

EclipseSuite BD 3.0 Release Notes

Below are the fixes and enhancements since the release of EclipseSuite BD 2.0.

Key Features:

- 3D Support including BDCMF 1.20 and 1.21
- Windows 7 Support
- Run-once Rules & Behaviors

Fixes & Enhancements:

3.0 BD Beta PR1

1. Enhanced the EclipseSuite tools to identify the media type and copy protection of images during the analysis. This will be displayed above the progress bar in the Analysis tab.
2. Improvements to the HDMV Region playback analysis to consume less memory and increase its speed as a result for big titles.

The EclipseSuite tools include other performance enhancements when handling 3D jobs.

3. Enhanced ImageCopy to also copy the PARTIAL_INFO directory and its contents when copying a BDCMF image.

The PARTIAL_INFO directory may be created by the CMU utility when signing an image. It will include the encryption keys and signed certificate files that can be archived along with the original Type A image for future use. Previously, when copying an image that included the partial info folder, the image was copied but the PARTIAL_INFO folder was not. ImageCopy has been changed to copy this folder when it exists.

4. Corrected a problem that was incorrectly triggering the warning rule "Elementary HDMV stream not found".

This occurred only on a 3D image when at least one PG_textST and at least one 3D IG stream were both included in the STN_table_SS data block.

5. Added several enhancements to the Title Structure analysis.
6. Added support for file/directory extents that are allocated but not recorded.

Typically, all extents will be allocated and recorded. However, the UDF file system supports another type that is 'not recorded but allocated'. The EclipseSuite tools are now able to detect these types of extents and will trigger the new rule "Extent not recorded and not allocated" when detected.

7. New rule "Index Table file 3D content flag set" will be triggered when the tools are unable to detect neither a single SS Playlist, a single BD-J application profile 5 nor SS Output Mode.

The Index Table file (index.bdmv) has a flag that specifies whether an image is 3D. If an image is 3D, it must also include a 3D Playlist, a BD-J application with Profile 5 or Stereoscopic Output Mode. This rule will only be triggered on Blu-ray discs.

3.0 Beta Z

1. Added new rule "BDCMF/PIC BCA Flag mismatch".
2. Update the EclipseSuite tools with the latest changes to the AACS requirement for Managed Copy compliance

according to the "AACCS Notice to Licensees 2010-05 MC Spec Update" document. The changes include:

- a. New error rule "Incorrect size for AACCS Managed Copy Manifest file" to indicate when the MCMF size is more than 768 Kbytes.
 - b. New info rule "No Content ID in Managed Copy Manifest file". This condition won't be an error as it used to be in previous versions. AACCS recommends the MCMF to have a Content ID, but it is not required. The MCM can start the process providing the Content Certificate ID instead.
 - c. The severity for the rule "No AACCS Managed Copy Manifest file" was changed from a warning to an info. AACCS recommends an MC-ready BD-ROM to have this file but if it is not present, MCM can start the process by accessing the Default MCS and providing the Content Certificate ID.
 - d. Added support for the new elements defined in the revised MCMF XML Schema.
3. Force the BDCMF "Density" attribute value to the only supported value of "25G".

3.0 BD Beta Y

1. Support retrieving an existing key set from a secure BDCMF image.

In a Secure CMF image, the encryption keys are stored in the file KEY.DAT or KEY.DAT.EPKI rather than storing them in the Unit_Key_RO.inf file in the image as it is done normally. Since Secure CMF is not common at all, full support for this feature had not been fully implemented. Previous version of the EclipseSuite software still expected to find the encryption keys in the image and did not know to search the KEY.DAT or KEY.DAT.EPKI files.

2. The CMU will now require the dongle option "AACCS Encryption" for ImageCopy. Be aware of this when upgrading customers to this version.

Since the CMU is normally used on the same system where ImageCopy is used, it is likely that this option may already be activated on your dongle.

3. Added new warning rule to report PAC read errors when reading from disc.

Previously the generic PAC error rule was used to report this condition. Since the PAC data is currently not used, ImageCopy always creates it when copying from disc. Therefore, any read errors from disc can be ignored.

3.0 BD Beta X

1. Enhanced the EclipseSuite tools with an option to specify a onetime usage of rule and/or behaviors file.

It is sometimes necessary to modify a rule or behavior for a specific job. In previous versions, users had to modify the existing configured rules or behavior files or save the changes under a new file. While this process worked, users sometimes forgot to return the rules or behaviors back to their original setting.

Instead of permanently saving the rule setting, the users can now specify a onetime use of a rule or behavior file. If users do not have a rules or behaviors file configured, then they can choose to modify the default rules or behaviors for the current job only. Once the job finishes, the rules and behaviors will automatically return to their original settings.

