Golden Eye 4

The Evolution of Vision

Features & Benefits
Version 2016.1 R2

DigitalVision
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Golden Eye

Archive Scanner with Universal Optics

DigitalVision

Gecko Version 200

This release of Gecko should be installed with **Golden Eye 2016.1 R2** scanner control software

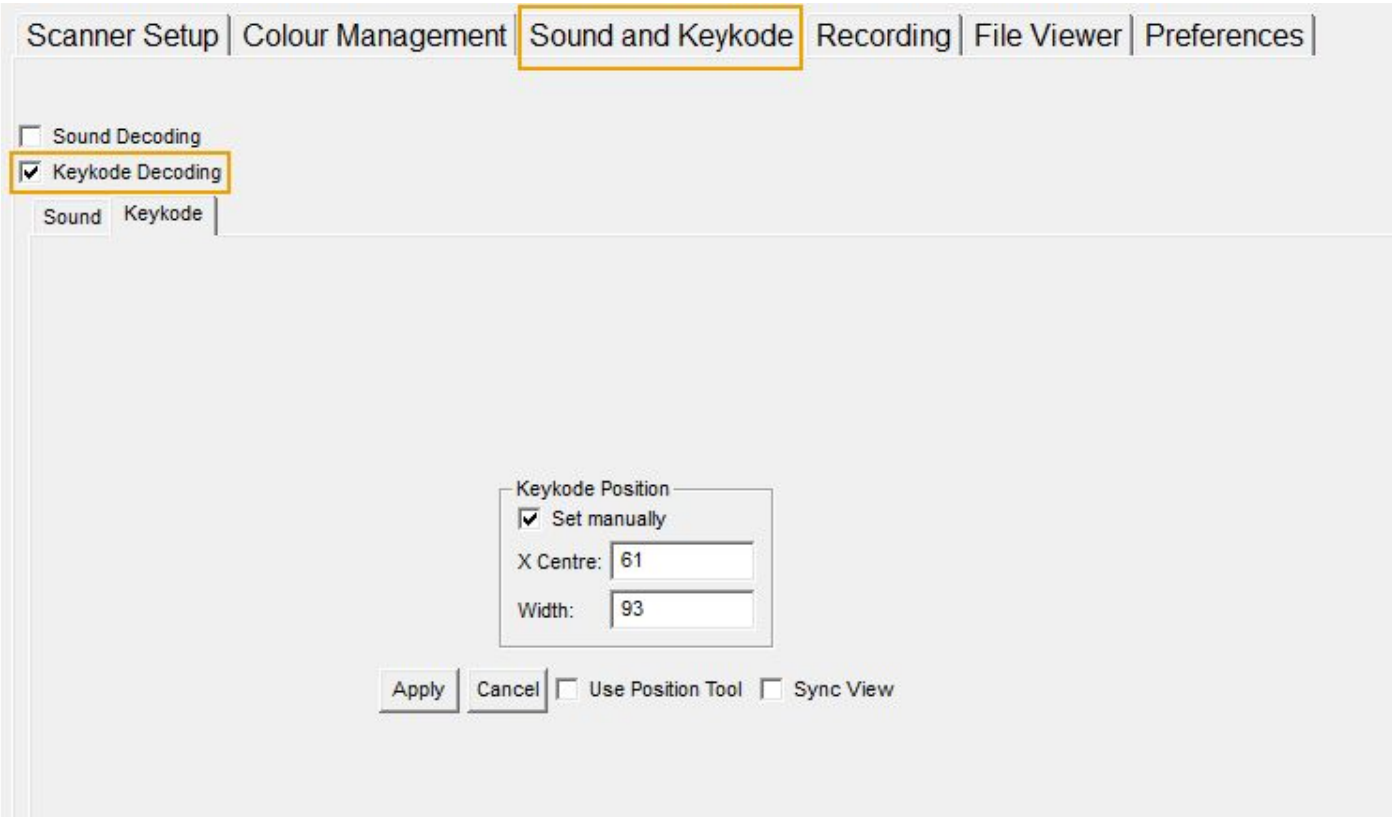
New Features in this Release

- **Keycode support for GE4**
- **Fix various issues in Gecko's communication with Gedi**

GoldenEye 2016.1 R2 Scanner Control Software

New Features in this Release

- **Keycode added for 16mm, 35mm and 65mm**

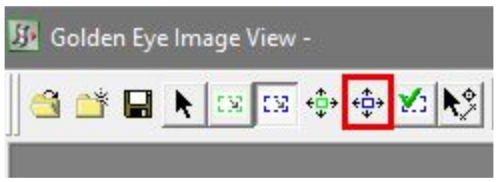


  - For a detailed description on how to use Keykode on GE4 see the Addendum at the end of this document.
  - Note: Keycode only works in play forward, and record mode, and as the keycode is not on every frame of the film; there are gaps before the reading commences.
  - Important: Keycode does not work in rewind or GoTo - so be sure to play film for a suitable time before starting to capture frames

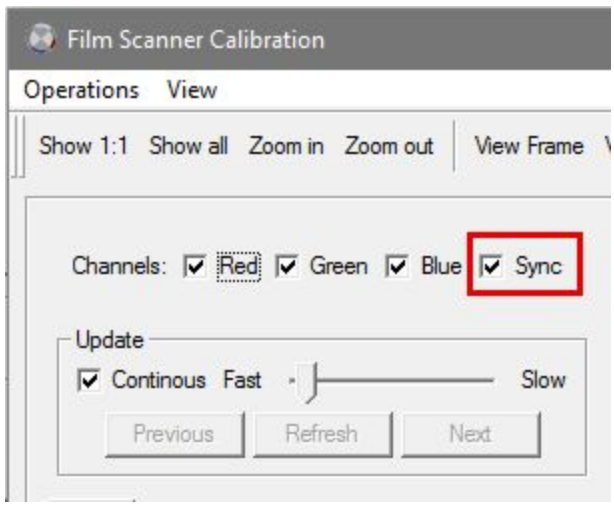
- **Auto stop now works for play/FF and RR**

- Two check boxes have been added under the transport controls, one to enable/disable auto-stop for play and step operations, the other for wind operations. Changes to the states of these check boxes made while the scanner is running will be respected. It is still possible to wind (or play) the film off by starting a wind (or play) from within the film's auto-stop range (where it will be left by a previous wind) towards that end of the film.
- The auto-stop distance used for play and step operations is the same one that is used for recording. A separate auto-stop distance for wind operations is added to the preferences, since it usually takes the scanner longer to slow down from the higher winding speed; this defaults to 6 m from the end of the film.

- **Add a button to set the default area of interest to 90% of image size in each axis**
  - The area of interest is used for auto calibrate. For most films it would better to have the area of interest set up to about 90% of the frame so the framing bar is excluded.

