

**To:** Eclipse ImageEncoder Agreement & Warranty Customers

**Date:** March 21, 2012

**Subject:** IEScheduler/ImageEncoder 5.0 Beta PR3

**Summary:**

This TechFlash is to notify all CD/DVD and BD support agreement & warranty customers of the availability of IEScheduler/ImageEncoder 5.0 Beta Pr3. This BETA software is our release candidate and has undergone limited testing and is being made available as-is. The IEScheduler/ImageEncoder 5.0 Pr3 is based on the analysis engine from the EclipseSuite 9.0 and EclipseSuite BD 4.0 releases. This email discusses the key features, enhancements and fixes to the encoder only. All format and rule enhancements & fixes are covered in the TechFlash for EclipseSuite. Please contact Eclipse Customer Support for a copy of the EclipseSuite 4.0 BD or ES 9.0 CD/DVD TechFlash.

**Key Features**

**BD Specific**

- Improved support of 3D images
- Support for BD BCA in mastering (option for all Eclipse BD ImageEncoders)
- Improved support and communication with the RMU-7000
- Support for Fortium Blu-Lock copy protection
- Added Sony PTM Scheduling Capabilities
- Support for Bus Encryption
- Added AACS Integrity checks between CPS Unit Usage file and titles
- Enhanced PCF file support to BI file
- BD-Recordable support updated for PTM and PanaClient integrations
- Support added up to and including BDCMF 1.21
- Title structure enhancements for BD-Plus continued support

**CD/DVD Specific**

- Signed CSS Support
- DVD RAW encoder support updated (option for ImageEncoder)
- Added support for several new drives for the CD/DVD encoders (listed at the end of the document)

**General (applies to ALL ImageEncoder Systems)**

- Backup/Restore Procedure has been significantly updated to work with all Windows 7 and Windows XP encoders.
- Windows 7 support\* enhanced
- All help has been converted to html and updated. Error Messages are being updated for the formal release
- Support for Verance Cinavia Watermark
- Added support for the \$ui\_signature prompt to **automatically** insert short signature data from **Image** into the IRG or ORG.
- Added stepping cut support to the PWM feature (note the PWM feature is an option for all Eclipse ImageEncoders).
- Added enhancements and functionality to the SIF/SRF interface.
- Added more ImageSharing enhancements
- Added ESP reference clock calibration to fine tune the clock frequency
- Improved IEScheduler opening speed on a large networks with many images in the queue or specified image directory

- Support added for a new calibration band type – Type=CAL
- Eclipse Gather File (EGF) Enhancements – make sure correct files are collected to reflect new integrations.
- Several enhancements were made to the ESP Control Panel, see details below.

\*PCI encoder card (generation 1 encoder) customer must run under Windows XP, 2K or NT only.