To use this new feature, hold down the Shift key while clicking the Start button or click File|Run Once. A window will popup asking you to select the rules and/or behaviors file to use for the job. Optionally, instead of selecting a file, you can select to modify individual rules and behaviors.

2. One-time usage of rules and behavior enhancement. This enhancement can be accessed using the Run Once menu option in the File menu or by clicking the Start button while holding down the Shift key. See email

thread "ImageCopy - one-time usage of rules / behaviors".

3. Enhanced the EclipseSuite tools to recognize the 'MVC' codec when BDCMF 1.21 is used.

Previous version of BDCMF used the codec attributes 'MVC Base' and 'MVC Dependent'. In BDCMF 1.21, both have been replaced with 'MVC'.

This problem was introduced in 3.0 BD Beta T. However, keep in mind this rule will always be triggered on disc if the Content Certificate Bus Encryption Enable flag is set. This is because there are currently no drives that support Bus Encryption.

4. The rule "File out of name space" has been renamed "File not in Authoring Studio namespace".

Also added a new similar rule for directories: "Directory not in Authoring Studio namespace".

5. Added several enhancement to the Title Structure analysis.
6. Corrected a problem where the log entry for the BD Live Options preference "Output ESW File Name" was set incorrectly.
7. Added logging of ImageCopy options "Do not encrypt", "DDP on disc" and "Disable Laser".

The ImageCopy log files will now include an entry that indicates the setting of these options when the job was run. The settings for these options can be found in Info|Runtime.

8. Added logging of preference settings "Archive log files in BDCMF" and "Overwrite logs under automation".

The log files will now include an entry that indicates the setting of these options when the job is run. You can view these settings in the Info|PREF display.

Corrected a problem where the "Limit analysis messages to 1000 per rule" and "Output DVD checksum version 0.99" behaviors were not being set to their default setting when running an application for the first time.

When no behaviors file is being used and an EclipseSuite program was started, the above behaviors were not initialized to their default setting.

3.0 BD Beta W

1. Added several Title Structure & Derivative BDCMF enhancements:

3.0 BD Beta V

1. Enhance the EclipseSuite software for better performance and to conserve system resources when processing a 3D image with many extents.
2. Added support for the Plextor PX-B320SA drive as a Blu-ray reader.
3. Added several Title Structure & Derivative BDCMF enhancements:
4. Corrected a problem that was causing the EclipseSuite tools to abort with the error 'End of input encountered' during UDF analysis.

The problem was caused by invalid addresses in the backup anchor points of the UDF file system.

5. Corrected a problem in ImageCopy that was causing an unnecessary overwrite prompt when automatically saving log files with the timestamp naming convention.

When the automatic saving of log file was selected and the log naming convention was set to timestamp,

there was always a user prompt to replace the existing log file. This prompt was occurring by error since the timestamp should have made the log filename unique.

3.0 BD Beta U

1. Corrected a problem where empty lines in the log file were causing errors when opening the log.
2. Added enhancements to the Title Structure analysis.

3.0 BD Beta T

1. Don't log any debug statements and don't check for allocation errors during the quick UDF scan that gets used to determine the media content type. A UDF analysis is not intended when determining the media type.
2. Don't display the "FE/EFE ICB File Type" info for each file when the UDF behavior "Basic Advanced UDF info" is checked to decrease memory requirements.
3. Added enhancements to the Title Structure analysis.

3.0 BD Beta S

1. UDF data allocation analysis tuned again for better performance.
2. Corrected a problem in ImageCopy where it was not properly setting the PMSN flag in BDCMF if the source image was Sony CMF.

When processing a Sony CMF image and the PMSN flag is set in the CPTBL.DAT file, previous versions of ImageCopy did not set the PMSN flag in the output BDCMF image.
3. Enhanced the BD-Java security check for better performance.
4. If multiple individual sections for the same file entry are found in the JAR Manifest File when verifying the Java Signature File, the "SHA1-Digest" attribute value of the last section will be used according to the JAR File Specification.
5. Added enhancements to the Title Structure analysis.
6. Corrected a problem in which the warning rule "Bad Tag CRC" was been displayed incorrectly for the File Identifier Descriptor of some files in directories with an allocation size bigger than 65536 bytes. This problem was discovered in 3.0 BD Beta P.
7. Corrected a problem that could incorrectly trigger the rule 'Invalid Partition Descriptor' with the Additional Info '...Partition overflows'.
8. The EclipseSuite tools will show more detailed information in the Additional Info column to help to explain why the rule "Invalid Partition Descriptor" is getting triggered during an overflow condition.
9. Improved the UDF analysis that checks Volume Descriptors for equivalence.