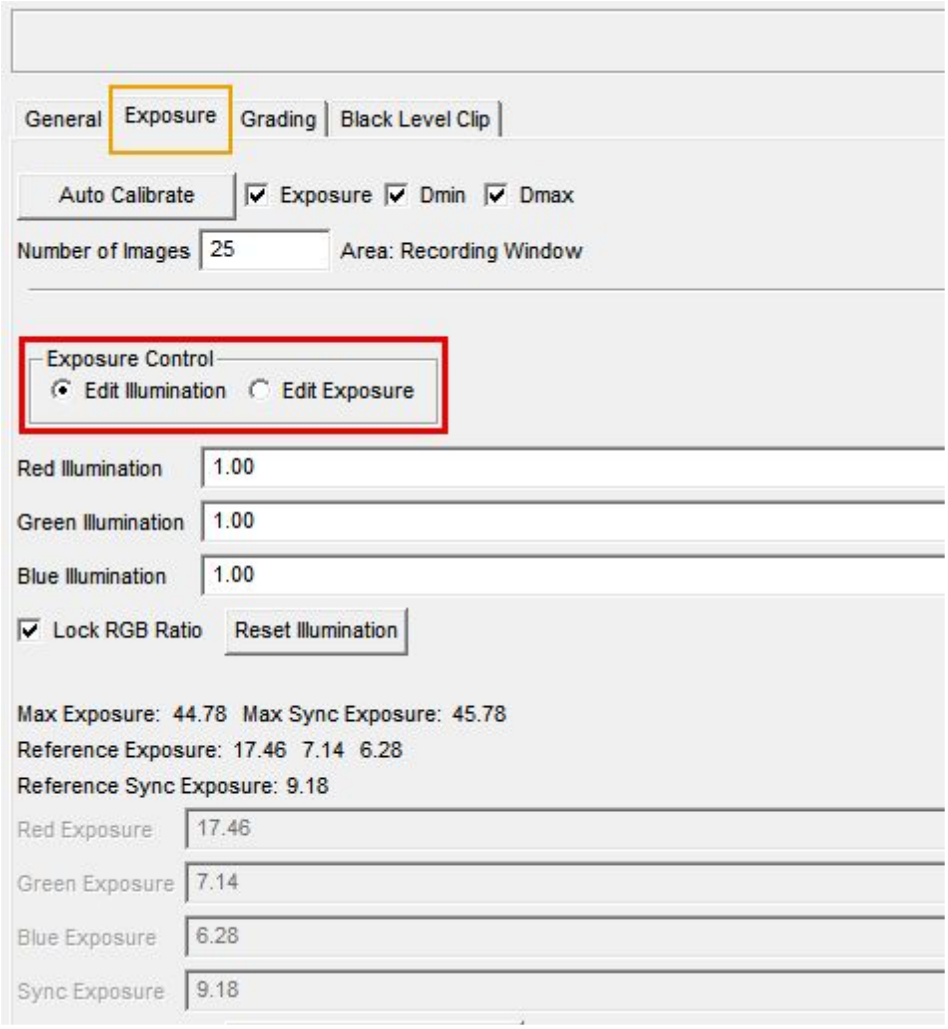


- **Change the default behaviour of "Scanner line" so that "Sync" is always selected**



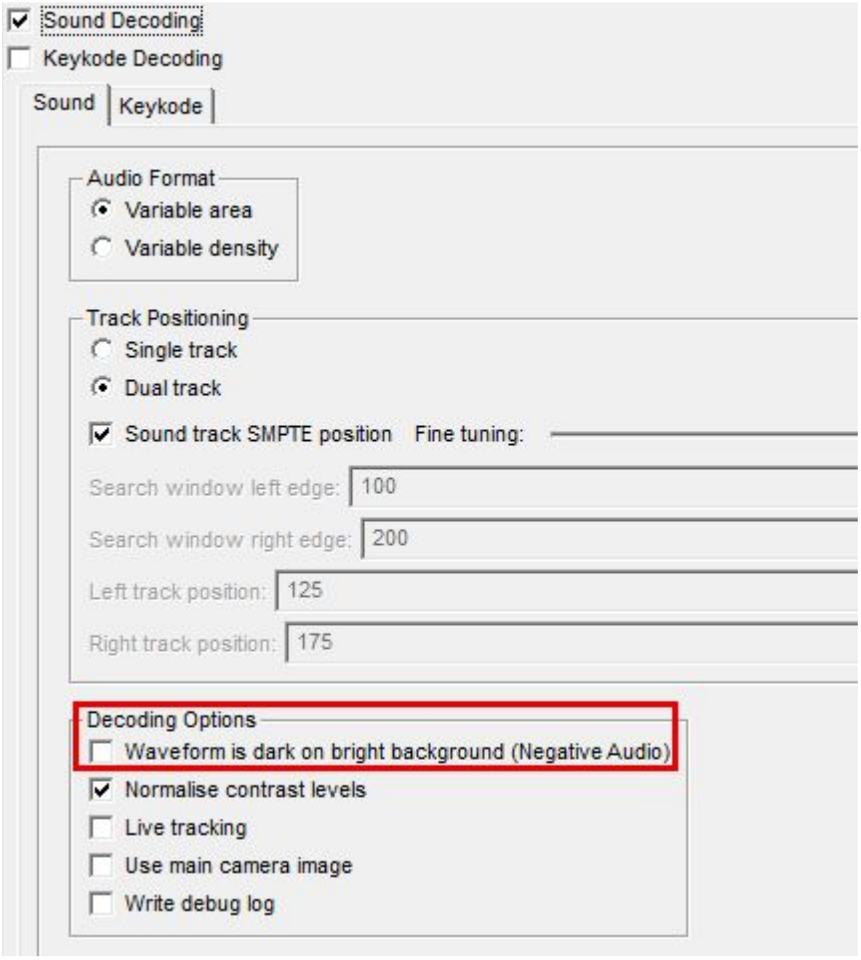
  - Rename the "Extra" tickbox in the "Scanner line" menu to "Sync"

- **Changes to Exposure Controls**
  - The Exposure pane options "Control from Transmittance" and "Free Strobe" have been renamed to to "Edit Illumination" and "Edit Exposure" respectively and moved above the other exposure adjustment controls.



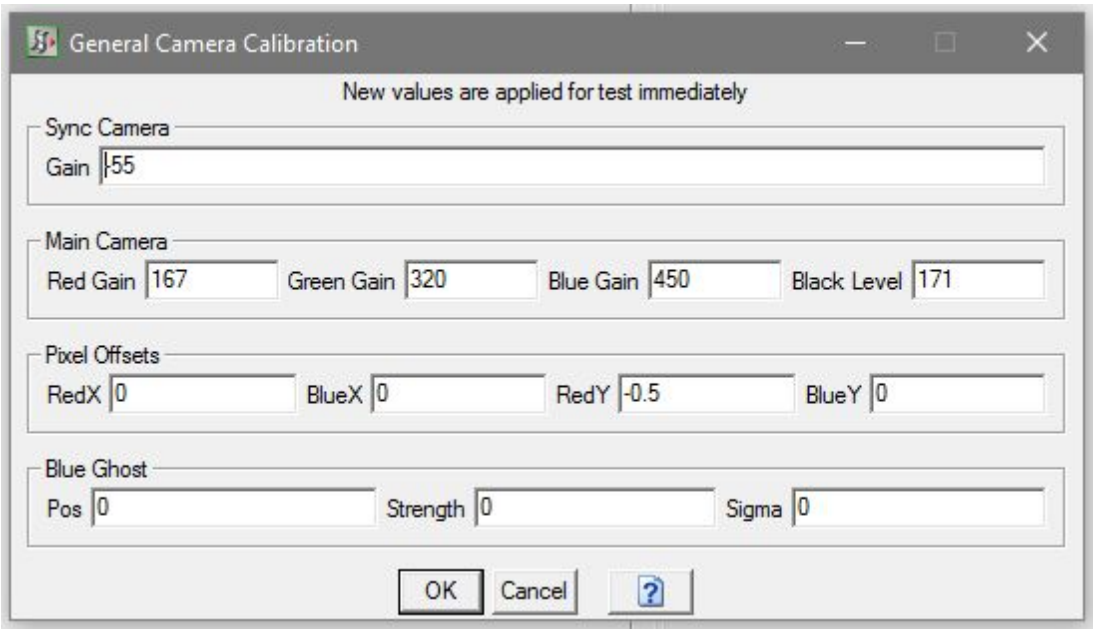
  - Exposure is now correctly updated to match the reference exposure after a shading calibration in “Edit Exposure” mode.
  - When the exposure is adjusted via the Red/Green/Blue Exposure controls, in “Edit Exposure” mode, the corresponding Illumination controls are now updated accordingly.

