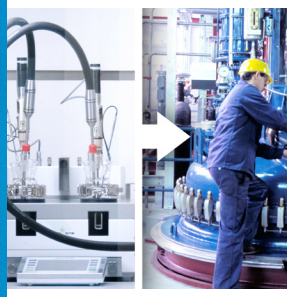
Intelligent Software

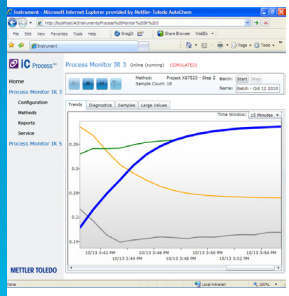
# Seamless Pathway from Lab to Plant

## Linking Process Knowledge to Process Control



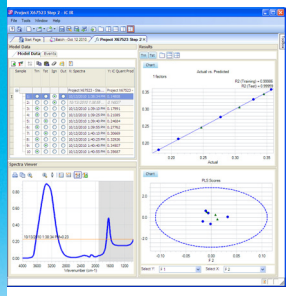
### Transfer Lab to Plant

Data collected in the laboratory is developed into an analytical method using iC software. iC Process™ enables the seamless transfer of these methods to the production environment where they can be used by operators and engineers to monitor the process.



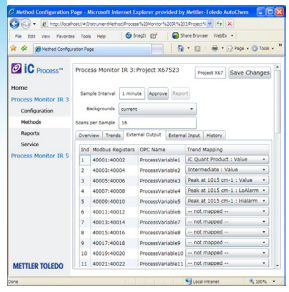
### Simple Interface for Operators

The straightforward web-based user interface of iC Process™ makes it easy for any operator to select an appropriate, approved method and collect data. Trend views allow users to monitor the process and visual warnings quickly notify them of any process upsets.



### Data Analysis for Experts

Data collected with iC Process™ can be easily viewed or analyzed by process engineers or laboratory chemists. iC IR™ provides expert users with a wide breadth of analysis options and can access process data in real time or after a batch is completed.



### Standard Interface to DCS

Due to its specific design for the process environment, iC Process™ supports full communication to Distributed Control Systems (DCS) via industry standard communication protocols such as Modbus and OPC UA.

### iC Process™

Specifically designed for the production environment, iC Process™ enables the transfer of critical control parameters determined in the laboratory. This allows their impact on the process to be followed in production.

The unique user interface gives operators an immediate visual understanding of reaction progress and any process upsets that may occur. Upon designated approval, iC IR™ methods are simply sent to iC Process™ for operator use. Key information can be viewed on the iC Process™ web page or sent to the Distributed Control System (DCS). iC Process™ is the key link to deliver protocols developed in the laboratory to the production environment.

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## Seamless Pathway from Lab to Plant

Linking Process Knowledge to Process Control

iC Process™ provides a simple, web based user interface that enables the transfer of expert knowledge from the lab for the use of non-expert users in the plant.

### Collect Data and Build Model

During the development process, chemists use iC software to collect and analyze data from laboratory experiments and use it to develop analytical methods for PAT (Process Analytical Technology) instruments. These methods are used to collect information on process variables when the process is transferred to the plant. iC Process™ works in combination with iC IR™ and iC Quant™ to deliver an unsurpassed combination of data analysis and modeling tools.

### Transfer and Approve

An important part of the implementation of PAT in the plant is the ability to transfer expert knowledge from the laboratory in the form of a method that can be used by non-expert users. iC Process™ enables the transfer of any template developed for a plant application in iC IR™, where it can be validated and locked, then made available for use by authorized personnel.

### Collect Data and Monitor

Operators can select an approved method and start batches using the simple web interface. Collected data is available via the iC Process™ web page or directly through the DCS. Visual alarms warn the operator of any process deviation so corrective action can be taken.

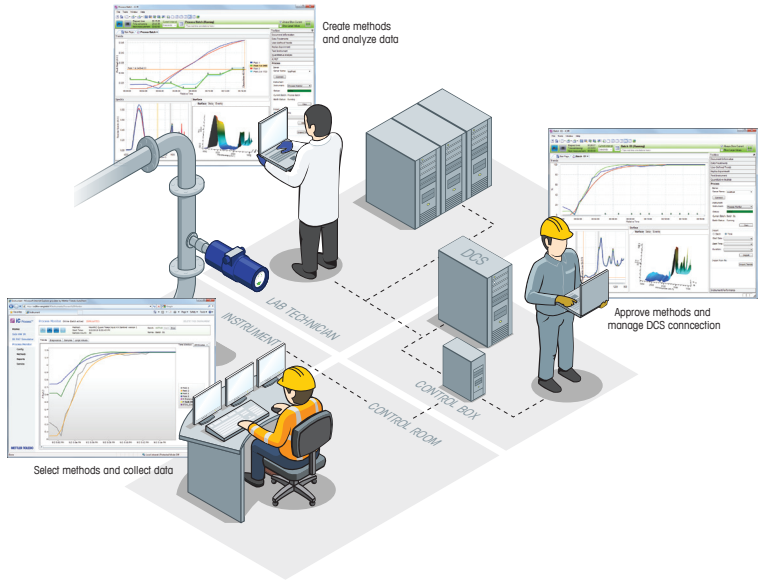
### Conduct Expert Analysis with iC IR™

Key to the ongoing development of a robust process is the ability to take data collected in the plant and use it to learn about the process under development. Data collected in the plant using iC Process™ can be seamlessly transferred back to the laboratory where it can be further studied and analyzed for factors such as batch to batch reproducibility.

### Generate Reports

iC Process™ includes options to produce quick batch reports or details on data collected over a time range.

Additonal details are available using the professional reports generated by iC IR™ and iC Quant™.




**PC Specifications (Minimun Requirements)**

| | iC Process™ Client | iC Process™ Server |
|---|---|---|
| **Operating System** | Microsoft Windows 7™, Microsoft Windows XP™ SP3 | Windows Server 2008, Windows 7, Microsoft Windows XP SP3 |
| **CPU** | Intel Core 2 Duo 2.4 GHz E4600 | Intel Core 2 Duo 2.8 GHz E8300 |
| **Memory** | 2+ GB RAM or more | 3 GB RAM or more |
| **Hard Drive** | SATA 5400 rpm | SATA 7200 rpm |
| **Graphics** | SXGA 1280x1024 with 3D hardware acceleration, including Vertex Shader, Pixel Shader, Texture Support, and Lighting | |
| **Additional Software** | Internet Explorer 8, Microsoft Silverlight 3.0 Runtime, Adobe Acrobat Reader | |

**Supported Hardware**

- iC Process™ software supports the acquisition and evaluation of data from ReactIR™ 247 and MonARC™

### Accelarate Development with iC Suite

The iC Suite of software products support METTLER TOLEDO *in situ* spectroscopy, particle system characterization, precise reactor and calorimetry. iC software integrates the entire experimental workflow making it simple to visualize, interpret and report results.

- **Intuitive, Consistent User Interface**
- **Seamless Integration Between Products**
- **Easily Transform Data into Information**

To learn more visit **www.mt.com/iC**

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