

## SUCCESS STORY



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## ABS Plant Migrates from CENTUM XL to Integrated CENTUM CS 3000 Solution

Location: Rayong, Thailand  
Order Date: December 2007  
Completion: November 2008  
Industry: Petrochemical



### Executive Summary

The Integrated Refinery and Petrochemical Complex Public Co., Ltd. (IRPC) in Rayong, Thailand has a refinery (215,000 b/d) as well as several petrochemical plants that produce chemicals such as olefins (360,000 t/y) and aromatics that are used as feedstock at various types of plastics plants. One of these petrochemical plants produces 140,000 t/y of acrylonitrile butadiene styrene (ABS). Although this plant had experienced no major problems with its CENTUM XL process control system during the 19 years that it was in use, IRPC decided to upgrade to the latest technology when Yokogawa announced the end of service for CENTUM XL.

To control complex production operations in a total of 17 batch reactors at this ABS plant, Yokogawa Thailand installed the CENTUM CS 3000 Integrated Production Control System together with CCTV equipment, a plant information management system (PIMS), the Exaplog Event Analysis Package, and the CS Batch 3000 package.

### Customer Satisfaction

Wichian Art-ong, Instrument Supervisor, said, "We are very happy that we have been able to operate the ABS plant without any major problems. We have no complains with the Yokogawa systems." He went on to say, "The entire integrated production system is functioning well. We are able to view video from the CCTV cameras as well as other production data on large screens positioned near the CENTUM human machine interface (HMI) stations. Plant information can also be viewed from any location using a standard web browser.

### About ABS

This material is a terpolymer of acrylonitrile, butadiene, and styrene. Usual compositions are about half styrene with the balance divided between butadiene and acrylonitrile. Considerable variation is possible resulting in many different grades of acrylonitrile butadiene styrene with a wide range of features and applications. In addition, many blends with other materials such as polyvinylchloride, polycarbonates and polysulfones have been developed. Acrylonitrile butadiene styrene materials can be processed by any of the standard thermoplastic processing methods.

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### The Challenges and the Solutions

IRPC wished to minimize the shutdown period for replacing the systems. Working together, Yokogawa Thailand and IRPC's project team carried out all configuration work for the new CENTUM CS 3000 system, and all functionality could be confirmed through a factory acceptance test (FAT) at Yokogawa Thailand's Bangkok facility. The plant only needed to be shut down for five days to install the new system and complete all rewiring to field devices.

The customer also wanted production operations at this ABS plant to run more smoothly and efficiently. The CS Batch 3000 package was installed to control the production of nearly 100 different polymerization batch recipes with this plant's 17 reactors and 3 strippers. By making it easier to configure, start up, and carry out these operations, production could proceed without interruption 24/7/365.

With the CENTUM XL control system, the proliferation of both high and low process alarms and critical alarms was an issue. To ensure safe operations, it was essential for process alarms to be issued at the right time to the operators. The combined use of Yokogawa's Exaplog Event Analysis Package and the Advanced Alarm Administrator Suite (AAASuite) has improved alarm management at this plant. By eliminating alarm overload, operators no longer miss important alarms and are able to make a correct and timely response. The control room is much quieter and calmer than before and operator stress levels are down considerably. Large screens that display production data and CCTV video also improve efficiency by giving operators a much better overview of what is happening throughout the plant.

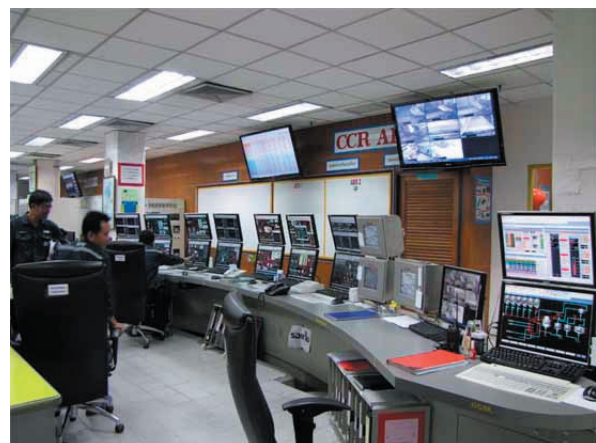


Instrument panel



CENTUM XL consoles

**Before**



DCS

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