- **Add description 'Negative Audio' to "Waveform is dark on bright background"**



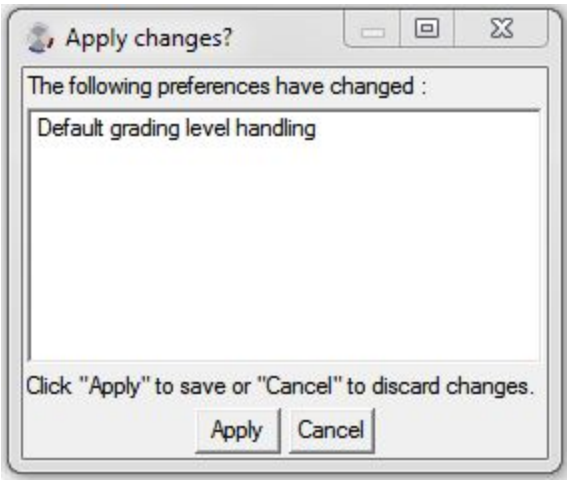
- **Improved control of Colour Crosstalk Correction**
  - The existing Temporary Colour Crosstalk Compensation Disable checkbox on the Advanced Settings\Test and Debug pane has been removed. There is no means to enable or disable crosstalk compensation dynamically except by setting the Limit Image Processing mode to Raw Camera Image, in which case shading correction is not performed either (so there's no problem with shading compatibility).
  - A checkbox has been added to the Shading Calibration dialog to specify whether crosstalk correction is to be disabled in both the shading calibration to be performed and the subsequent use of the shading correction created by that shading calibration. The presentation of this checkbox is optional, as determined by preference (see later).
  - The current state of the Shading Calibration dialog's option to disable crosstalk correction is held in the current session and persisted through session files (.gst). In a new session, this is initialised to a default state, as determined by preference (see later). If the checkbox in the Shading Calibration dialog is not shown, the current state of the session (starting as the default in a new session) is used for all subsequent shading calibrations. This avoids requiring the user to set the option every time they perform a shading calibration, which would risk them forgetting to set the option and performing shading calibration with the wrong setting.

- **Update the General Camera Calibration window (new value and labels)**
  - This is found in the Factory Calibration tab of the Advanced Settings.
  - **This is not a setting that should normally be adjusted by the user** - refer to GE-Support@digitalvision.se for any questions regarding use.



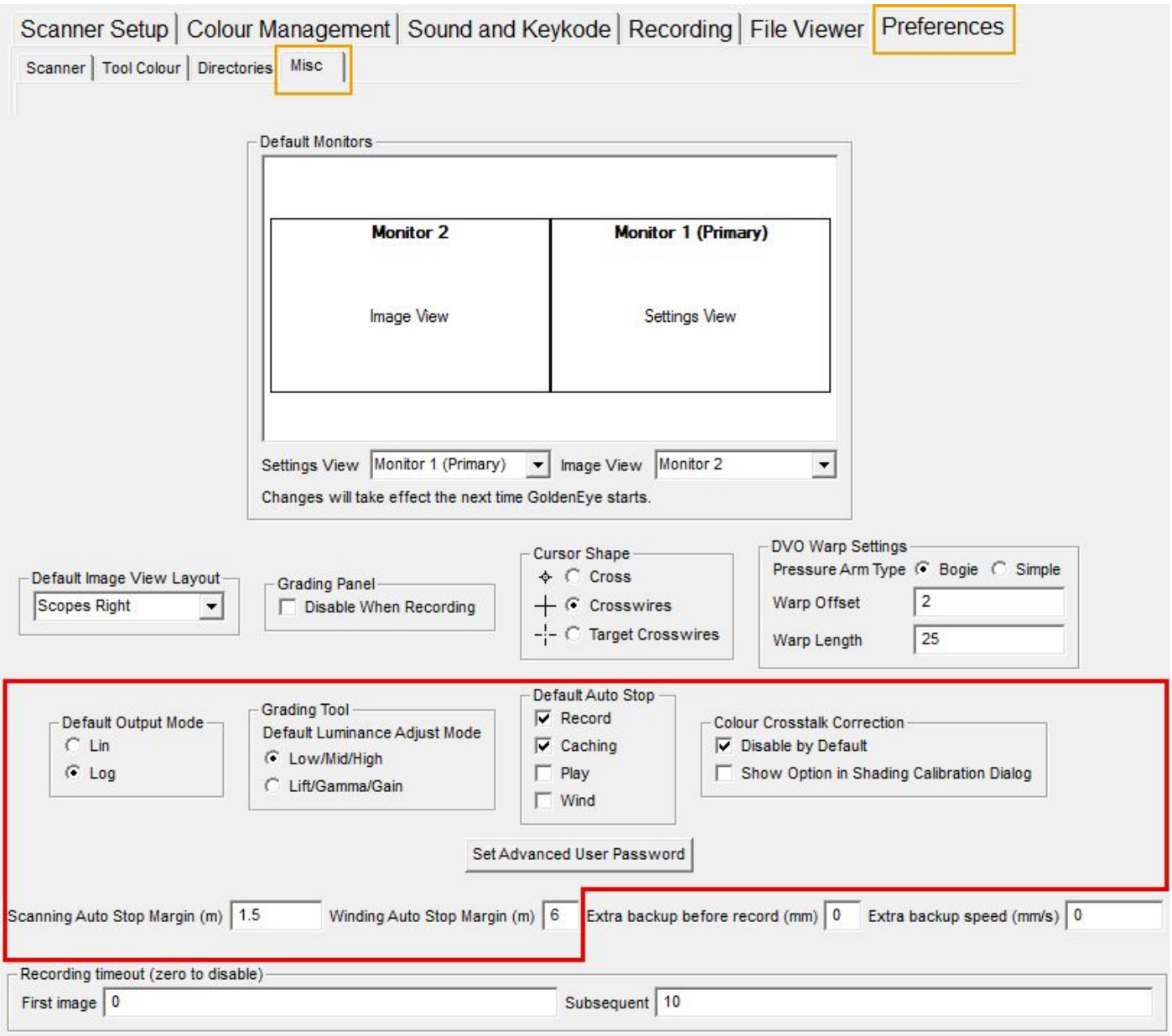
Preference changes confirmation dialog

When preferences have been changed and the user switches away from the Preferences pane without clicking the Apply or Cancel button, a dialog will appear listing the changes made and asking the user whether they wish to apply or cancel them, like this:



New Preferences in this Release

A number of new preferences have been added to the Preferences-Misc tab. They are shown in the image below and then itemised in the following list:



- **Default Output Mode**
  - This preference selects whether new sessions default to Lin or Log output.
- **Grading Tool**
  - This preference selects whether the grading tools in a new session default to Low/Mid/High or Lift/Gamma/Gain controls.

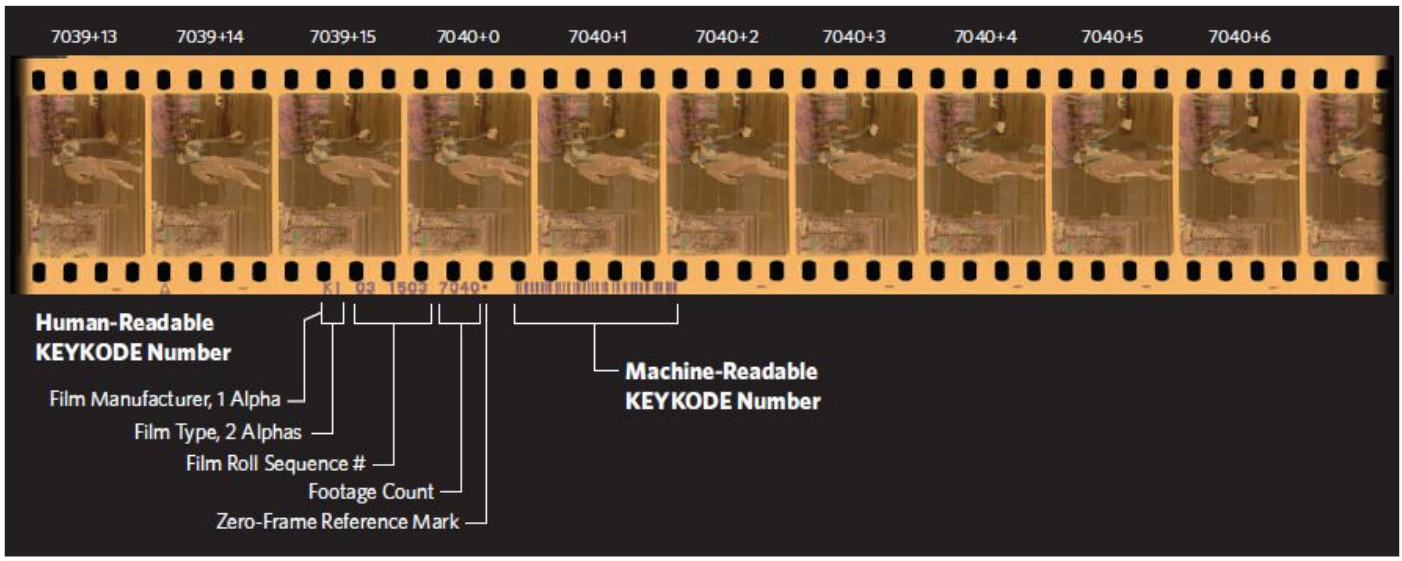
- **Default Auto Stop**
    - These preferences select the default states in a new session of the auto-stop options for various operations:
        - Record: Recording to a file.
        - Caching: Playing with recording to cache enabled.
        - Play: Play and Step operations.
        - Wind: Open-ended winding and winding to a particular frame.