3.0 BD Beta R

1. Implement code to properly detect the CC BEE flag and set the BDCMF BEF flag when creating a new BDCMF from Sony CMF input. Create a new, streamlined function to load the file system with little overhead so it can be called quickly.

2. Display the bus encryption flag on the Info|BD-ROM tab.

The EclipseSuite tools will check the Bus Encryption Enable flag in the BDCMF file and report it in the Info tab. The same will be done if the image is Sony CMF.

3. Enhanced the UDF data allocation analysis for BD images for better performance.
4. Enable/disable the button allowing unencrypted transfer when the user types in the DDP location manually.

When the user selects File as the source device, ImageCopy will enable the 'Do not encrypt' check button to allow the transfer of the image without encryption.

BD 3.0 Beta Q

1. Added support for the Plextor PX-B310U drive.
2. The AACS option has been split. The new dongle option "**AACS Encrypt**" will be use for ImageCopy only. The existing "**AACS**" option will be used for decryption and applies only to ImageAnalysis and ImageVerify.

All customers using ImageCopy for AACS encryption that are upgrading to this version will require an ImageCopy activation for "AACS Encrypt".

3. Corrected a problem that was causing SCSI read errors when analyzing BD media and copy-protection Plug-Ins were configured.
4. BDCMF 1.21 is the default version for BD 3D:
 - Supports the "CMF-DOCS.ZIP" file (version 1.20 and higher). This file will be created by ImageCopy and will include customer's metadata files (defined in BDCMF 1.21). The EclipseSuite programs now include the Preference option "**Archive log files in BDCMF**" that when enabled will append the log file to the CMF-DOCS.ZIP file. This file is not described in the BDCMF.CMF file and therefore is not protected with a SHA-1 checksum like every other BDCMF file. ImageCopy will protect it by creating a checksum for it in the checksum.chk file.
 - This version adds the new rules "BDCMF Version 1.20" and "BDCMF Version 1.21".
 - When converting a Sony CMF to BDCMF and the Automatic output behavior is chosen, BDCMF version 1.21 will be created if 3D data is found or if the input Sony CMF is version 0.933 or later.
5. Corrected a problem that caused no default Sony CMF output behavior option.

The default output behavior for Sony CMF conversion is 'Automatic'. However, when loading behaviors from a file, neither option (**Automatic** or **BDCMF 0.90**) was selected. This is only a display problem as ImageCopy still uses the 'Automatic' behavior internally.

6. Enhanced the EclipseSuite tools to detect when the CHT files are not the correct size.

The EclipseSuite tools currently check when the file is too small. However, a problem surfaced where the file was larger than required. This problem was not detected until the CMU tried to sign the image. Because of the larger file size, the CMU thought the user was signing the wrong image. The CCs cannot be applied to the image and new CCs are required once the problem is corrected in the authoring system. This problem is now detected early in the process.

BD 3.0 Beta P

1. Rule "No SSIF file detected" defaults to Flag severity now since it is allowed to mux 2D and 3D video streams in

a single Clip AV stream file.

Previously, the EclipseSuite tools assumed that the 2D and 3D video streams would be stored in separate files (*.m2ts and *.ssif, respectively). However, the specifications allow both video streams to be stored in a single Clip AV Stream file.

The EclipseSuite tools have been changed to expect 3D content without SSIF files because the specifications allows multiplexing both MPEG-4 MVC Base and MPEG-4 MVC Dependent view video streams in a single Clip AV stream file (.m2ts file).

2. Added several enhancements to the UDF analysis.
 - a. Added more UDF checks to comply with BDA FSV detailed requirements.
 - b. Many UDF errors will provide more details in the Additional Info column in the analysis.
 - c. Show location information for file extents with error conditions under the UDF tab with the appended string "(Extent error)" to help during debugging.
 - d. Provide location information in the analysis tab when showing the rule "**Invalid Logical Block Number**" for allocation descriptors. Without a location it is difficult to know what descriptor was affected by the error.
 - e. Added new UDF behavior "**Support multiple partitions**" to optionally expect this possibility during address translations from LBN to LSN. The software expects multiple possible physical partitions but all know ROM formats use only one. By default this behavior will be turned off so that invalid LBN addresses can get translated to a meaningful LSN.
 - f. UDF rule "ECMA 167 Volume" rephrased as "ECMA-167 Volume".
 - g. New UDF rules to show more specific errors for BDA FSV qualification:
 - i. "Invalid character set type".
 - ii. "Bits 9-31 in list of character sets not set to zero".
 - iii. "All zero bytes dstring value".
 - iv. "Unused dstring characters not set to zero".
 - v. "Reserved regid flags not set to zero".
 - vi. "Unrecognized Volume Structure Descriptor".
 - vii. "Extent Location specified but Extent Length is 0".
 - viii. "Bad Tag Descriptor Version".
 - h. Corrected a problem where ImageAnalysis remained running in the background after a job was aborted and there were too many errors in the analysis.

