



INFOTROL & Sherpa

Model Predictive Controller

What is INFOTROL-MPC?

INFOTROL-MPC , a Model Predictive Controller (MPC) from France Sherpa Engineering and INFOTROL Technology, is used in continuous processes.

It integrates with INFOTROL's IPOES sequence automation program to handle all APC features, including On/Off operations, model management, and tuning parameters.

INFOTROL MPC

MPC engine result by France Sherpa and INFOTROL partnership



By adopting Hierarchical model predictive control technology, process control can be configured to various cases



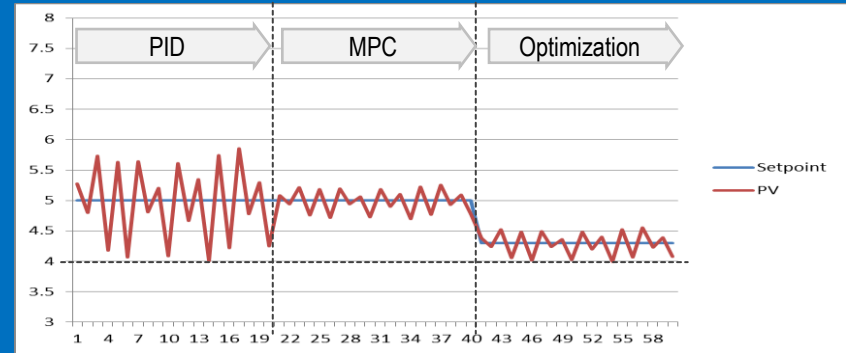
Management by class (module) independently, capable to extended with external program



Model, control variable configuration, controller change is flexible under operating condition change

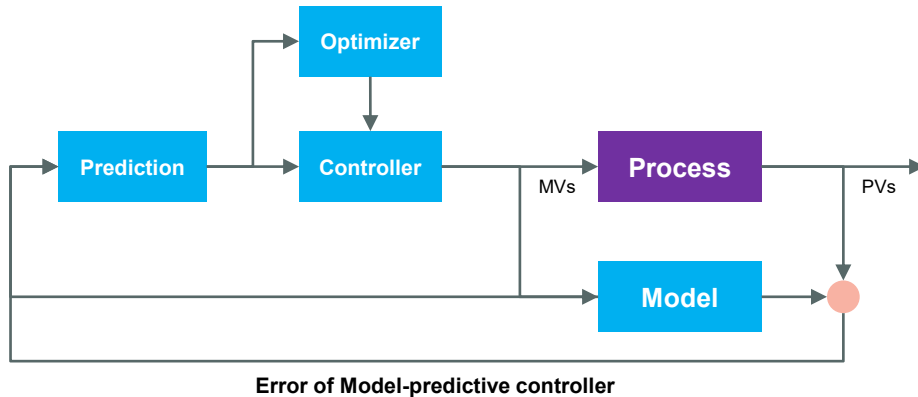


INFOTROL-MPC can be integrated with INFOTROL's solution IPOES or AI vision control to establish fully automatized system



INFOTROL Calculation Process

- **Prediction:** Calculate all of control variable's predicted values
- **Optimizer:** Calculate the best steady-state condition
- **Controller:** Using a process model with the goal of maintaining the predicted control variables within set values or predefined ranges, calculate the optimal control variable trajectory



INFOTROL-MPC : Continuous Process Optimization Controller

- Constructs a dynamic model representing relationship between process inputs and outputs based on actual operational data
- Predicts and controls future output variable movements based on changes in variables using the dynamic model
- INFOTROL-MPC is applied in continuous process optimization and HVAC control fields

PID vs INFOTROL-MPC

- PID control
 - Controls disturbances like reaction heat using feedback
 - Difficult to achieve precise control after error (SP-PV) occurs
 - SISO (Single Input Single Output) Control
- INFOTROL-MPC
 - A model predictive control solution that preemptively recognizes and controls disturbances
 - Controls by considering future setpoints in advance
 - MIMO (Multi Input Multi Output) Control

INFOTROL Integrated solution in BIO industry

- All INFOTROL solutions are operated centrally around IPOES
- Integrated operation enables the automation of the entire operation
 - Automatically change control parameters according to changes in operating conditions

All **Integrated** Solution

- **Process Automation (IPOES)**
- **Model Predictive Batch Reactor Controller (HPCB)**
- **Advanced Process Control (INFOTROL-MPC)**
- **Batch Optimal Production Planning**
- **AI Vision Control (CNN)**

