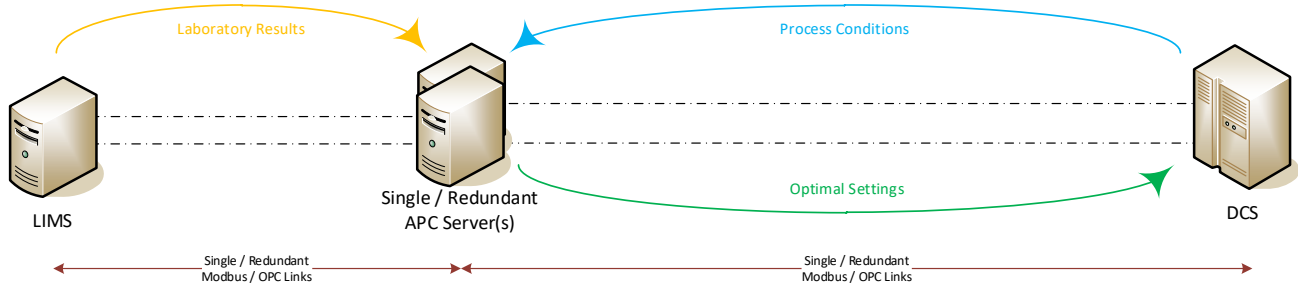# Intelligent Information: Advanced Process Control (APC)

APC Implementation Schematic

Overview

We have engineered a number of robust Microsoft Windows based APC solutions for improving product quality, reducing off-specification material, reducing raw materials and/or increasing energy efficiency.

These APC applications have consisted from rigorous mass balance models including reaction kinetics to simple mathematical algorithms. These models / algorithms predict the optimal process conditions and communicate them to the DCS (Distributed Control System) where they can either be used in open loop (informative mode) or closed loop (actioned mode) control.

Feedback tuning loops can be implemented from online and/or offline measurements e.g., analysers or laboratory results from a LIMS (Laboratory Information Management System), to improve the quality of the models / algorithms in real-time.

The main advantages of placing these models / algorithms in a separate environment (as opposed to being implemented on the DCS) is protection of intellectual property and the need to only test the application once and reuse multiple times.

Main Features

➢ Solution is based on widely available hardware / operating system software

➢ Encrypted solution to protect intellectual property

➢ Once tested can be used multiple times on similar manufacturing processes

➢ Robust OPC / Modbus links – many years operating experience

➢ Data acquired by the APC periodically (or on demand) can be exported in user-friendly formats so performance can be assessed and the models / algorithms refined off-line

➢ APC control shedding algorithms implemented in DCS to disconnect APC control in case of loss of communications or model / algorithm errors

➢ One-off project costs; no on-going licence fees