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## CENTUM CS 3000 Cuts Clean-in-place (CIP) Time 50% and Improves Productivity

Location: Pandan Loop, Singapore  
Order Date: April 2006  
Completion: December 2006  
Industry: Food



### Background of This Project

ADEKA (SINGAPORE) PTE. LTD. (ADEKA) is located in the Jurong Industrial Estate on the western side of Singapore. Each month the ADEKA Singapore plant produces 700 tons of margarine and 150 tons of shortening from palm oil and other ingredients. This plant had operated for 16 years using a small-scale MicroXL process control system from Yokogawa. Although this system had been failure free, the decision was made to replace it because of the discontinuance of MicroXL support and the need for new technology that could cope with changing production requirements. By installing a new CENTUM CS 3000 process control system and also modifying its plant processes, ADEKA significantly improved productivity.

### The Challenges and the Solutions

ADEKA manufactures many different products for its customers, and has over 150 specifications of production (SOP). The SOP include all detailed specifications and production conditions. Detailed recipes are stored on and downloaded from a production management computer that runs SAP. Even though the existing SOP management software was coded in the BASIC language and has certain limitations, the new package software running on the CENTUM CS 3000 has enabled flexible configuration and data settings for greater productivity.

Once a recipe is downloaded from the SAP computer and the CENTUM CS 3000 operator selects the correct SOP, detailed SOP settings are automatically performed. Even inexperienced operators can easily recognize and confirm the recipe and the SOP on the display terminal before production starts. As a result, ADEKA is able to consistently maintain high quality and operate the plant safely, without errors.

In the food industry, clean-in-place (CIP) is a very important method for eliminating contamination. Although many different items must be cleaned at different times and with a variety of detergents, ADEKA was able to reduce CIP time by 50% using the CENTUM CS 3000 system. Steam consumption was also drastically reduced and plant availability remained high.

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For the tracing of data on individual as well as multiple batch processes, the CENTUM CS 3000 features a standard long-term trend function that can store a year's worth of data on more than 200 tags that are sampled at 2 minute intervals. This function ensures complete traceability in batch processes.

It was very tough work to transplant all the complex plant procedures into the CENTUM CS 3000 system. Engineers from ADEKA and Yokogawa Engineering Asia working on the same project team were able to visualize all procedures during the engineering stage. The replacement and testing work for the new system took only two weeks and the plant resumed normal operation with minimum production loss.

### About CIP

CIP is used in many kinds of operations to maintain sanitary conditions. In acid/base concentration measurement, concentrations and methods for cleaning piping and tanks are all different.

To maintain efficiency, reduce energy consumption, and achieve high productivity, it is important to smoothly manage a complex sequence of functions involving the execution of CIP between batch processes.

### About the CENTUM CS 3000 Batch Management Package

The CENTUM CS 3000 Batch Management Package is compatible with the ISA-88 (IEC 61512) batch control standard and 21 CFR Part 11 regulations. Web-based trend, report, and analysis functions support the analysis of batch process productivity, equipment, and recipes.

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## System Details

CENTUM CS 3000 , CENTUM CS Batch 3000 (Batch Management Package)

