



## Safety with Multifunctional Laser Measurement Systems

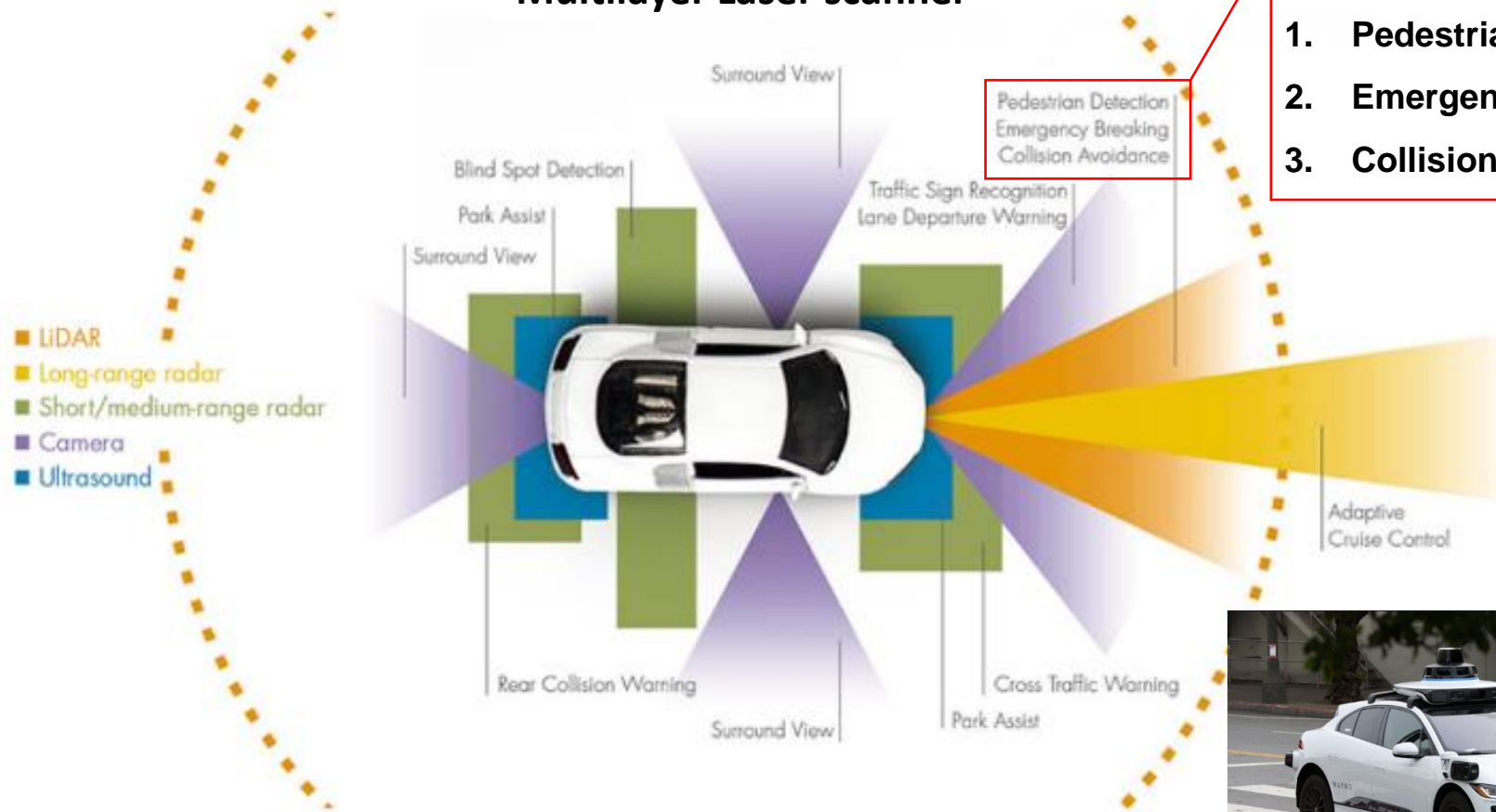


# Who is LASE?

1. **A system house for Laser Measurement Solutions**
2. **80% of our Business is for Cranes in Ports**
3. **We are the eyes of the cranes**