The software was unable to process all the errors fast enough so they were queued in memory to be processed. The job was not allowed to abort until all errors were processed.

3. Recognize BDCMF version 1.20 as a valid BDCMF version.
4. Corrected a problem where the incorrect media type was being set when reading a disc on a BD drive.

The Blu-ray drives are also CD and DVD readers. Before the media can be analyzed, the media type must be

identified so that it can be handled correctly.

5. Add support for the Plextor BD PX-B910, PX-B920, PX-B930 drives.

BD 3.0 Beta O

1. Corrected a problem that was causing the UDF behaviors tab not to be displayed.

This problem was introduced in 3.0 BD Beta N when the new Smart Card behavior tab was added.

2. Add back support for Plextor BD-R B940 drive which got removed when more precision was added in the device name.

BD 3.0 Beta N

1. Corrected a problem that caused the preferences not to be loaded when the EclipseSuite and ImageEncoder programs were launched.
2. Added new rule "Full signature" which defaults to Ignore. This rule displays the full signature value.
3. Clarified each instance of the rule "Blu-ray Last User Data Address too large". Now the additional information will contain a more descriptive explanation of the issue causing the rule to be displayed.
4. Added enhancements to the Title Structure analysis.
5. Log all BD-Live preference options in the Info | PREF section of the analysis/log file.
6. Corrected a problem that was causing the ES tools to crash when opening a log file that included certain UNICODE characters.

These Unicode characters in a log file caused an internal pointer to be NULL and crashed the EclipseSuite applications when they tried to use the pointer.

7. Added support for new PLEXTOR BD USB drive B310 as a CD, DVD and BD drive. Currently works for CD and DVD. Does not work for BD yet.
8. Made the EclipseSuite tools more specific on the device name string when scanning for supported devices in order to recognize the PLEXTOR BDR 900 drive.

3.0 BD Beta M

1. Perform the HDMV Region playback analysis even if there are CHT/CC errors.

3.0 BD Beta L

1. Modified the Sony CMF Output Behaviors to output a more current version of BDCMF during the conversion in order to support images that use the Bus Encryption Enable in the CC.

Previous Sony CMF behaviors were as follows:

Automatic – (Default) This option would create a BDCMF image using BDCMF version 0.90.

BDCMF 1.01 – Using this option would force IC to create a BDCMF image using BDCMF version 1.01.

In this version (3.0 BD Beta L), the behaviors have been reversed. Now, **Automatic** will default to BDCMF 1.01. The option 'BDCMF 1.01' has been renamed to 'BDCMF 0.90' and will generate BDCMF 0.90.

When the **BDCMF 0.90** output behavior is selected, IC will check the image CC for the BEE flag and the Sony CMF data for version 0933 or SSIF data. If either of these is present or more than 1 CPS unit exists, an error is triggered and the job is aborted (BDCMF 0.90 does not support more than 1 CPS Units or the BEE flag).

The purpose of outputting version 1.01 is to support the 'Bus Encryption Enable' Flag in BDCMF when the image CC is Bus Encryption Enabled.

2. Allow an Extended Attribute space to contain only the Extended Attribute Header Descriptor and no Extended Attributes.

An Extended Attribute includes a header (Extended Attribute Header Descriptor) and 0 or more Extended Attributes. Previously, the ES tools expected at least one Extended Attribute. Recently, a customer submitted a log where an Extended Attribute included the header but not attributes. This triggered the rule "Bad Extended Attribute".

3. Corrected a problem that was causing dongle counts to be decremented more than once when analyzing a BD-ROM image.
4. If the "BD-ROM" dongle option isn't programmed, the applications will stop sooner, before all the initial Blu-ray pre-scanning checks take place.
5. Corrected a problem that was causing the ImageCopy process to wait 30 seconds before being shutdown completely.
6. Corrected a problem that was triggering the rule "3D BD" more than once per job.

3.0 BD Beta K

1. Corrected a problem that caused the drive LG CH08LS10 not to be recognized.
2. Corrected a problem that stopped the BD Royalty Report from working on 2D images on the previous version due to the changes that were required to fix another problem.
3. Make "BD-ROM AACs robustness requirement failure" rule be an abort instead of error since many masters are coming in as playable discs on BD recordable without an AACs directory.
4. Added a new rule "Managed Copy URI" which will display the valid URI found in the mcmf.xml file under the Additional Info column.
5. Corrected a problem that was causing the rules "Stereoscopic content assigned to multiple CPS Units" and "First SPN for 3D clip extent differs" to be triggered incorrectly.

