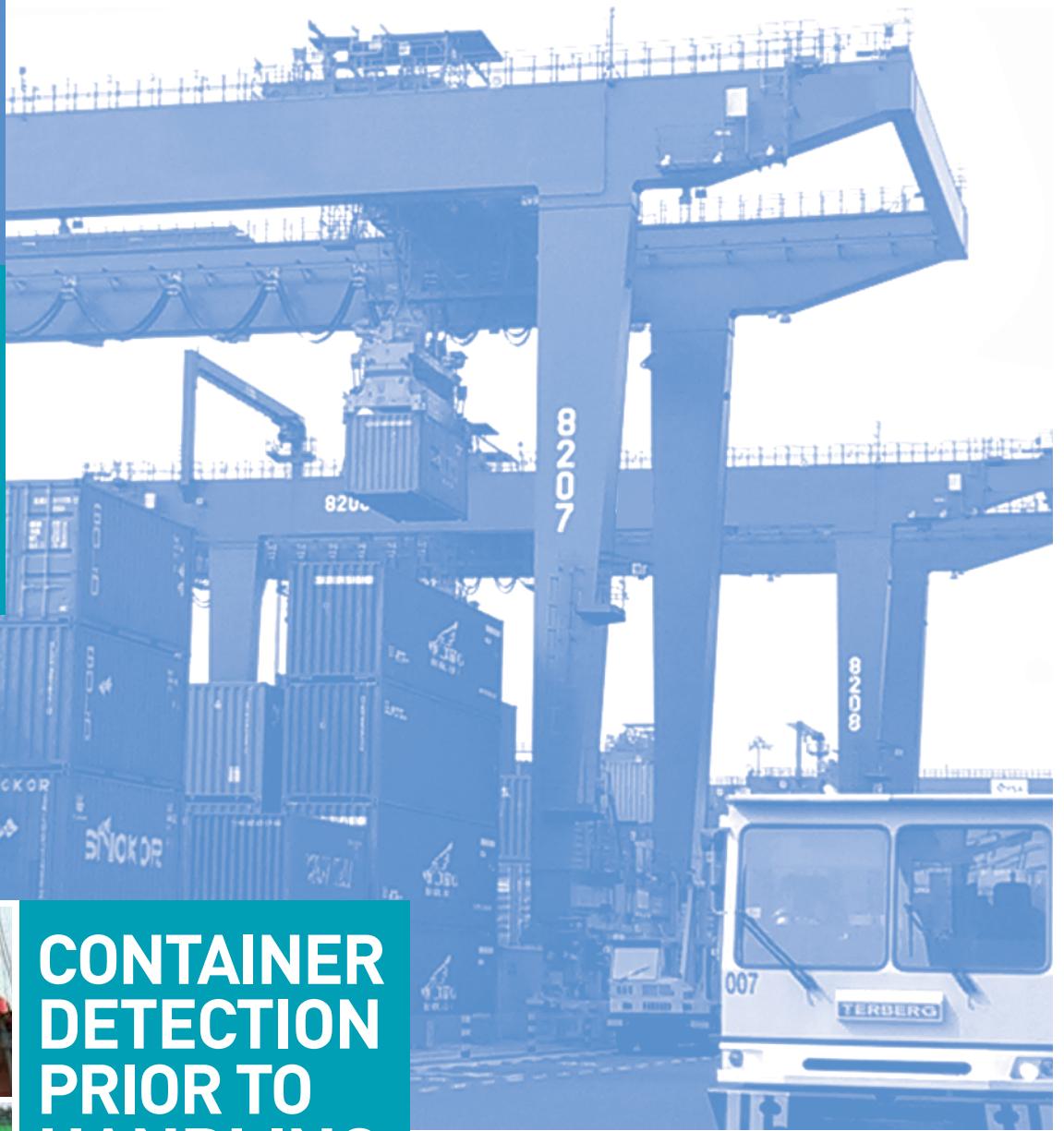




ACCURATE  
ROBUST

# CRANE AUTOMATION AT CONTAINER PORTS



## CONTAINER DETECTION PRIOR TO HANDLING OR STACKING

Arck Sensor solution helps the crane driver to adjust the hoist position in order to pick-up containers faster and therefore to save time.

