Evaluating Drug Names Similarities applying Handwriting Recognition Technologies

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Evaluating Drug Names for Similarities

Goal: evaluate proprietary drug names to reduce medication errors due to similarity in drug names.

Answer: Parascript's proprietary Total Recognition™ Technology can

- Compare graphic patterns of writing a proposed drug name against the patterns of writing the existing drug names.

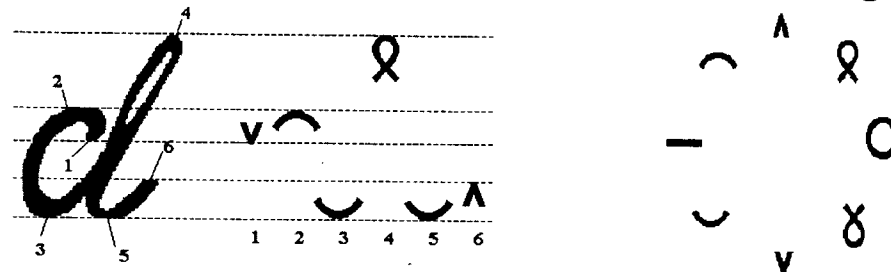PARASCRIPT
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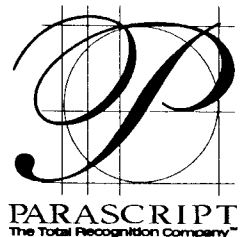
Parascript Overview

- Incorporated March 1996
- Profitable since 1997
- Recognized industry leader
  - Two decades of recognition research, development and innovation
  - First to introduce natural handwriting recognition
  - Recognizing more than 100,000,000 forms daily
- Employees: 100+
- Locations:
  - Niwot, Colorado
  - Moscow, Russia
  - Sunnyvale, CA
- Leading users in a variety of industries

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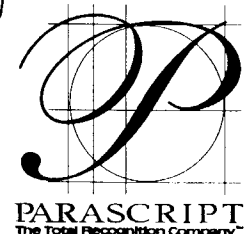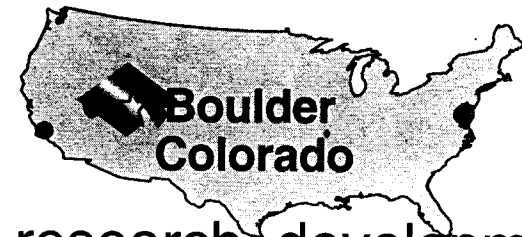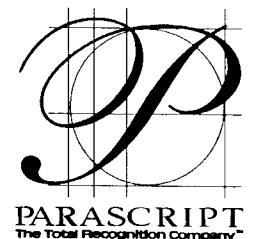
Total Recognition Technology

- Comprehensive recognition technology able to read any style of cursive handwriting.
- Built on the newest scientific ideas
  - **Human-like, holistic approach to handwriting recognition.**
  - **Uses a special descriptive language.**

clear   dear

  - **Analytical approach**
  - **Neural Networks**

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Applying Total Recognition Technology to Evaluate Drug Names for Similarities

Parascript offers two approaches:

