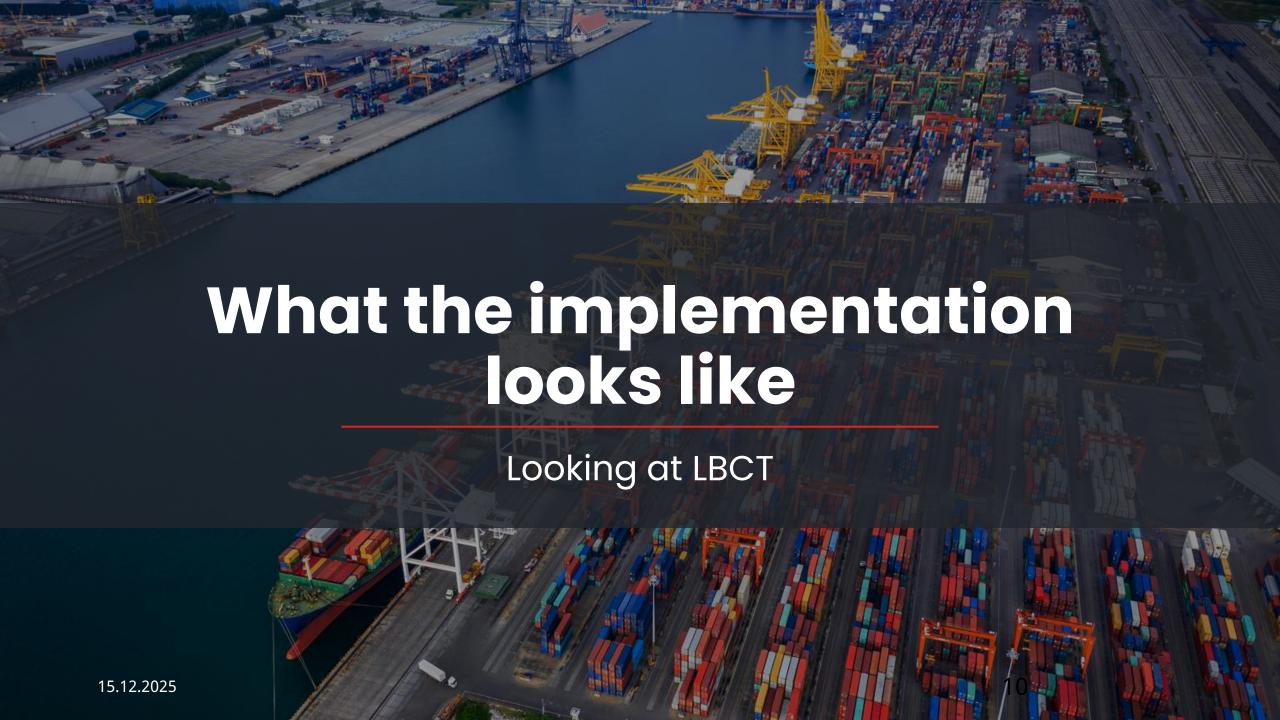


### **Safety Function**



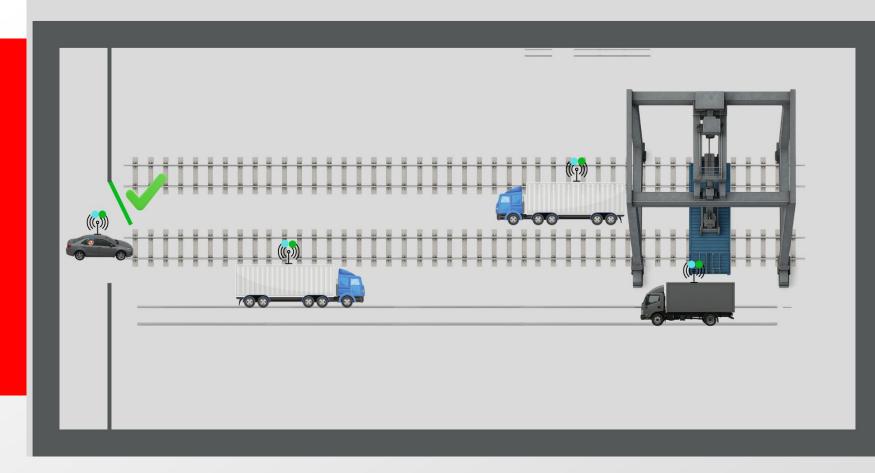






# Automated entry!

Only detectable objects are allowed in the yard



What are detectable objects?

