TrueQuant™ v3.1.3 Release Notes

TrueQuant v3.1.3 is a minor update that adds support for several new FMT instrument configurations. The v3.1.1 and v3.1.2 updates included improvements to the reconstruction module. For convenience, these release notes combine the notes for this release with those for TrueQuant v3.1 and the v3.1.1 and v3.1.2 updates.

Before You Install

TrueQuant v3.1 is a significant new release. Before you upgrade from a previous version of TrueQuant, please review the small number of very important notes in this section.

1. The reconstruction module has been updated. The new reconstruction module preserves the existing instrument calibration while reducing the intensity of false positives in the reconstruction. For consistency, it is recommended that you do not install this update in the middle of a study. However, if you choose to do so, the scans that were acquired prior to the update can be re-reconstructed after the update, provided that you are using Fast Reconstruction or are upgrading from TrueQuant v2.1 or later.

2. If you are upgrading to this new release from a version older than v3.0, you must follow the "Before You Install" instructions from the TrueQuant v3.0 release notes when upgrading to v3.1, with one exception that is detailed here.

   While this release of TrueQuant includes changes to the database structure, or "schema," it is no longer necessary for all investigators to ignore their remote databases before performing an upgrade. All databases will need to be upgraded on the Host PC and/or Data Storage Server before being used remotely, but this process does not require those databases to be ignored and re-noticed by remote users.

   Once the databases have been upgraded on the computer where they are hosted, any remote users of those databases will be able to use them after upgrading those remote computers to TrueQuant v3.1. As with any software upgrade, it is strongly recommended that you schedule a time for the upgrade when users will not need immediate access to their data.

3. This release can be installed as an update to v3.0 without first uninstalling the older version of TrueQuant. Simply run the TrueQuant v3.1 installer from the install disc to update your existing installation. If you are upgrading from a release of TrueQuant prior to v3.0, you will need to uninstall that older release before installing this new version.

New Features

TrueQuant v3.1 includes new features in several areas:

Reconstruction

1. The reconstruction module has been updated. The new versions reduces the intensity of artifacts near z=0 in the reconstruction while preserving the existing instrument calibration. Old scans that had been previously reconstructed may be re-reconstructed using this updated recon module as long as the scan's calibration is compatible with the new recon module. These re-reconstructed scans will be saved as duplicate scans alongside the originals, with notes in the scan descriptions to indicate this.

Scan

1. Higher sensitivity scanning can be enabled in the Scan tab's Advanced Settings window. This enables the detection of fainter sources of fluorescence, but also increases the chances of saturation from bright sources of fluorescence. See the Operator Manual for details.

Analysis

1. A new pair of buttons in the Analysis tab enable a user to export a dataset's ROIs to an ROI template file and then import them at a later date for use with any number of datasets. This enables "cloning" of ROIs across studies and even across databases.
2. The visualization controls in the Analysis tab have been reorganized. Controls to manipulate display of the 2D reflectance images have been grouped together, as have the controls to manipulate the display of the 3D tomographic data. This simplifies the user experience and takes up less space so the window fits more easily on standard laptop screens.
3. The state of the enable/disable ROI clipping button is saved on a keyframe-by-keyframe basis when creating movies.
4. The font size and decimal precision used for the colorbar in exported images is customizable. These settings are saved in individual users' preferences, so each subsequent image export will use the same settings as the previous one.
5. Setting the threshold on a 2D ROI automatically sets the 2D displayed minimum for that ROI's dataset, while setting the threshold on a 3D ROI automatically sets the 3D displayed minimum for that ROI's dataset.

Agent Management & Calibration

1. The list of PerkinElmer agents included in TrueQuant's agent database has been updated to include all agents that are commercially available as of April 2012.

Administration & Diagnostics

1. The TrueQuant Admin includes a new Configuration Manager window to help diagnose problems with SQL Server, Windows shares and other pieces of external configuration that are required for TrueQuant to run properly.
2. Local databases can be ignored directly from the TrueQuant Admin.
3. Log files from the Recon Queue Service and the Recon Queue Manager are accessible using log viewers in the TrueQuant Admin.
4. The log viewer window is responsive to user input more quickly after being opened, even with a large number of log files. Older log files are loaded in the background once the most recent log file is displayed.
5. The Refresh button in the log viewer updates without having to re-select the date range, as long as the selected date range includes the most recent log entries.
6. All windows in the TrueQuant Admin are non-modal. That is, they can be left open while working with other Admin windows.
7. The split is now adjustable between the top and bottom sections of the TrueQuant Admin's Database Administration window.
8. The User & Groups Administration window is now resizable.

Installation

1. If the recon queue service was running using custom credentials prior to upgrading TrueQuant, the installer will display a reminder at the end of the upgrade that the service's credentials will need to be reset. This configuration is common only in environments that include a Data Storage Server.