This occurred on a 3D BD optical disc containing unencrypted clips and the CPS Unit analysis assigned any of those clips to CPS Unit 0.

3.0 BD Beta J

1. Trigger the rule "Stereoscopic content assigned to multiple CPS Units" only if an SSIF file had both required M2TS clips for the left and right view presentation and if a valid CPS Unit pointer had been assigned to both of them.
2. Remove the Sony CMF output options. Now all is automatic:
 - a. If Sony CMF is version 0.933 or above, ImageCopy will output BDCMF 1.19

- b. Any Sony CMF version with SSIF SA data will create BDCMF 1.19
 - c. If more than 1 CPS units are in the data then BDCMF 1.01 will be created.
 - d. If only 1 CPS unit then BDCMF 0.90 will be created.
3. The rule "Invalid video frame rate" was renamed "PAL compatible video frame-rate" and will now default to "Info" severity.

Video frame rates of 25MHz or 50MHz are valid but may still present some problems for certain BD players. According to specifications, not all players are required to support these video frame rates, except for players designed for regions that use these video frame rates (PAL). Customers should consult with the BD players for compatibility.

4. The new "Info" rule "Estimated HDMV Region playback" will be shown when the HDMV region playback analysis detected at least one clip that will play for at least one of the known regions.

The additional info column will display for each region if playback is:

- Allowed
 - Partial (50% or less of the total amount of clips will get presented)
 - Prohibited
 - Not applicable
5. When a BDCMF image has no region information, show the message 'Not Applicable' in the additional info for the rule "BDCMF Region". Similarly, the same message will be displayed for the "Region" item of the Info|BDCMF.
6. The warning rule "Different BDCMF and estimated HDMV Region playback" will be shown for each individual region playback value that won't compare when at least one BDCMF and one estimated HDMV region assignment was determined to be applicable for images with no BD-J titles.
7. The "Warning" rule "Video frame-rate support is optional" will be used to highlight video clips encoded at PAL compatible (25/50 Hz) frame-rates that were determined to playback on regions "A" or "C" by the HDMV region playback analysis.
8. Added enhancements to the Title Structure analysis.
9. Implement changes to BDCMF 1.19 specifications. Note that this is an interim version to support 3D.
- a. Update the "BD-3D" attribute values to "USEwithSSIF", "USEwithoutSSIF" and "NONE" instead of "USE" or "NONE".
 - b. The EclipseSuite tools will check to see if there is an "SSIFInfo" element while loading a BDCMF file with the "BD-3D" attribute set to "USEwithSSIF". "SSIFSpecificAreaInfo" element became "SSIFInfo". "SSIFSpecificArea" element is now optional.
 - c. ImageCopy should correct images created with the previous 1.19 version during output to reflect the latest changes.
 - d. The BDROM button under the Info tab will display the BDCMF BD-3D info and a list of SSIF and M2TS Specific Areas.