Everything that is equipped with D-GNSS and UWB





Automated entry!
Without tracking,
nothing can enter
the yard.

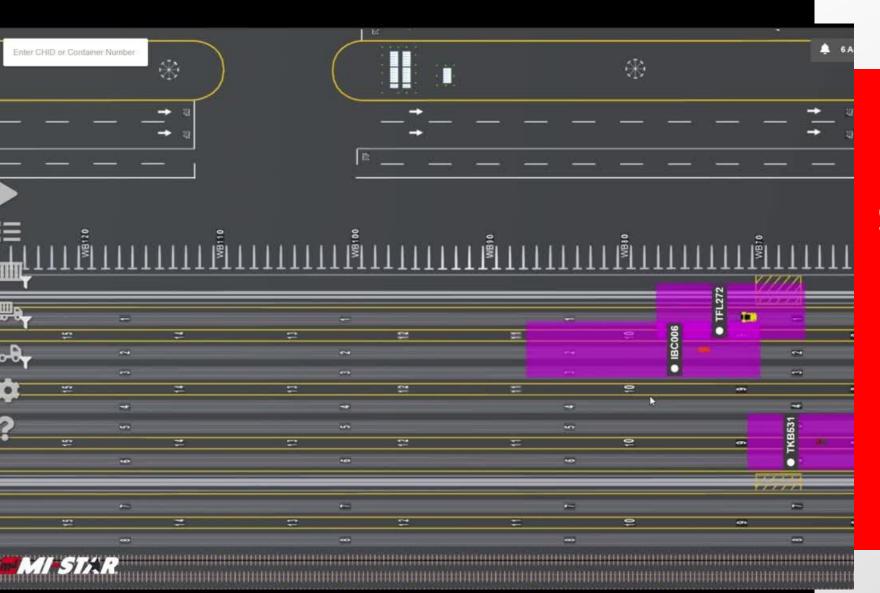


#### No Downtime. No Damage.

No suspended loads



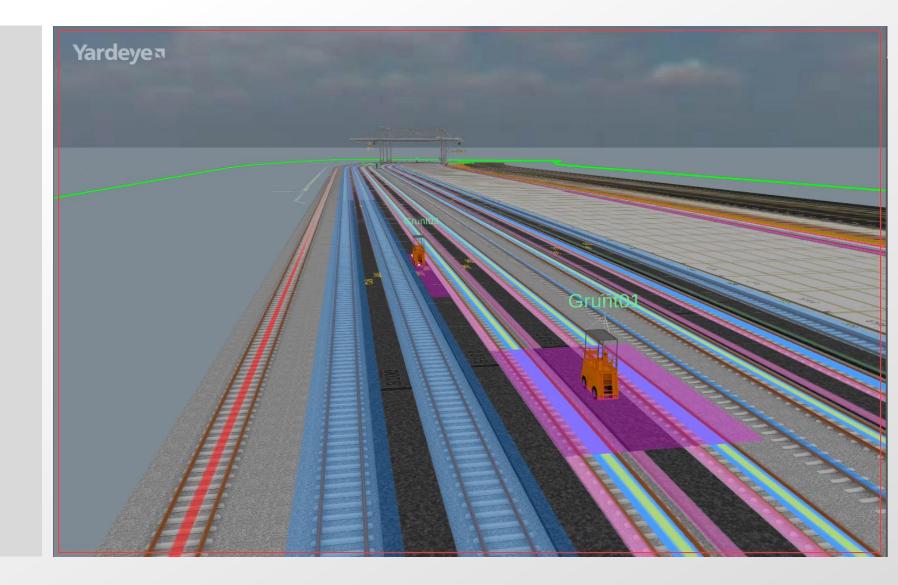




Speed Matters!
Let Safety Move
with
Your Vehicles.

