

Online Process Simulation

Online Process Simulation means the integration between the DCS or SCADA or Historian systems of real operating plant and the **Blue-Print** model of plant's own performance. It is realized by PLANT2CC and PLANT2CCD software and solutions from Nor-Par, running CHEMCAD and CC-DYNAMICS as the engine.

The integration of the **Blue-Print** model with your systems can be done by a variety of mechanisms, for example, via OPC, OLE or Excel.

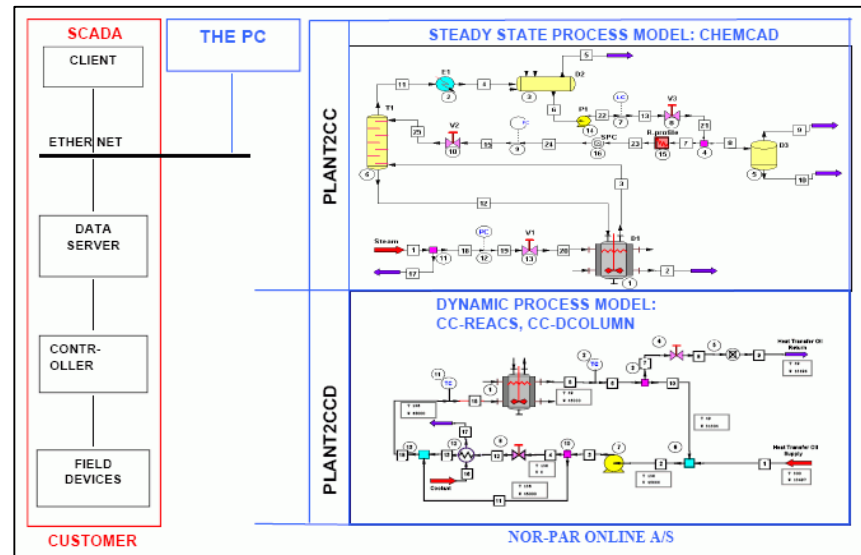
The **Blue-Print** model of the plant's own performance is updated with trusted process and control data from DCS/SCADA/Historian and it provides your systems with synchronous update of the information that cannot be physically measured but only be achieved by process simulation.

Online Process Simulation can provide data that no instrument can measure (for example, heat transfer coefficient at the wall or a reactor; or coke deposit thickness on the inner surface of a tube; or current flooding condition of a distillation column; or thermal efficiency of the entire plant). It will give you process values for plant locations where placing an

instrument is physically impossible or difficult. It will replace the functionality of instruments that are normally not placed in the plant due to high cost. It will reduce the number of expensive laboratory analyses. And Online Process Simulation will give you a calculation of current process economics.

The benefits from applying Online Process Simulation are:

- ✚ Ideal for technologies outsourced by you to your customers and operated by you from central control office
- ✚ Surveillance (monitoring) of performance of critical and expensive process equipment (e.g., reactors, pyrolysis furnaces, large compressors, distillation towers) and better/more accurate control
- ✚ Online steady state or dynamic process optimization: better control of purity and higher yield; better control of emissions and waste from the plant (reduced environmental penalties)
- ✚ Estimation of unmeasured process conditions (soft-sensors)
- ✚ Fault diagnosis and data reconciliation
- ✚ Capital cost savings (reduced installed instrumentation by use of software sensors)
- ✚ Production cost savings:
 - Smarter operation
 - Economic calculations based on the model
 - Significant reducing the amount of expensive laboratory tests
 - Integration with DCS, SCADA, Historian/SAP



Structure of Online Process Simulation