12. Add several enhancements for 3D analysis.

- a. New rule "Extent of file is less than 500,000 bytes" to check EXT1 and EXT2 requirements for 3D BD images in stereoscopic output mode.
- b. New rule "ATC duration of EXT1 is less than 300 milli-seconds" to check this condition for 3D BD images in stereoscopic output mode.
- c. New rule "Extent size too big for 3D Output Mode" to test for Condition5 required for EXT1 and EXT2 allocations on 3D BD images.
- d. BD player emulator used for HDMV region code analysis modified to include new 3D player configuration options like "Output Mode Preference" (PSR21), "Display Capability" (PSR23), "3D Capability" (PSR24) and "Profile and Version number" (PSR31).
- e. Test clips used for different PlayItem angles to make sure they satisfy Condition1, Condition2, Condition3, Condition4 and Condition5 allocation requirements.
- f. Test for Condition4 for the last extent of PlayItem clips connected to a following PlayItem with connection condition 6. Before we were only testing when the connection condition was 5.
- g. Tests for Condition1 and Condition3 of clips belonging to PlayItems connected with an ATC_delta offset (connection_condition 5) could show incorrect results due to a bug in the code.
- h. The EXT1 allocated before the last EXT1 was not being tested for Condition2. (The last EXT1 doesn't have to be tested).
- i. Rules "Equivalent SSIF Specific Area not found" and "Equivalent M2TS Specific Area not found" were shown incorrectly when there were multiple SSIF SAs equivalent to a single M2TS SA. See email thread "Eclipse verifier error on Sony CMF – Test data" from Nishino-san on 05-07-10.
- j. Rule "Equivalent left view data block not found" renamed "Equivalent Base data block not found", "No corresponding EXT1 allocation for left view" renamed "No corresponding EXT1 allocation on Base file" and "No corresponding EXT2 allocation for right view" renamed "No corresponding EXT2 allocation on Dependent file" to use the words from the BD-ROM Part 3-1 spec instead of the BDCMF spec. See email thread "Eclipse verifier error on Sony CMF – Test data" from Nishino-san on 05-07-10.
- k. Show the errors "No corresponding EXT2 allocation on Dependent file", "No corresponding EXT1 allocation on Base file" and "Shared UDF data allocation" only once at the beginning of a file extent to gain test speed and reduce log file size.
- l. The code that compares the content of M2TS and SSIF Specific Areas (SA) was modified to handle correctly the case where multiple SSIF SAs should be equivalent to a single M2TS SA. See email thread "Eclipse verifier error on Sony CMF – Test data" from Nishino-san on 05-07-10.
- m. Test for a valid type_indicator and version_number fields on ClipInfo and PlayList files.
- n. SSIF and M2TS SAs entries in the BDCMF file were being created incorrectly when ImageCopy was converting SonyCMF images with multiple SSIF SAs (EXTBss) that had a single corresponding M2TS SA (EXT2D). See email thread "Eclipse verifier error on Sony CMF – Test data" from Nishino-san on 05-07-10.
- o. When analyzing a 3D disc with M2TS files including a single extent, it is possible some comparison errors will appear if a clip doesn't get decrypted and miss-compares to the BDCMF equivalent sectors, resulting in a bad signature and content hash and digest problems. See email threads "SHIPMENT - BD - Disney BD 3D Showcase Disc 1B - SHO-1N-NE1.1 - Global - Aspera SCP - Deluxe Microplant Burbank" on 05-14-10 and

"3D BD verify Error" on 05-14-10.

13. Corrected a problem in the XML output so that it does not log unprintable characters.
14. Don't show the warning rule "Different BDCMF and estimated HDMV Region playback" when playback for all the regions was set to "Allowed" in the BDCMF file but the HDMV playback for all regions was determined to be "Limited" during the analysis.

This is because presentation for some clips could be limited to parental settings or other configuration conditions in the player we are currently not testing.

15. Log the Bus Encryption Enable flag setting in the Info|BDCMF sectin.

3.0 BD Beta I

1. Begin to support BDCMF version 1.19 for 3D images (this is an interim BDCMF version for support of 3D images).
2. Begin testing for Condition 4 for the last EXTSS of a clip in a 3D BD image.
3. Allow the "25G" string, equivalent to 25GB, as the only valid attribute value for the "Density".
4. Preserve all valid UTC-8 character sequences in XML files and display the new info rule "Multiple UTC-8 octet sequence" when they are found.

If an invalid sequence is detected, display the new error rule "Invalid UTC-8 octet sequence" and replace the octets with a space character so that the file can be processed and the applications can continue uninterrupted.

5. Corrected a problem with the XML library which was causing the EclipseSuite tools to crash when trying to handle invalid elements.
6. Support Sony CMF 3D input when the CPTBL.DAT file contains SSIF SA records.

Previously the versions would interpret the SSIF SA records as belonging to 00000.m2ts.

7. Support output of BDCMF 1.19 when converting a Sony CMF image to a BDCMF and the image contains SSIF SA records.
8. Do not show UCD Bus Encryption Flag errors when the Content Certificate BEE flag is set and the input is a disc.

Currently, drives do not support Bus Encryption so this BEF tests will always fail on BD media.

9. Added several updates to the BDCMF schema files.
10. Always output BDCMF 1.19 when converting from Sony CMF version 0.933 and later.

The calculation to determine the average bit rate in Stereoscopic Output Mode has been corrected to exclude right view source packets from the EXT2 packet count if their ATS was not in the EXT1 ATC range of the corresponding left view.

The rule "Maximum Stereoscopic average bit rate exceeded" defaults to an "Error" instead of "Info" as a result of this change.

11. If a CPS Unit is not specified for an SSIF file in the CPTBL.DAT or BDCMF.CMF of a 3D image, ImageCopy will automatically assign the same CPS Unit of the corresponding M2TS file.

Previously, the SSIF files were always getting assigned CPS Unit 1 by default.

12. New 3D rule "Stereoscopic content assigned to multiple CPS Units".

3.0 BD Beta H

1. Make sure to check the layer 0 last address unit (LAU) against the theoretical maximum number of sectors for layer 0 - even when working with a dual layer image.

