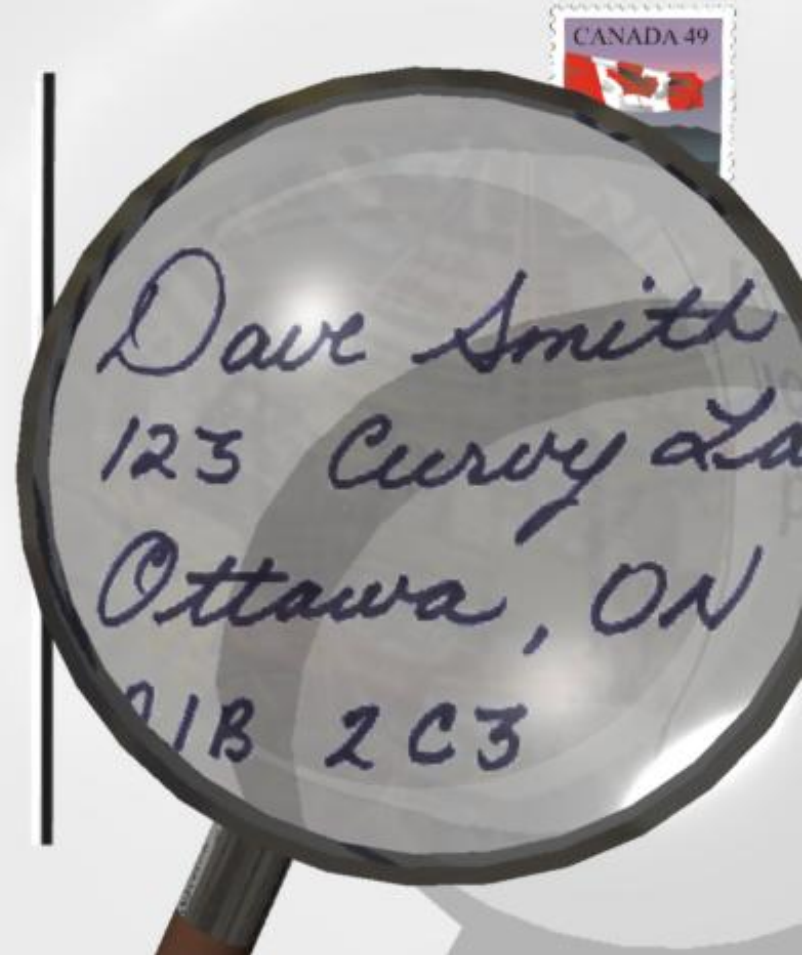


The Present and the Future of the Postal Automation System

In Quest of More Advanced Recognition Technology





LETTER MAIL

- Canada Post is processing 2.8 billion letter mail pieces annually through 61 Multi-line Optical Character Readers (MLOCRs) in 17 letter sorting centers
- ~10% of destination addresses are handwritten
- ~5% of addresses do not have postal code (PC)
- 3 to 5% of mail pieces have incorrect postal code for the address
- MLOCRs read Canadian, U.S. and foreign addresses

POSTAL CODE

- Canadian PC is Alpha-Numeric "ANA NAN" (eg K1A 0B1)
- It represents 1 to several thousand delivery points (eg in rural areas). Average is: 13 delivery points /PC
- Canada Post is sorting letter mail to 850k PCs and to > 600k Points of Call (delivery points derived from PC and address reading)

Present OCR Automation System

MLOCR /RCR



MLOCR - YEAR 2000

- Read Rate 68%
- Error Rate*) 1.5%
- Throughput 31k-36k pcs/hr
- Machine print reading only
- Derivation of Postal Codes

MLOCR/RCR - YEAR 2003

- Read Rate 90%
- Error Rate*) 1.7%
- Machine print/script reading
- Derivation of Postal Codes and Point of Call Identifiers - delivery points
- Reading of barcodes (Data Matrix, Aztec, 4-State, Postnet, Planet)
- Revenue Protection (metered mail)

In 1989 Canada Post purchased MLOCRs

In 2000 Canada Post purchased
on-line co-processors (RCRs)

*) Uncorrected customer postal code errors
are counted as MLOCR/RCR errors

CURRENT PROBLEMS

- Low read rates on:
 - handwritten addresses (~63% to PC level)
 - Inward portion of addresses (derivation of delivery points)
 - outgoing foreign mail (~70% of addresses handwritten)
- High error rate on handwritten addresses (~2.9%) e.g.
MEXICO interpreted as Canadian PC M5X 1C0,
FRANCE interpreted as Canadian PC T2A 4C3
GREECE Interpreted as Canadian PC G2E 5C5
- Low read rate of postage red fluorescent 2D barcodes (~85%)

