iC Process™ 4.4 for FBRM

Release Notes

Dear Customer,

Thank you for purchasing iC Process 4.4 for FBRM, the simply powerful software package for connecting the lab to the plant. Everything you need to install and run iC Process 4.4 for FBRM is stored on the installation media (CD-ROM or downloaded zip file).

Contents of the Installation Media

- iC Process 4.4 for FBRM software installer (AutoRun.exe)
- iC Process 4.4 for FBRM Release Notes (this file)
- iC Process 4.4 for FBRM Installation Guide
- iC Process 4.4 for FBRM Documentation Portfolio

For optimal viewing of the Installation Guide and Documentation Portfolio, use Version 9 or greater of Adobe Acrobat Reader.

Installation Guide and System Requirements

Please install iC Process 4.4 for FBRM according to the installation guide which can be found on the installation media. This also describes the minimum PC requirements to install and run iC Process 4.4 for FBRM.

User Guide

The iC Process 4.4 for FBRM Software User Guide can be printed by the user from the PDF included in the Documentation Portfolio.

Customer Support

If you encounter any issues with iC Process 4.4 for FBRM, please don't hesitate to contact your sales representative or service engineer, or contact us at:

support.msg@mt.com for General Support on your FBRM Instrument

iC@mt.com for Software Support

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Feature Summary Table

Key features of iC Process 4.4 for FBRM.

Feature	iC Process 4.3 for FBRM	iC Process 4.4 for FBRM
Easy Data Collection and Instrument Control		
Support for ParticleTrack™ G600/G600Ex and E25 instruments	✓	✓
Support for ParticleTrack™ C35/C35Ex and FBRM® D600 instruments	✓	X
Easily apply iC FBRM™ templates created in the laboratory to the production environment	✓	✓
Authorized users can adjust common method parameters directly from iC Process interface	✓	✓
Authorized users can create and approve methods for execution on the instrument	✓	✓
Easy to use Calibration Validation and System Calibration interface	✓	✓+
Intuitive Data Analysis and Visualization		
Easy, web enabled operator interface to start and monitor runs and batches	✓	✓
Three stacked trend graphs and distribution display for process analysis	✓	✓
Up to two Chord Selection Models can be used simultaneously for ParticleTrack G600/G600Ex	✓	✓
Up to two Chord Selection Models can be used simultaneously for ParticleTrack E25	X	✓
User can capture instant reference distribution for data comparison	✓	✓
Import production data into iC FBRM software for analysis	✓	✓
Quick Reporting and Data Exchange		
Create method, run, and batch reports in a non-editable XPS format	✓	✓
Automatically generate daily archive file and summary reports	✓	✓
Interface to a DCS or other client application via Modbus	✓	✓
Interface to a DCS or other client application via OPC UA	✓	✓+
Interface to a WITSML server to upload statistic trend values	✓	✓
Ability get distribution data via OPC UA interface	X	✓
Compatibility and Support		
Provide audit log to support 21 CFR Part 11 requirements	✓	✓
Microsoft® Windows® 7 support	✓	✓
Microsoft® Windows® 8.1 Support	X	✓
Easy to send system log files and activate license options	✓	✓

✓ = Supported feature   ✓+ = Supported feature with enhancements   X = Not supported

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These release notes summarize the key features of iC Process for FBRM.

Enhancements for Version 4.4

Full Support for Microsoft® Windows® 8/8.1

iC Process FBRM 4.4 fully supports the 32-bit and 64-bit versions of Microsoft® Windows® 8.1 as well as Microsoft® Windows® 7. Note that Microsoft® Windows® XP and Vista are no longer supported.

4 m/s Scan Speed Supported for ParticleTrack G600/G600Ex instruments

Both 2 m/s and 4 m/s scan speed options are now available for the ParticleTrack G600/G600Ex instruments. Users may configure their instrument to scan at either 2 m/s or 4 m/s.

Dual CSM Supported for E25

iC Process for FBRM 4.4 now allows users to select two Chord Selection Models (CSM) for ParticleTrack E25 instruments. Distributions from one or two CSMs can now be viewed simultaneously during the live experiment or during data analysis after the experiment is complete. Previously this was only supported for G600/G600Ex systems.

Enhanced OPC UA Server for Real-Time Access by a DCS

Now the OPC UA server supports users to get the current Chord Length distribution (up to 2 CSMs). Previously supported features are still supported:

- Load and run an approved method
- Start, stop, pause or resume running a method
- Start or stop a batch
- Get the current probe status
- Get statistics trends, diagnostic values, and their alarm limits
- Read process variable values mapped within a method

Discontinued Features for Version 4.4

Discontinued Support for Legacy FBRM D600 Instruments

iC Process for FBRM 4.4 does not support Legacy D600 series instruments. iC Process for FBRM 4.3 is the final version to support FBRM D600 systems. If you are interested in trading in a legacy FBRM system for credit towards a new ParticleTrack instrument, then please contact your local Mettler-Toledo Sales Representative.

