

# Kalmar AutoRTG

Be part of the next big transformation -  
but you set the pace.

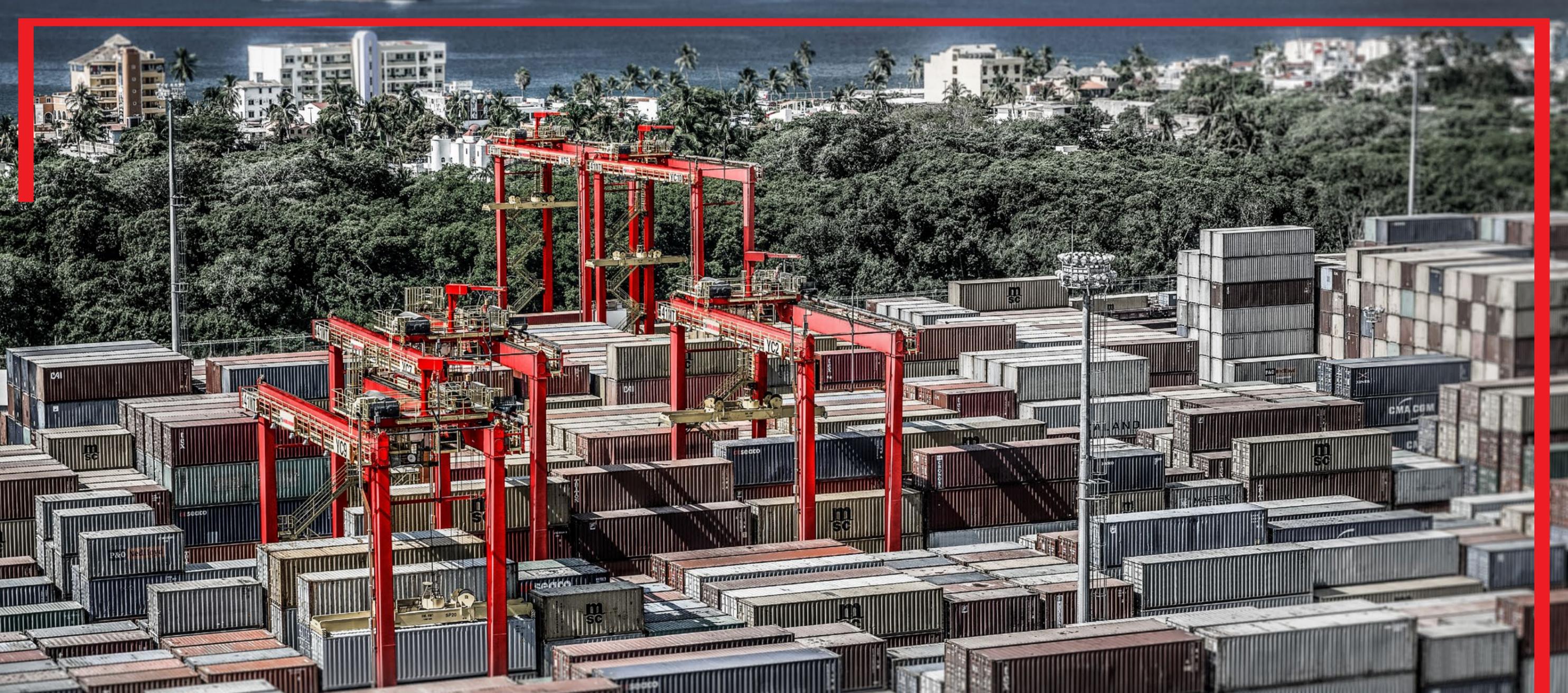


Kalmar offers the widest range of cargo handling solutions and services to ports, terminals, distribution centres and to heavy industry. Kalmar is the industry forerunner in terminal automation and in energy efficient container handling, with one in four container movements around the globe being handled by a Kalmar solution. Through its extensive product portfolio, global service network and ability to enable a seamless integration of different terminal processes, Kalmar improves the efficiency of every move. [www.kalmarglobal.com](http://www.kalmarglobal.com)

