Intelligent Information: Production Scheduler Gateway

Colour Control Monitor System

Office Workstations

Generation of Production Reports

Production Schedule

Serial Communication

SQL Queries

Multi-Port Serial Communications

Schedule Recipe Data, Start & Finish

Production Gateway Server (inc. SQL Server)

MELSEC Communication Protocol

Mitsubishi A-Series PLCs
Each controlling a number of textile manufacturing machines
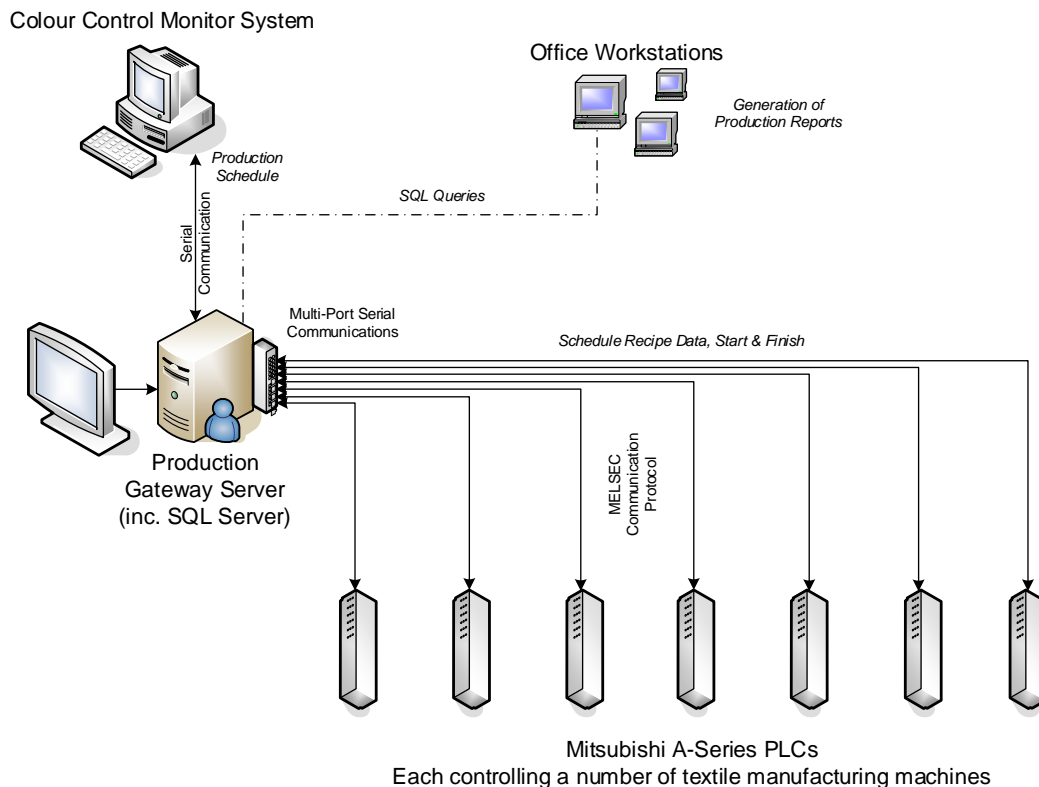
Production Scheduler Gateway Schematic

Overview

The Production gateway server was engineered to replace an obsolete first-generation PC (YEWMAC) with a modern supported system based on a Microsoft SQL Server and enhanced reporting facilities.

Production schedules were sent from the Colour Control Monitor (CCM) system to the Production Scheduler using a bespoke communications protocol. The Production scheduler queued the production batches and assigned them to a Mitsubishi PLC controlled textile machine according to each machine's availability, capacity and properties.

An SQL server was used to hold the production schedules, status and data. Communication with the Mitsubishi PLCs was performed using the MELSEC protocol.

Main Features

➢ Production gateway server based on widely available hardware / operating system software

➢ All communications were service based; no need to be logged onto the Production server

➢ Differing access levels to Production server allowed different functionality; modifying production schedule, recipes and / or equipment status

➢ The use of SQL Server allowed a wide variety of reporting / production analysis packages to be used on Office workstations

➢ All configuration details stored in SQL database tables allowing easy viewing / modification

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