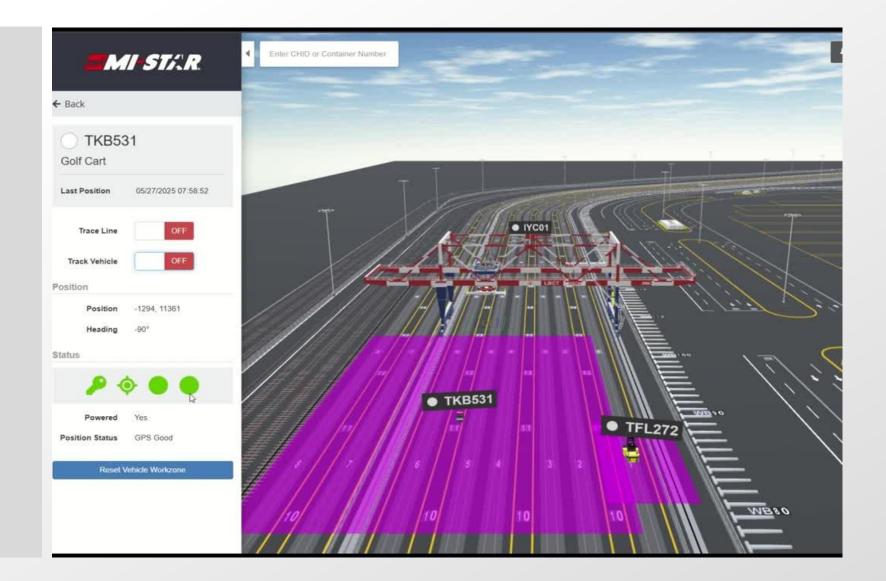


Protection of Grunt Carts and workers



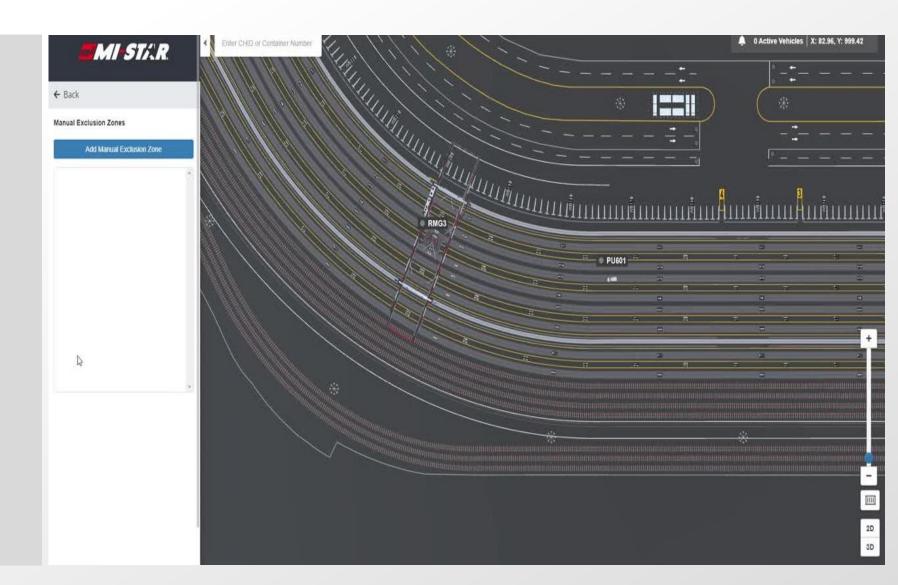


Dynamic Safety Zone Activates on Connection Loss



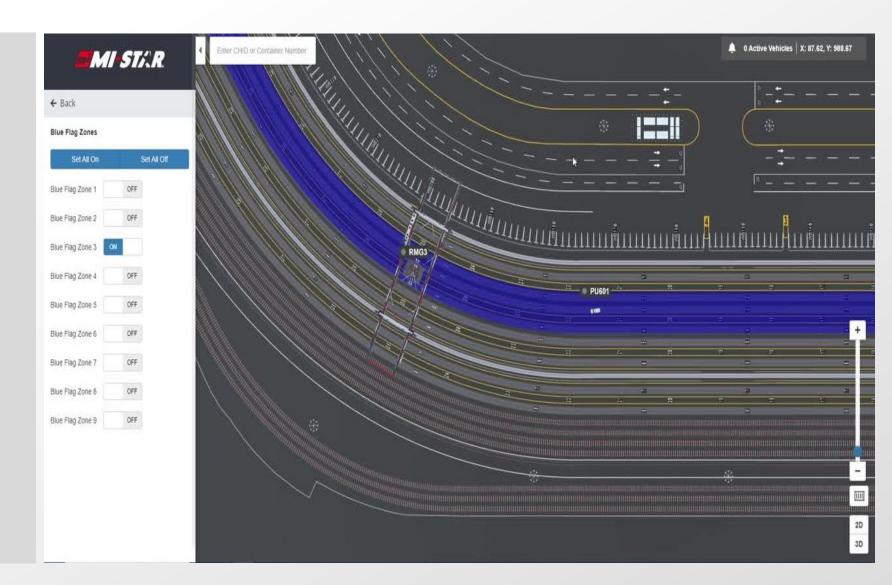


