OPUS FreeFlow

Production Digitization System
for Preservation and Access

Production Digitization System

OPUS FreeFlow

Produce output at virtually any quality while offering the highest throughput possible today!

Production Digitization System
for Preservation and Access
www.DLSG.com

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DLSG at **Image Access**
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Version 2.1.9

Introduction

Thank you for your purchase of Opus software. Opus FreeFlow and Opus FreeFlow Lite are members of the Opus family of production software designed specifically for digitization projects. Opus FreeFlow and Opus FreeFlow Lite have the same unique four-tab interface which allows you to move dynamically between, Scan, Image Treatment, Metadata, and 'file' Export as your project requires. In Opus FreeFlow Lite some of the functionality of Opus FreeFlow has been disabled, including the option to upload, install and create Metadata Template schemas using the Metadata Tab. In this manual, you will learn to install the software, establish the global settings and use each of the four processes available to you.

Opus has been designed to efficiently batch process images within an object and export them to a storage device or a content management system. Once converted and stored the user removes the completed object in Opus. Several uncompleted or 'working' objects may be in process at any one time.

It is recommended that you read each section of this manual with the corresponding Opus user interface on your monitor, so that you may execute the commands as you learn them. Best results are obtained by entering a few sample images into the system and processing them as you progress through the manual. While learning to master each process it is not necessary for you to produce beautiful collections. That will come with experience.

With this software and an appropriate scanner, you should be able to scan and treat the images of eight or more books per day. For best results, it is important to use a large, high-resolution display and high-speed computer with at least eight gigabytes of RAM. For additional system information, see Appendix A: System Requirements.

Additional copies of this manual may be acquired by contacting your Image Access Inc. representative.

Installing the Scanner

Our complete digitization solutions include Opus software and one or more of a variety of archive quality scanners.

Verify that the scanner power adaptor, the network cable and the foot pedal are connected to the back of the scanner.

Connect the scanner directly to the computer that will run Opus FreeFlow via an Ethernet connection through a second Network Interface Card (NIC) or connect the scanner to the network and assign it a unique IP address in a range where the computer can access it. For more information about setting up the network configuration of the scanner, please refer to the scanner's Setup Manual.

To ensure that the computer can access the scanner via the network, open Windows Explorer and enter the IP address that has been assigned to the scanner in the address bar. The default browser will be launched and if the connection to the scanner is successful, the user interface in the figure below should be displayed.
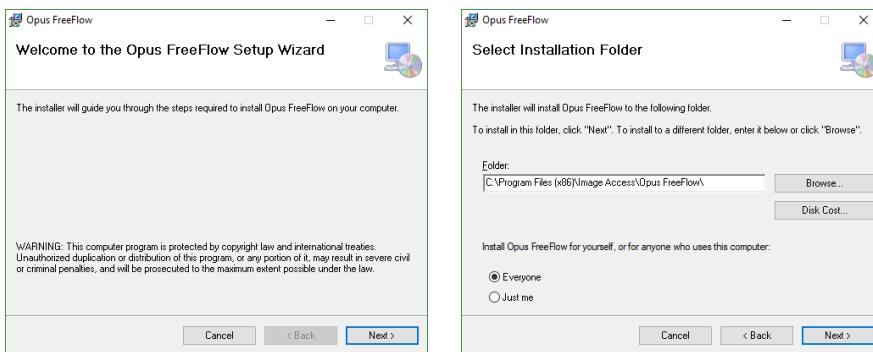

⚠ *Please Note:*
- *It is important to install Opus software in a computer that complies with the recommended requirements. Please refer to Appendix A of this User's Manual for a list of the computer requirements.*
- *Please keep your OPUS software station PC updated with regular Windows updates.*
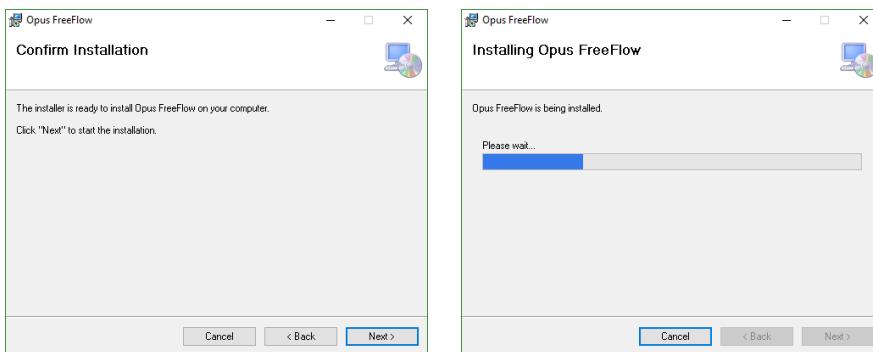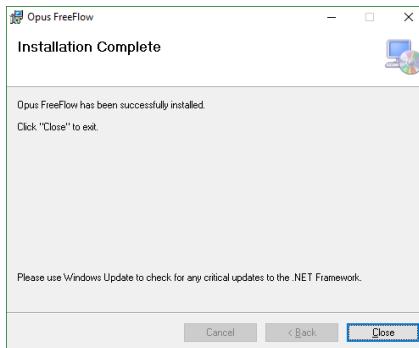
Installing the Software

- Insert the Opus software program CD. The installer program will automatically run. If the installer does not start automatically, press the Start key ⊞ + the letter E simultaneously, navigate to the CD drive and double-click Setup.exe.
- The installer will check the computer to verify if the computer has some required Windows components installed (i.e. .NET Framework 4.7, Run time libraries, etc.). If these components are not installed in the computer, the setup program will proceed to install them after the user has accepted the terms. It is imperative to install these components. Without them, Opus software will not run properly.
- After the required Windows components are verified and installed, the Welcome window is displayed. Click **Next** to start. Unless directed otherwise, use the default settings in the "Select Installation Folder" window. Click **Next**.

- In the Confirm Installation window, click **Next** to initiate the installation of the software. While the software is installing, a progress bar will be displayed.

- Once the installation is complete, click **Close**.

An Opus FreeFlow shortcut will appear on the desktop, and a folder named Image Access will be added to the computer's programs list.

Opus FreeFlow

Please Note:
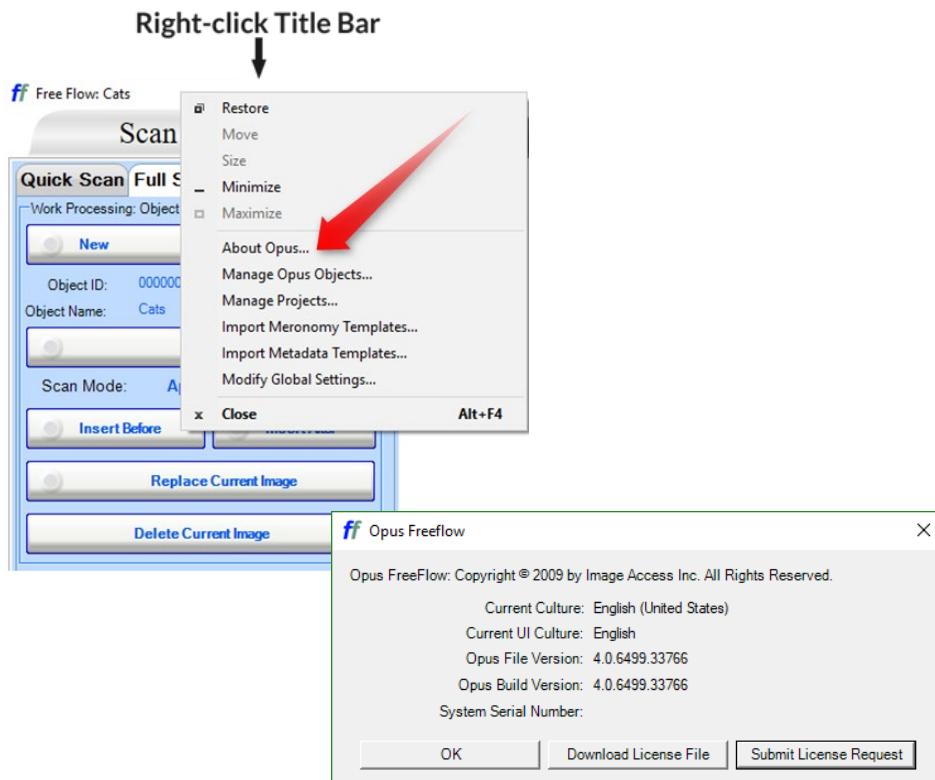
The accounts used to log into the computer should have rights to Read and Modify the folder located at C:\Opus.... This is the default folder where the settings, the working data and the derivatives will be stored.

Installing the Software License File

Please follow these steps:

1. Open Opus FreeFlow, right-click the title bar, and select About Opus.

2. Select 'Download License File.'

⚠️ *Please Note:*
If you are unable to automatically download a license file, you can request one by clicking on the 'Submit License Request.'

Brief Description of the Opus Software Options

Opus FreeFlow Lite Basic – Basic and mandatory license. It supports scanning in batches, manually treating the images, and exporting to the following output formats: Unaltered, Thumbnail, GIF, PNG, JPEG and TIFF.

PDF Generator – Enables the option to export non-searchable PDF's.

Opus FreeFlow:

Image Treatment – Enables the Automatic Image Treatment which includes Content Location, Deskew, Curvature Correction and Finger & Artifact Removal. These functions are run in the background while the user is scanning the document and can be run again at any time.

OCR – Enables the option to export Searchable PDF's, Audio (mp3) and Text files.

Batch Module – Enables the option to apply Despeckle, Rotation, Black Border Removal, Background Removal and Invert to a complete batch.

Endorser – Enables the option to imprint a digital watermark on the images (future implementation).

Barcode – Enables the option to read barcodes (future implementation).

Import – Enables the option to import multiple images at a time into Opus FreeFlow to be image-treated and exported.

Metadata – Enables the option to export a METS document containing the Opus Object Metadata (upgrade).

Web Output - Exporting HTML with 3D view.

Overview

Opus FreeFlow and Opus FreeFlow Lite is 'tab' driven, four stage production digitization software which enables the user to configure the associated scanner, manage projects, create templates, enter metadata, follow an organized workflow, manage objects/documents, apply image treatment and export the images in its native format or as a derivative.

This is accomplished in a flexible environment which allows the user to move dynamically between scanning, image treatment and outputting derivatives in any sequence.

Objects remain active within Opus FreeFlow until deleted and may be repeatedly processed and exported.

⚠ *Please Note:*
Metadata Tab option to export a METS document containing the Opus Object Metadata is an Opus FreeFlow upgrade option.
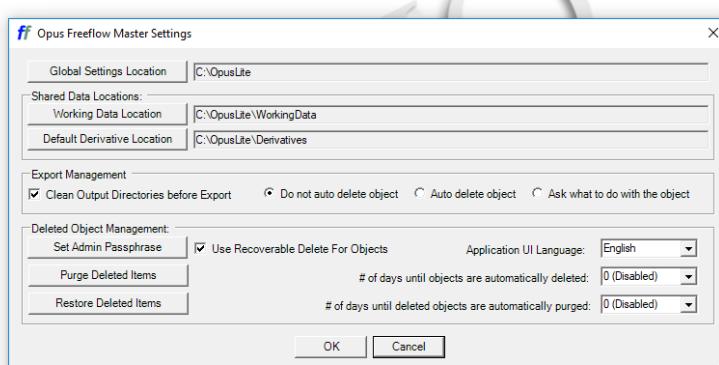
Global Settings

The Global Settings dialogue is where the system-wide control parameters are configured and can be changed according to the customer request. Because of the system-wide impact of these settings, the Global Settings dialogue is only activated when there are no Opus objects open.

Right-click on the FreeFlow icon or anywhere along the Title bar. A system menu will be displayed. Select Modify Global Settings.

The **Modify Global Settings** menu has four main sections: Global Settings Location, Shared Data Locations, Export Management, and Deleted Object Management.