Discontinued Support for Legacy C35 and ParticleTrack C35 Instruments

This version does not support any C35 series instruments so customers with C35 systems should not upgrade to iC Process for FBRM 4.4.

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Known Issues

No.	Issue	Description and Workaround
1. FB39427	**ParticleTrack USB Interruption** Data collection does not always recover after a USB interruption. This affects ParticleTrack instruments which are connected via the ThinkLogical USB fiber extender	During an experiment, if the USB cable is disconnected then reconnected to the PC, data collection usually recovers within 2 minutes. On some occasions the recovery fails. If this happens, power cycling the field unit, leaving it off for about 15 seconds, should enable the software to recover and resume data collection.
2. FB38221	**Other iC Web-based Products on same computer** iC Data Center™, iC Process for IR and iC Process for FBRM share the same URL as home page by default	Please contact Mettler Toledo if you have two of these products installed on the same PC. Instructions will be provided so all products can be used on the same PC simultaneously.
3. FB38948	**Calibration and Service Screen Refresh** Test results might be blank if user navigates away from calibration or service page	The result is not lost even if the display might look blank. All test results are captured by the server and documented as reports. Do not navigate away from calibration or service page when a test is in progress if you would like to view updates.
4. FB38867	**Invalid Service Test Failures** Service test may fail due to effective duration diagnostic being low for the first sample.	If the Effective Duration in iC Process Service test fails, look at a trend of the Effective Duration. If only the first value in the trend is below the low limit, the test can be passed. If multiple effective duration values are below the low limit, the test should be failed and the cause should be investigated.

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No.	Issue	Description and Workaround
5. FB38354	**Instrument Control with iC Process and iC FBRM** Installing or starting iC Process server service shall interrupt iC FBRM experiments.	When iC Process for FBRM and iC FBRM are on the same PC, iC Process for FBRM takes control of the hardware connection if any experiment is running within iC FBRM. Do not run experiments using iC FBRM when the iC Process service is running. Users should use the Process task pane in iC FBRM to monitor the data collection.
6. FB39303	**iC Process and iC FBRM Configuration Mismatches** Software might crash if the instrument configured in iC FBRM is different from what is defined in iC Process FBRM.	When iC Process for FBRM and iC FBRM co-exist on the same PC, iC Process will be the main control software for the instrument. The instrument defined in iC Process and iC FBRM should be the same type.
7. FB40023	**CSM Licensing with iC FBRM** Software license options for Chord Selection Models activated in the iC FBRM software might not be displayed as licensed in iC Process	If a user activates the license options for Chord Selection Model within the iC FBRM software, the CSM license in the iC Process client is still displayed as unlicensed. Either activate the CSM license again in the iC Process client (using the same activation codes), or restart the iC Process for FBRM server and web client to see the refreshed CSM license status.

Issues Addressed in Service Pack – Version 4.3 SP1

Data Missing in Auto-Archive for Time Zones with Plus GMT Times

There is a recently discovered issue with some time zones that are defined as 'n' hours plus GMT (Greenwich Mean Time) and auto-archive. The experiment data between 00:00:00 and the 'nth' hour was NOT captured in the automatically generated iC FBRM archive experiment files for certain time zones. This issue impacts iC Process server running in any of the 'GMT + n hours' time zones (such as continental Europe and Asia) but has no effect on time zones that are behind GMT (such as North and South America). It impacts continuous runs and the archive data generated for 'between batches'. It doesn't impact the batch runs since the batch archive is generated at different time. This issue has been resolved in the service pack.

Modbus Interface Improvement

The original interface was developed expecting a pulse from the Modbus coil to initiate a start, stop or change value. The interface has been modified to also handle equipment that provides a constant signal.

Features for iC Process for FBRM Version 4.3

Specifically designed to enable the monitoring of critical process parameters determined in the laboratory and in the production environment, iC Process provides a unique, simple user interface that gives operators an immediate visual understanding of reaction progress and any process upsets that may occur. iC Process supports industry standard communication protocols for interfacing with Distributed Control Systems (DCS).

Seamless Pathway from Lab to Plant

iC Process is the key link to transfer standard operating protocols developed in the laboratory into the production environment. iC FBRM™ templates are easily imported in iC Process as the foundation for a method and then approved for operator use. Key information can be viewed on the iC Process web page or automatically delivered to a Distributed Control System (DCS).