Protecting the unprotected – Manual exclusion zones

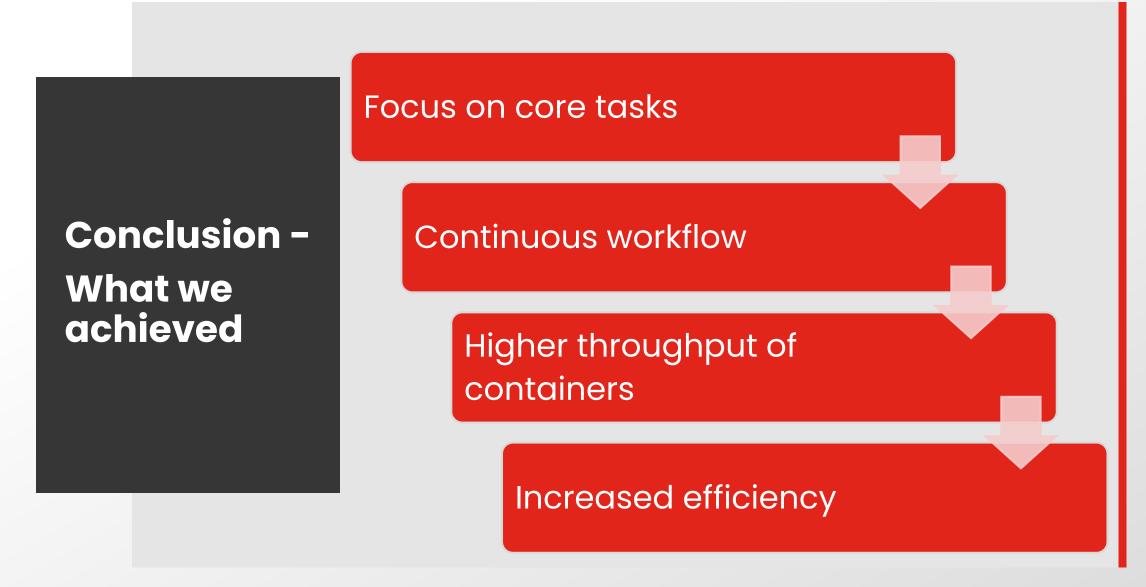




Protecting the trains – Blue Flag









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