- **Compare graphic patterns of writing a proposed drug name against the drug names existing in a database.**
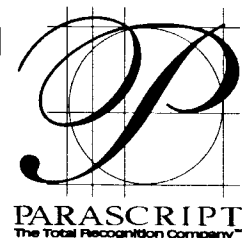
  Input Data Requirements:
  - A set of patterns of writing a proposed drug name (10 to 50 variations received from different people)
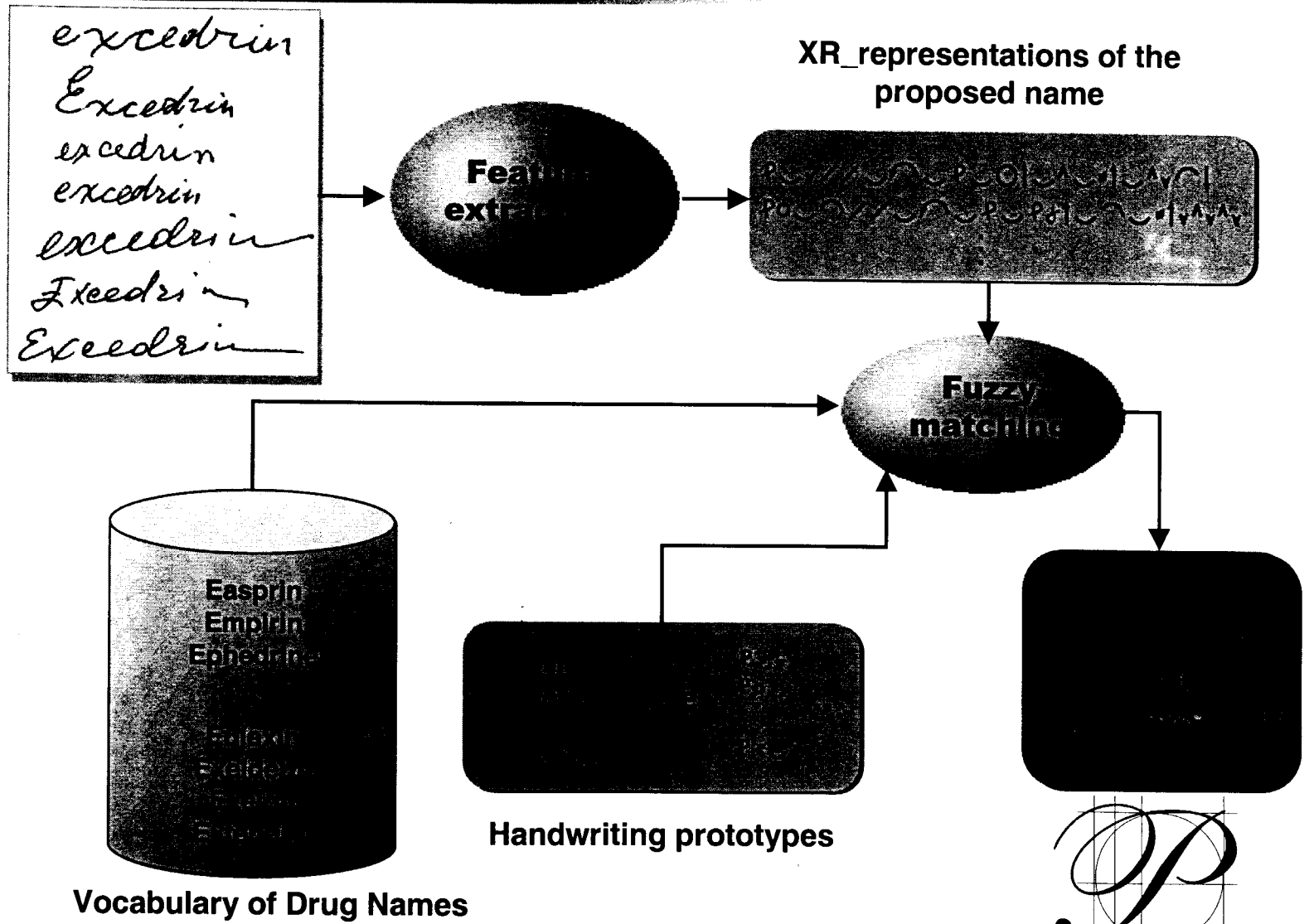 - Database of existing drug names

- **Compare graphic patterns of writing a proposed drug name against the graphic patterns of drug names existing in a database.**

  Input Data Requirements:
  - A set of patterns of writing a proposed drug name (10 to 50 variations)
  - Database of graphic patterns for all existing drug names (at least 10 variations for each entry)

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Solution Workflow

excedrin
Excedrin
excedrin
excedrin
excedrin
Excedrin
Excedrin

Feature extraction

XR_representations of the
proposed name

Fuzzy matching

Easprin
Empirin
Ephedrine

Vocabulary of Drug Names

Handwriting prototypes
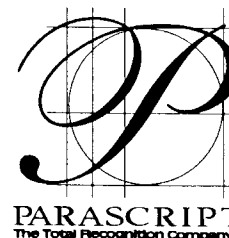
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Managing Additional Problems

Handwriting distortions:

- Parascript Total Recognition Technology deals with any type and quality of writing, including sloppy handwriting. No training is required.