## **Fixes & Enhancements**

### **IEScheduler**

1. Improved the job queue on IEScheduler. This includes the slowdown reported on opening IEScheduler when connected to a large network of images. This also includes counts and on screen updates that sometimes were out of synch.
2. Improved the ImageSharing capabilities of IEScheduler that allows jobs to be mastered from multiple encoders and allowed sharing of images.
  - a. Fix bug causing remote images to not show up in the queue as they were added using file Input. This occurred when a previous JI file did not exist and ImageSharing was disabled. See email "Mastering Queue not updating".
  - b. Allow ImageShared local images to show up in the queue list too. Previously, if the image was not in the monitored image directory but it was on the local machine, the job would not show up in the list.
3. Created new Full Scheduler Mode for the PTM integration. This includes FULL AUTOMATION and some PTM SCHEDULING control.
4. Improved the communication for the Sony PTM integration. The changes were based on the AUTOMATION mode which cleaned up problems when the system was placed into error conditions. This sometimes caused PortIO communication problems on the COM layer.
  - a. Fixed end of job condition causing the next PTM job to abort with the error "Port Automation: Empty directory Specified".
  - b. When running under PTM automation, the code will always choose one of the default BI files specified in the job control configuration defaults.
  - c. Integration with SIF/SRF protocol.
5. Significant SIF/SRF integration changes. This also includes SIF/SRF protocol when configured on a PTM. See details below in integration notes.
6. Several fixes for the continued support of Windows 7
7. No longer write the RMC file to the imagetools directory by default. Instead, if the RMCPATH entry is not set in the registry, only write it to the image directories.
8. Added more changes for Signature support in ImageEncoder.
9. Added support for the \$ui\_signature prompt to insert Short Signature data into the IRG.
10. Added three new options in the job drop down control for "View Directory", "Copy Signature To Clipboard", "Copy Master ID To Clipboard".
11. Fixed a condition where IRG preview would chop off the top and bottom of the annulus displaying the band.
12. Fixed a bug when importing DDP files while copying an image where certain DDP files were not being imported, which causes copying to abort. The import from floppy function now parses the DDPMS file to look for the correct filenames to import. This is in addition to the original method of using hard-coded DDP file names.
13. Added tool-tips for the copying status controls that will display the full status message.
14. Significant improvement on the RMU-7000 communication. Also extra enhancements to prevent users from making mistakes when working with multiple RMU units across more than one PTM.
  - a. Add in validation of serial number and from/to dates in the name of the RMU license data file. Also, change the name/size of the HW (calibration) update button.

- b. Fix issue with displaying the correct RMU COM port in the dropdown control in the RMU Service Dialog.
  - c. Add in the Check Box "RST Update". Allows an extra update option when having license update issues.
  - d. If RMU-7000 license is expired, a more informative message will appear.
  - e. Fix issue with RMU Service Mode control panel to increase timeout when doing the license update. If the timeout is too low, the update fails.
15. Eclipse Gather File Enhancements
- a. Expand EGF file to include any other EGF in the image directory created within the last 10 minutes. This allows the EGFs created by IES running under the automated SIF interface to be picked up by INET.
  - b. Add "\_IES" to the EGF file to indicate which app wrapped up the archive file.
  - c. Add a preference option to copy the IEScheduler built EGF back to the original image directory when it differs.
16. When a user chooses to overwrite the JI file during the file input operation, overwrite the JQ file too.
17. Fixed the layer 1 PWM condition when no steps are defined in the pulse control file. In this case we were not defining any step, but the table needs at least one step, even if it encompasses the entire disc.
18. Do not complain and display an error if a band's settings (i.e. – laser power) are incorrect when the band is disabled.
19. Changed code to use single quote character (') to preserve leading and trailing barcode and text irg prompt data. Double quotes are no longer being stripped when reading from the JI file.
20. Fixed the PA end radius parameter sent to IE (which displays on the info tab/LBR button) so it reflects any overridden value from the BI file, when "Preferences – Override IEScheduler.INI settings with BI file settings" is set.
21. Fixed the FormulaMethod override from BI file. Previously if it was set to maximize track pitch (value of zero) the override would be ignored.

### ImageEncoder

1. Implemented several changes to support BD BCA in mastering.
2. Implemented enhancements to allow control over the BCA flag in the PIC information.
  - a. if BCA override in PIC is enabled, do this for both the single layer DI and now for the dual layer DI as well.
3. PTM scheduler integration enhancements and bug fixes. This ties into the changes made in IEScheduler.
4. Fixed condition where layer 1 jobs could set the layer to zero when an existing JI file was found with invalid contents, or the job was DVD and the original JI file did not exist.
5. Enhanced the IEScripting Copy protection support for BD and DVD jobs. These functions were added to support multiple copy protection companies as they develop further on the ImageEncoder platform.
6. Cleaned up support for a Type CS image for BD.
7. Continued support for 3D BD
8. Support calibrated reference clock. This is required for very precise integrations and customers that would like to fine tune and calibrate the master clock. The calibration requires a frequency counter. Contact customer support for the current procedure.
9. Fixed an issue with RMU-7000 getting an erroneous dongle expired message
10. Support added for TCDI band. Used in the SIF/SRF integration and Nimbussio.dll.
11. Fixed issue where the "Digital Silence" rule is triggered incorrectly with some CD-DA images.
12. Changes to make RMU fail if the SW switch is OFF, but the HW switch is ON.
13. If RIU-2000 detected, use the default timeout rather than what is in the registry for the RMU-7000.
14. Add support for RMU-7000 'DCHK' command to get feedback from the unit if it successfully writes the ROM Mark. This requires a certain version of the RMU FW that supports this communication with the ImageEncoder.

