



Symeo (D-)GNSS  
System SAT/SAT-D

## 2D Symeo Position Detection Systems

Reachstacker, Emptyhandler, Tophandler

- Precise detection of vehicle and spreader position
- Usable in all areas of container terminals, even between high container stacks or near RTGs/RMGs
- Usable for all types of vehicles and cranes
- Standardized data interfaces
- Easily usable with common Terminal Operating Systems
- Can be upgraded to an anti-collision system for free ranging vehicles
- Options: detection of load status (twist locks engaged) and lift height, collection and transmittal of telemetry data

Symeo Position Detection Systems, based on GNSS (Global Navigation Satellite Systems), enable a reliable detection of vehicles in all typical application fields of container terminals with slot accuracy. With the integrated Symeo SensorFusion Software, even areas with limited satellite availability can be reliably covered – for instance between high container stacks, near buildings or near STS cranes.

Symeo systems determine the position, orientation and speed of the vehicle as well as the spreader position. Optionally, information about the load status (twist locks engaged) and other telemetry data of the vehicle can be collected.

Symeo Position Detection Systems are suitable for all types of cranes and vehicles and can be easily integrated in existing Terminal Operating Systems.

### Application Fields:

- Inventory Management
- Collision Avoidance
- Process Automation
- Fleet Management

## Syмео GmbH

Syмео GmbH develops and markets systems for precise and contact-free distance and position measurement, as well as anti-collision solutions for cranes, industrial vehicles and fixed objects. Furthermore, the company develops certified, customer-specific telemetry solutions with mobile data transmission.

Syмео products are robustly designed and well-suited for applications in harsh industrial environments indoors and outdoors. The products are easy to retrofit and can be used regardless of vehicle or crane type. The LPR<sup>®</sup> sensors with unique patented radio technology are equipped

with industry standard interfaces. The company also provides industrial GNSS (Global Navigation Satellite Systems GPS, Glonass and Galileo) receivers that can be combined with LPR<sup>®</sup> and other movement sensors like encoders and inertial measurement units (IMU). This combination enables highly-available and precise positioning, even under the most adverse conditions and in areas with limited satellite availability.

An international network of Syмео affiliates and partners ensures local support for customers worldwide. Syмео offers a 24/7/365 technical support hotline for subscribers to avoid any downtimes.



Position Detection



Collision Avoidance



Distance Measurement



Telemetry/Data Transmission