# The basis of being Multifunctional is having Multilayer Laser scanner

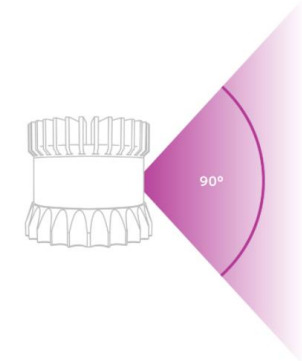
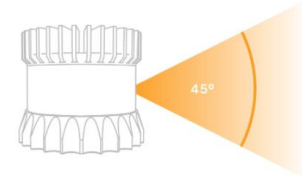
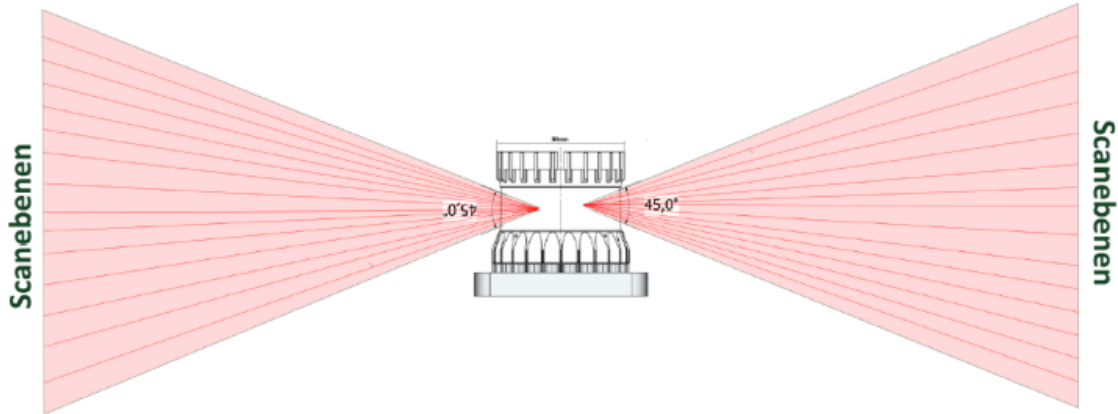
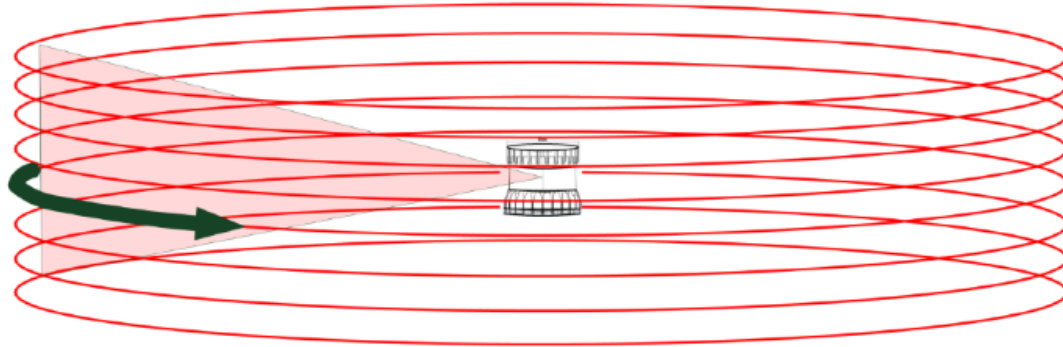


## LIDAR

1. Pedestrian Detection
2. Emergency Breaking
3. Collision Avoidance

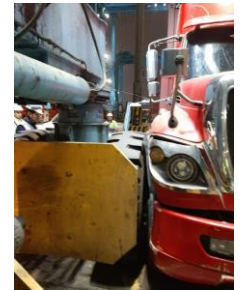
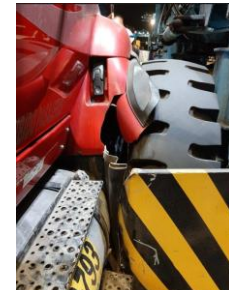