15. Fixed the function waiting for the initial job start TTL line (ESP control INI parameter WaitForJobStartTTL) so it can now support only a rising or falling edge. Previously the wait parameter had to be specified (e.g. ORW) so the code would look for both edges in order to use the setting.
16. Make certain ImageEncoder returns a proper error value when it encounters a checksum error (only known at end of job). Previously IES would show the job finished with errors and it was not obvious to the operator there was an abort condition.
17. Added a display tab for dongle information, this is located under the Info tab on the ImageEncoder UI.
18. Do not show "User terminated Job." Error rule when a true error has been encountered on job shutdown. Previously (for instance) if a checksum error was set, IE would also show this rule.
19. Allow post MAIN IRG bands no matter if we are cutting OTP or w/CutOTPIRGForward = TRUE.
20. Support added for Signed CSS.
  - a. Add new SSCRST types 8 (encrypted, not hashed) and 9 (encrypted and hashed, not signed). IE will refuse to master these images. The images must be completed and returned to SSCRST 2 after CC signing.
  - b. SL and DL support
21. Support for the CBHD Format
22. Implemented setting ESPTTLStart in the INI file for any layer.
23. Changes for SETTEC Copy protection
24. Support BI specified Philips RMI PCF files. To use the new functionality specify the full path to the PCF file in the BI file's general section: [General] PCFFile = <full path and file name>.
25. Fixed a band sort bug causing the CTO band to be skipped when mastering a layer 1 image with the PCI encoder.
26. Support a new option to extend the cutting of the last area on main band (outer area on SL and LO, inner area on L1 OTP).
27. PWM FIRMWARE now supports IdleData output

### RemoteScheduler

1. Improved the job queue on RemoteScheduler. This includes the slowdown that had been reported on opening RemoteScheduler when connected to a large network of images.
2. Fixed a bug when importing DDP files while copying an image where certain DDP files were not being imported, which causes copying to abort.
3. The import from floppy function now parses the DDPMS file to look for the correct filenames to import, in addition to the original method of using hard-coded DDP file names.
4. Added tool-tips for the copying status controls that will display the full status message. The status message display was being cut off when the message is too long.
5. Added 3 new options in the job drop down control for "View Directory", "Copy Signature To Clipboard", "Copy Master ID To Clipboard".
6. Fixed issue when changing the queue or queue status filters. The timeout was incorrectly set to 3.75 seconds instead of 60 seconds.
7. Fixed some problems with Signature support.
8. Allow two different queues to co-exist in the same directory.
9. Fix bug where a queue change while editing a job was not getting saved.
10. Make sure IC is given a log file that is unique and delete the temporary IC logs after copying them to the image directory.
11. Create a new INI file entry [general] FileInputPath=<default directory path> to specify the default location to begin the File Input directory search. When a BI file references an ERP file using a full path, extract the file and use only it to look up the entry in the combo box.
12. Fixed issue when the IRG source file is a UNC path reference
13. When waiting for the prescan to finish and the copy stage to begin in the ICThread, also watch for an abort condition.

