

# Important transport hub for global resources

Khalifa Port, the largest and most automated port in the Middle East, is located between United Arab Emirates' capital Abu Dhabi and Dubai. It boasts a favorable geographic location and a deep water harbor. COSCO Shipping Ports Limited (COSCO Shipping) signed an agreement with the local port authority in September 2016, and the two sides will jointly run Khalifa Port Phase 2 automatic wharf. Shanghai Zhenhua Port Machinery Company Limited (ZPMC), which has over 70% market share in the global port machinery market, cooperated with its long-term partner Siemens to provide automation solutions for the project.



Container cranes are being commissioned in Shanghai.

This project has recorded the highest contract value among all cooperations between ZPMC and COSCO Shipping. The project includes 11 container cranes, 24 automated rail-mounted gantry cranes, eight automated empty container cranes and one fixed crane. The first batch of quay cranes will be put into operation at the end of December 2018. By 2020, the annual capacity of the whole Khalifa Port is expected to reach 6 million standard containers.

## A strong partnership creates confidence

During the project implementation, ZPMC, as the EPC company, is responsible for the general project contracting and the integration of the whole electrical system. Siemens offers key electrical equipment and parts of the automated operation modules including motors, drive system Sinamics S120, new safety programmable logic controllers (PLC) and the Simocrane automation module. Many benefits are evident as both parties bring their strengths into play.

In this project, Siemens provides the equipment and modules, while ZPMC is in charge of the development, integration, debugging and delivery of the automation system. This cooperation model is highly competitive thanks to the clear division of responsibilities, enabling fast feedback to solve onsite problems and improve the cost efficiency.

“This kind of cooperation model has been used in many successful cases in China previously. COSCO Shipping found it highly efficient because it can rely on timely feedback no matter what happens. Thus, COSCO Shipping is quite

confident that these two long-term partners would achieve success together in the new project,” said Gu Chaofeng, Key Account Manager of Process Industries and Drives Division of Siemens China.

### **Open and flexible modular design**

To realize stable and flexible unmanned operation at a wharf, the cranes must not make any mistakes while picking up or stacking containers. Of utmost importance are the Siemens PLCs with certified safety function, which can prevent accidents in the case of malfunctions. Furthermore, with Siemens’ Simocrane automation module, the customer can rest easy when it comes to automation engineering, configuration and subsequent maintenance.

An engineering configuration process of automation equipment could be compared to a house-building process, where different strategies are carried out by different builders. A typical approach is to offer a turn-key solution, like delivering a fully built and decorated house directly to the customer. The customer does not have to worry about any of the details, but he can’t make his own decisions about the components. In contrast, Siemens’ Simocrane automation module breaks its automation solution down into independent modules, just like providing specific fittings and furniture. It is up to the customer to decide how to decorate the house and arrange the furniture.

ZPMC’s engineers can easily complete engineering configuration as needed during electrical integration. Meanwhile, the Khalifa Port will operate for at least 40 years after this. After the warranty period expires, COSCO Shipping must deal with the possible equipment problems by itself. Siemens’ solution of modular design provides great accessibility and flexibility. The end customer could easily learn to operate and master the Siemens solution, and handle the subsequent operation and maintenance.

ZPMC’s vice president Zhou Qi spoke highly of Siemens: “When it comes to the products, the high reliability of Siemens’ equipment and solutions is unquestionable. In terms of services, Siemens’ global service system renders timely support for our projects in every corner of the world, helping us to meet customer demands quickly. Along the journey to international markets, ZPMC and Siemens have achieved numerous splendid milestones together. We will deepen our cooperation in the future to win more customers in more markets.”