Support for ParticleTrack™ G600/G600 Ex, ParticleTrack™ E25, ParticleTrack™ C35/C35 Ex and FBRM® D600 Instruments

All ParticleTrack™ and FBRM® instruments utilize FBRM measurement technology to track the rate and degree of change of particles and droplets as they occur in their actual process environment. Inline measurements of particle dimension, count and shape are recorded in real time without the need for sample extraction or dilution. ParticleTrack™ is the brand name for all current instruments featuring FBRM technology.

ParticleTrack™ instruments include onboard smart chip technology for storage of critical calibration and system configuration information – providing better security and traceability in

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experimental and process FBRM data. Earlier versions of G600 and C35 models (FBRM® G600 and FBRM® C35 systems) may be compatible with iC Process for FBRM with a ParticleTrack™ hardware upgrade. Please contact AutoChemCustomerCare@mt.com or your local service representative if you have questions about the compatibility of your specific hardware.

Method Updates, Approval and Logging

The iC Process web interface allows Process Analytical Technology (PAT) engineers to review and approve methods before they are available to the operator. Frequently modified parameters, such as averaging settings, can be modified directly on the method page without the need for iC FBRM™. Target and reference distributions can also be specified. Any changes made to the methods are captured in a log file that is easily viewed from the iC Process user interface.

Simple Interface for Operators

A web based user interface makes selecting methods and collecting data simple and straightforward. Trend views allow operators to monitor the process, and visual warnings quickly notify them of any process upsets.

Instant Capture of Reference Distribution for Comparison

Users can capture the most recent distribution as an instant reference distribution to help with data comparison during the live run and/or calibration tests. This instant reference distribution can later be used as part of the method to help track process changes.

Standard Interface to DCS using Modbus TCP-IP

iC Process supports full communication to Distributed Control Systems (DCS) via the Modbus industry standard communication protocol. The links are easily set from the iC Process web client.

OPC UA Server for Real-Time Access by a DCS

iC Process 4.3 for FBRM can be configured to include an embedded OPC UA server for real-time access to iC Process features and data by a Distributed Control System (DCS) or other OPC UA based client applications. Please refer to the iC Process 4.3 Installation Guide for details on how to set up the OPC UA server.

The OPC UA Server supports similar functionality to the Modbus Server, such as:

- Load and run an approved method
- Start, stop, pause or resume running a method
- Start or stop a batch
- Get the current probe status
- Get statistics trends, diagnostic values, and their alarm limits
- Read process variable values mapped within a method

OPC UA can restrict or allow client access based on the OPC UA client user's permissions in iC Process for FBRM.

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Interface to External WITSML Server

Specifically designed for oil-field and drilling rig applications, iC Process for FBRM supports the transfer of selected statistics to an existing WITSML server.

Comprehensive Trend Viewer

Users can select up to 6 statistics trends or key diagnostics to be simultaneously viewed in three stacked trend graphs. If a target distribution has been specified for the method, the target value for the associated statistic trend is displayed as a dotted horizontal line, in addition to the high/low alarm limits.

Data Analysis for Experts

iC Process for FBRM makes it easy to access process data in real time or after a batch is completed. All data collected using iC Process for FBRM can be viewed and analyzed in iC FBRM™ using the analytical tools developed for expert users.

Reporting

iC Process allows batch, run, and method reports to be generated in XPS document format. XPS (XML Paper Specification) was developed by Microsoft to provide a read-only definition for document layout and formatting (similar to what an Adobe PDF provides). The XPS reader software is included with Microsoft DotNet 3.0 (this is a free add-on that is installed with many software packages, such as iC Process and iC FBRM™) and is part of the standard Vista and Windows 7 operating systems).

Daily archive reports are also created automatically.

Support for System Calibration for ParticleTrack™ G600/G600 Ex and ParticleTrack™ C35/C35 Ex Instruments

The iC Process web interface provides an easy way for users to perform system calibration according to the System Calibration procedures in the "iC Process for FBRM Software User Guide". Reports are automatically generated to capture the system calibration results.

Support for Calibration Validation for ParticleTrack™ G600/G600 Ex, ParticleTrack™ E25 and ParticleTrack™ C35/C35 Ex Instruments

Calibration Validation of ParticleTrack™ instruments is recommended every 3 months. The iC Process web interface provides an easy way for users to perform this function according to the Calibration Validation procedures in the "iC Process for FBRM Software User Guide". Reports are automatically generated to capture the calibration validation results. During instrument calibration validation, users may use original sample, replacement sample, or other material.

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