Miscellaneous

1. The version of the Microsoft Visual C++ Redistributable has been updated to include the latest security patches.

Bug Fixes and Enhancements

Reconstruction

1. Fixes an issue in the reconstruction module that could cause erroneously high levels of background signal to appear in reconstructions using the 790 nm channel, especially in animals that had little or no detectable fluorescence. Scans on the 790 nm channel that were previously reconstructed using an older version of TrueQuant can be re-reconstructed simply by adding them to the reconstruction queue, as long as the scan's calibration is compatible with the new recon module. Duplicates of the scans will be created, and those copies will be reconstructed using the latest version of the reconstruction module.
2. Fixes an issue that could cause reconstructions to fail for scans with a scan pitch of 5mm or larger.
3. Improves performance of the reconstruction module on 64-bit systems.

Experiment

1. Fixed an error that could cause TrueQuant to crash when attempting to view certain types of scans using the thumbnail viewer.
2. Fixed an application crash that was caused by deleting a study group and then navigating to the Analysis tab if some of that group's scans had been loaded in the Analysis tab at the time they were deleted.

Analysis

1. The Analysis tab has significant performance improvements when using multiple panels to view datasets side by side.
2. Movies no longer look distorted if the TrueQuant window had a different aspect ratio from the output movie at the time the movie was created.
3. Fixed an issue with the Thresholding Advisor where setting the threshold to zero would erroneously include empty voxels in the post-thresholding statistical calculations.
4. Fixed a race condition that could cause a crash when adding an ROI to a study in a remote database.
5. Fixed an error caused by deleting the active ROI along other ROIs in the table.

Database

1. Eliminated erroneous log warnings when moving a study that contains 2D scans from one database to another.

Reconstruction Queue

1. If a user logs in to Windows immediately after a reboot and before the TrueQuant Recon Queue service has had a chance to start, the Recon Queue Manager will wait up to 25 seconds for the service to start before attempting to connect to it. A conflict between the Queue service and the Queue Manager when they attempt to start simultaneously has also been resolved.
2. Tomographic scans with a cassette depth of 0 mm cannot be added to the recon queue. To add these scans to the queue, their depth must first be corrected using the Advanced tab of the scan's Properties window.
3. Fixed a rare error caused by attempting to remove the active reconstruction from the queue after it had completed but while it was still listed in the Queue Manager window.

Agent Management & Calibration

1. Agent names are no longer truncated in the Agent Calibration window when they first get calibrated.

DICOM & PACS

1. Fixed an error when exporting a DICOM series of a mouse scan that was taken using the MSIM mouse cassette docking station insert.
2. Fixed an issue where the presence of bad pixels or partial bad columns could prevent fiducial marks from being exported with DICOM series.

Administration & Diagnostics

1. When moving a database's image data from one image data location to another, only the configured image data locations can be selected.
2. The free space available in each image data location is updated after moving a database's image files from one location to another.
3. All optical alignment and calibration functions work properly on FMT 1000 systems with a 750 nm laser.
4. Fixed the instructional text during the pixel scale measurement so it indicates the correct orientation of the test fixture.
5. The TrueQuant Admin sets the correct ACL on the replication data folder itself rather than on its parent folder.
6. Eliminated an erroneous error message that was generated when a database with no owner had an owner assigned to it.

Miscellaneous

1. The protocol order for the SQL Native Client is set correctly for new installations of TrueQuant.

Known Issues

1. If a database becomes unavailable due to a network issue, it cannot be reconnected to simply by re-selecting it in the Experiment tab once the network issue is resolved. To reconnect to an unavailable database, first select a different database in the Experiment tab. Once that database has been activated, re-select the previously unavailable database, and it will be re-activated.
2. The installer does not set permissions correctly on the default fmtdata share on Microsoft Server 2003. In this case, the share's permissions must be set manually as described in section 4.2.2 of the IT Setup Guide.
3. Unless the MSIM cassette calibration has been performed on the local computer, users will not be able to select "MSIM" as the cassette type when exporting a scan as a DICOM series. Therefore, scans acquired with the MSIM cassette will only include fiducial marks when exported to DICOM series from the FMT Host PC. This is because positioning the fiducial marks correctly in the exported images requires using the calibration information for the cassette, which exists only on the Host PC.
4. When deleting a scan that has been used to create a computed dataset, TrueQuant will quit with an unexpected error if any of those computed datasets are loaded in the Analysis tab. To avoid this program crash, unload any computed datasets from the Analysis tab before deleting one of their parent scans.
5. If any background ROIs are modified after using the "Optimized" setting in the Thresholding Advisor, those ROIs statistics and therefore the threshold will not be updated if the Thresholding Advisor is re-opened. If TrueQuant is closed and re-launched between uses of the Thresholding Advisor, the ROIs will update properly.