      Changing these preferences does not set the auto-stop options for the currently open session. The Auto-stop options for the currently open session are located outside the preferences pane (in the caching pane, in the record pane and under the transport controls).
- **Colour Crosstalk Correction**
    - The Disable by Default preference sets the default state, for a new session, of the Shading Calibration dialog's option to disable crosstalk correction.
    - The Show Option in Shading Calibration Dialog preference sets whether the Shading Calibration dialog shows the option to disable crosstalk correction.
- **The default for 'Scanning Auto Stop Margin' has been changed**
    - In previous versions the 'Scanning Auto Stop Margin' was too low for 35mm film on 'Auto Stop Recording'. The default for old builds was 0.5m. It has now changed to 1.5m.
    - Note: This change in default is applied only when new settings are first created, i.e. when a new installation of GoldenEye is first run and that installation didn't migrate settings from another pre-existing installation. In any other case, the margin specified in the pre-existing settings will be used. Users migrating settings from an existing installation of GoldenEye should review the current Scanning Auto Stop Margin in their preferences and update it if desired.
    - This preference sets the auto-stop distance used for record, play (including with caching) and step operations.
- **Winding Auto Stop Margin**
    - This preference sets the auto-stop distance used for wind operations (both open-ended and winding to a particular frame). Winding needs a separate, longer auto-stop distance since it usually takes the scanner longer to slow down from the higher winding speed; this defaults to 6 m from the end of the film.

Addendum

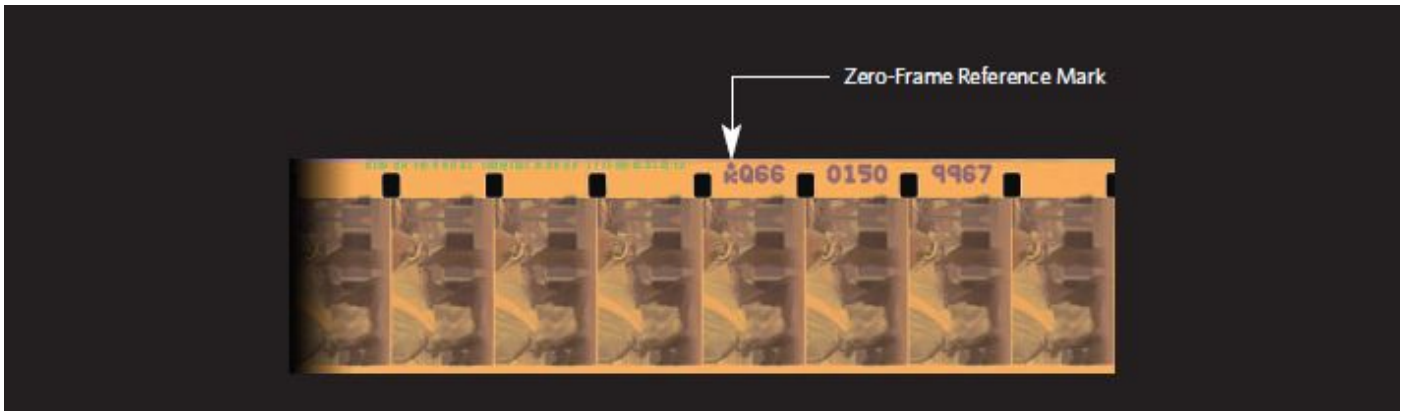
Keycode - Overview and User Guide

- Keykode is a Kodak development that uses human-readable key numbers and machine-readable Keykode Numbers. They're printed on the edge of the film when it is perforated—one of the last steps in film manufacturing. These numbers are exposed as latent images and they become visible after the film is processed. These numbers provide a unique address for every frame of film.



- Human-readable key numbers are comprised of five elements:
    - The manufacturer's code—K or E for Kodak.
    - The first K or E, with the addition of the second character, identifies the film identification code. Each Kodak film has its own set of letters for identification. For example, KI represents KODAK VISION 5246 Film.
    - The key number consists of a six-digit prefix (roll number) and a four-digit footage count. The prefix gives each roll of film a unique identifier. The prefix number remains the same while perforating the entire roll. When the roll finishes, the next roll carries a different prefix in increments by 1.
    - The footage count numbers increase at precise intervals throughout the roll—every foot for 35 mm film, and every half-foot for 16 mm film. On 65 mm film, the interval is 120 perforations, a little less than two feet. This increment was chosen as the lowest common denominator for the four different 65 mm frame-formats: 5-, 8-, 10-, and 15-perforations.
    - The zero-frame reference mark, the dot following the key number, indicates the specific frame of film identified by the human-readable key number and the machine-readable Keykode Number. Subsequent frames are identified by their offset—the number of frames they precede or follow the zero-frame. For example, KI 03 1503 7040+06 identifies the sixth frame of film after the zero-frame, KI 03 1503 7040.
- Keykode Numbers - all the information in the human-readable key number is replicated in the Keykode Number—the machine-readable barcode.