Global Settings Location - Specifies the file path of the global settings file: Settings.xml. The default location is C:\Opus…

Working Data Location - Contains the file path where Opus will store data as Opus objects are being processed. The default path is C:\Opus…\WorkingData. This folder contains the scanned and treated images; however, <u>the user must not manipulate the files at this location as they are internal program files that are vital to the normal function of the program</u>. The user should only manipulate the 'Exported Images' located in the default Derivative Hive folder or in the file path specified by the user at the time of export.

Default Derivative Location - Specifies the file path where the output derivatives produced by the Opus system will be stored. Typically, because the produced derivatives will be used to populate a content management system or used by a web or file server, this location must be accessible by other computer systems deployed within the archive's or repository's facility.

The Export Management section allows users to control what happens to each Opus object after it has been exported and how to prepare the destination sub directory for the export.

Clean Output Directories before Export – Deletes all files at the destination file path (i.e. the directory where the derivatives will be stored), prior to exporting.

Do not auto delete object – Select to keep the object active after it has been exported.

Auto delete object – Select to automatically delete an object after it has been exported.

Ask what to do with the object – Select to display a message asking the user if the object should be deleted after it has been exported.

Opus software supports two types of deletion: Temporary and Permanent. Deleted objects can be recovered for further processing if the **Use Recoverable Delete for Objects** option is enabled. After an object has been temporarily deleted, the user can also delete it permanently to purge it. Once an object has been purged, it cannot be recovered.

The **Deleted Object Management** menu has four functions:

Set Admin Passphrase - Allows the administrator to enter a passphrase which will be required to Delete and Purge Objects in the future.

Purge Deleted Items – Allows the user to purge all of the Deleted Items from the Deleted Items Folder during routine maintenance and data management.

Restore Deleted Items – Enables the user to restore items previously deleted and move them back into the active Object queue. The "**Use Recoverable Delete for Objects**" checkbox must be checked prior to any deletions in which restoration of deleted items is desired.

# of days until objects are automatically deleted – Select the number of days that the software will keep an Opus object after it has been created.
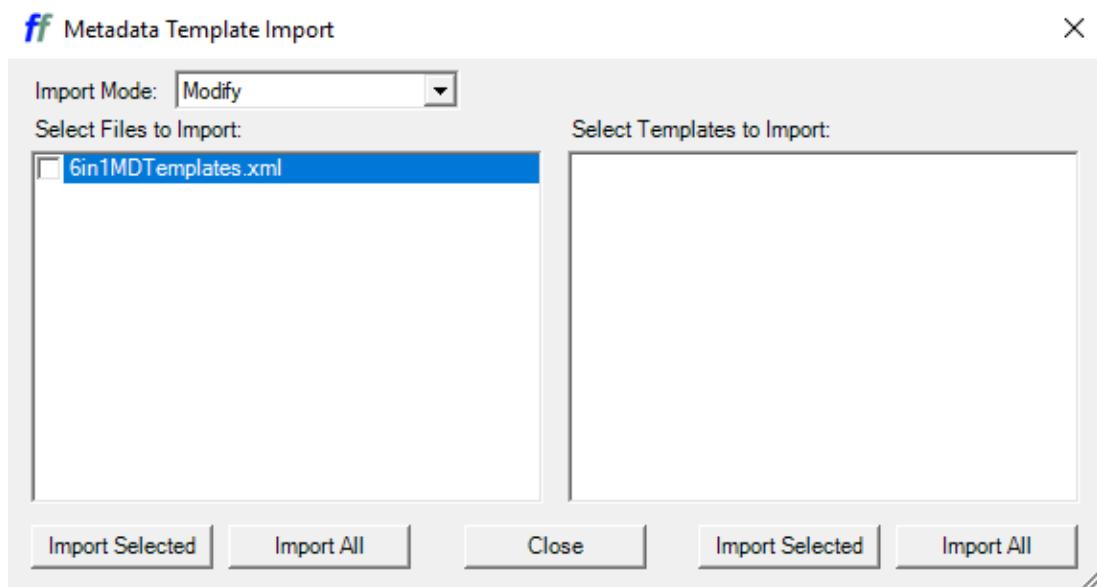
# of days until objects are automatically purged – Select the number of days that the software will keep an Opus object after it has been deleted (i.e. the point at which it will be permanently purged from the system).

Click **'OK'** to save your settings and exit, or click '**Cancel'** to exit without saving.

Metadata Template Import

Only available with Opus FreeFlow upgrade option

Opus FreeFlow software allows working only with predefined metadata templates. Right-click on the Opus FreeFlow icon or anywhere along the Title Bar. A system menu will be displayed. Select the **Import Metadata Templates** option. Browse for the folder where the uploaded templates are stored. Select this folder and click OK. The **Import Metadata Templates** window will open. On the left, select the file with Metadata templates (one file can contain several templates) and on the right, select which template(s) need to be imported. Having selected a template or templates, click on the **Import Selected** button or if you need to import all templates, click on **Import All**. When a message appears stating that the template is merged, click OK.

⚠ *Please Note:*
Basic predefined metadata templates are provided by DLSG. If you require customized metadata templates, please contact the DLSG service department for assistance.
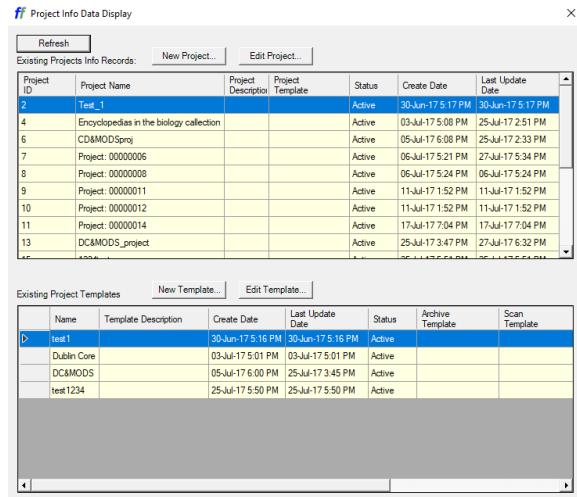
Managing Projects

Placing Opus objects in groups or projects can be helpful for organizational purposes. To further help the user maintain order, Opus FreeFlow also supports Template Creation for all your different projects. A project template can be used many times for different projects as a project-template.

Right-click on the FreeFlow icon or anywhere along the Title Bar. A system menu will be displayed. Select the **Manage Projects** option.

A Project Info Data Display window will be shown. In the second half of this window, select **New Template**. Enter the Template Name, choose a Metadata Template and optionally fill in the Description of the project template. Click 'OK' and a new project template is created.

Next, to create a project, select **New Project** in the first half of the Project info Data Display window. Enter the Project Name, Description and select the Project Template created. Click 'OK' and a new project is created. Close this window. Instructions on how to use a Project Template with Metadata in Opus FreeFlow are explained later in this user manual under the section titled **Metadata**.
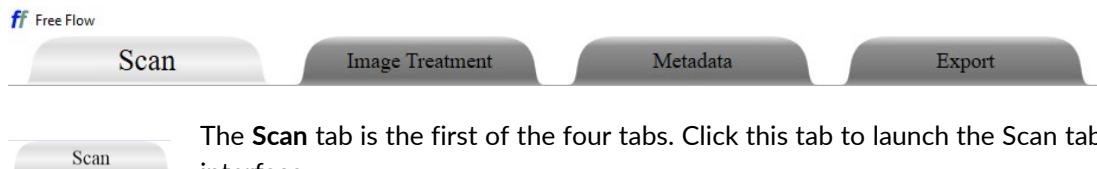

⚠ *Please Note:*

Our DLSG team can work with you to customize the MD templates for your needs. We understand that even though there are standards and predefined schemas, each institution has its preferences when it comes to the specific structure of XML output, the MD elements to capture, or predefined values that should always remain consistent, such as the Copyright statement.

Scan

Opus FreeFlow and Opus FreeFlow Lite allow the user to move between the four tab interfaces at any time. By clicking on the selected tab it becomes the 'active tab'. An active tab appears lighter than its inactive counterparts.

⚠️ *Please Note:*

Metadata Tab option to export a METS document containing the Opus Object Metadata is an Opus FreeFlow upgrade option.
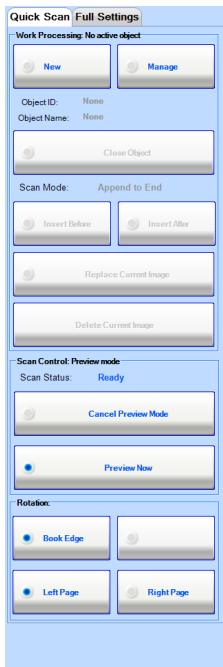

The **Scan** tab is the first of the four tabs. Click this tab to launch the Scan tab interface.

The Scan tab interface is divided into four areas: the light blue vertical control panel on the left[1], the image preview toolbar[2], the previewed or current image in the center of the interface[3], and thumbnail previews across the bottom of the window[4].

Control Panel

Quick Scan   *Full Settings*

Use the vertical Control Panel to manage the objects and operate the scanner.

Beginning at the top of the panel the functions and settings are:

Full Settings - Reveals the 3 complete sets of control panel areas including the scanner settings. (Full Settings control panel shown above right).
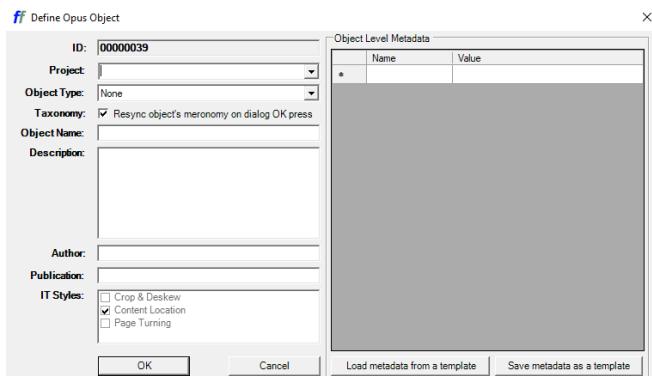
Quick Scan - Hides the scanner settings functions in the vertical Control Panel, and displays only enlarged scan function controls. Quick Scan is recommended when working with touch screens. (Quick Scan control panel shown above left).

New Object - Click this button to open the Define Opus Object window. An object represents a digital copy of the physical object. It is a digital 'bucket' that contains all the images and data about a physical object. (Some people refer to objects as 'batches'.) Notice that without having an object open, the user will not be able to scan or import images.

In the **Define Opus Object** window, the user can enter data about the object (e.g. the name of the project to which this object belongs to, the name of the object, a description, the author and the publication). In the Project field, you can also select a project you created, also linked to a predefined metadata template. Although none of the fields are required, we recommend that the user enters at least the Object Name, so the object can be easily identi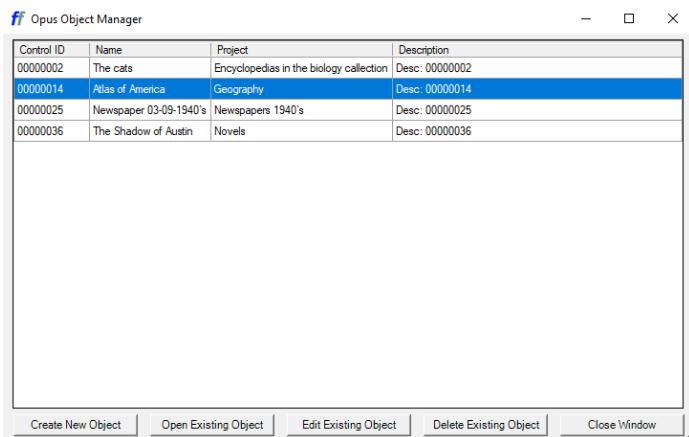fied in the future. In the Object Type field, you can select the type of scanned materials. In the IT Styles field, you can select automatic image treatment functions for the current object. In the area on the right-side of the window where the data field Name and Value can be specified (for example keywords), you can enter Object Level Metadata. The user can enter as many additional fields as needed. Alternatively, the user can load object level metadata from a previously saved template or save object level metadata as a template to be used.

The values entered in the Define Opus Object window will be automatically exported in a CSV (Comma Separated Values) when the derivatives are created. This file can be later used as an object spread-sheet.

