

### RowScan and ReelScan

The scanning operation can be considered as two separate tasks: one is the acquisition of the information from the microfilm, and the other is the processing of it to isolate the image and enhance it. The ScanFlo application does all this in real time, and for all the three categories of microfilms: rollfilms, microfiche, and aperture cards.

There are two other applications: RowScan and ReelScan. These two optional software applications were developed specifically for processing microfiche and rollfilms, respectively. The key difference in their operation, versus ScanFlo, is that these two applications scan and capture the images on the film in real time, but allow for much of the processing of the digital data to be carried out at a later time on another PC.

The most significant advantage in using the RowScan/ReelScan applications is when you have poor quality microfilm with images of varying sizes and legibility. For these types of film, it may be impossible to scan and capture all the images with a single ideal setting for auto operations. RowScan/ReelScan software captures all of the data from the microfiche/rollfilm in one pass. And later, on another computer, process the captured data.

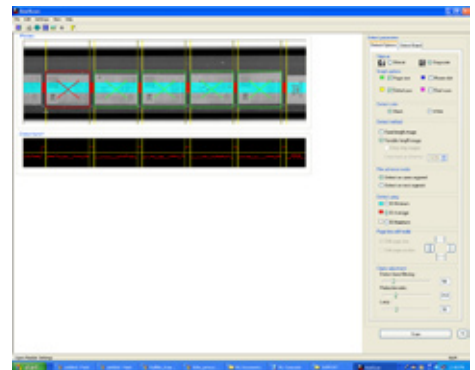
The scanning process is distributed, with image capture done in scanner and segmentation, extraction and processing are carried out offline. This allows for:

- More efficient & lower cost of operation for high-volume conversion
- Better management of poor-quality films by eliminating rescan
- Maximizes scanning speed in the image capture operation on the scanner
- Improved image quality for films with high degree of variances in density
- Minimal manual intervention during scanning
- Scanned images may be sent directly to a network server for post editing.

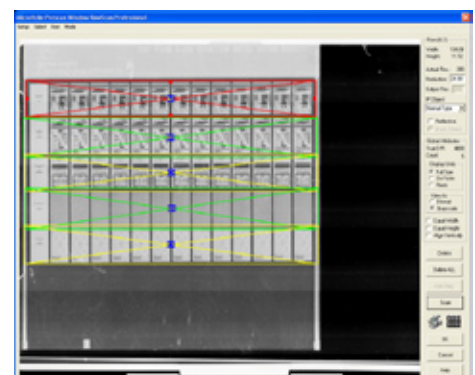
RowScan and ReelScan use the same new advanced technologies as ScanFlo Professional. A primary difference is RowScan and ReelScan allow difficult microfilm to be handled off-line, so the scanner may be used simply to scan while a standard PC is used for later processing – allowing greater productivity in the total scanning operation.

RowScan for microfiche and ReelScan for rollfilm also run under the Microsoft Windows XP operating environment. Portions of these applications that relate to image processing also get installed on a standard PC under the same operating software. The standard PC can be standalone, or connected on the same network as the PC. Scanned data may then be sent directly to it.

**RowScan** scans an entire row of images on microfiche. **ReelScan** continuously scans strips of images from rollfilm. Image segmentation, extraction and



*ReelScan PreScan*

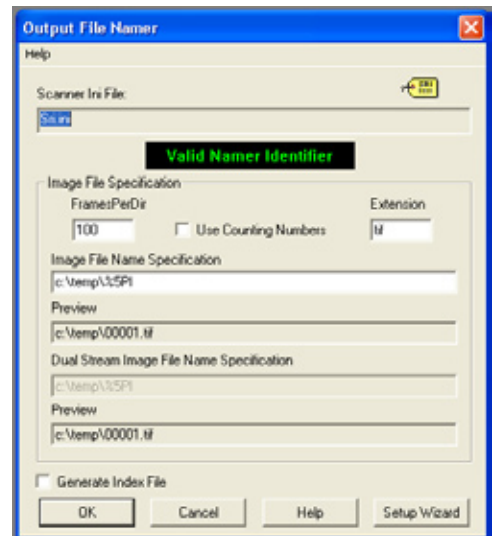


*RowScan PreScan*

processing are performed after the scanning process. These tasks may be executed either on the SunRise scanner or on an external workstation connected to the network. This allows faster QA and minimizes the need to reinsert the fiche/rollfilm for rescan.

Advantages of the dedicated RowScan/ReelScan applications:

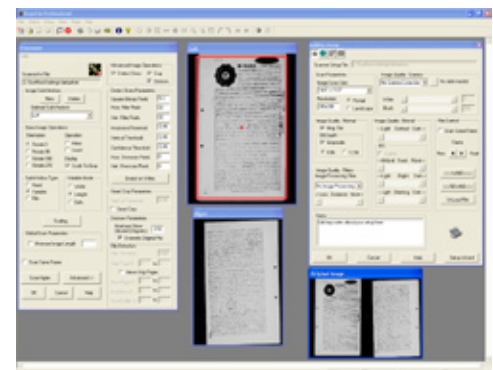
- Easy scanning operation setup
- Scan once operation - eliminate rescan
- Scan microfilms with bad images on fiche/rollfilms
- Scan varying image sizes in one operation
- Distributed operation - reduces scanner operation time
- Image segmentation - auto and manual
- Post image process on a standard PC - crop, deskew and image quality adjustment
- Increases productivity



ScanFlo Namer Dialog

### ScanFlo, RowScan, ReelScan Modularity & Functions

	SunRise Scanner	Standard PC
<b>ScanFlo for all microfilm</b>	✓	✓
Complete image control parameters setup	✓	
Motor and light control	✓	
Image capture and digitization	✓	
Individual image segmentation	✓	
Post image process	✓	
Index and save to folder	✓	
<b>RowScan for fiche &amp; ReelScan for rollfilm</b>	✓	✓
Simple image control parameter setup	✓	
Motor and light control	✓	
Image capture, digitization, simplified image process	✓	
Digital data stream (rows or strips) saved to queue	✓	
Digital data stream (rows or strips) from scanner queue		✓
Individual image segmentation		✓
Index and save to folder		✓



ScanFlo Rollfilm Two IP Windows