# 3D-Multilayer-Laserscanner



<b>Aim (USE CASES)</b>	<b>Solutions</b>
<b>Prevent Collision with Objects /Subjects in the gantry travel path</b>	<b>Gantry Collision Prevention</b>
<b>Prevent to lift Trucks</b>	<b>Truck Lifting Prevention</b>
<b>Protect Crane Driver in the Truck Cabin</b>	<b>Cabin Collision Prevention</b>
<b>Prevent Collisions between the Load and Stacks</b>	<b>Load Collision Prevention</b>
<b>People Detection for Automatic handover of Container in transfer areas</b>	<b>Area Surveillance Truck Operation</b>

# Gantry Collision Prevention



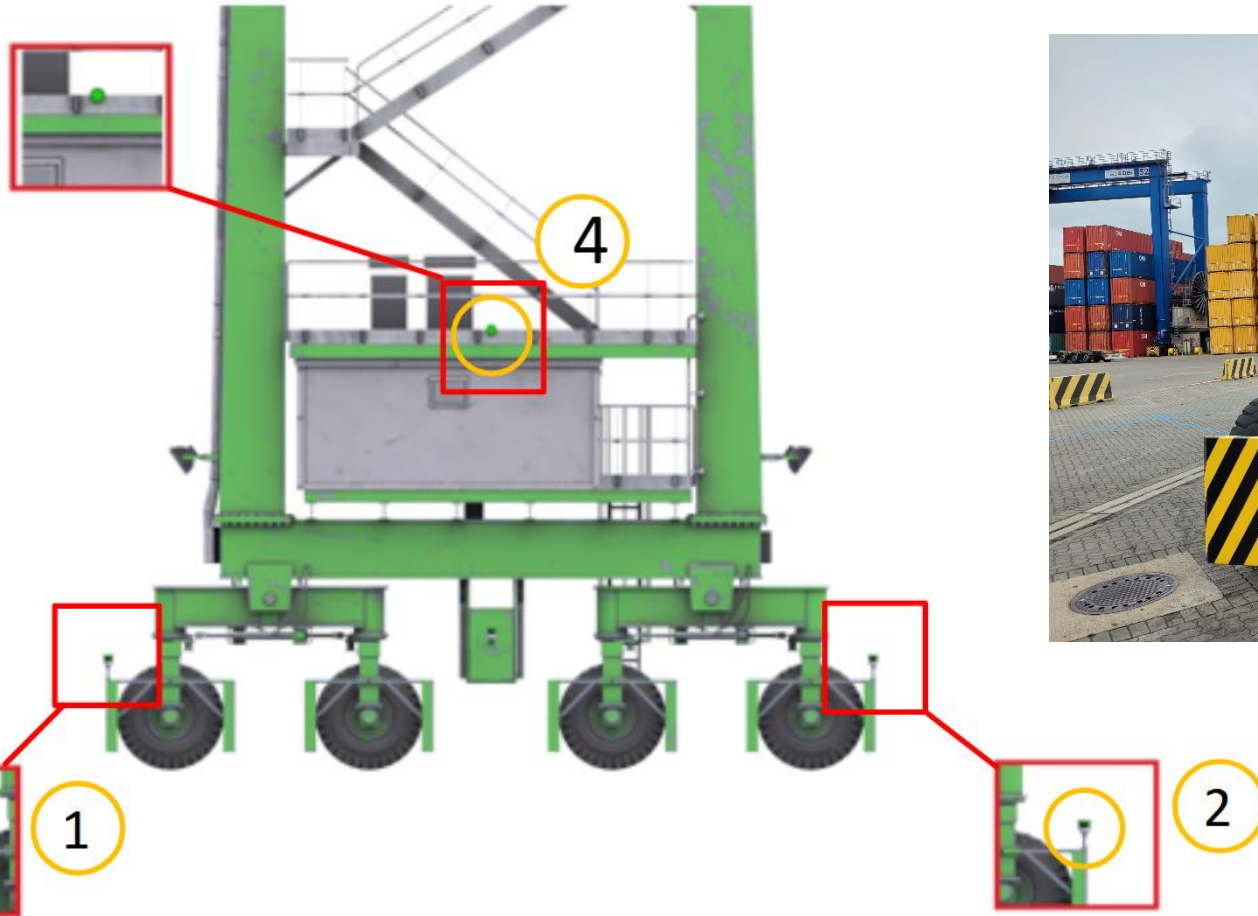
# Truck Lifting Prevention



# LaseMF-1 Multifunction 1 Laser Measurement System

<b>RTG</b>	<b>RMG</b>	<b>Name</b>	<b>Function</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseTLP	Truck Lifting Prevention
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseGCP-3D	Gantry Collision Prevention 3D
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseTPS	Truck Positioning System