Manage Objects - opens the Opus Object Manager menu. It displays five functions and a list of available objects.

Opus FreeFlow and Opus FreeFlow Lite have the ability to manage objects as they are processed. However, it is not designed to permanently manage these objects. Once processing is completed the objects should be deleted and later purged. This enables Opus to operate more efficiently. We recommend to our customers to have not more that 15-20 objects in the list.

Create New Object - opens the Define Opus Object menu that allows the user to create new objects (see New Object description above for more details).

Open Existing Object - Click this option to begin or continue working on the highlighted object in the list.

Edit Existing Object - edits the naming schema of the highlighted object in the list.

Delete Existing Object - deletes object(s) in the Manage Opus Objects window. To delete multiple objects, hold the Control key and click each of the objects that need to be deleted, then let go of the Control key and click Delete Existing Object. To delete multiple objects that show continuously in the list, hold the Shift key and click the first and the last object to be deleted, then let go of the Shift key and click Delete Existing Object. If an Administrator Passphrase has been previously set up, the user will need to enter it before the objects can be deleted.

Close Object - Closes the current open object.

About Inserting Images: When scanning, the most recent image created will be displayed to the right of the previous images in the thumbnail preview section. An enlarged view of the most recent image will also be displayed in the center of the screen, and it becomes the 'current image'. So, the last image created is the current image. Any image may become the 'current image' by clicking on its corresponding thumbnail.

The 'current image' is indicated by a red border.

Insert Before - Inserts the next image before the current image.

Insert After - Inserts the next image after the current image.

Replace Current Image - Replaces the current image.

Delete Current Image - Deletes the current image.

Scan Controls

Scan Status - The Scan Status indicates whether Opus FreeFlow is communicating with the scanner and if it is ready to scan.

'Ready' – tells the user that the system is ready to scan.
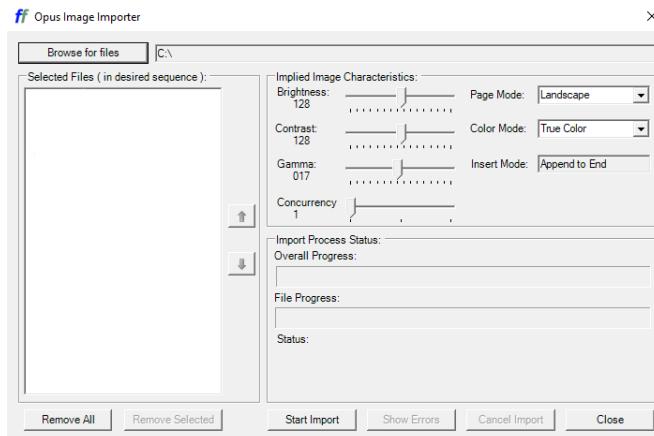
'Processing' - tells the user that data is still being transferred and that it cannot execute a scan.

Scan Now - initiates the scan process. The scanned image will become part of the open Opus object, it will be displayed in the Preview Panel, and its corresponding thumbnail will be displayed in the bottom of the screen.

Import - opens the Opus Image Importer menu and allows the user to import images into an Opus object for further processing.

Please Note:
The user can scan and import images only when an object has been opened.

Browse for Files – Opens a navigation window where the user can select the image(s) to be imported. After selecting the image(s) click Open. If the Import option was purchased and installed, the user will be able to import multiple images at a time; otherwise, the user will only be able to import one image at a time.
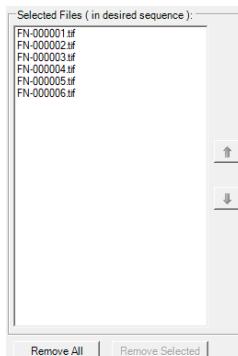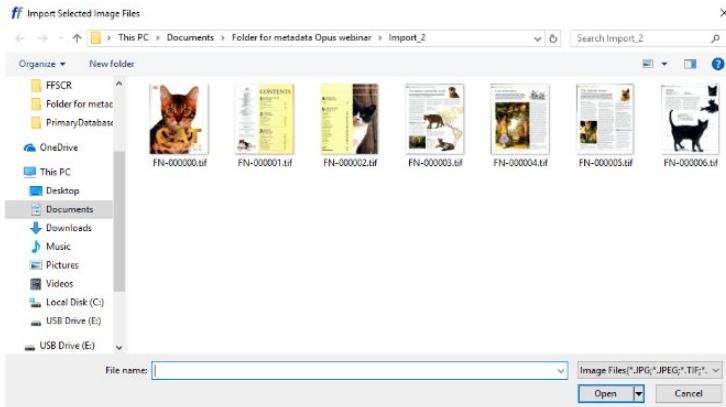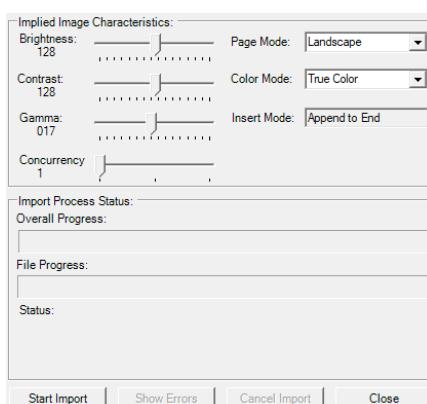

The file names of the selected image(s) will be displayed on the left side of the Opus Image Importer window in the Selected Files panel. Use the arrows on the right side of the panel to rearrange the order in which the images will be imported. Simply select the file name and click the corresponding arrow up or down to move its position in the import sequence.

To remove an image from the list, click on the image, and then click Remove Selected. Click Remove All to remove all the files in the list without selecting specific images.

When the images are scanned instead of being imported, Opus FreeFlow Lite saves any specified scanning settings. These settings include: Brightness, Contrast, Gamma, Concurrency, Page Mode and Color Mode. However, when an image is imported these characteristics are unknown to the software. For imported images Opus FreeFlow Lite uses the default values set here in the Opus Image Importer window.

After selecting the images to be imported, click Start Import. Two bars will be displayed to show the progress of the import. When the Overall Progress bar has reached 100%, click Close to go back to the main window.

Images that have been imported into an Opus object are displayed in the thumbnail strip in the bottom of the main window. The user can then treat the images and export them.

Preview Mode - is a scan mode which displays a quick view of the image so that the user can make preliminary adjustments before the final image is scanned. The images scanned using this mode, will have a watermark: "Image Preview". And they will not become part of the Opus object. To exit the Preview Mode, click Cancel Preview Mode.

Rotation

No Rotation - Opus FreeFlow Lite has the ability to rotate images automatically as they are scanned. The 'No rotation' command tells the software not to rotate the images at scan time.

CCW Rotation - gives the user the option to rotate the image 90° counter-clockwise. This is useful when scanning a document that does not fit in the vertical (normal) orientation. To use this feature, place the document in a horizontal orientation as shown below and select the CCW option before scanning.

Document on Scanner Bed

Rotated Image on Screen

When scanning oversized books, the user can place the book rotated in a way that either the right or left pages fit on the scanner bed one at a time. In this case the user should scan all the left pages and then all the right pages.

Lefts

Left Pages - automatically rotates the scanned image 90° counter-clockwise. Place the left page of the book as shown below. The image will be rotated accordingly and the software will display the image and create a place holder for its corresponding right page. Turn the page and continue scanning all the left pages of the book.

Left Pages on Scanner Bed   *Image on Screen*
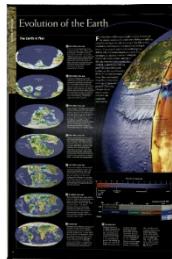
After scanning all the left pages, click the thumbnail for the first place holder at the beginning of the object. Then click   **Replace Current Image**

Next, start scanning the right pages as indicated below.

Rights

Right Pages - automatically rotates the scanned image 90° clockwise. Place the right pages of the book as shown below. The scanned image will replace the place holder created when its corresponding left page was scanned. Turn the page and continue scanning all the right pages of the book.

Right Pages on Scanner Bed   *Image on Screen*

Scanner Settings Panel

This section of the left control panel adjusts the general scanner settings.

Scanner Settings - this indicates whether Opus FreeFlow Lite is communicating with the scanner.

'Scanner Connected' - tells the user that the software has established a connection the scanner.

'Looking for a scanner' - tells the user that the software is trying to establish a connection to the scanner.

Scanner IP – Enter the IP address assigned to the network scanner. The default IP address for a Scan2Net scanner is 192.168.1.50

Black and White – Sets the scanner to capture Black and White images (1-bit format).

Grayscale – Sets the scanner to capture Grayscale images (8-bit format).

Color – Sets the scanner to capture Color images (24-bit format).

⚠ *Please Note:*
Scanner must have the color option activated.

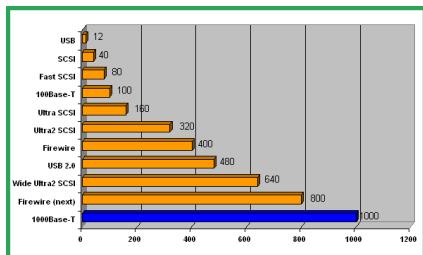**Slide bar controls –** Allow the user to adjust the scanner's Brightness, Contrast and Gamma correction.

Setup – Click to access the scanner's setup menu.

Scanner Settings

The scanner settings options will vary depending upon the scanner model in use with Opus FreeFlow. The following are generic scanner settings; please refer to your scanner's manual for more details.

Scanning speed has several variables including data transfer. The easiest, most efficient and fastest means to connect and transfer data between a scanner and a personal computer is via a network connection, rated at one gigabit transfer rate. We believe that all network devices such as printers and scanners should avail themselves of this technology especially when managing large files such as 24-bit color images. The graph below shows the expected transfer rates using various methodologies.

Scanning Speed – Select the scanning speed according to the following:

High Quality Mode – produces higher quality images by slowing down the sweep of the camera which allows the camera to absorb more light making the image higher quality.

Fast Mode – speeds up the sweep of the camera; however, the camera loses some image quality because the camera cannot capture as much light during its sweep.

Document Mode – Select the mode based on the document type and the scanning mode that your scanner supports. For example, if using a flatbed scanner, select Flat. If using planetary scanners use Glass if a glass plate is being used, otherwise select V-Mode, Book or Flat.

Color mode – Select to scan in Color, Grayscale or Line Art (Black and White).

⚠ *Please Note:*
If Color is not listed, the scanner does not have this option installed.

True Color	24-bit color
Indexed	8-bit color (256 colors)
Grayscale	8-bit grayscale
Line Art	1-bit black-and-white
Photo	1-bit black and white with dithering

Document Size – Select the size of the document to be scanned. Choose 'Automatic' to allow the scanner to detect the size of the document and crop it accordingly.

File Format – Select the file format or the type of image to be captured by the scanner. The file formats supported by Opus at scanning time are JPEG and TIFF.

JPEG - stands for Joint Photographic Experts Group. The original JPEG file format goal was to allow for the compression and storage of high quality digital photos. JPEG files are also known as JPG file named after their common three letter file extension. JPEG files are the de-facto standard for storing digital photos and are used by virtually all digital cameras and computer software. JPEG files store digital images in a compressed format. There are two types of compression algorithms: Lossy and lossless. Lossless compression means that when opening a compressed file, the extracted data is exactly the same as the original. Lossless compression is used for example to compress large documents. Lossy compression on the other hand means that the extracted data is a bit different than the original. At first it seems that the loss of data typical to lossy compression algorithms is a problem. But for some data like digital photos such loss can be negligible. The advantage of lossy compression is much higher compression ratios.

TIFF - stands for Tagged Image File Format. It is a flexible image format that normally saves 8 or 16 bits per color - red, green and blue - for a total of 24 or 48 bits, and uses a filename extension of *TIFF* or *TIF*. TIFF's flexibility is both a feature and a curse, with no single TIFF viewer capable of handling all the different varieties of TIFF files. TIFF can be lossy or lossless. Some types of TIFF files offer relatively good lossless compression for bi-level (black and white, no grey) images. Some high-end digital cameras have the option to save images in the TIFF format, using the LZW compression algorithm for lossless storage. The TIFF image format is not widely supported by web browsers. TIFF is still widely accepted as a photograph file standard in the printing industry.