### **IRG Designer**

1. Added support for the \$sui\_signature prompt to insert short Signature data into the IRG or ORG.
2. Added support for BD BCA

### **ESP Formatter (2.0)**

1. Added support for [Encoder] JobAbortedTTLout= in the .erp to set an output pin on a job abort.
2. Prepit formatter version 1.41: support the newer version 0x0200 PitAPI.DLL. Prior to this release, any DVD-R job would support only the older 0x0100 version of the PitAPI.DLL.
3. Added Help button to the main dialog screen.
4. Added in delay mechanism (specified in milliseconds) for the BCA zone end and wide area track pitch end TTL output signals. The settings are specified in the [Zone\_BCA] and [Zone\_HFM] areas with the parameter TPChangeTriggerDelay\_ms. The delay can be positive or negative.

### **BD-R/RE ESP Formatter (1.0)**

1. Added support for [Encoder] JobAbortedTTLout= in the .erp to set an output pin on a job abort.
2. Fixed issue reported by a customer where there is noise signal generated in BD-R Layer 1 recordable band cutting when the wobble amplitude is higher than 1V.
3. Fixed issue with BCA wobble amplitude on Layer 1 for BD-R(E)
4. Fixed display during BD-R cutting, the display shows "Cutting Rewritable band..." and during BD-RE the display shows "Cutting Recordable band...". These were switched.
5. Fixed underrun and HFM embossed zone issues with BD-RE Layer 1
6. Implemented BD-R/RE HSO output amplitude sweep steps. To use the option, simply include a set of sweep ranges including for each range: Start Radius, End Radius, Start Amplitude Multiplier, End Amplitude Multiplier, Amplitude Multiplier Step. The sweep is valid in the [zone\_BCA], [zone\_HFM] and [zone\_da] areas of the ERP file. For example, [zone\_BCA] SweepAmp = (21.0 21.4 0.8 0.9 0.02) (21.5 22.0 0.91 1.03 .02).
7. Fixed the radii display for the layer 0 cuts that do not have a BCA.
8. If the BCA end radius is less than BCA start radius on Layer 0 then do not generate any BCA. This is to support a customer request.
9. Fixed an issue with end of PZ3/start of DCZ1 for BD-R (non-HC) Layer 1 discs. The end of PZ3 was occurring 274 clusters too late (meaning closer in to data zone).

### **ESP Control Panel (1.74)**

1. The Tools tab added "Show Board Info", "Generate Tach Pulses", "Calibrate RefClock"
  - a. Show Board Info displays more details on the ESP and what it is capable of running. It also allows the user to review the POST (Power On Self Test) details should there be an issue.
  - b. The Generate Tach Pulses Tab was added to exercise the Tach and Translation outputs. It also allows the user to set the 12 TTL outputs and view the current status of the 8 TTL inputs.
  - c. The Calibrate RefClock was added to allow the user to calibrate the reference speed to a FrequencyCounter for higher accuracy. ImageEncoder now supports these calibration values.
2. There is a new Debug tab for further diagnostics.
3. Idle Wobble Support Added

### **Integration Details**

#### **PTMPortIO.DLL (version 1.0.1.2)**

1. Trims any extraneous commands off the end of the current command. The emulator would sometimes send a status command at the same time as another command and the resulting command info was invalid.

2. Does not allow the operator to change parameters on the LBR Port IO.DLL (ptmportio.dll) when jobs are scheduled. This is causing the DLL to disconnect from the socket and reconnect.

#### **ODC\_Nimbus.DLL version 1.1.46**

1. Implemented setting ESPTTLStart in the INI file for any layer. If this setting is present the older EspTTLStart\_L0 and L1 settings will be ignored
2. TCDI band implementation changes – general support for TCDI band.

#### **PanaLBR.DLL version 1.19**

1. Implemented setting ESPTTLStart in the INI file for any layer. If this setting is present the older EspTTLStart\_L0 and L1 settings will be ignored.