Previously, the software only checked the LAU for layer 0 for a single layer image.

2. Added several enhancements for 3D.
 - a. Added 3D BD rule "Maximum Stereoscopic average bitrate exceeded" to test that the sum of average bitrate of EXT1[i] and average bitrate of EXT2[i] is less than or equal to $64 * 10^6$ bits/second.
 - b. Test for Condition2 required for left view blocks EXT1 allocation on 3D BD images.
 - c. When testing Condition1 and Condition3 for the last Extent of a 3D file look at the connection condition indicated for the next PlayItem instead of the connection condition indicated for the current PlayItem.
 - d. Temporary disable the "BDCMF File Missing" rule for Sony CMF images until 3D support is added for Sony CMF.
 - e. Test for Condition4 required for EXTSS allocation on 3D BD images. This version will check only EXTSS that belong to the same clip. The next revision will include the check for EXTSS connected between different clips.
 - f. Added BD rules "Maximum intra-layer jump distance exceeded" and "Maximum inter-layer jump distance exceeded". These rules are only getting triggered for 3D images for now.
3. Fixed Export to HTML function to correctly print out the Verify After Analysis categories.
4. Enhance ImageVerify Done status in the progress tab to show whether or not it was successful, similar to ImageAnalysis and ImageCopy.
5. Renamed analysis category labels in the XML logs to match with user interface labels.
6. Fixed XML export problem where categories are printed multiple times.

3.0 BD Beta G

1. Added enhancements to the Title Structure analysis.

3.0 BD Beta F

1. Added enhancements to the Title Structure analysis.

3.0 BD Beta E

1. Added enhancements to the Title Structure analysis.
2. Corrected a problem where the rule "AACs Managed Copy Manifest file error" was being triggered incorrectly.
3. Enhance the performance when parsing the BDCMF.CMF file of a 3D image.

4. Update the EclipseSuite tools with recent changes in the 3D specifications.

The errors "PlayList file structural error" and "Incorrect allocation order for Stereoscopic Interleaved files" were appearing on images with multiple PlayItems due to specification changes in the STN_table_SS data structure definition that had not been incorporated in the EclipseSuite tools.

5. The error "ClipInfo file requires Extent_Start_Point() definition" was being triggered incorrectly for 3D images due to problems introduced from previous extensive modifications.
6. The rules "BDCMF VISAN Error" and "ISAN Error" won't trigger the rule "Managed Copy - Image not compliant" anymore since the specifications allow the use of the Content Certificate ID instead of the Content ID (ISAN number) in MC authorization transactions. The use of Content ID (ISAN number) though optional, remains recommended.

3.0 BD Beta D

1. Added enhancements to the Title Structure analysis.
2. Added several 3D enhancements:
 - a. Added 3D BD rule "Extent size too small for 3D Output Mode" to test for Condition3 required for right view clip EXT2 allocation.
 - b. Completed testing of Condition1 required for left view clip EXT1s allocated on the 2D clip file that will trigger the 3D BD rule "Extent size too small for 2D Output Mode".
 - c. The 3D BD rule "PlayList file structural error" with the additional comment "Missing PlayItem (a) for ext_data_entry(b), SubPath_block_extension() SubPath (c) type 8" was being triggered incorrectly because of a problem in the software that made applications try to find the PlayItems using a SubPath index instead of a PlayItem index.
 - d. The EclipseSuite tools could trigger the error "Incorrect allocation order for Stereoscopic Interleaved files" randomly if a 3D clip didn't have Specific Areas if the tools couldn't identify the left and right view files correctly. Starting with this revision they will use information from the PlayList files to unmistakably identify the left and right view content.
 - e. The errors "HDMV transport stream PAT interval exceeded", "HDMV transport stream PMT interval exceeded" and "First SPN for 3D clip extent differs" can get triggered in the presence of 3D images that contain a clip file with 2 or more Specific Areas due to an ATC value discontinuity in the engine performing the analysis.
3. Added several enhancements for Secure CMF.
 - a. Added a new behavior to IC "Prompt for BDCMF 1.10 Secure encryption targets".
 - b. When "Prompt for BDCMF 1.10 Secure encryption targets" is enabled, display a dialog box asking the user to select the secure BDCMF targets in ImageCopy at the beginning of a transfer.
 - c. Change the software to always select a matching public key for the inserted private key when encrypting – regardless of whether the user has chosen that key as a target.
4. Corrected a problem in ImageCopy that was causing a job to abort with the error "Abnormal program termination" and the additional info "UDF File System structure is not Blu-ray compatible" when copying a Type P image.