Spelling Errors and Abbreviations:

- Total Recognition Technology provides for a mechanism that deals with word abbreviations and will help to anticipate errors that may occur due to the similarity of the abbreviated forms of the proposed drug name and existing ones. This mechanism is called aliases mechanism.

- Similarly, the technology may anticipate medication errors aroused by typical spelling mistakes.

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Legacy Form s

Sloppy handwriting

Bad image quality; background noise

Special symbols

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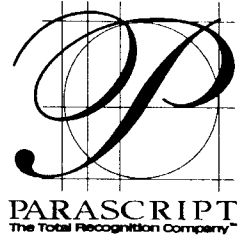
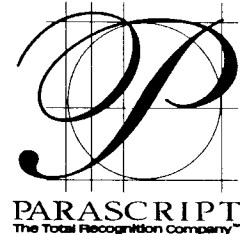# Envelopes, Letters, Postcards, Flats
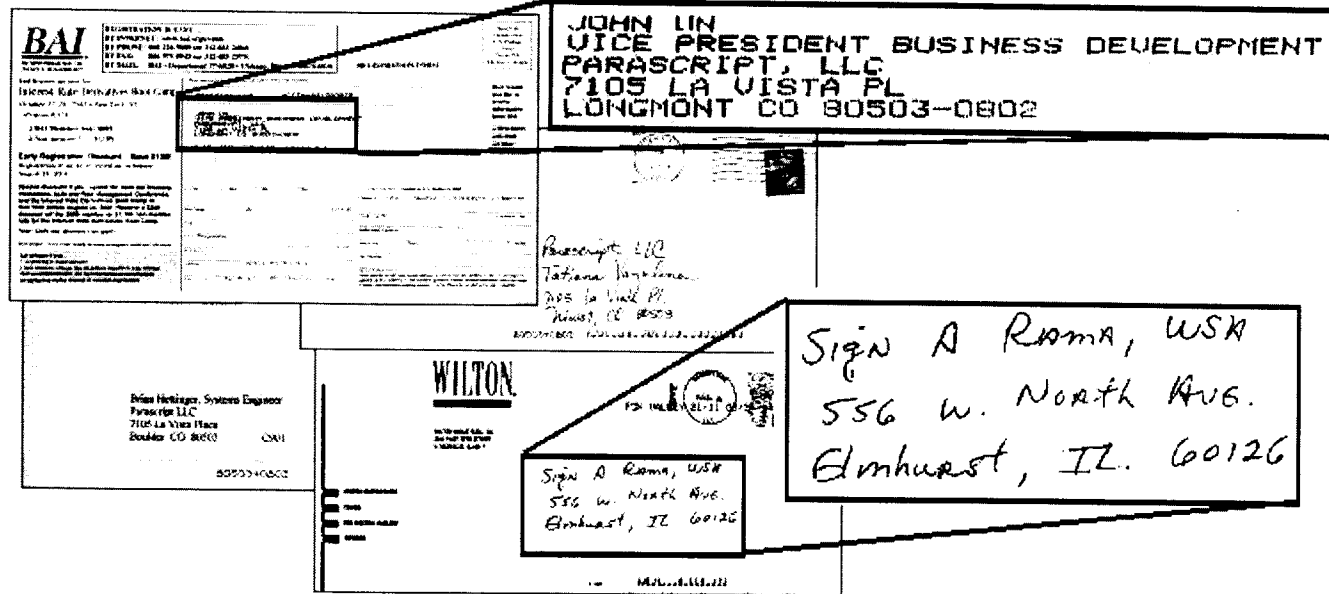
Case Study: Address Recognition for United States Postal Service

- 250+ locations

- Parascript recognition solutions process more than 68 million envelopes/day

- The United States Postal Service saves 12 million work hours/year for a total of $350 million savings

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A Selection of Parascript Users

- ALLTEL
- BancTec
- Bank of New York
- Bell Atlantic
- Chase Manhattan Bank
- Control Diabetes
- First American Bank in Nashville
- Frost Bank
- Nova Information Systems

- Regions Bank
- Republic of South Africa
- Scan Optics
- TIAA-CREF
- TRW
- Union Bank of California
- UNISYS
- United Missouri Bank
- U.S. Postal Service
- Wachovia Bank

And the list keeps growing!!!!

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