#### **TTLGeneric.DLL version 1.34**

1. Implemented setting ESPTTLStart in the INI file for any layer. If this setting is present the older EspTTLStart\_L0 and L1 settings will be ignored.
2. Add code to now allow the ESPR band start mechanisms to be overridden by the TTLGeneric.INI file.

#### **DMS8000.DLL version 1.0.30**

1. Implemented setting ESPTTLStart in the INI file for any layer. If this setting is present the older EspTTLStart\_L0 and L1 settings will be ignored.
2. Changes made to allow the DLL to work with only an ESP encoder. This included porting start signals so they can be used with the ESP.

#### **IEWAuto.exe version 5.0.0.1**

1. Added an error condition if IEWAUTO is launched with an ESP job (BD, HD-DVD, ESPR) but no ESP is configured.
2. Return a warning to the calling client when more than 1 instance of IE is found to be running on the encoder system.

#### **SIF/SRF integration, with PTM functionality**

3. Support a priority field in the SRF file, in INET
4. When operating in full SIF->PTM scheduler mode, filter jobs on screen so only those with a SIF file can show in the queue list.
5. Several improvements to this interface when running with INet.
6. On cached jobs, the Job ID is added to the name to create a unique directory.
7. Fixed a condition where job MID is not found even when it has been scheduled on the PTM in full SIF PTM scheduler mode.
8. Fixed end of job timing problem when jobs get mastered from the PTM in a different order than they were scheduled.
9. When a SIF file is deleted and a job has not been started, remove its JI file and also remove the job from the queue list.
10. Will not allow the operator to right click and remove a job from the IEScheduler queue list.
11. Fixed priorities so they follow the ones reported by the LBR (PTM) under full SIF-PTM mode. The code will sync up every 60 seconds by default.
12. Preserve irlg text data spaces at the beginning and ending of the string when writing the SRF.
13. Fixed issue where pending jobs were not being displayed when ImageSharing was turned on.
14. fix SIF->PTM condition where the layer would be lost when AllowCombinedImages=FALSE and attempting to master layer 1.
15. In SIF-PTM Auto mode, check for deleted SIF files even when not mastering.
16. When in SIF->PTM auto mode, make sure to check the position of wafers when the PTM issues a NEW command.

17. Expanded SIF job control screen to include new radio button allow the prefix to be used for the IRG text data.
18. Fixed SIF->PTM interface when IRG text (via SIF MID) and barcode (Via SIF barcode) are set in the SIF. Previously this information would be lost and any text or barcode prompt will cause the operator to be prompted.
19. Fixed issue where UNC paths specified in the SIF file under the SIF->PTM integration were not getting preserved in the image-shared JI file.

#### **New Devices:**

##### CD/DVD Drives:

- Plextor PX-LB950SA (internal) & PX-LB950UE (external USB)
- Plextor PX-L890, PX-B310, PX-B320 and PX-B940
- Pioneer BD-RW BDR-206

#### **Download Instructions:**

The new 5.0 Beta PR3 software is available from the following links:

**NOTE:** You will need a dongle activation in order to run this version unless you are already running a previous Beta version of 5.0. Contact Eclipse Customer Support with your system code if you need an activation code. Please backup your c:\eclipse\imagetools directory before the software update in case you need to move back to your previous version.

IEScheduler/ImageEncoder 5.0 Beta PR3:

<ftp://ftp.eclipsedata.com/IEScheduler/ies-ie50pr3.zip>

Password: 354pm0Rel9

RemoteScheduler 5.0 Beta Pr3:

<ftp://ftp.eclipsedata.com/IEScheduler/rs50pr3.zip>

Password: 354pm0Rel9

**You may be required to login to Eclipse's FTP site. Contact Eclipse Customer Support if you don't already have the username and password.**

**NOTE:** The software download links and passwords in this email are provided to you as a benefit to your ImageEncoder software support contract. Please do not forward or share this information outside of your company.