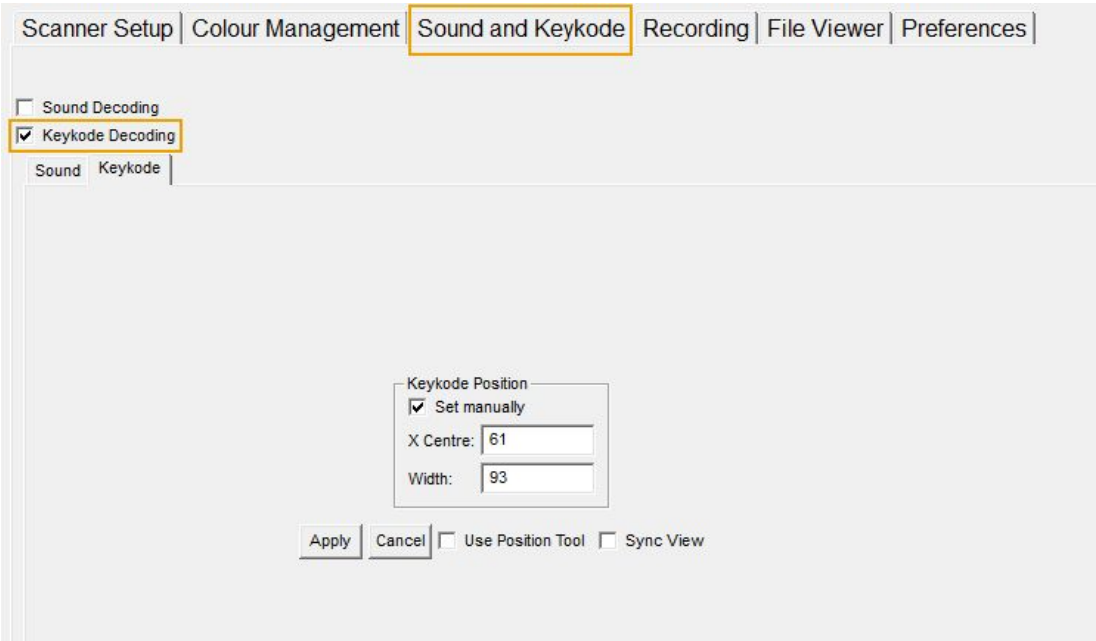
- Key numbers and Keykode Numbers on 16 mm, 35 mm and 65 mm films all follow the same format. Keykodes specify "count" and "offset" fields, where the offset is defined in perf holes.
- 35 mm Keykode Numbers
    - There are also intermediate, mid-foot key numbers along with the full-foot key numbers on 35 mm films. These are useful for identifying very short scenes—those quick cuts where the frames the editor selects may not include a main key number. Key numbers are displayed as large font. Mid-foot key numbers are printed midway (32 perforations) between the main key numbers. The mid-key numbers will be smaller font and contain a (+32), making them easy to recognize as mid-foot numbers.
    - On 35mm film, the count specifies a number of feet and offset ranges from 0 to 63 perfs or 0 to 15 frames, assuming 4 perfs per frame.
- 65 mm Keykode Numbers
    - On 65 mm film, there are two intermediate-key numbers between the key numbers—the first at (+40) perforations, the second at (+80) perforations. They serve the same purpose—to identify very short scenes that may not contain the main key number.
    - On 65 mm film, the count increments every 120 perf holes, which equates to every 24 frames given 5 perfs per frame, so 1 second of film assuming 24 fps playback; offset values then range from 0 to 119 holes or from 0 to 23 frames.
- 16mm Keykode Numbers
    - On 16 mm film the zero-frame reference dot is directly above the letter that identifies the film manufacturer, instead of between the key number and the barcode.



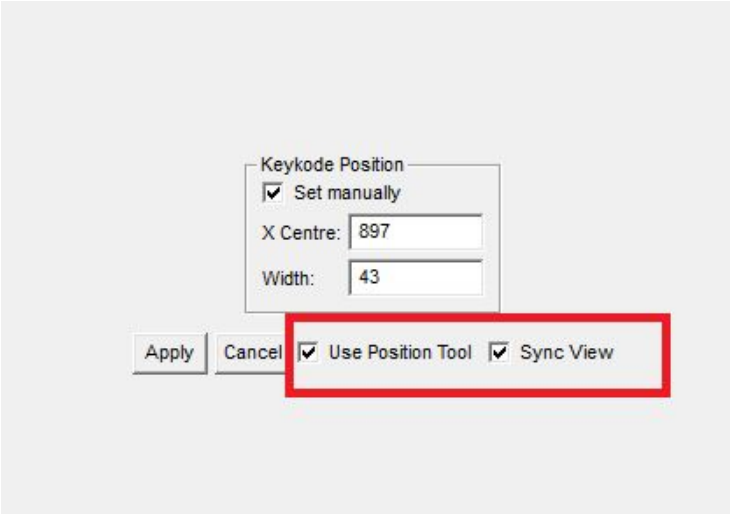
- On 16mm film, the count specifies a number of half feet (containing 20 frames) and offset ranges from 0 to 19.

Recording Keycode in Golden Eye

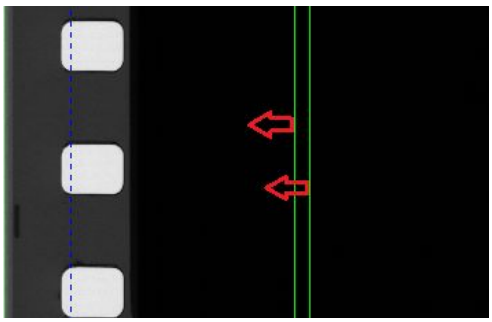
- Set up 'Keycode' by selecting the 'Sound and Keycode' tab and tick 'Keycode Decoding'.



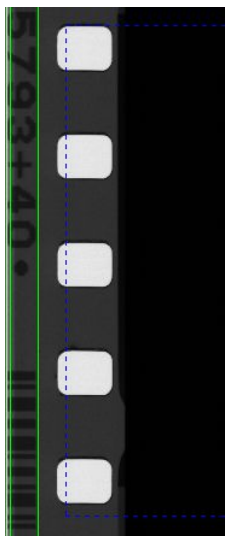
- Tick "Use Position Tool' and 'Sync View'.
  - Now in the 'Image View' the monitor should have changed to 'Sync View'
  - Note if the monitoring doesn't change to 'Sync View' press play and stop so that the monitoring gets updated.



- Now the Keycode detection lines are displayed, but not in the correct position.

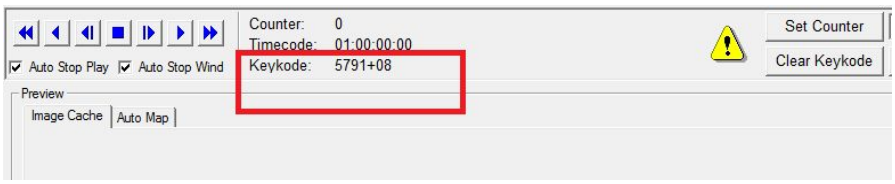


- Use the mouse and drag the Keycode detection lines into the Keycode area.

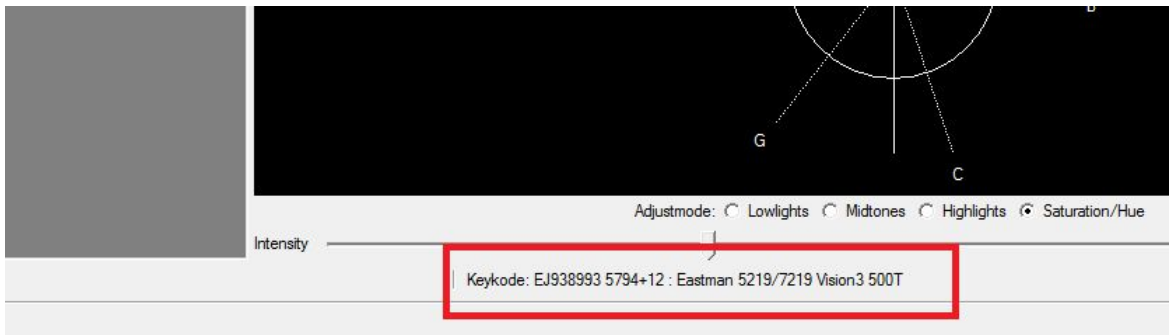


- Press play so that the orange detection lines are displayed.

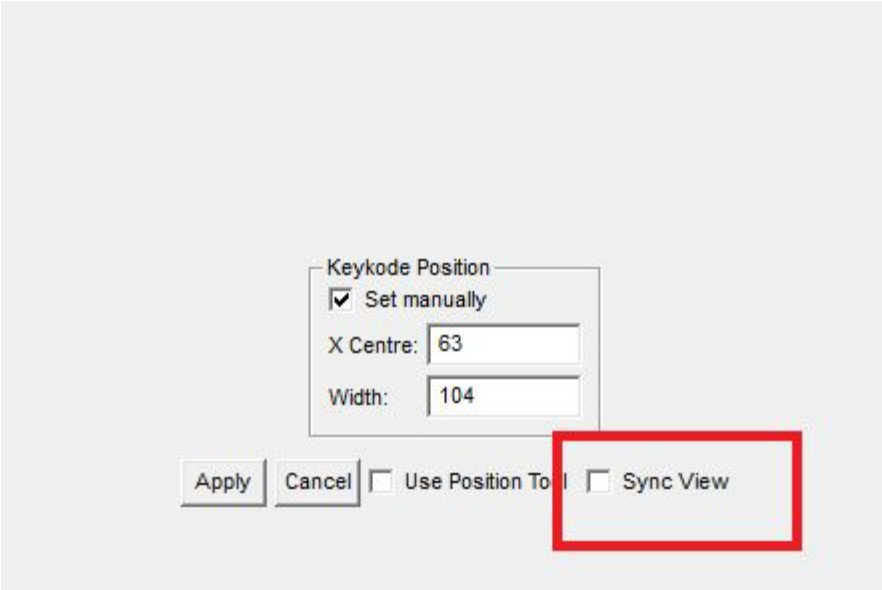
- Now the 'Keycode' should be seen in the underneath the 'Counter' and Timecode next to the transportation control.