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## Getting full value from your RTGs

### Step by step

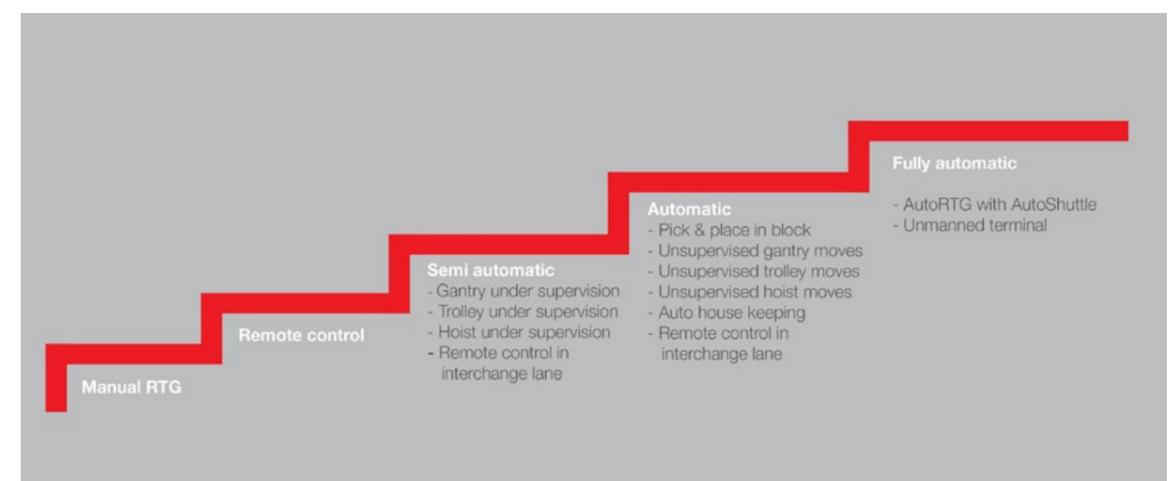
Less time, more traffic. Add to that the need to increase safety, reduce costs and eliminate the risks of mistakes – the demands of today’s container terminals are huge. Automation is the way forward in addressing all of these challenges.

Automating an existing container terminal is a complex task. Operations cannot be interrupted for an automation conversion, existing arrangements may make it hard to fully automate operations in one go, and cranes can still be in the middle of their planned lifetime. This is why Kalmar offers solutions that help terminals deploy automation in incremental steps.

### Unleash the potential of the RTGs

Converting your terminal to automation allows you to not only invest in new automated RTGs, but also upgrade your existing cranes. By automating your current RTGs, you can increase efficiency, reduce costs as well as improve operator safety and work conditions. Automation enables you to unleash the full potential of your RTGs so they perform at their most efficient – day in and day out.

## Levels of RTG automation



# What AutoRTGs can do for your business



## Reduced costs

A single operator can control at least two or three AutoRTGs, depending on the level of automation and the operational structure at the terminal. Remote control is needed only for truck and exception handling. Automated systems using GPS, laser measurements and cameras ensure that containers are always in the right place – consistently and safely.

## Safer and more secure

Crane operators are located in a separate office building, so there is less personnel in the yard. AutoRTGs are fitted with advanced safety features – including anti-collision systems – that keep track of equipment and container movements while avoiding accidents.

## Automation, easy to implement

A key benefit of the RTG concept is the low initial investment required. AutoRTGs are an economical alternative to ASCs, with significantly lower infrastructure costs compared to rail-mounted cranes.

Kalmar helps you set up an automation roadmap for your terminal, in which every step is ready for the next level of automation. This means you can implement automation step by step – with a flexible deployment and minimal disturbance to your operations. You can always choose the level of automation that best suits the needs of your terminal.

## Virtual testing, faster deployment

Kalmar's state-of-the-art automation test facilities enable your new AutoRTG system to be fully pre-integrated and tested in our labs prior to deployment. Your entire terminal operating structure can be modelled virtually, saving significant time during the on-site installation.

