LEAD TECHNOLOGIES INCORPORATED

*LEAD*ing Technology in imaging developer toolkits

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FOR IMMEDIATE RELEASE

V.14 LEADTOOLS FACT SHEET

New Document Imaging Features

Annotations

- New Annotation Objects
  - Encrypt Area
  - Curve
  - Closed Curve
  - Text Pointer
  - Poly Ruler
  - RTF Text
- Users can now create their own custom annotation objects
- Annotation objects (for example Ruler) can be fixed in the container
- Flicker Free annotation object display
- Text Objects now support left, right, or center alignment
- Text objects support token expansion
- Improved ruler behavior, with new smart units, which auto-adjust during zooming, and optional tick marks for ruler/polyruler/crossproduct/protractor display
- Text object can be imported from files
- WMF/EMF Stamp objects can now be rotated
- Custom handles and cursors for Automation mode

Image Registration Functions

- Apply Transformation Parameters - Corrects a deformed image according to the transformation parameters.
- Get Marks Center Mass - Finds center of mass points for the registration marks.
- Get Tranformation Parameters - Computes the rotation angle, XY scaling, and XY translation of the transformed bitmap with comparison to the reference bitmap.
- Is Registration Mark - Check whether the object inside the bitmap is a registration mark or not.
- Search Registration Marks - Searches the bitmap for registration marks.

OCR

- New OCR Engine: (based on the ScanSoft V12 engine)
  - Add several zones area in the same page
  - Specify different options for each different zone in the same page
  - Specify your own dictionary – the dictionary contains words that will be used within the recognition process.
  - Supports over 100 different languages
  - Saves the recognition results into memory in addition to saving it in a file
  - Specify document options – document margins, paragraph options, etc.
  - New file format support
    - Adobe PDF edited
    - XML
    - Open eBook 1.0
    - 2G Type 2
    - 2G Type 3

Three specialized OCR recognition engines are supported:

MOR OCR Engine

- Supports 114 languages
- Supports up to 500 zones on one image
- Supports Omnifont, Draftdot24 and OCR-A filling methods
- Supports character training to achieve improved accuracy
- Provides 3 page-level accuracy and speed trade off settings including Accurate, Balanced and Fast
- Provides Checking Subsystem based correction

MTX (Mtext) OCR Engine

- The fastest of the selectable OCR engines
- Support for 12 languages
- Supports up to 64 zones on one image
- Supports Omnifont, Draftdot9 and Draftdot24 filling methods
- Provides 2 page-level accuracy and speed trade off settings including a combined Accurate & Balanced value and Fast
- Provides Checking Subsystem based correction

FireWorX OCR Engine

- Optimized for speed
- Support for 54 languages
- Supports up to 2,500 zones on one image
- Supports Omnifont filling methods
- Supports character training to achieve improved accuracy

ICR

ICR recognition engines:

HNR - Hand printed numeral recognition engine is designed for a reduced character set for improved speed and accuracy. Typical recognition time is 280-310 characters per second (Measured on a computer with 1500 MHz Pentium processor / 256 MB RAM running Windows 2000.) It specializes in recognizing the following:

- digits (0-9)
- plus sign (+)
- minus sign (-)
- period or full-stop (.)
- comma (,)

RER - reRecognition Hand print recognition engine is designed to recognize upper and lower case text, numbers and symbols. Typical recognition time is 150-220 characters per second (Measured on a computer with 1500 MHz Pentium processor / 256 MB RAM running Windows 2000.)

OMR

OMR (Optical Mark Recognition) is used for recognizing marks such as checkmarks on an image. Recognition accuracy is 99.95% and the average recognition time is 0.005 seconds per checkbox zone (measured on a computer with 166 MHz Pentium Processor / 16 MB RAM).

New Medical Imaging Features

- New Display functions for Medical images
- Support for the latest version of DICOM Specification
- New medical image Processing functions
- Full Support for JPEG2000 encoded DICOM
- DICOM Security and DICOM Communications now included in Medical Imaging Suite

- DirectShow read and write filters that support JPEG and JPEG Lossless, JPEG2000 (and JPEG2000 lossless) and uncompressed DICOM files.