- Also Keycode should be seen on the bottom of 'Image or Sync View'.

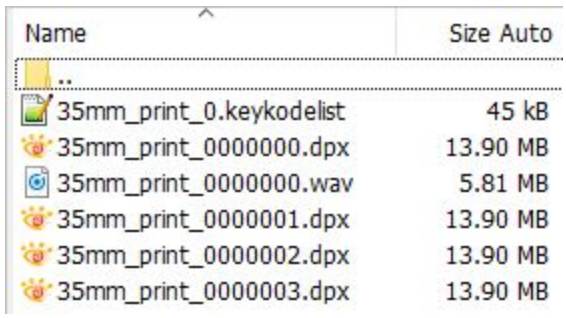


- Now deselect 'Sync View' in the Sound and Keycode' tab.
- Then go to the beginning of the film or wherever the capture should start and press record.



- When recording keycode it is important to establish a relationship between the keycode being recorded and a timecode value. The timecode value is set using the “Timecode Setup” button.

- Once this has been set and a recording is done, the following files will be stored in the Image Recording / Default Directory:



Name	Size Auto
..	
35mm_print_0.keykodelist	45 kB
35mm_print_0000000.dpx	13.90 MB
35mm_print_0000000.wav	5.81 MB
35mm_print_0000001.dpx	13.90 MB
35mm_print_0000002.dpx	13.90 MB
35mm_print_0000003.dpx	13.90 MB

  - .DPX files for the image (file headers will contain the timecode and keycode information).
  - .WAV files if audio was also recorded.
  - .Keykodelist file (a basic text file that can be reed by any text reader).
    - Note - The Keykodelist file is only saved if the timecode has been set as above.

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Gecko

New Version 199

This release of Gecko should be installed with **Golden Eye 2016.1** scanner control software

New Features in this Release

- 9.5 mm Pathe support has been be added to Film Formats
- Gecko film definition data now configurable from a data file
- Wheel data file has been updated for 9.5mm film in Gecko

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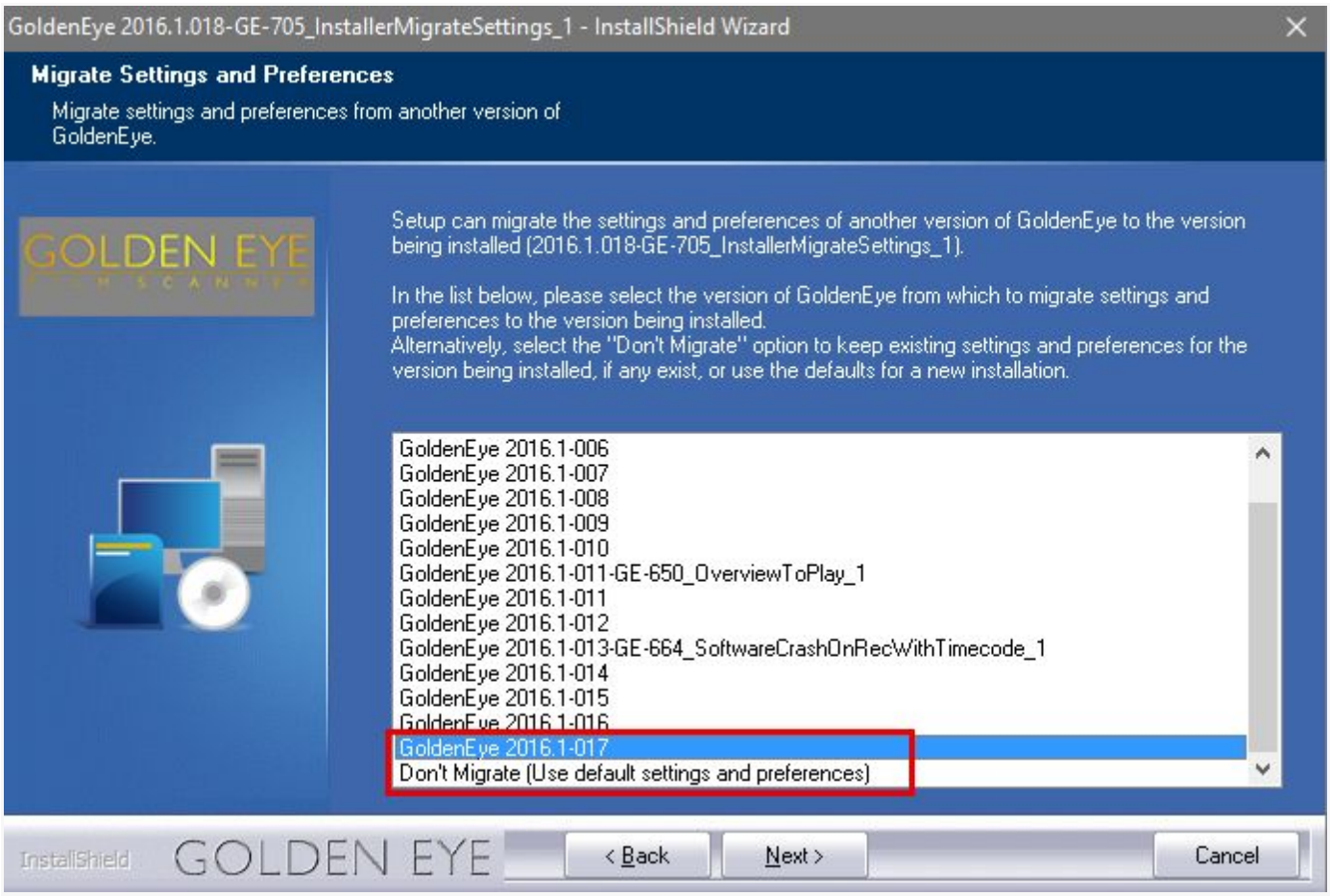
GoldenEye 2016.1 R1 Scanner Control Software

Installer includes an option to migrate GE's settings and preferences

- A new dialog is added to the installer, between the installation path and start installation dialogs, allowing the user to select the version whose settings are to be migrated to the version being installed, from the list of available versions. If data already exists for the version being installed, that option is presented as:
  - **Don't Migrate (Keep existing settings and preferences)** and is made the default selection.
- If no data exists for the version being installed, an additional option:
  - **Don't Migrate (Use default settings and preferences)** is presented and the highest version prior to that being installed is made the default selection, or the don't migrate option if there are no prior versions.
- If there are no existing preferences and settings that could be migrated (i.e the first time GoldenEye is installed on a machine), the dialog isn't displayed.