The position adjustment of the spreader takes a longer time when swaying which means a longer time for every container transfer.



The sensors can also be used on unmanned cranes where the spreader should be automatically positioned to pick up a container.

This system can be used in three different modes:

- CENTERING (CC): Measuring the position of an empty spreader on top of a container.
- STACKING (CS): Measuring the position of a spreader placing a container on top of another.
- GAP (GA): Container gap detection. The main purpose is to check on the trailer or in the stack if there is one 40' or two 20' containers. This is useful to avoid accident due to a mistake when discharging a trailer or a vessel.

### Benefits and gain: decisive advantages

Arck Sensor products will:

- Increase productivity.
- Reduce containers transfer cycle times and operations.
- Increase safety for people, materials and equipment.

### Accurate and Robust:

The patented sensor technology, its specific design and ruggedness are approved for severe environments; ambient light immunity.



## ACCURATE ROBUST

Arck Sensor is a French company specialized in optical measurement in harsh industrial environments. Our mission is to provide the most robust and accurate sensors for container ports and heavy industries in the frame of automation and safety concerns.

Since 1998, Arck Sensor has been constantly improving its technology to deliver long term solutions for major container terminals and metal industry companies, world-wide.

## OUR EXPERTISE IN CONTAINER PORTS

- Load Movement Measurement
- Anti-Collision for Cranes and Vehicles
- Truck or Straddle Carrier Positioning
- Container Detection Prior to Handling or Stacking
- Boom to Vessel Anti-collision

### CONTACT US

22, rue Hermes  
31520 RAMONVILLE ST AGNE  
FRANCE  
Phone : +33 5 34 31 86 44  
contacts@arck-sensor.com

## CONTAINER DETECTION PRIOR TO HANDLING OR STACKING



**SPICA®**

### System presentation

The "all-in-one" optical sensor with smart emitted infrared LED sources is used to measure position of the stacked container edge to accurately put containers on right position.

SPICA® sensor is a successful solution for Container Terminals to gain space in Unmanned Automatic Container Yard.

It replaces mechanical long flippers to stack 7 containers in a perfect alignment.

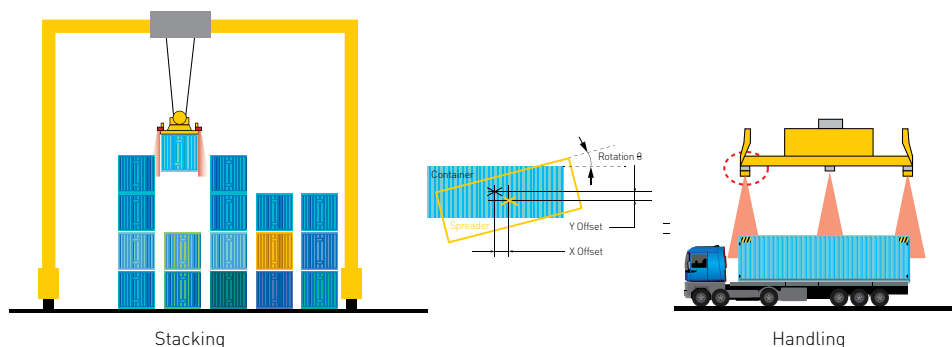
### How does it work?

Optical sensors are looking down and constantly measuring the position of the edge of the container in regards with their optical center.

The result of the measurement is 4 or 6-deviation value.

In case of the use of 6 sensors, the 2 additional sensors will express the X and orientation error in stacking the upper container with the lower one. These values are visible only on one side, the other side remains blind. The deviation values of detectors placed on the left and right side give information on the Y error of the stacking and are used in the same way that the X values.

SPICA® sensor must be locked on the spreader in such a way that its optical axis should be vertically over the container edge.



### Required material

Four or six sensors on metallic support and protective housing and one calculator.