Compression – Select the type of compression to be used when capturing the images.

Resolution - Select the desired resolution in DPI (Dots per Inch).

DPI is a measure of dot density, in particular the number of individual dots that can be placed in a line within the span of 1 inch (2.54 cm). The higher the resolution, the bigger the files produced. Some scanners support the option to purchase and install a module that increases the maximum resolution to 600 dpi.
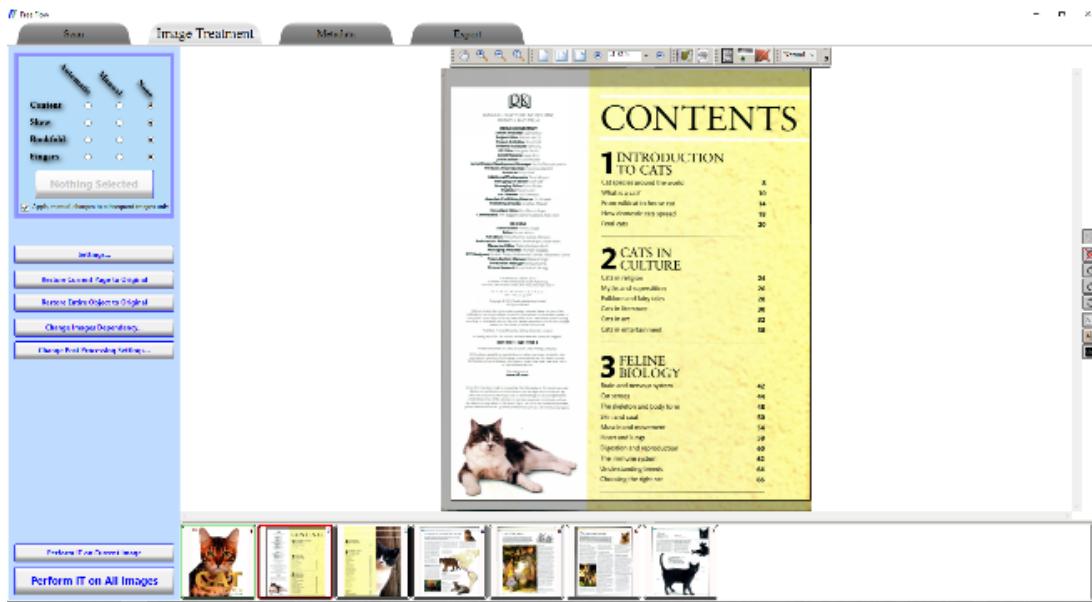
⚠ *Please Note:*
In order to minimize the scan processing, set up time, we recommend the user save scan settings as a template for different projects. Click the Setup button in the scanner settings window to Save Settings as Template or Load Settings from Template. Please contact our DLSG service department for assistance if needed.

Image Treatment

The **Image Treatment** tab interface is the 2nd of the four tabs. Image treatment plays an important role in cleaning up the scanned image preparing it for storage or presentation. However, it is also highly recommended that when processing images for archive and preservation that the user go directly to the Export tab interface and export the raw uncompressed image (images as they were scanned) to their archive before applying image treatment (see Export section for details).

Open the Image Treatment tab interface by clicking

Opus software supports two types of Image Treatment: Automatic and Manual.
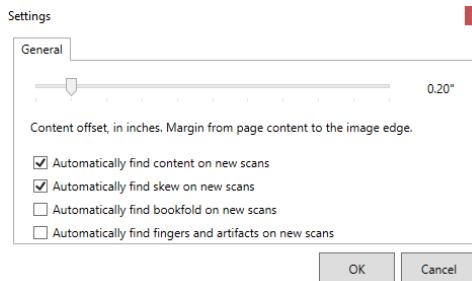
Automatic Image Treatment

Automatic Image Treatment refers to the calculations the software does for the purpose of improving the quality of the images. These improvements include: splitting the pages when scanning a book, locating the content on the pages, eliminating the fan and the gutter, correcting the skew, removing the fingers when used to hold the book open, and correcting the curvature of the pages.

The Automatic Image Treatment is offered as an option that can be purchased. When this option is installed, the software will run the enabled Image Treatment functions while the images are being scanned, so when the user navigates to the Image Treatment tab, the automatic results will be displayed on each image.

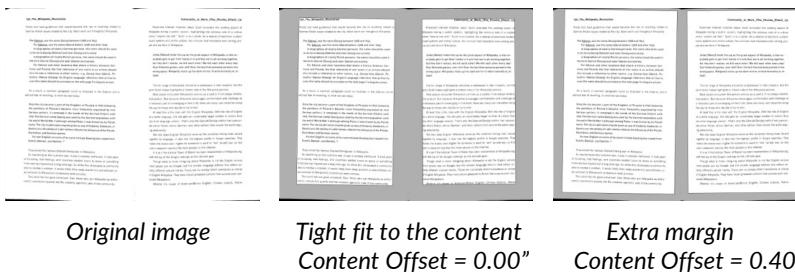In order to select which Image Treatment functions should be run automatically, click
[Settings...] The Settings button is located on the left control panel. The settings window will be displayed as shown below.

Click the checkboxes of the Image Treatment functions to be automatically run when new images are scanned or imported.

Set the content offset or margin that the software should leave away from the page content. The default value for Content Offset is 0.20". See examples below.

| *Original image* | *Tight fit to the content*
Content Offset = 0.00" | *Extra margin*
Content Offset = 0.40" |

It is probable that the results of Automatic Image Treatment require some manual adjustments. The section below describes how to make these types of changes manually.
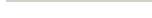
Manual Image Treatment

Manual Image Treatment allows the user to modify the results of Automatic Image Treatment or make all Image Treatment changes manually on each image.

This is accomplished by using the functions found on the toolbar located above the previewed image in the Image Treatment tab interface.

Image Preview Toolbar

The current image, that image which is outlined in 'red' in the thumbnails and appears in the center of your screen, may be manipulated in size and location in order to optimize image treatment or scan previewing. Use the functions in the Image Preview Toolbar to adjust the size and location of the image or a portion of the image viewed.

Click this icon, hold down the left mouse button and the hand shaped cursor will grab the image allowing the user to move the viewable area within the image.

After clicking this icon each click on the image will enlarge the image on the screen to a maximum of 1600% of the original image.

After clicking this icon, each click on the image will reduce the size of the image on screen to a minimum of 8.3% of the original image.

After clicking this icon, the user can hold down the left mouse button and drag the mouse up to zoom in and down to zoom out of the current image.

Click to view the image at its original size.

Click to fit the image to the screen.

Click to fit the width of the image to the screen width.

Click repeatedly to reduce the size of the preview image.

Click the arrow to display a list of percentages for zooming.

Click repeatedly to enlarge the size of the preview image.

Click to display a list of the parts of the book. Click on the image's thumbnail, and select the corresponding part of the book.

Image Treatment Toolbar

Click to toggle between "Dependent" and "Independent" images. See "Image Dependency" explanation below.

Click to make the two pages on the current image the "Same Clip Size". This enables the user to create exactly the same image size of the selected images, eliminating 'flutter' or 'stutter' when viewing multiple images in a 'film strip' style viewer.

Click to activate the manual "Content Location" and "Deskew" functions. This enables the user to adjust the size and/or skew of a page. See "Content Location" function explanation below.

Click to activate the manual "Curvature Correction" function. This enables the user to adjust the image so the curvature is eliminated. See "Curvature Correction" function explanation below.

Click to activate the manual "Finger or Artifact Removal" function. This enables the user to remove artifacts of all types. See "Find Finger/Artifact Removal" function explanation below.

To see an explanation about the other functions on the toolbar, refer to the Image Preview Toolbar section of this User's Manual.
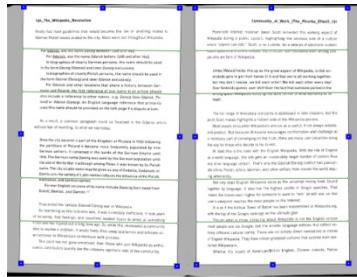
Content location

Using the Content Location function will help the user to include or exclude portions of the image(s) in the content to be preserved. In most cases, the user opts to include only text, graphs, charts, tables, etc., leaving out the fan, the gutter and any unnecessary large margins.

Click the ▤ icon and pages will appear with two boxes on them, one for the left page and one for the right page (when scanning a book). They will each have eight blue ▪ Move Points. Hover the mouse over a Move Point until it turns into either style of ↕↔ double arrow. Click with the left mouse button on a Move Point and drag it to include content that was missed or to remove an area that is not needed.

It is important to note that by changing the clip size on one image. All the clips will be set to the same size throughout the object if they are set to be dependent. Once the size of the clip is set for dependent images, the user should move the clips, if needed, by dragging the page when the cursor turns into ✛ and not by changing its size.

To apply the changes, click Perform IT on Current Image or All the Images. The results are displayed in the Export tab for review.

Clips set in Content Location   *Result*
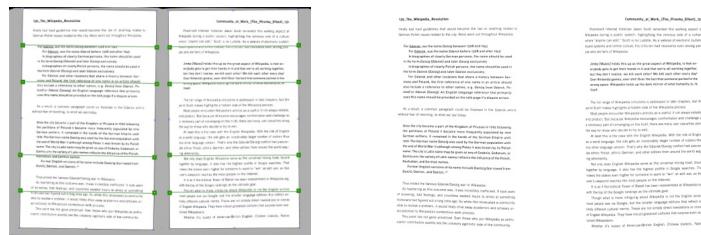
To delete a clip, right click anywhere inside the clip. To create a clip, click and drag on the image where the clip is going to be placed. If the image is dependent and the user needs to create a clip, click on the image where the upper-left corner of the clip should be placed and a clip of the predetermined size will be displayed. To move a clip area, follow the instructions above. There is a maximum of two clips per image.

Skew

Click the ▤ icon. Skewed white boxes for the left and right pages will appear with four horizontal green lines each and Move Points at the ends of each line. Move the cursor over one of the Move Points ▪ . When it becomes a double arrow ↕ hold down the left mouse key and move up to deskew the page clockwise and down to deskew the page counterclockwise.

⚠ *Please Note:*

When deskewing pages, line up the green lines with lines of text or with the bottom or top of an image. This will act as a grid to aid in correctly deskewing the page.
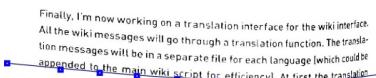

Set Deskew   *Result*

Curvature Correction

Click ▤ . A blue line with multiple Move Points ▪ will appear on the top and bottom of the page where Opus finds book curvature.

Move the cursor between two move points until a double arrow appears ↕ . Hold down the left mouse button and drag the line to the top or bottom where the user sees the biggest curve on the book.

Position the curve along the text or content on the page. Move the cursor over the move points. When a four arrow cursor appears ✛ , create an underline to the curve by dragging the points to the bottom of the line following the curve of the book. Right clicking on a move point will delete it, while right clicking on an empty area on the line will add a move point.

Set Curvature Correction   *Result*

If the user does not want to correct the curvature, click and drag the blue curve to the top or bottom edge of the clip accordingly.
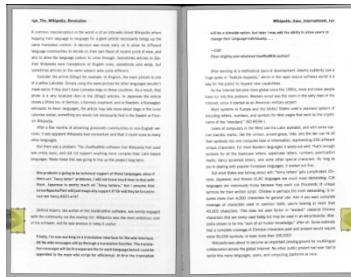
Finger Removal

Click　　　　. A yellow box with eight Move Points will be placed over fingers that have been found by Automatic Image Treatment (if installed and selected. If one of these yellow boxes needs to be modified, Mouse over a　　　Move Point until it becomes one of the two double arrows ↕ ↔ and resize it, leaving about 0.5 inches between the box and the content on the page. This enables the software to 'fill in' the newly removed area with surrounding background.

If the user needs to delete a yellow box, right click on it. To create a yellow box, click and drag anywhere inside the clip. To move the yellow box, hover the mouse over it and when the cursor turns into　　click and drag the box to position it in the correct place.