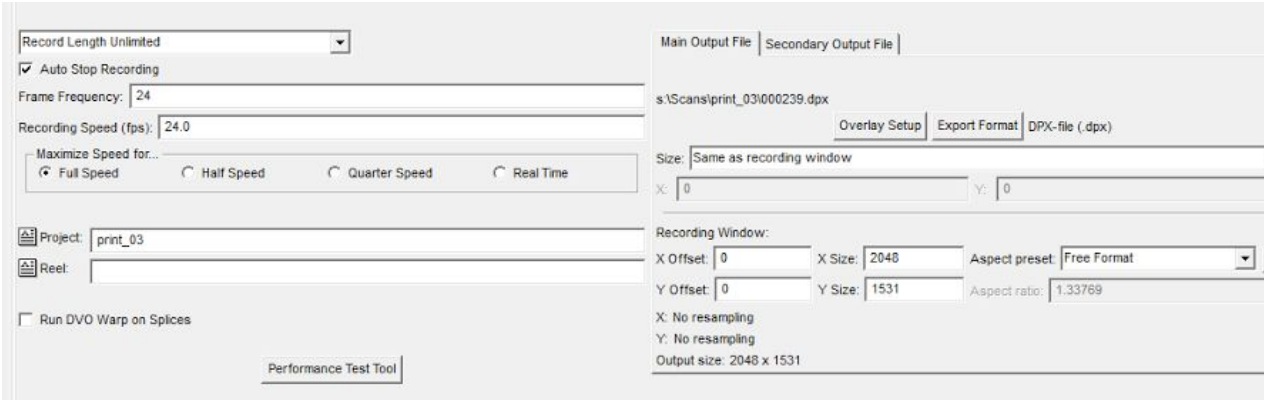
- The new migration system scans both 2015 and 2016 Program Data directories, looking for GoldenEye versions that have settings and preferences files in place that can be migrated. It

then builds a list of version numbers and data file paths, ordered by increasing version number.

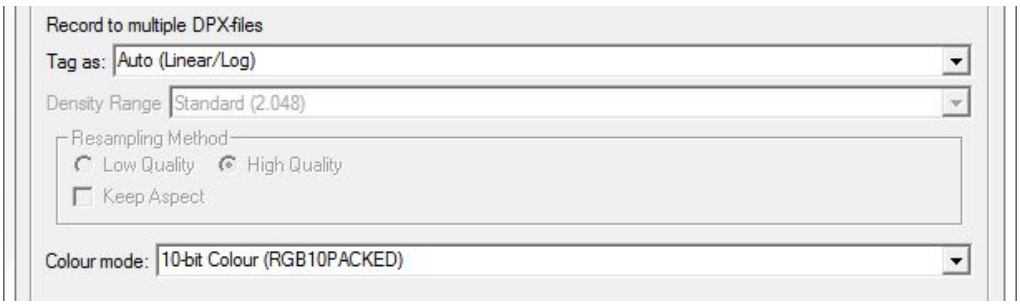
- If the user selects any option other than "Don't Migrate", then the selected versions .cfg and .tep files are copied to the data directory of the version being installed during the installation process. The files are set up not to be removed on uninstall, to avoid users losing their existing configuration.

New Features in this Release

- Storage Format - Review and re-specify naming of options
- Renaming *Storage Format* to *Export Format*

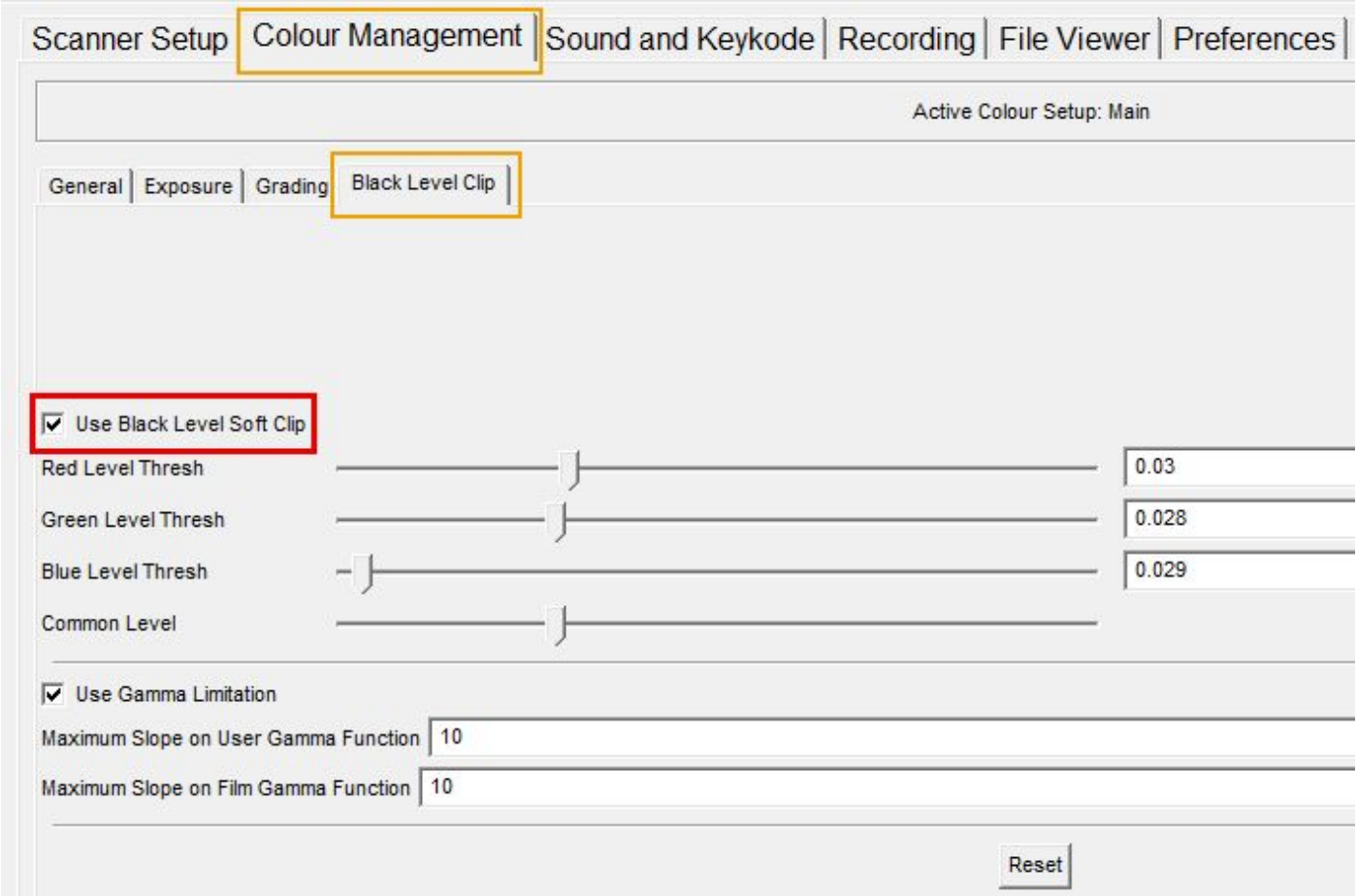


- Use industry standard names for colour modes ie 10 Bit
- Renaming "Display Mode" and "Storage Formats" from *Grayscale* labels to *Monochrome*