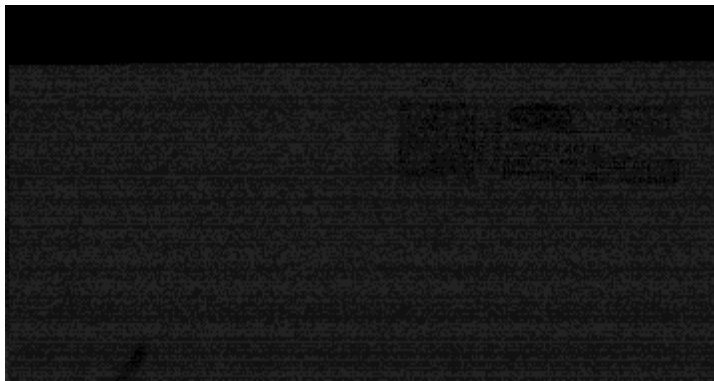


- Poor grey level image quality on dark colour envelopes (green, blue)

PRESENTLY CANADA POST IS PREPARING AN RFP (REQUEST FOR PROPOSAL) TO ENHANCE THE MLOCR/RCR SYSTEM TO:

- Replace obsolete MLOCR electronics (mail tracking / sortation)
 - improve equipment reliability
 - allow sortation on PCs, POCIs and customer numbers
- Replace current grey level camera with new TDI camera
 - improve address and barcode reading on dark colour envelopes

Image of Dark Green Envelope



Gray Level Camera

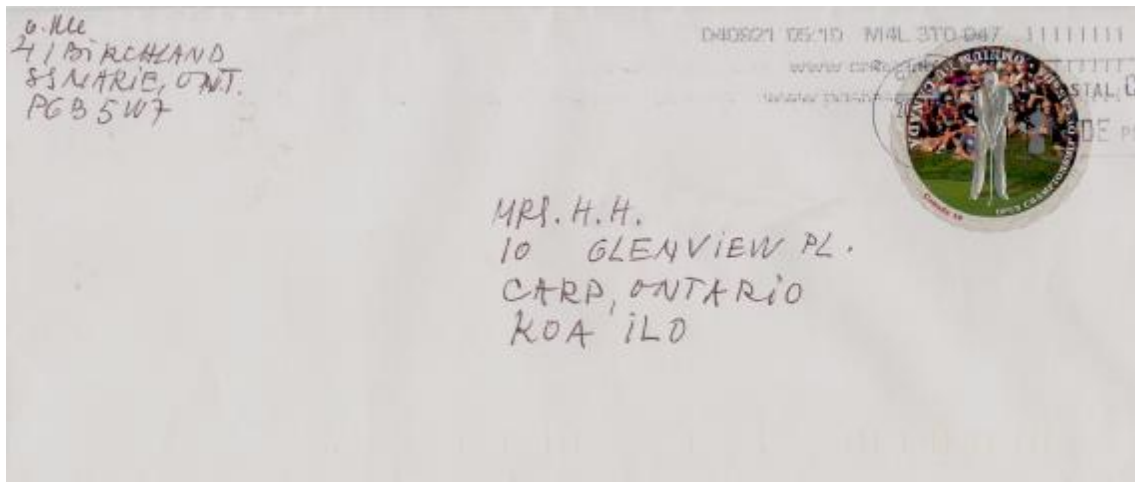


TDI Camera

Future Canada Post OCR System (cont.)



- Replace MLOCR uVAX with new OCR recognition engine
 - increase read rates and reduce error rates on handwritten addresses (including foreign)
 - reading and matching of personal and business names to enable on-line redirection
 - derivation of missing address elements from other redundant address information ie. derivation of RR# or PO Box # from street addresses, derivation of Suite # from personal or business names,



Incomplete rural address.
The correct mailing address is:

**Mrs. H. H.
RR 3
10 Glenview Pl.
Carp, Ontario KOA 1L0**

MLOCR can derive RR 3
from street name and street
number reading and
matching with RR#

Future Canada Post OCR System (cont.)



Incomplete Urban address:

**The Bay
100 Bayshore Dr.
Nepean ON K2B 8C1**

The correct mailing address is:

**The Bay
Suite 301
100 Bayshore Dr
Nepean ON K2B 8C1**

MLOCR can derive Suite # from company name reading and matching with suite numbers.

- deeper mail sortation – for Universities, Government, ...
- Revenue Protection (eg reading of address and 2D barcode)



U.S. address and Canadian domestic postage \$0.49.
Required postage is \$0.80

Thank-
You

ありがとう