Removing Artifacts

Any unwanted artifact like hand-written notes or stains may be eliminated using the Remove Finger removal feature. Click　　　with the left mouse button draw a box around the artifact needing to be removed. The background around the yellow box will fill in this area; consequently, it is important that the yellow box has about 0.5 inches of background around it. To learn how to move and delete a yellow box, see previous section.

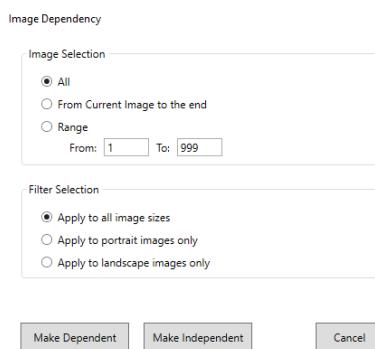*Set Finger Removal*　　　　　　　　　　　　　　　　　*Result*

Image Dependency

By default, all the images are set to be Independent, which means that each clip can be of a different size based on the content found in the image. In some cases, the user wants to set the size of all the clips in an object to be the same, this could happen if the final output file is a PDF or a multi-image TIFF where the reader scrolls through the pages, so having them all be the same size provides a nicer viewing and reading experience.

To change the dependency of one image, click [image] in the Image Treatment toolbar. This will toggle the dependency of the image between Dependent and Independent. Dependent images are forced to have the same clip sizes and Independent images can have different clip sizes.

To change the dependency of a range of images, click [Change Images Dependency...] in the left control panel. This will open the following window:

The first section allows the user to select all the images in the Opus object, select the current image and all subsequent images, or enter a specific range.

The second section allows the user to filter the first selection. The user can apply the dependency change to all the images in the Opus object, apply it only to the portrait images, or apply it to landscape images only.

In the bottom of the window the user can select if the specified images should become dependent or independent.

If all the images are independent and the user selects a range of images to be dependent, the software will attempt to apply the biggest size clip found (among the selected images) to all the images in that range. If this size clip does not fit one or more of the images, a message will be displayed letting the user know that specific images could not be converted to dependent because of size constraints. If the user still wants to force an image to be dependent, click [image] in the Image Treatment toolbar.
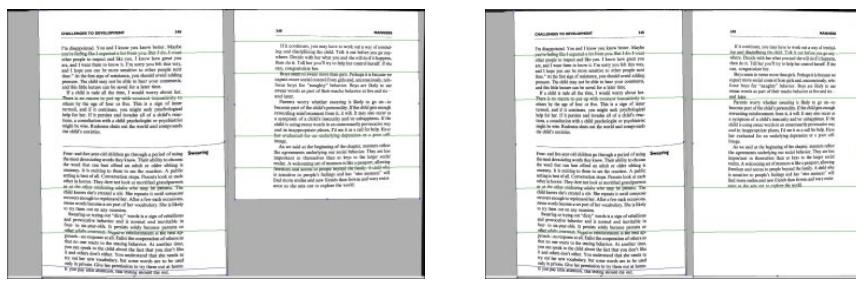
Dependent images have a green border and Independent images have a white border around the thumbnails.

Independent Image   *Dependent Image*   *Current Image*

Same Size Clip

The Same Size Clip function only works in conjunction with the Independent Image feature.

When working with an Independent image, the user has the ability to create different clip sizes for the left and right side pages. Should the user want the left and the right side page to be the same size, click   .

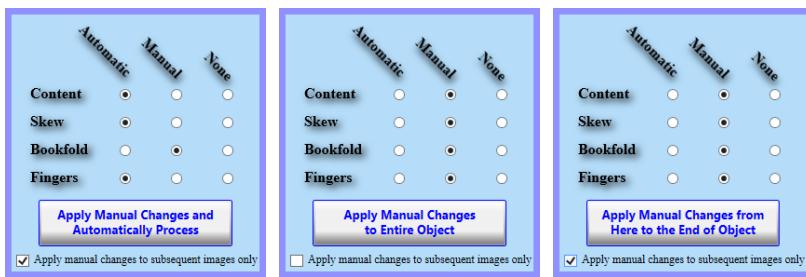*Regular independent image*   *Independent image set to have both clips be the same size*

Single Clip

Opus FreeFlow users typically use the page splitting feature to separate the left and right pages of a book into individual clips. However, to produce a single clip containing both pages, first check that the image is set to be independent. Next delete one of the two clips by right clicking on it. Finally, use the Move Points to expand the remaining clip box to encompass the area desired.

Image Treatment Matrix

The Opus matrix feature allows users to select one or more IT functions and apply them to all the images. The matrix can save a lot of time in the process of treating the images since the user can make the needed changes in one image and then apply it to the rest of the images. For example, the user can set the size and the location of the clips in an image and then have these clips be positioned at the same place throughout the Opus Object.

First, select the function(s) to be applied by clicking its corresponding radio button and then click **Apply Manual Changes to Entire Object** or **Apply Manual Changes from Here to the End of Object**. The label on this button varies depending on whether the 'Apply manual changes to subsequent images only' checkbox is selected.

With Opus FreeFlow, the Opus matrix includes the option to select Image Treatment functions to be run automatically. This is convenient because it allows the user to run the Automatic Image Treatment functions again after they have been run at scan time. For example, if the first results produced by Automatic Curvature Correction were not accurate because the clips were not located correctly, the user can manually adjust the clip locations in one image and select Manual Content and Automatic Bookfold in the Matrix. By doing this, the clips size and location will be applied to the rest of the images and Automatic Curvature Correction will run based on the new clip locations.

⚠ *Please Note:*
The content of the matrix will change depending on whether the Automatic Image Treatment option is installed (i.e. The Automatic column will not show unless the Automatic Image Treatment option is installed, this option is included with Opus FreeFlow but not included with Opus FreeFlow Lite).

Regular Matrix   *Matrix with Automatic Option Installed*

There is also a shortcut that will apply the change the user is making to the subsequent images. Hold down the Control key while making a change in Content Location or Skew with the mouse to apply that particular Image Treatment change to all subsequent images.
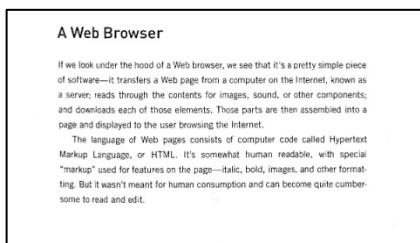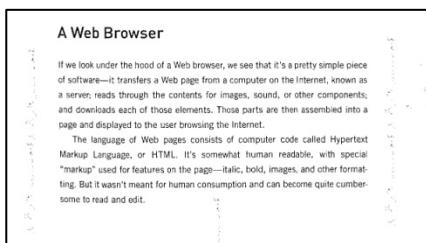
⚠ *Please Note:*
Using the Image Treatment matrix or the Control key will not override any Image Treatment changes done to images that have been set as Independent images.

Post Processing Image Treatment Functions

If the Post Processing Image Treatment option has been purchased and installed, a second toolbar will be displayed in the right side of the window (this option is included with Opus FreeFlow but not included with Opus FreeFlow Lite). This toolbar allows the user to apply Despeckle, Rotation, Black Border Removal, Background Removal and Invert. To view the results of these IT functions as they are applied, select the corresponding function in the vertical toolbar and click Perform IT.

Despeckle - is the process of removing the 'noise' in an image. This function is only available for Black and White Images. Sometimes when the image is captured by the scanner, there are dots in the background that should be removed to improve the quality of the image.

Before Removing Speckles   *After Removing Speckles*

Rotation – rotates the image by 90° , 180° and 270°

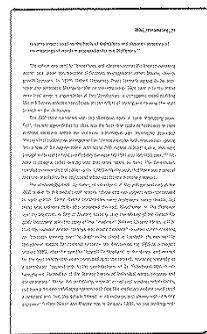*No Rotation*   *90° Rotation*   *180° Rotation*   *270° Rotation*

Black Border Removal – Removes the dark area around the edges of a clip caused by the fan and gutter of a book. It is only available for images scanned in Black and White and TIFF format.
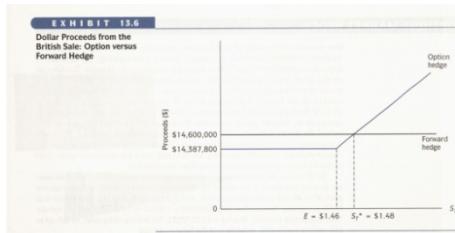

Original Clip   *After Black Border Removal*

Background Removal – removes unwanted bleed-through in the background of an image. Scanning very thin documents that show the content of the back side of the paper when scanned can render undesirable artifacts or a ghostly image in the background commonly known as 'bleed-through'. The Background Removal feature is available only for images scanned in Color or Grayscale.
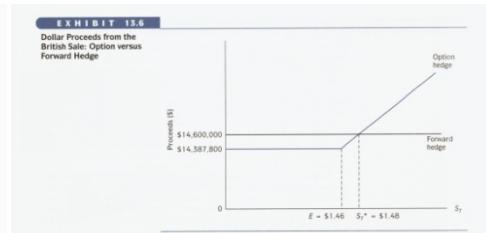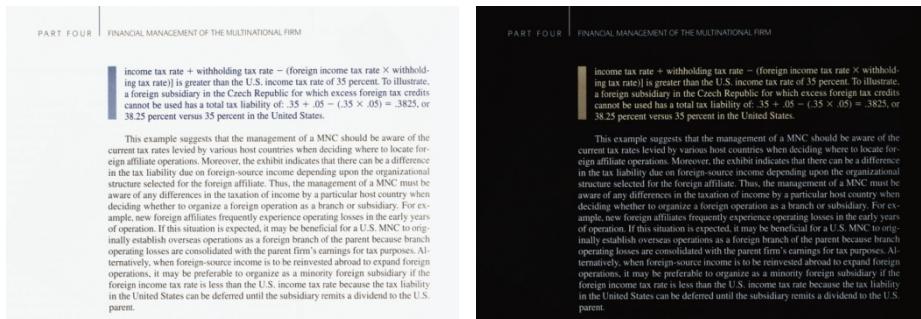

Original Image   *Image with Removed Background*

Invert – converts the light colors to dark colors and vice versa.
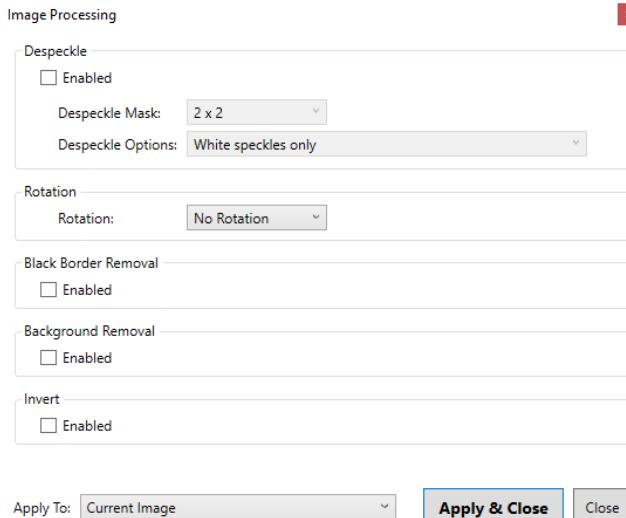
Original Image   Inverted Image

To apply to a range of images, click **Change Post Processing Settings**… on the left control panel.

The user can apply post-processing Image Treatment functions using the toolbar as described above. Select all checkboxes you want, and choose from Apply To the range of images you want to perform these functions.