## The reliability of proven technology

With decades of continuous development and innovative thinking, Kalmar has always kept RTG technology at the forefront of the market. The RTG automation system shares the same technology, components and software (for example, Kalmar TLS) as Kalmar's proven automatic stacking cranes that are in use all over the world.

An accessible, maintenance-friendly design ensures optimal performance throughout the entire lifetime of the system, while all software upgrades are

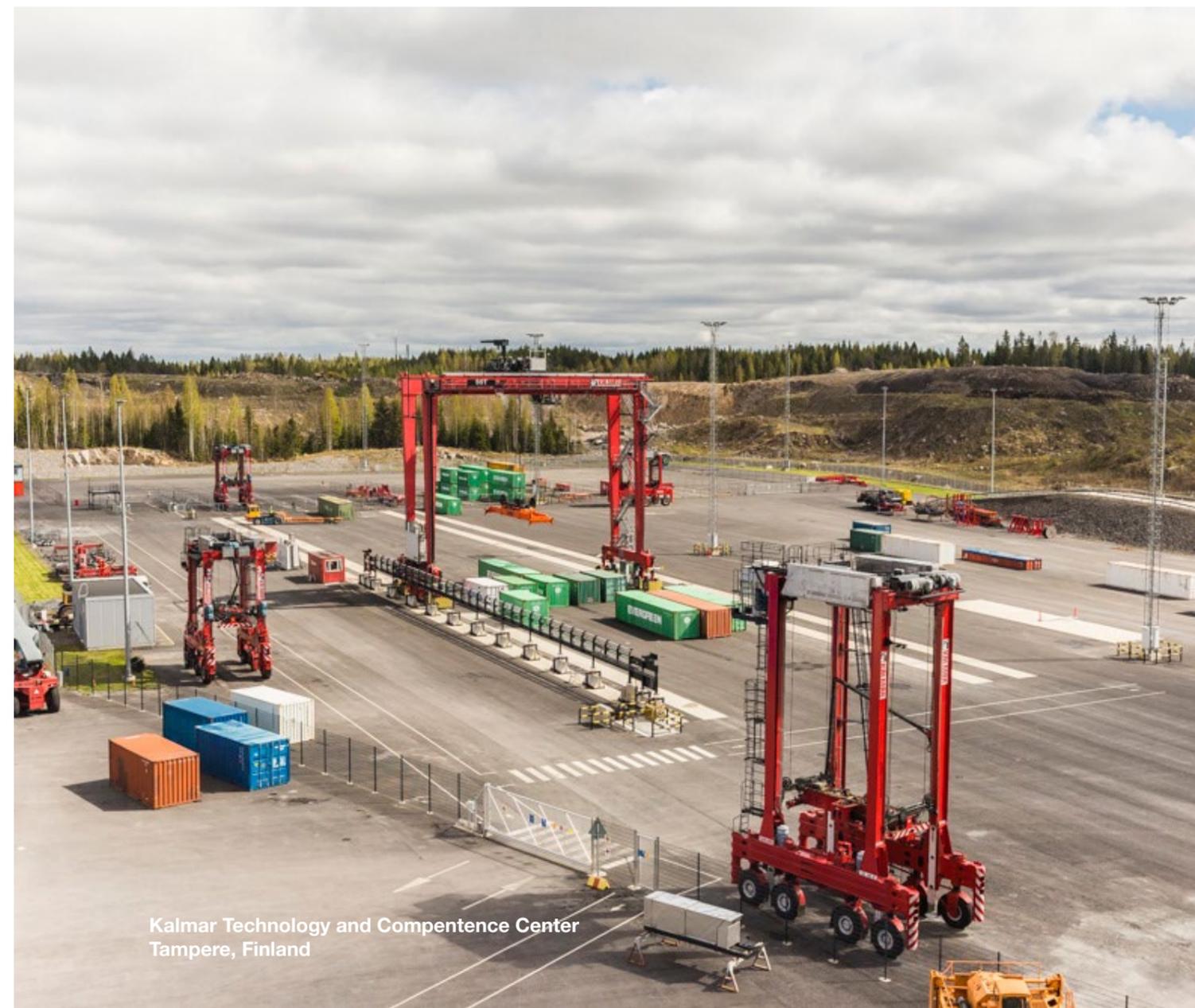
automatically included as part of your service and support package.

