



# **SIMOCRANE** Remote Control Operation System (RCOS)

New environment for higher productivity and automated cranes

**SIEMENS**



With Siemens RCOS, port terminals achieve productivity comparable to conventional cabin-controlled cranes. Safe and constant performance for efficient crane operation.

### **It's all about safety and productivity**

The growth in vessel size creates the need to provide a solution which maintains the efficiency of cargo handling. Embracing this challenge, Siemens has taken the next step in automation developing an efficient Remote Control Operation System (RCOS). Improving visibility is the key. Using the latest camera zoom technologies together with an innovative assistance using automatic functions, the remote operator acts when necessary working from a comfortable and safe environment. The main role of the operator is to initiate the operation and supervise the automated movements. RCOS developed by Siemens can work non-stop, providing a more consistent use of the crane, increasing its lifetime and reducing damage, thus having a positive effect on the output.

### **Optimum Crane Performance**

RCOS delivers a complete end-to-end crane control solution from operator login, carrying out operations, to operator logout. The Remote Control Station can be situated anywhere on the terminal when associated with a reliable and low latency network connection. RCOS assists operators to carry out their work assignments by presentation of all task-dependent information on a human-machine interface which is tailored to the cognitive and physical capabilities of a human operator.

### **Customization and productivity**

Siemens understands that every terminal has its own processes and demands. Therefore, every project can be tailor-made to suit specific requirements. By doing this, the RCOS achieves its full potential.

# Siemens Remote Control – Customizable to suit every type of crane

## Smart integrated views

Siemens RCOS uses a PROFINET protocol that enables crane control with low latency and therefore a high degree of predictability. The system is supported by strategically positioned cameras that automatically track the movements of the spreader and customer specific processes.

The screens are planned according to human cognitive abilities, so only relevant and easy to understand information is displayed. The smart screens automatically change the view to follow the process as the operator performs a movement which allows the operator's tasks to be carried out without distractions.

## Safety and comfort

The system significantly improves the working environment and operator safety. RCOS certified integrated safety solutions guarantee safe operations for people and equipment.

- Camera latency check ensures a minimum time delay between crane movements and screen viewing.
- Frame rate detection ensures the video connection to the crane is reliable.
- Equipment check ensures the desk is connected to the selected crane.

More comfortable seats and a more collaborative work place also contribute to personal health and welfare.

In addition to the daily comfort, there is an improvement of the operator's mobility during their basic tasks. All operations become more flexible and the shift changes become faster. The crane operator role becomes multilayered and flexible.

## Any-to-any

Siemens Remote Control is based on the "any-to-any" principle, which enables the operator to logon to any connected crane from any con-

nected desk. This becomes very useful when a crane is equipped with semi-automatic functions that enable the crane to partly operate by itself and calls for the remote operator only when it requires manual operation.

## Agnostic concept

The Siemens remote control system offers not only the ability to connect to different type of crane but also to connect to different controller types and brands from e.g. different crane suppliers. This gives a Terminal the opportunity to standardize to one remote control platform. Resulting in many advantages like one user interface for all cranes, single system to maintain, any crane can be controller from any desk and the best cybersecurity protection.

## The road to automation

Siemens "Pooling" system makes sure the crane is forwarded to a free desk when assistance is needed. Within Pooling it is also possible to redirect difficult or complicated tasks to remote operators that have the required skill set. In the same sense, simple tasks can be done by any operator.

RCOS supports terminals towards a fully automated process. The higher degree of automatic functions on the cranes, the fewer stations are required.



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