Additional Controls

Removing Image Treatment

| Restore Current Page to Original | Restores the current image to original by undoing all image treatment which has been performed. |

| Restore Entire Object to Original | Restores all images within the Opus object to original by undoing all image treatment which has been performed. |

Saving Image Treatment Changes

| Perform IT on Current Image | Saves the Automatic and Manual Image Treatment changes for a single image. After applying and saving the changes to the current image, review the results in the "Metadata" or the Export" tab, where the software automatically takes you. |

| Perform IT on All Images | Saves the Automatic and Manual Image Treatment changes for all the images in the Opus Object. After the software has finished saving the changes, the **Metadata** tab will become active <u>or in the instance you have not assigned an Opus Object to a project linked to an MD template</u> - the **Export** tab will become active, so the user can review the results. To make additional Image Treatment changes, click the Image Treatment tab, make the desired changes, and click Perform IT on Current Image or Perform IT on All Images depending upon how many images are modified. |
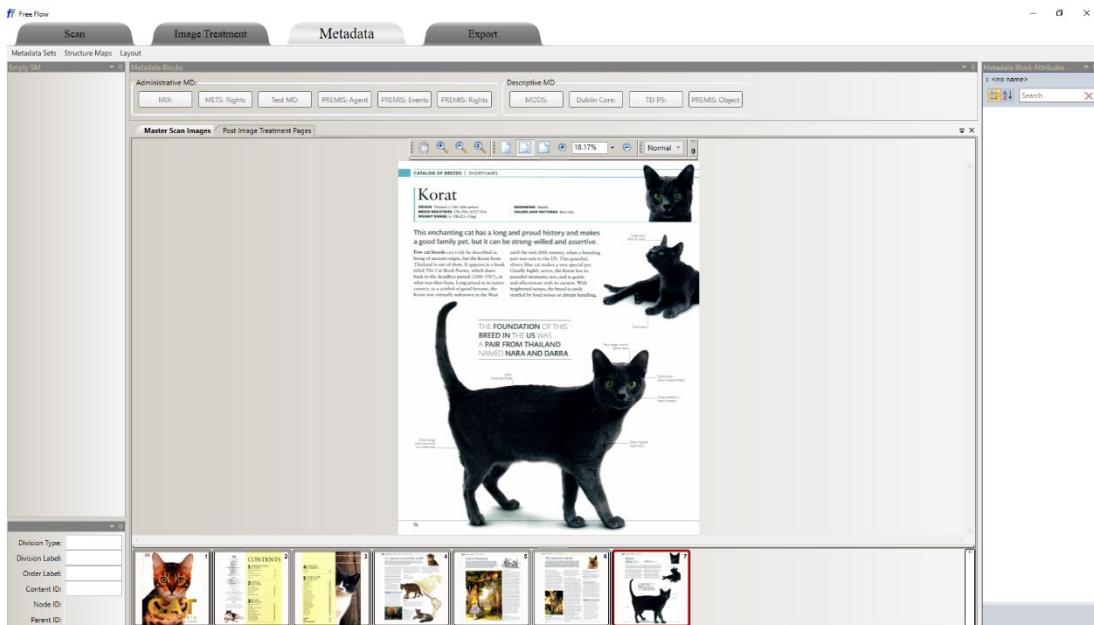
Metadata

The third tab of the four-tab digitization system is the Metadata tab, located between the Image Treatment tab and the Export tab. If the Metadata option has been purchased and installed, and a metadata template has been imported (refer to the **Metadata Template Import** section of this manual) then the user can enter and capture hierarchical metadata and link metadata templates to objects when they are defined. If the user does not link metadata templates to objects, the Opus software will automatically skip this tab.

The Metadata tab interface is divided into five areas:

Structure Map control panel on the left, Metadata block at the top of preview image area, Preview Current Image area in the middle of the screen, Thumbnails preview across the bottom of the interface, and Metadata Attributes field on the right side of the screen.

To start working with metadata, mouse over and select Metadata Sets at the top of the screen and in the dropdown list select to Add New Metadata Set. From the available metadata templates, choose the one that you need and click OK.

To add descriptive metadata, mouse over and select Structure Maps at the top of the screen, below the four tabs, and in the dropdown list select to Add New Structure Map. From the available structure maps, choose the one that you need and click OK.
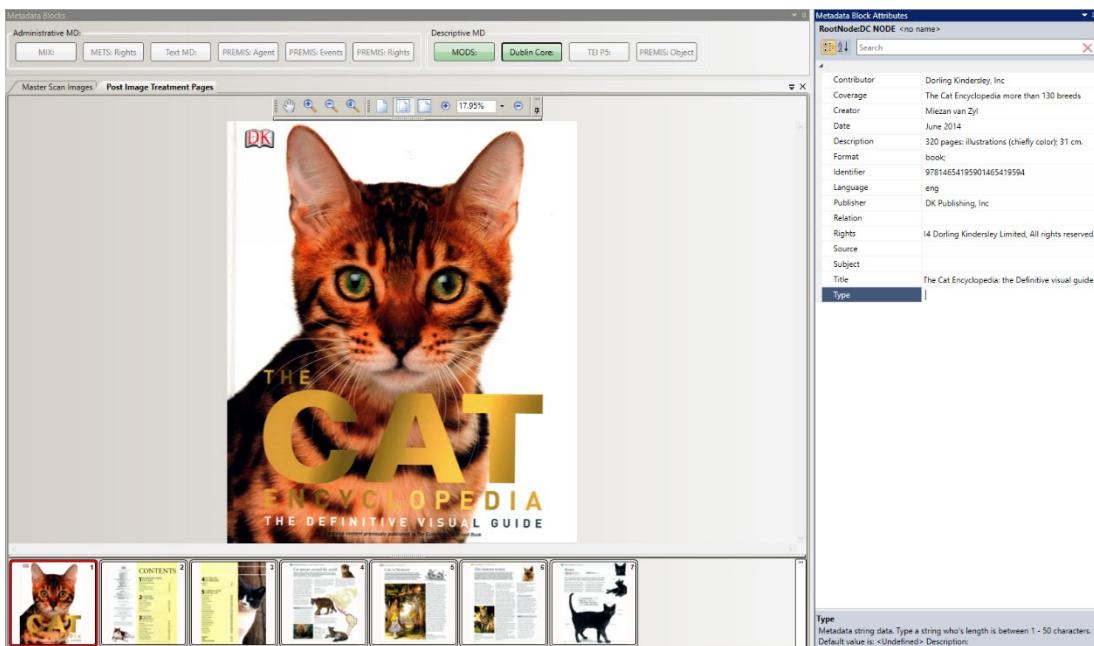
If you have selected the metadata template which is based on the two or more metadata standards the corresponding buttons in the Administrative MD and/or Descriptive MD section become active.

Entering Metadata

First, select the descriptive metadata option you want to use by clicking the relevant button (located below Descriptive MD) in the Metadata Block window. In the Metadata Block Attributes, on the right side window, enter the object level metadata you need to capture for your object.

Next, the user has the option to select another descriptive metadata button, and again enter object level metadata needed. Here, you are able to see how the templates in both schemas can be linked. This is important because the user only has to type the object level metadata once, and the commonalities are populated.
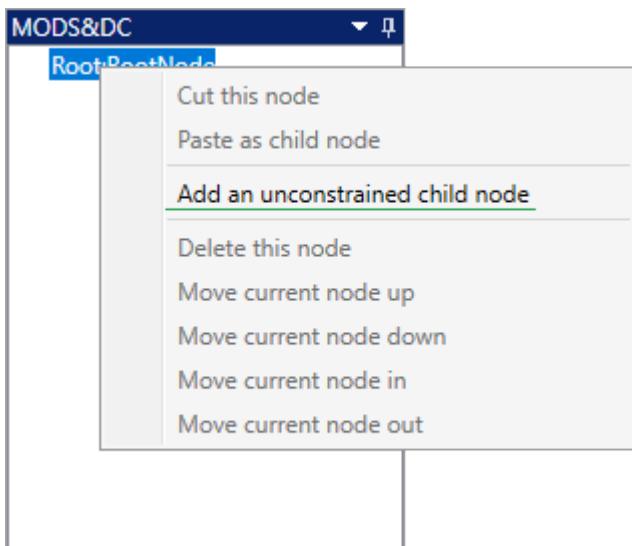
⚠️ *Please Note:*
The red field is a required field needed to export your object.

Structure Map

The next step is to recreate a table of contents using the Structure Map. By doing this, the user can export PDFs with bookmarks so a reader can navigate through a PDF easily.
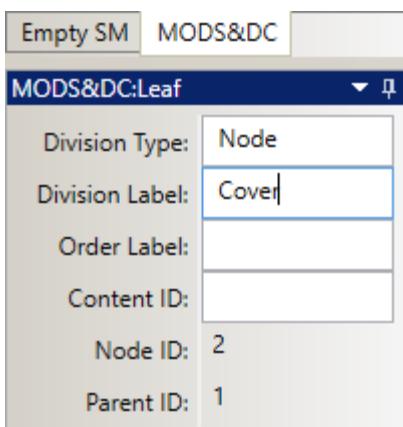
On the left part of the screen, there is a vertical blue bar where you will be able to see the bookmarks created. Start the process by adding the Child nodes to the Root node. Right click on the Root node and in the menu that appears select 'Add an unconstrained child node'.

You will be able to create and populate new child nodes, and in doing so, add a tree of bookmarks to your Opus Object. By right clicking on child nodes, you can also select to move them up and down, in and out, or delete them.
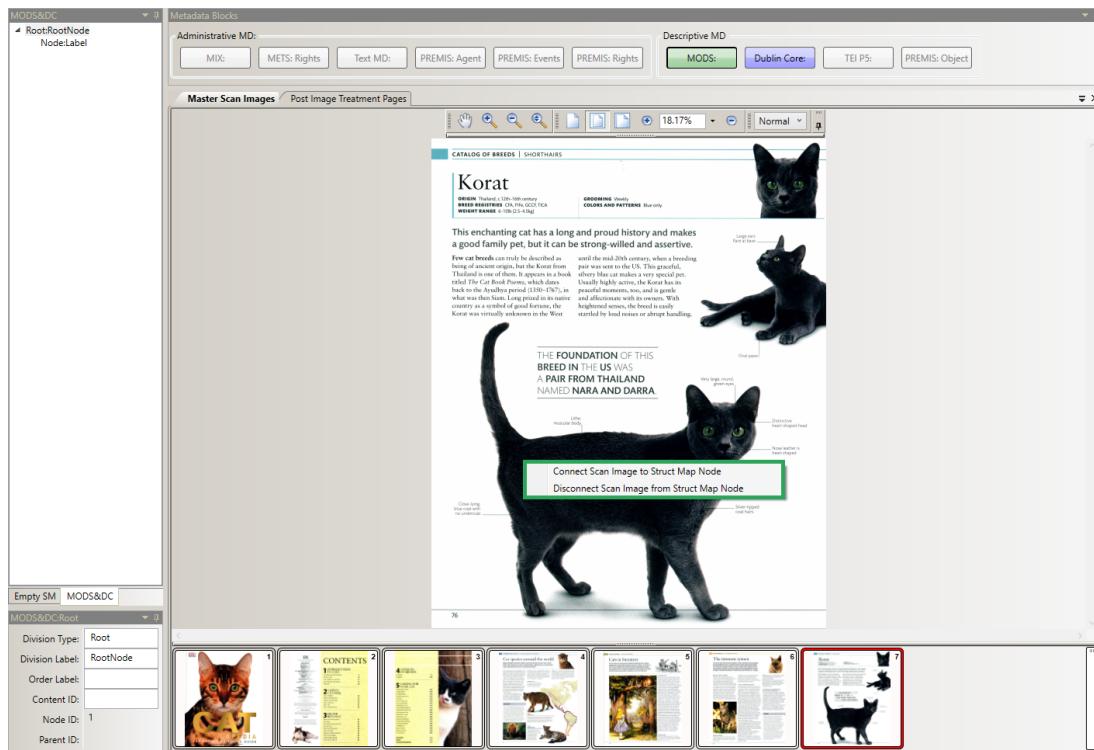
⚠️ *Please Note:*
You can delete nodes only from the lowest level that does not have child nodes. For any other nodes, the delete function is disabled.

In the bottom left corner enter the Division Type values and the Division Label values in order to name nodes. In a PDF, the Division Label will be the visible value. You can change these for each node.

Next, connect the child nodes to the corresponding images, so when the user clicks on a node, it will automatically open the image linked to the node. Select the relevant child node and image, and then right click on the image, this will give you two options: Connect IT Image to Structure Map Node and Disconnect IT Image from Structure Map Node. Of course you need to first connect it before you can disconnect it. If you did something wrong, you can disconnect the node and image, and reconnect the node to the correct image.