5. Corrected a problem that caused the rule "Macrovision" was being displayed always as a Warning for Blu-ray images regardless of the severity setting.
6. Corrected a problem that was randomly triggering the error "Clip AV Stream not assigned to a CPS Unit".
7. Enhanced the EclipseSuite software for better performance of 3D images.

3.0 BD Beta C

1. Added the new BD rules:
 - "PlayList file structural error"
 - "ClipInfo file structural error"
 - "ClipInfo file requires Extent_Start_Point() definition"
 - "Multi-angle PlayItem requires at least two angles"
 - "Incorrect allocation order for Stereoscopic Interleaved files"
 - "No corresponding EXT1 allocation for left view"
 - "No corresponding EXT2 allocation for right view"
 - "Stereoscopic Interleaved file allocation error"
 - "Extent size too small for 2D Output Mode"
2. Do not trigger the rule "Managed Copy - Image not compliant" if the Managed Copy Manifest File does not specify an URI.

A default URL embedded in the MC Machine can be used to contact a default MC Server.
3. Enhanced the XML parsing libraries for better performance of 3D images.

3.0 BD Beta B

1. Added support for the Lite-On BD drive model iHES106.

3.0 BD Beta A

1. Added enhancements to the Title Structure analysis.
2. Corrected a problem where the EclipseSuite tools were not running the HDMV Region Code analysis on Type V images.
3. Update the Royalty Reports to include information for 3D images.
4. Corrected a problem that was causing the warning rule "Elementary HDMV stream not found" to be triggered incorrectly.
5. Change rule "Decrypted analog output is prohibited" to "Digital Only Token enabled - Analog Output prohibited" and "Image Constraint Token enabled" to "Image Constraint Token enabled: High Definition Analog Output prohibited".
6. The EclipseSuite applications could crash during the Region Code analysis with the error "not enough space for thread data" if the image had many buttons executing Call Title commands.
7. 3D rules tab category has been renamed "3D BD".
8. The rule "BD 3D" has been renamed "3D BD".

9. The rule "Index Table file 3D content flag set" has been deleted since it was not being used.
10. The rule "3D ready PlayList or BD-J application not included" has been renamed "3D ready PlayList file not included".
11. Added the new rules:
 - "M2TS Specific Area not aligned with AU"
 - "Equivalent left view data block not found"
 - "Equivalent 2D data block not found"
 - "Drive laser disabled"
12. Collect Interactive Graphics Stream buttons during the Region Code analysis for 3D images by including the newly defined PID values in the collect conditions. Only use buttons from the Base view (left) stream since Dependent view (right) streams should carry a copy.
13. Include support for the new navigation commands SetOutputMode and SetStreamSS in the Region Code analysis.
14. When searching for 3D subpath extensions, the corresponding PlayItem playing time has to be considered. This will affect how many clips get tested for missing streams and for button navigation commands for the region code analysis.
15. In an effort to clearly show the Managed Copy (MC) status of every image, the MC related rules were reorganized creating two high-level 'parent' rules indicating whether an image is MCM compliant or not, and one additional 'child' rule checking for the existence of a valid URI inside the MCM file. The EclipseSuite BD help file description for the 'parent' rules will explain the general items we look for and refer to the 'child' rules for detailed descriptions of the rules:

Rule	Severity
Managed Copy compliant (<i>None of the below rules will be triggered</i>)	Info
Managed Copy – Image Not compliant (<i>Any one of the below rules will trigger this rule</i>)	Error
No AACCS Manage Copy Manifest file	Warning
AACCS Managed Copy Manifest file error (indicating a file structural problem)	Warning
ISAN error (indicating a missing ISAN or a structural error)	Warning
BDCMF VISAN error (indicating a missing ISAN or a structural error)	Warning
Managed Copy Manifest file - No URI found	Warning

16. Added a message to the Progress tab to indicate when the EclipseSuite tools are "Evaluating Managed Copy compliance".
17. Fixed last user data address and number of layer 0 sector checks. They were off by 1 (using an offset instead of a count).
18. Don't show an error if padding words are inserted between AppInfoPlayList() and PlayList() data structures in a Blu-ray PlayList file.

19. Enhanced the EclipseSuite HTML logs by displaying error messages in bold so they are more noticeable.
20. Corrected a problem where the EclipseSuite tools were not detecting STN_table_SS() nor SubPath_block_extension() ExtensionData() for new 3D images due to a change in the specifications for ID1 and ID2 values.
21. Added the new rule "First SPN for 3D clip extent differs" to check SPN Start Points.
22. Renamed the rule "Image Constraint Token disabled" to "Image Constraint Token enabled".
23. Added several small updates to BDCMF schema files for versions 1.01, 1.02, 1.03 and 1.10.