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseCPD	Cabin Position Detection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseTMD	Truck Movement Detection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseESD	Empty Space Detection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LaseASTO	Area Surveillance Truck Operation

# LaseMF-1 Multifunction 1 Laser Measurement System on an RTG



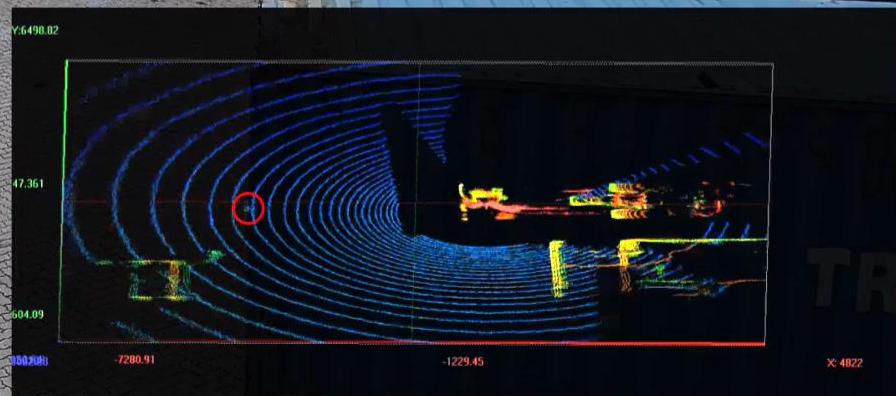
# LaseMF-1 Multifunction 1 Laser Measurement System



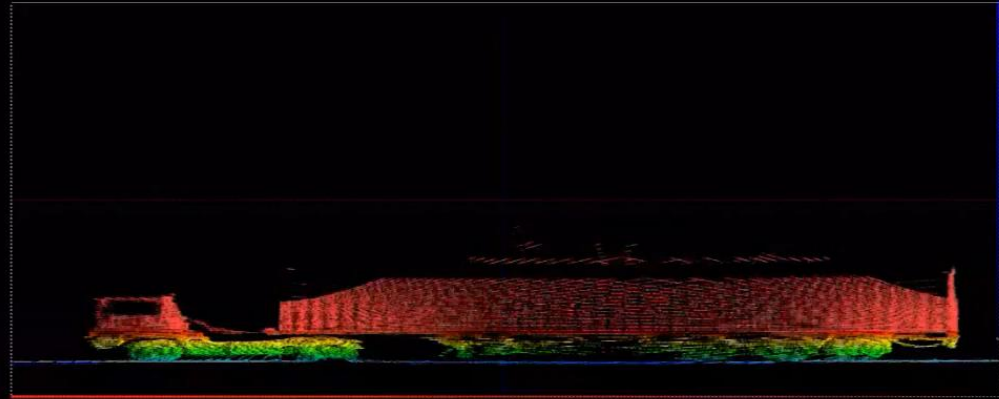
## Product of LASE Port Solutions

*LaseYC-MF - 1 - Yard Crane - Multi Function - 1*

# Gantry Collision Prevention



# Truck Lifting Prevention



X:17329.4

0452.27

-424.861

Z:16329.8

7452.66

-1424.47

0.000000

# Conclusion

**Instead of having seven individual systems, all functions are combined in one system with a very limited number of sensors.**

**Multiple Safety in one system!**