⚠ *Please Note:*

Only last image connected to one Child Node will be exported as a bookmark in PDF.

All changes at the Metadata stage are saved automatically. To pass it, just switch to export tab.
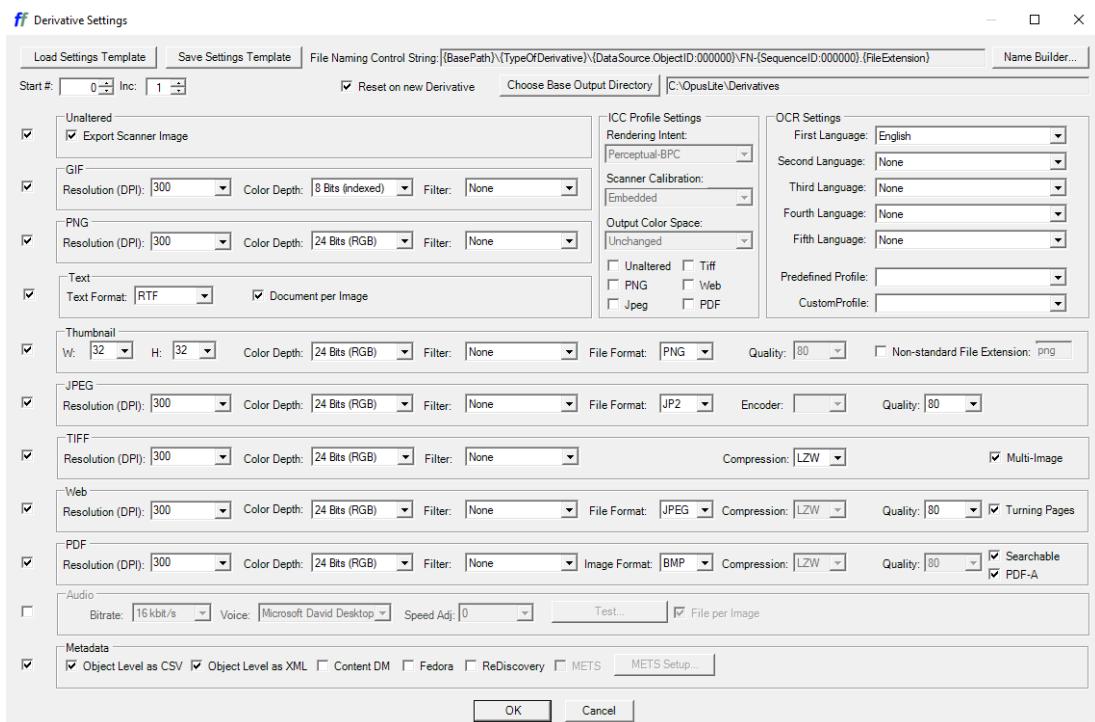
Export

The fourth tab of the four-tab digitization system is **Export**. The Export tab interface has several functions including exporting the images to a directory. One of the precursors to exporting an image is the conversion of the raw image to a derivative format meeting its intended purpose. With respect to archiving raw uncompressed images, the export format should mirror the specifications of the raw image.

The Export tab interface may be accessed either by clicking on the Export tab or by clicking the 'Perform IT on Current Image' or 'Perform IT to All Images' within the Image Treatment interface. Like the other processes Export may be accessed at any time.

Export Images Upon clicking the Export Images button, the user will be presented with the Derivative Settings window. In this window the user can select the format file of the derivatives or final output, save or load a template, select the path where the derivatives will be stored and specify the name of the derivative file(s).

⚠️ *Please Note:*
The settings selected the last time the user exported an Opus object are automatically loaded.

Start #: `0` Option to number the first file in your derivatives (i.e. if you select 5, then your first file by default will be named like that: FN-00005.tfe).

Inc: `1` Option to select the spread between files (i.e. if you select 3, so one file will be FN-00008.tfe and the next one will be FN-00011.tfe).

☑ **Reset on new Derivative** Checkbox for resetting your file naming to the start after creating another derivative (i.e. if checkbox is enabled, then your PDF will have the name FN-00005.pdf, and the first JPEG will have the name FN-00005.jpg).

Load Settings Template Click to load a saved template for derivative export settings. All saved settings templates will appear in an 'Open' window. To open a template, click on a name and then click 'Open'. The template settings will then replace the default derivative settings on the screen.

Save Settings Template Click to save a template of settings that can be loaded on demand. There may be more than one group of derivative settings used for exporting. For example, this would be the case if the user is working on two projects and one of them requires TIFF derivatives and the other one requires PNG derivatives. If this is the case, select the settings for one project and click 'Save Settings Template'.

After the button is clicked, a 'Save As' window will be displayed. Enter a descriptive name of the template that can be easily recognized in the future.

Choose Base Output Directory Enables the user to browse to select the root folder under which the output files will be saved. The 'root folder' contains the array of subdirectories in which the output files are stored according to the subdirectories structure specified in the 'Name Builder' (see Name Builder section for details).

ICC Profile Settings

ICC profile is a set of data that characterizes a color input or output device, or a color space, according to standards promulgated by the International Color Consortium (ICC). Profiles describe the color attributes of a particular device or viewing requirement by defining a mapping between the device source or target color space and a profile connection space.

To use ICC profile you first need to select file formats where ICC profile will be used.

After it at ICC profile settings select that file formats and select the rendering intent, the scanner calibration (by default is 'embedded') and the output color space.

After it you can export your images. Now you are able to work with your images on other devices without loss of image quality.

OCR Settings

The New OPUS OCR engine recognizes up to five different languages at the same time.

The default First Language is English and we recommend that this default remains unchanged.

Derivatives

To select a type of derivative, click the checkbox next to its format. After clicking the checkbox of a specific format, its options will become selectable. The user can select one or more formats to export simultaneously.

By default, Opus FreeFlow has the following file format outputs enabled: Unaltered, Thumbnail, GIF, PNG, JPEG, TIFF, PDF, Searchable PDF, Text, Audio, Metadata, and Web.

The following section will first go through the definitions of the different file format types and then through the options within each format type.

Types of Derivatives

Unaltered – The images are exported exactly as they were when scanned. Even if Image Treatment has been performed, the images will not reflect those changes. For example, if the images were scanned in TIFF format and Color mode at 600 dpi, the output derivatives will have exactly the same characteristics. Unaltered images could be used for preservation purposes in case the user may need them in the future for further Image Treatment or to be exported as a different kind of output.

GIF - Stands for Graphics Interchange Format, a bitmapped graphics file format used by the World Wide Web, and many BBSs. GIF supports color and various resolutions. It also includes data compression, but because it is limited to 256 colors, it is more effective for scanned images such as illustrations rather than color photos.

PNG - Short for Portable Network Graphics. A bitmapped image format that employs lossless data compression. PNG supports palette based (palettes or 24-bit RGB, grayscale or color) PNG net support CMYK.

Text - OCR will be applied to the Opus Object and a text file(s) will be created with the OCR.

Thumbnails - Thumbnail is a term used by graphic designers and photographers for a small image representation of a larger image, usually intended to make it easier and faster to look at or manage a group of larger images. For example, software that lets the viewer manage a number of images often provides a miniaturized version of each image so that the viewer does not have to remember the filename of each image.

JPEG – Short for Joint Photographic Experts Group an ISO/ITU standard for compressing still images. The JPEG format is very popular due to its variable compression range. JPEGs are saved on a sliding resolution scale based on the quality desired. For example, an image can be saved in high quality for photo printing, in medium quality for the Web and in low quality for attaching to e-mails, the latter providing the smallest file size for fastest transmission over dial-up connections.

JPEG 2000 (JP2) - is an image compression standard and coding system. It was created by the Joint Photographic Experts Group committee in 2000 with a newly designed, wavelet-based method. The standardized filename extension is .jp2 and .jpx.

TIFF – Short for Tagged Image File Format, it is a file format for storing images, including photographs and line art. It is now under the control of Adobe. The TIFF format is widely supported by image-manipulation applications, by publishing and page layout applications, by scanning, faxing, word processing, optical character recognition, and other applications. Adobe Systems, which acquired Aldus, now holds the copyright to the TIFF format.

Web - Web application, that uses HTML, CSS and JavaScript. You get the folder that contains a document, which can be opened in any browser (Chrome, Safari, etc.). After opening you can view your object in the 3D viewer or 2D viewer. With both of them, you are able to go to any page you want in the most comfortable way. Also, object level metadata is inserted in this web document. You are able to switch to your PDF file from this document. This document can be added to your web site for free access and it will look the same.

PDF - Short for Portable Document Format, a file format developed by Adobe Systems. PDF captures formatting information from a variety of desktop publishing applications, making it possible to send formatted documents and have them appear on the recipient's monitor or printer as they were intended. To view a file in PDF format, the user needs Adobe Reader, a free application distributed by Adobe Systems.

Audio - Opus FreeFlow runs OCR throughout the Opus Object, and the results are transformed into MP3 files that users can listen to. The user is able to choose the voice (male or female), speed and bitrate. The user can listen to the test sound of the options he selected in order to get the sound he wants at the export.

Metadata - CSV and XML files. CSV (Comma Separated Values) file is widely supported by a lot of Content Managers, so you can directly import this type of file into the Content Manager with the information it needs regarding the object level metadata. XML file format supports a more sophisticated structure. Nowadays more Content Managers support it. You can customize the template of this XML file by working with one of our specialists in the Digitization Advisory Team.

Option Definitions

Width – Specifies the number of pixels in the horizontal orientation of the thumbnail to be created. The software will adjust this number if needed in order to preserve the proportion of the image.

Height – Specifies the number of pixels in the vertical orientation of the thumbnail to be created. The software will adjust this number if needed in order to preserve the proportion of the image.

Non-standard File Extension – Enter up to four characters to specify a non-standard file extension to be used in the creation of the thumbnails. If this option is not selected, the thumbnails will have the extension specified in the File Format field.

Color depth - The number of bits used to hold a pixel. Also called **pixel depth**, the bit depth determines the maximum number of colors that can be displayed. True Color (16M colors) is required for photorealistic images and video. Most display adapters today support 65K and 16M colors at their highest resolution without noticeable loss of performance in rendering the images.

Color depth	Number of colors
1-bit	Monochrome, black and white
4-bits	16 (Standard VGA)
8-bits	256 (Super VGA, indexed color)
24-bits	16,777,216 (True Color)
32-bits	16,777,216 + alpha channel

Filter - A routine that changes the appearance of an image or part of an image by altering the shades and colors of the pixels in some manner. Filters are used to increase brightness and contrast as well as to add a wide variety of textures, tones and special effects to a picture. The filters available in Opus break down into two categories Blur and Sharpen.

Blur - The blur tool is useful for removing small blemishes and smoothing out wrinkles. Sometimes if using a high compression rate, the user can get certain artifacts around the image. By adding a slight blur to the image, it is possible to create a smoothing effect so they are not as noticeable.

Sharpen - Sharpening enhances the definition of edges in an image whether the images come from a digital camera or a scanner. This can be valuable in the case if images that are slightly blurred and need some extra 'pop' out of the image for contrast. Keep in mind that sharpening cannot correct a severely blurred image.

File format - Some derivatives can have different types of formats. For example, a PDF can include BMP, GIF, JPEG, PNG or TIFF images. Depending on the type of the file format, different compressions will be available. When selecting TIFF, the user can select LZW or G4 compression, or when selecting JPEG, the user can select its quality.

JPEG Quality – Opus FreeFlow uses a lossy JPEG compression which ranges from 100 (the highest quality and the largest file size) down to 30 (lower quality but very small files).

G4 - A compression technique used in Fax Group 4. It produces very good results for black and white. Therefore, it is frequently used as an option in TIFF files for black and white images.

LZW - A lossless compression method that finds repeated patterns in Blocks of pixels in an image. Variations of LZW compression are used in a number of image file formats, including GIF and TIFF. LZW stands for Lempel-Ziv-Welch.