LEAD has extended its DICOM support to include the following:

- DICOM LUT/Overlay/Palette support
  The high-level support for Modality LUT, VOI LUT, Palette Color Image in LEADTOOLS Medical Imaging means developers can implement DICOM Presentation state into an application with ease. LEADTOOLS can also apply the Modality LUT to the image data to further simplify image processing and statistical calculations.
- DICOM Print SCU support
  Add DICOM printing to an application in hours with the new high-level DICOM Print support.
- DICOM Annotation Object support
  Store/retrieve DICOM annotations from a dataset and convert them to LEAD Annotation objects and vice versa. Annotations can also be converted to regions of interest for additional statistical calculations and for storing to DICOM Presentation State.

New Image Processing Functions

Functions have been created for managing overlay bitmaps, including the ability to create overlay from another bitmap, get/set the overlay bitmap, update the bitmap based on the overlay, etc.

- Registration marks detection
- Edge detection
- De-interlace: Remove interlacing lines from an image taken from a video source.
- Fast Fourier Transform
- Correlation
- Message Embedding (either a file or text)
- Re-mapping the image colors according to a mathematical function such as square, log, square root, and sine.
- Adding Shadow to the bitmap.
- Texture Alpha blend: Combines image data from two bitmaps with feathering and constant opacity.
- Color leveling: Applies color leveling to an image. It changes the image shadows, mid-tones and highlights.
- Adds or averages the bitmaps in a list according to their weight factors in order to minimize noise and improve night vision images.
- Remove the background from the image in order to improve the quality of the image and increase the visibility of the details.
- Controls the light levels of the bitmap in order to reveal the detail of dark or highlight areas.
- Color replace: Replace specified colors by adjusting new value of hue, saturation and brightness.

New Image Formats Supported Include:

- CIN: The CIN file format is a bitmap format, developed by Kodak, used to store a single frame of a motion picture or video data stream. It allows up to 64-bit color.
- CRW: Canon Raw file format.
- KDC
- DCR: Shockwave file format.
- DCS: Desktop Color Separation file format.
- DjVu® (read only)
- ECW: ER Mapper Compressed Wavelet file format.
- FIT: Flexible Image Transport System file format.
- RTF: Rich Text Format document format.
- SFF: Scene File Format.
- DCS
- PSP
- MrSID® (read only)
- TIFF-FX
- RTF
- SFF
- ECW
- WMZ

New Common Dialogs:

CustomizePalette
Brightness
Contrast
Hue
Saturation
HistoContrast
Average
Median
MaxFilter
MinFilter
Sharpen
ShiftDifferenceFilter
Oilify
Mosaic
ZoomWave
RadialWave
Swirl
Wave
Smooth
LineRemove
ErosionFilter
DilationFilter
ContourFilter
GradientFilter
LaplacianFilter
SobelFilter
PrewittFilter
LineSegmentFilter
Multiply
Underlay
Picturize
Rotate
Shear
CanvasResize
Histogram
HolePunchRemove
PNGWebTuner
GIFWebTuner
InvertedText
DotRemove
BalanceColors
ColoredGray
GrayScale
RemapIntensity
RemapHue
LocalHistoEqualize
IntensityDetect
Solarize
Posterize
MotionBlur
RadialBlur
ZoomBlur
GaussianBlur
AntiAlias
UnsharpMask
AddBitmaps
FreeHandWave
Wind
Polar
AutoTrim
WaveShear
Punch
Ripple
Bending
Cylindrical
Spherize
Impressionist
Pixelate
EdgeDetector
JPEGWebTuner
Stitch
HTMLMapper
FilesAssociation
PrintStitchedImages
PrintPreview
AddBorder
FileConversion
AddFrame
RemoveRedeye
BorderRemove

New Multimedia Features

LEADTOOLS Multimedia Suite now includes:

- LEADTOOLS Multimedia SDK
- LEADTOOLS Raster Imaging Pro
- LEADTOOLS Multimedia Filter Pack
- LEAD MJPEG/MCMP Codec
- LEAD JPEG2000 Codec
- LEAD MCMW Codec

New Audio and Video DirectShow filters included in Multimedia Imaging Suite:

Audio:

- LEAD Audio Callback - Each audio sample is provided in a callback for additional processing before being forwarded to the next component in the graph. This filter can be used during capture, playback or conversion.

Video:

- LEAD Video Motion Detection - Motion is emphasized by a frame around the motion and/or displaying a frame of only the motion (areas of the frame without motion are black).
- LEAD Video Callback Filter - Each video sample is provided in the callback for additional processing before being forwarded to the next component in the graph.

Additional Features

- LEADTOOLS Digital Paint now included in LEADTOOLS Raster Imaging Pro
- LEADTOOLS MRC (Mixed Raster Content) now included with LEADTOOLS Document products.