

SUCCESS STORY



Universal Terminal Uses CS 3000 with Terminal Automation System

Location: Jurong Island, Singapore
Order Date: April 2006
Completion: October 2007
Industry: Oil & Gas

Executive Summary

Universal Terminal (S) Pte Ltd, one of the largest independent petroleum products storage terminals in the Asia Pacific, has been built on Singapore's Jurong Island at a cost of S\$750 million.

Universal Terminal (S) Pte Ltd offers 2.3 million m³ of storage capacity and modern berthing facilities. The terminal has 73 storage tanks with capacities ranging from 2,000 m³ to 100,000 m³ and provides a total of 12 berths, including two that can accommodate very large crude carriers (VLCCs).

Yokogawa Engineering Asia provided a complete terminal automation system (TAS) and a CCTV system for the terminal. The state-of-the-art TAS addressed key customer considerations regarding operational efficiency and system reliability.



Very Large Crude Carrier Berth (VLCC)

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The Challenges and the Solutions

The design work for this project started in 2004 and the terminal control system and the associated equipment were all decided in April 2006. The project was completed in the third quarter of 2007 and the terminal became operational in October 2007. One key consideration for selecting the automation vendor was engineering capability and the ability to deliver a system within the limited timeframe. The project team had to be flexible, reliable and cooperative to ensure smooth project implementation and completion of the project. Yokogawa Engineering Asia came through with its commitments and provided full engineering support, successfully delivering the TAS on schedule.

All the 12 berths are in constant use for the unloading of various oil products into the 73 storage tanks. The products are mixed at a pumping station before being moved to the other tanks. Universal Terminal operates continuously 24 hours/day, 7days/week throughout the year. Product specifications vary depending on the clients, so a large number of path selection and blending operations have to be accurately executed in this terminal. Yokogawa's CENTUM CS 3000 and TAS package are designed to handle such complex and demanding terminal operations.

Report data creation is a very important issue in the oil terminal business due to local government requirements for the monthly auditing of oil IN/OUT amounts. The TAS is designed to automatically create daily, weekly and monthly report.

Asset maintenance is very important in ensuring the efficiency of terminal operations. Yokogawa supplied a computer maintenance management system (CMMS) and fully integrated it with the CS 3000. This realizes predictive maintenance and reduces the total cost of ownership.



Central Control Room



Tank Yard

Customer Satisfaction

"We are pleased with the support team that Yokogawa has provided us with. They have been most helpful." said Chandra Sekaran, Head of Logistics.

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About TAS (Terminal Automation System)

The TAS handles the loading and unloading of oil products, LPG, petrochemicals and asphalt. Its functionality comprises all necessary monitoring and control functions for terminal operations. The TAS executes the movement control function with ease and efficiency, and monitors the quantities transferred to ensure accurate control, annunciating alarms as necessary in response to inadvertent operation or equipment malfunction. Control platforms can be variably selected to meet the user's needs. CENTUM, STARDOM and FA-M3 will be used.

System Details

Control Systems: CENTUM CS 3000

Number of I/O points: 3185(Di),1718(Do),378(Ai)

Software Package: TAS (Terminal Automation System), PRM

Additional supply : CCTV

LEGEND

- HIS : Human Interface Station
- FCS : Field Control Station
- ENG : Engineering Workstation
- DCS : DCS IO Marshalling Cabinet
- : V-Net/IP for DCS