The capabilities of the AutoRTG system are further extended with Kalmar AutoShuttles™ and SmartPort automation solutions, all designed to work seamlessly together.

## Start automation today

You can fully automate your yard operations or use automation to complement remote control. Either way, automation doesn't have to involve the huge investments and disruptions of changing everything in one go.

Kalmar has the complete offering to help you automate your operations step by step, at your pace, always ensuring that you gain the maximum benefit for your investment. Because we know that your every move counts.



Kalmar Technology and Competence Center  
Tampere, Finland

# Kalmar Care for automation

Kalmar is dedicated to optimising the value of your terminal equipment throughout its lifetime. Maintaining an automated terminal is a whole new game – and we are the most experienced player in the field.



## Fast track to commercial operations

Kalmar Care start-up services are designed to streamline the commercial operations start-up phase. Our expertise has been proved in real life cases, helping you to reach the planned throughput even months earlier. In the heart of the service is our core team. Your maintenance management is set up faster, required competencies are at hand from day one, and your maintenance personnel trained by experienced professionals. For example, our experts will plan and implement CMMS, including asset structures and maintenance programs. They will also help in training and recruiting technicians, and support your operators in their daily work during the early steps of your operations.

## Making sure your business never stops

Kalmar Optimal Care contract provides guaranteed availability of your equipment or terminal, as well as financial predictability, over a longer term partnership. If you selected Kalmar Care start-up services, the same core team will continue to support you 24/7, optimising the value of your terminal. With Kalmar Optimal Care, you can reach even 10% savings in operational costs through for example our spare parts management and other optimisation services.

### Examples of services in Kalmar Optimal Care contract

<b>Technical services</b> <ul style="list-style-type: none"> <li>• Inspections</li> <li>• Preventive and corrective maintenance</li> <li>• Software and automation maintenance</li> <li>• Component replacement and overhaul</li> <li>• Port infrastructure maintenance</li> </ul>	<b>Availability management</b> <ul style="list-style-type: none"> <li>• Maintenance planning and optimisation</li> <li>• Availability reporting (CMMS)</li> <li>• On-line trouble shooting</li> </ul>	<b>Spare parts management</b> <ul style="list-style-type: none"> <li>• Inventory management</li> <li>• Capital item management and financing</li> <li>• Logistics management</li> </ul>
<b>Operations</b> <ul style="list-style-type: none"> <li>• Skilled operations personnel</li> </ul>	<b>Training</b> <ul style="list-style-type: none"> <li>• Technical training</li> <li>• Operations training</li> </ul>	<b>Financial services</b> <ul style="list-style-type: none"> <li>• Rental and leasing of mobile equipment</li> </ul>

Read more at [kalmarglobal.com/kalmarcare](http://kalmarglobal.com/kalmarcare)

# Kalmar OneTerminal

## Optimise your performance every day

Kalmar OneTerminal provides an integrated automation solution, delivered by a single team, which brings together Kalmar and Navis software systems, equipment and services for seamless deployment.

Whether automating a greenfield or existing site, the Kalmar OneTerminal will help you to realise your investments faster and ensure that your terminal performance is optimised for both today and tomorrow. You can expect dedicated operational support, combined with Kalmar's superior service, throughout the lifespan of your terminal.

Based on a unique integrated combination of the Navis N4 and Kalmar's equipment control system TLS, Kalmar OneTerminal provides a complete automation solution for container terminals, based on three initial concepts for ASC, AutoStrad and AutoRTG terminals. It also ensures that all automation systems combine optimally, giving you the shortest possible time to realisation and providing outstanding efficiency from day one.

With one key contact, one core team, Kalmar OneTerminal makes automation accessible, mitigates the risks involved and enables you to realise the full potential of your terminal operations.

