PARASCRIPT®

Parascript® *Stamp*Verify®

Automate indicia detection and verification on envelope images.

Mail processing is a labor-intensive and time-consuming process. The application of image analysis and pattern recognition technologies currently enables process automation of standard-sized envelopes and cards and is applied when reading and interpreting addresses. However, there are still stages of mail processing that are less automated or are equipped with already obsolete technology. This creates processing bottlenecks and reduces the potential effectiveness and benefits derived from solutions using state-of-the art technology. Indicia verification is one of the areas where an image-based indicia detection system with image capture and recognition capability can significantly improve processing efficiency.

All pieces of mail delivered by the postal service must have stamps or "postal indicia" indicating that the proper postage and/or a postal permit exist to allow the items to enter the domestic mail delivery network. In addition to providing payment for delivery, indicia are used by the postal service to verify that postage was paid, and at what rate. Without this proof of payment, the postal service returns the mailed item to the sender. Existing automatic indicia detection systems are mainly used to locate indicia to determine the orientation of the mail piece and to properly face the mail for subsequent processing, while postage validity and value detection rely on manual labor and are error-prone processes. Inability to detect insufficient postage or counterfeit indicia results in multi-million annual losses for the postal service.

With Parascript *Stamp*Verify, the postal service can reduce operating costs and increase efficiency and reliability of indicia detection. *Stamp*Verify offers a streamlined approach to automatic indicia location and detection on envelope images including stamps, meter marks, facing identification marks, information based indicia, or US postal stationary. It can also determine types and total value for all valid indicia on the mail piece.

Next generation indicia detection

Integration of several advanced technologies – image processing, pattern recognition, and advanced OCR - into a single product provides a solution to the broad range of the most challenging tasks in indicia detection process. No other solution can process the real-life stream of envelopes and cards with the variety of indicia types, diversity of location and combinations on mail pieces as accurately as *Stamp*Verify.

*Stamp*Verify reduces restrictions on the types of tasks that may be solved automatically in the indicia detection process and opens new opportunities for a broader range of applications.

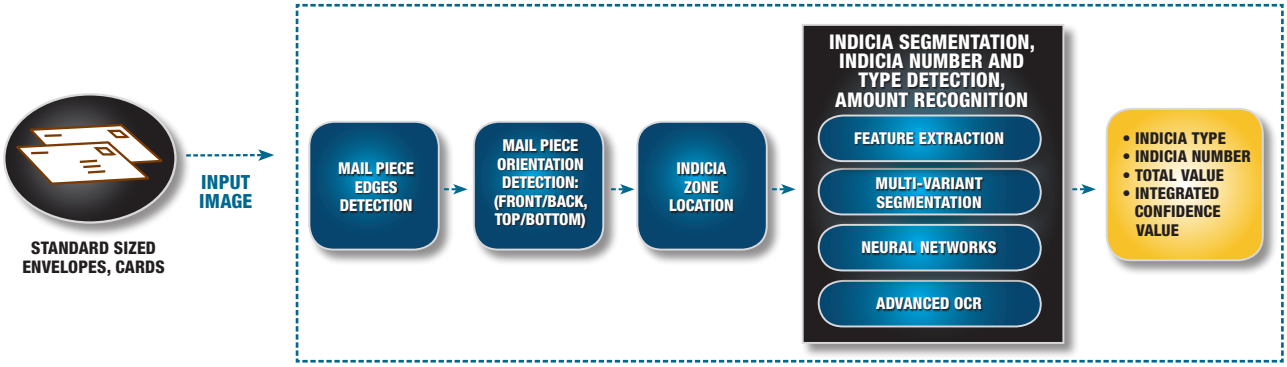
Product Benefits

- **Automate indicia detection and verification**
  *Stamp*Verify accumulates decades of Parascript's experience in image analysis and pattern recognition. Thus feature extraction uses proprietary binarization algorithms to reliably locate zone(s) containing indicia. Multi-variant segmentation methods and several neural networks distinguish between multiple indicia and determine their types even in those cases when they partially overlap. Finally, advanced OCR based on Parascript's proven recognition technology ensures recognition of amount even when printed in different indicia types.
- **Detect indicia fraud**
  *Stamp*Verify automatically detects, locates and validates stamps. Each stamp is compared against a database of stamps that have been issued or authorized by the US Postal Service. If a stamp does not match the database it is flagged as a suspected counterfeit.
- **Protect postage revenue**
  *Stamp*Verify uses advanced recognition technology to reliably read the postage amount printed in different kinds of indicia. If a stamp does not contain a printed value, *Stamp*Verify verifies the value of the stamp against a database of stamps that have been issued or authorized by the US Postal Service.
- **Adapt quickly to country-specific requirements**
  Due to the universality of algorithms, *Stamp*Verify can be easily tuned and adapted to country-specific indicia types and requirements.

Parascript® *StampVerify*®

Postal Automation

How *StampVerify* Works



Technical Product Specifications

Requirements

- Platforms: Windows® NT 4.0 Service pack 4 and higher, Windows® 2000 Professional, Windows® XP Professional. Porting to other systems is available on request.
- CPU: Pentium III, 500 MHz minimum required
- RAM: 1 GB minimum required
- Storage: Complete installation requires a minimum of 50 MB free disk space. Additional space is required for a database of stamps that have been issued or authorized by the US Postal Service.

Input

- Image Format: StampVerify accepts grayscale images with 8 bits per pixel, TIFF, bitmap (BMP), and JPEG industry-standard images from a file, as well as images from DIB or from memory.
- Image Resolution: 200 - 300 dpi

Output

- Indicia type
- Indicia number
- Total value
- Integrated confidence value

License Protection

- Softlock

StampVerify is just one of many solutions within Parascript's product suite. For more information visit our web site at **www.parascript.com**

PARASCRIPT®

Parascript, LLC | 6273 Monarch Park Place | Longmont, CO 80503 USA
tel: +1.303.381.3100 | toll free: 888.772.7478 | fax: +1.303.381.3101 | info@parascript.com | www.parascript.com