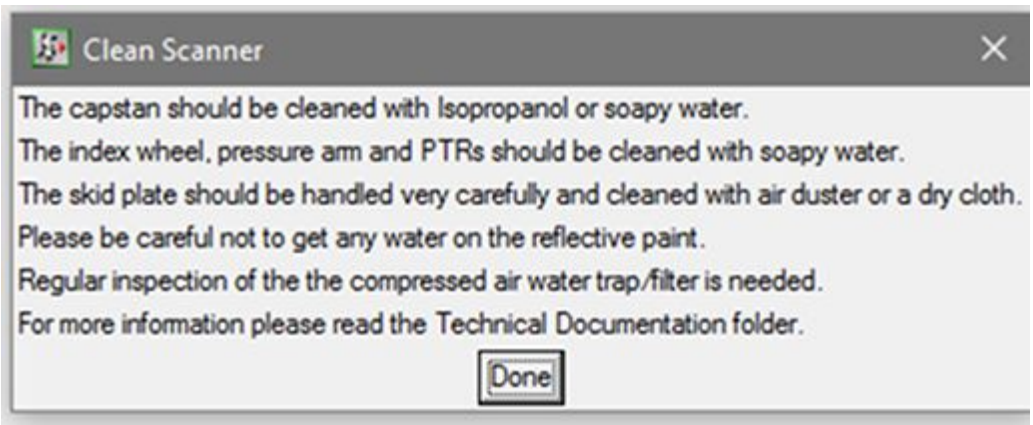


- Remove 'Clean output directory' checkbox
- Operator Resume for Audio

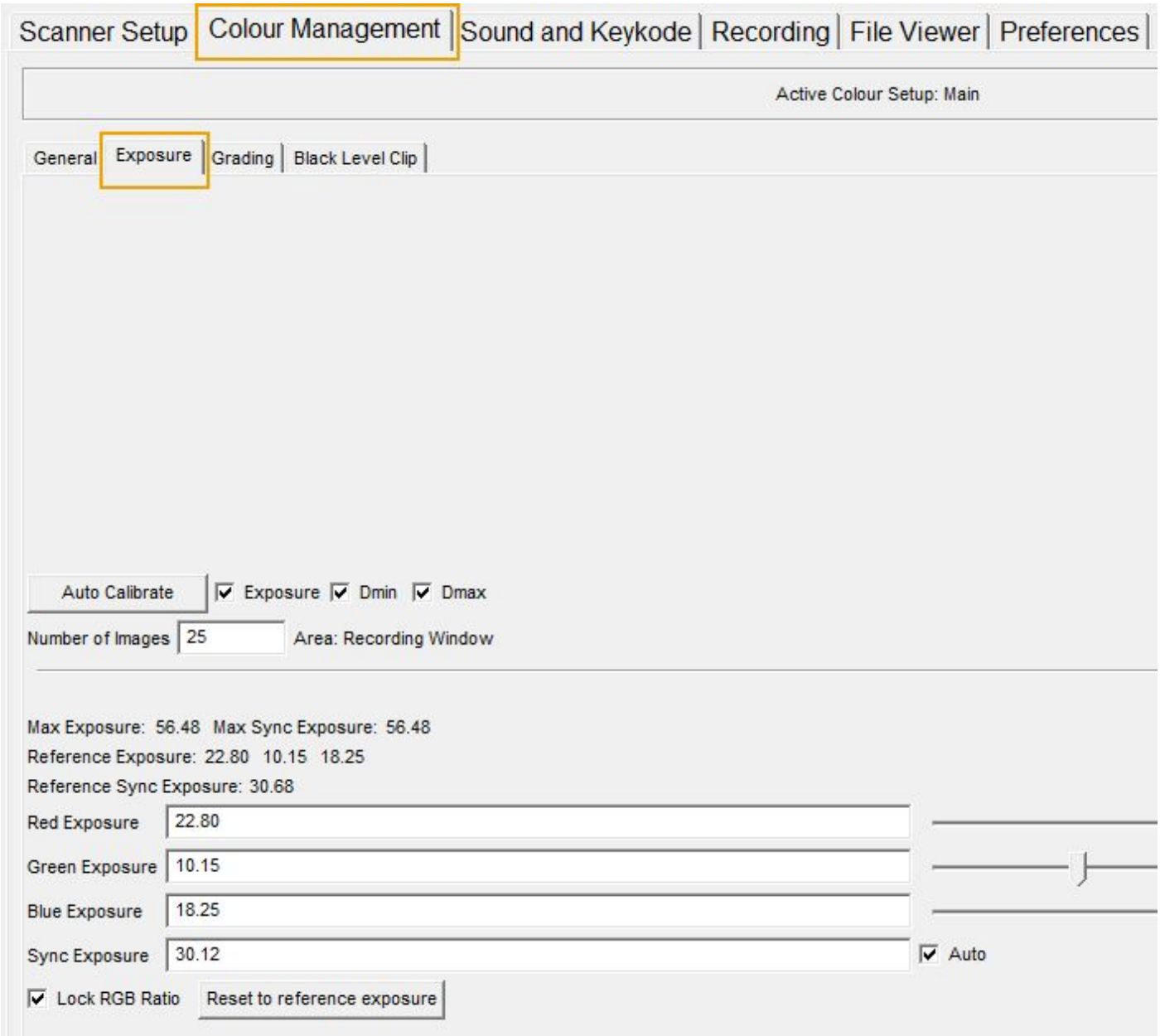
- Black level soft clip now works on negative film



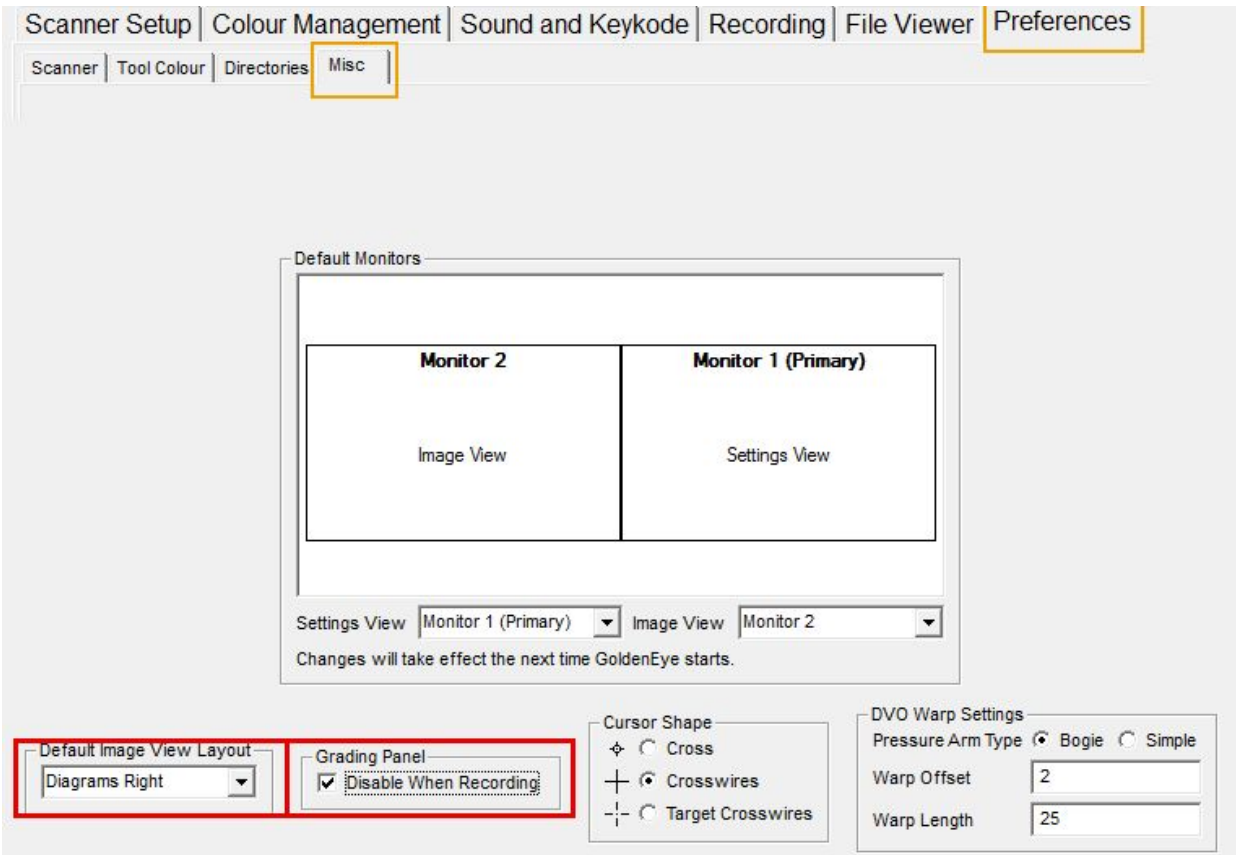
- Update *Clean Scanner* pop up window



- Move exposure levels into the operator mode



- Add option to change the GUI Setup when opening a new session
- A new preference, "Default Image View Layout", is added to the "Preferences\Misc" panel, with a default setting of "Diagrams Right". This preference is applied as the default layout of the image view when it opens.
- Add option to turn Tangent Wave panel on or off during scanning



- Change default output from Lin to Log/Use Dmin and Dmax when opening a new session
- Rename "Overview Speed" to be "Play Speed"
- Live tracking should be deselected in the software
- Add a shortcut to the Index page from the desktop during install

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