Resolution – It is defined by DPI which stands for Dots Per Inch. As the name suggests, the DPI measures how many dots fit into a linear inch. Therefore, the higher the DPI, the more details can be shown in an image. It should be noted that DPI is not dots per square inch. Since a 600 dpi printer can print 600 dots both horizontally and vertically per inch, it actually prints 360,000 (600 x 600) dots per square inch. Since most monitors have a native resolution of 72 or 96 pixels per inch, they cannot display a 300 dpi image in actual size. Instead, when viewed at 100%, the image will look much larger than the print version because the pixels on the screen take up more space than the dots on the paper.

Common DPI's used in the world	
72 dpi	Web images
150 dpi	Printed Newspapers
300 dpi	Magazines and books
400 dpi	Archives

Multi-Image - It can be used for TIFF images to create one single file with multiple images included in it, similar to a PDF file. Not all image viewer programs can display all the images in a multi-image TIFF file.

Searchable/OCR - Optical Character Recognition is the machine recognition of printed characters. OCR systems can recognize many different fonts, as well as typewriter and computer-printed characters. When a document is scanned into the computer, it is turned into a bitmap, which is an image of the pictures and text on the document. The OCR software analyzes the light and dark areas of the bitmap in order to identify alphabetic letters and numbers. When it recognizes a character, it converts it into ASCII text. Hand printing is much

more difficult to analyze than machine-printed characters. Old, worn and smudged documents are also difficult to OCR.

Document per image - It creates separate text files for each image in the Opus object. If the pages were split in Image Treatment, the software will create one file per page.

RTF - Stands for Rich Text Format. This is a file format standardized for creating formatted text files. Unlike a basic text file, an RTF file can include information such as text style, size, and color. RTF format is a universal format which means that it can be read by nearly all word processors.

ASCII - Acronym for the American Standard Code for Information Interchange. ASCII is a code for representing English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase M is 77. Text editors and word processors are usually capable of storing data in ASCII format, and in some cases, programs cannot store Unicode (see below) and will only accept ASCII. But for the most part, Unicode has mainly become the standard for computers today when the text does not need to be stored in RTF.

Unicode - A standard for representing characters as integers. Unlike ASCII, which uses 7 bits for each character, Unicode uses 16 bits, which means that it can represent more than 65,000 unique characters. This could be unnecessary for the English and Western-European languages, but it is necessary for some other languages, such as Greek, Chinese and Japanese. Since the software industry has become increasingly global, Unicode has supplanted ASCII as the standard character coding format.

Bit Rate – Bit rate can also describe the quality of an audio or video file. For example, an MP3 audio file that is compressed at 192 Kbps will have a greater dynamic range and may sound slightly more clear than the same audio file compressed at 128 Kbps. This is because more bits are used to represent the audio data for each second of playback. Similarly, a video file that is compressed at 3000 Kbps will look better than the same file compressed at 1000 Kbps. Just like the quality of an image is measured in resolution, the quality of an audio or video file is measured by the bit rate.

Voice – Windows 10 is supplied with Microsoft Zira or Microsoft David. These are text-to-speech voices, and represent the voice that the user will hear when listening to the Audio (MP3) output.

Speed Adj - Increasing this value will speed up the voice and decreasing it will slow down the voice. The user can select different settings and click test to hear a sample.

Naming Derivatives

The Name Builder located within the Export interface window gives the user the ability to create customized names for the files being exported.

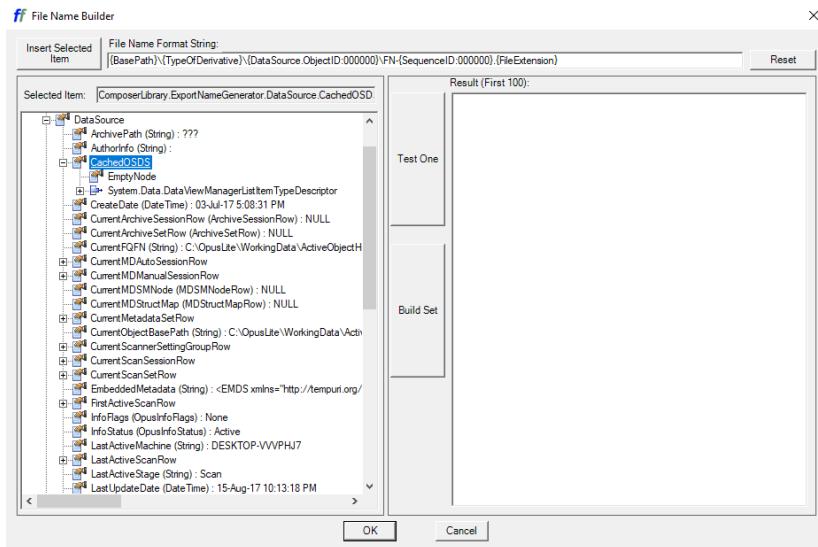Click 'Name Builder' to open the File Name Builder window.

Expand the Compose Library by clicking ⊞ and repeat to expand the Data Source options.

Here the user can select the descriptive elements stored with an object. These elements include the Object Name, Project Name, Description, Author and a Publication entered when defining the object initially. To include any of these elements, position the cursor at the point of insertion in the File Name Format String: field, select the element on the left section and click 'Insert Selected Item'. To insert another element of the list, repeat this process. To insert a fixed set of characters, type the characters outside the bracketed fields.

The file name format string should always start with the {Base Path} and it should be followed by the subfolders, the name of the files and the file extension.

Keep in mind the following important information when modifying the file name string:

- The file name format string should always start with the Base Path
- The elements that represent the data about the Opus object are surrounded by curly brackets.
- Subfolders are separated by the '\' sign.
- Fixed characters should be entered outside the bracketed fields.
- If multiple files of the same file format are going to be generated, it is important to have the sequence number in the name of the file. This will prevent overwriting.
- The sequence number could be altered by using the Start and the Increment numbers in the Derivative Settings window.
- The last element in the file name format string should always be the File Extension.

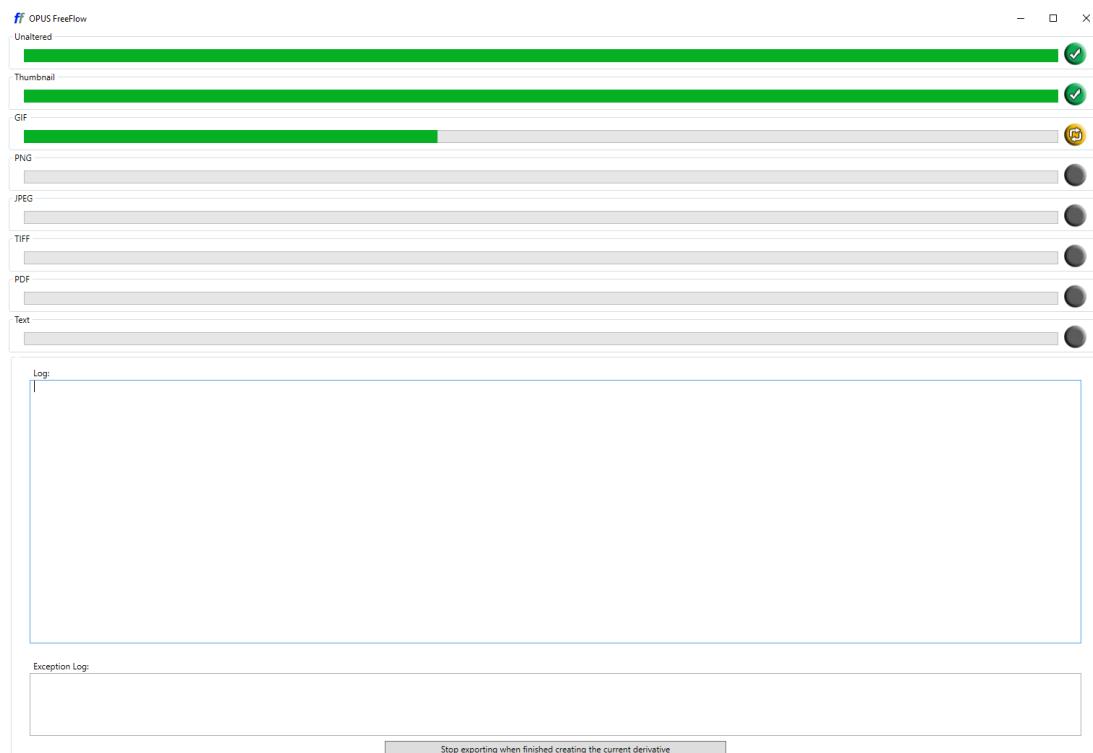|	
Insert Selected Item	Click to include the Object Name, Project Name, Description, Author and a Publication.
Reset	Click to reset the File Name Format String to the default.
Test One	Click to see the preview of the path and the name of the derivative file. This applies to derivatives that generate only one file like a PDF or a TIFF.
Build Set	Click to see a preview of the path and the name of the first 100 derivative files. This applies to the derivatives that generate multiple files.
OK	Click to save the changes and return to the "Derivative Settings" window.
Cancel	Click to close the window and discard the changes made.

Create Facility

After selecting the derivatives to be exported, click OK to begin creating the derivatives. The time it takes to complete this process is dependent upon many variables: number of images, size of each image file, number and type of derivatives selected, the speed of the workstation's processor, the speed of the storage drive being written to, the speed of the connections being used, etc. Because this process is automatic and does not require intervention or constant oversight by the user, the process may be initiated and left to process during off hour times if desired.

During the create process, a progress screen displays a progress bar(s) and indicator lights for each derivative selected. This monitoring screen enables the user to estimate the processing and completion time. It will also indicate paused or failed processes.

This icon indicates the object is waiting to be created.

This icon indicates the object is being processed.

This icon indicates the object has been successfully processed and the derivative has been created and exported.

This icon indicates that there was an error while trying to create the derivative.

To stop the derivatives creating process click 'Stop exporting when finished creating the current derivative'. The software will finish processing the current derivative and not proceed with any of the pending derivatives.

Exception Log: Lists the exceptions encountered while processing derivatives.

Close   Closes the Exporting window.

The derivatives can be found at the path selected by the user in the Base Output Directory.

Troubleshooting

Problem	Solution
Scanner not found	Solution 1: Verify scanner IP is entered correctly Solution 2: Verify network card is configured Solution 3: Verify that scanner is turned on
Manage object queue launches slowly	Be sure to periodically delete old Opus objects
Scans are out of focus.	Calibrate scanner
Unable to import more than one image at a time	Option was not purchased, multiple image import only available with full Opus FreeFlow
Unable to scan in color	Color option was not purchased
Images are washed out	Adjust brightness, contrast, & gamma values
Error after selecting 'Export Images' button/tab	Register the OCR engine
Auto crop not working correctly with darker colors	Go to scanner settings and change scan area to max
Auto Image Treatment not available	Auto image treatment option was not purchased

The troubleshooting chart above describes typical problems and solutions. If the problem you experience is not described here or if the provided solution does not resolve the problem, please call our service department at **561.995.6939** or **888.247.3917**.

Appendix A

Recommended System Requirements for Opus FreeFlow	
Processor	Intel® Core™ i5 Processor
Operating System	Genuine Windows 10 Pro, 64-bit
Memory	8GB DDR3
Hard Drive	500GB 2.5 SATA 3.0Gb/s
Video Card	Minimum resolution of 1920x1080 (dual monitor support if preview screen is used)
Monitor	22" Widescreen Flat Panel
Keyboard	USB Keyboard
Mouse	USB 2-Button Optical Mouse with Scroll
Additional Network Adapter (Second Network Interface Card)	Secondary Network adapter Gigabit Ethernet (1000Base-T)
External Archive Storage (Recommended if the system will not be connected to a SANs environment)	1 or 2 TB Network Attached Storage
Software	Latest service pack plus all relevant Microsoft® updates
Location	• A well ventilated area • Near 110v outlets • Away from windows or other bright or uneven light source

Upgrades	
Processor	Intel® Core™ i7 Processor
Monitor	• 24" Wide Flat Panel • 30" UltraSharp Widescreen Digital Flat Panel(1)

⚠️*Please Note:*

(1) To view the 30" monitor in its native resolution of 2560x1600, the PC must have a dual-link DVI-D compatible graphics card that supports this resolution.

Notes

Notes