



E-filing using digitally signed
Acrobat forms
or
The PKI / CA roller coaster –
from hope to hype to hysteria
to, finally, happiness

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of British Columbia

For the
NIST 3rd Annual PKI R&D Workshop
Gaithersburg, MD 13 April 2004




PKI – and I mean really big
“T”





What we often really need...






What we needed was “PKE”

- **Public Key “Enough”**
- **The right amount of infrastructure appropriate to the**
 - Risk
 - Value
 - Cost
 - Participants
 - System
- **Usually what we really need is Public Key Cryptography, with only some of the infrastructure.**




Juricert™


- Incorporated as a Canadian, for profit Federal corporation.
- Founded by the Law Society of British Columbia
- An initiative of the 14 Law Societies of Canada
- Supported by the the Federation of Law Societies of Canada (www.flsc.ca)
- Share ownership restricted to non-profit professional regulatory bodies



A credential, not certificate authority


- **Juricert is technology neutral**
 - Not dependent on a single certificate technology
 - Can be an RA, may develop a CA if needed (but very unlikely)
 - Partners with existing certificate issuing authorities
 - Can support a variety of local and national initiatives
 - Supports security system other than PKI, as appropriate for the application in question





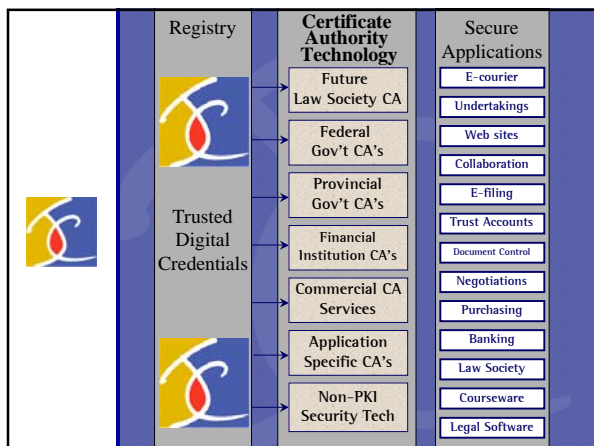
Trusted Digital Credential™

- Is a uniform digital record
 - created by the Juricert secure identification and authentication process,
 - issued by a professional regulatory body (Law Society),
 - linking a person and their professional status to an electronic identity.
- This record is used as the basis for the issuance of PKI certificates and accreditation to other internet security systems.
- Use and maintenance of this record is legally and technically controlled by the issuing professional regulatory body (such as a Law Society) through Juricert.



The Juricert I&A Process

- Registrant completes web form
- Data submitted via SSL
- Printed form witnessed, then faxed and mailed
- Fax image and data matched
- Workflow system presents image and data to PRB credential department (for professional applicants)
- Data and signatures validated against existing extensive paper and digital records
- Acceptance by PRB creates "TDC" in Juricert data base
- Ongoing moves and changes validated by PRB
- Only necessary info. released to applications



Paper forgeries are a problem

RELEASE OF MORTGAGE
BP26604
and BP132972

TERMS: Part 2 of this instr...

Belmont Ave. Fraud March 2004

Belmont Ave. Transfer

4. TRANSFEROR(S):*
ROSY PALACE INVESTMENTS


5. FREEHOLD ESTATE TRANSFERRED:*

Transferor(s) Signature(s)
Rosy Palace Investments by its
Authorized Signatory
Susan Chen
Susan Chen



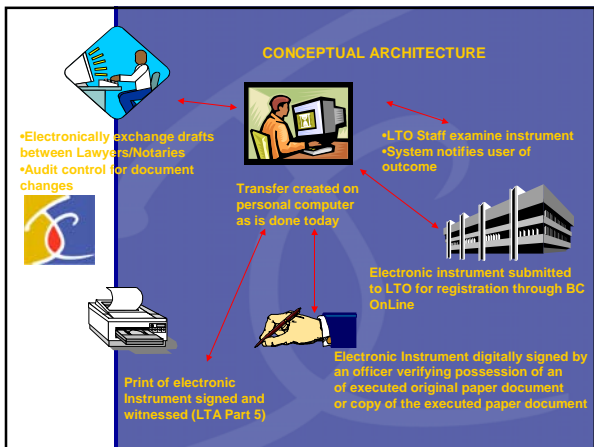
A few terms & acronyms

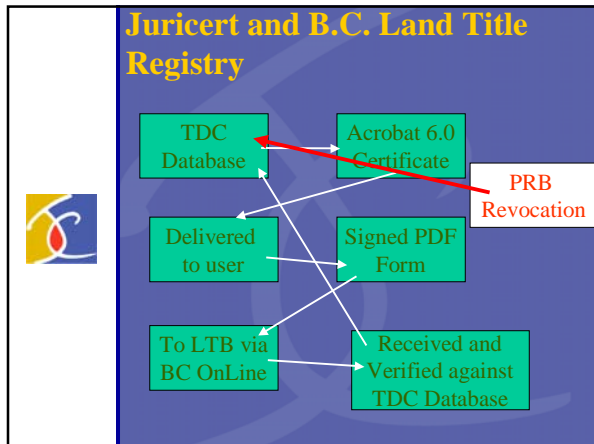
- “EFS” – Electronic Filing System
- “LTB” – Land Title Branch
- “Torrens” – the kind of legal interest in land registration system in B.C.
- “LSBC” – The Law Society of British Columbia – the statutory regulatory body for the legal profession in B.C.
- “B.C.” – British Columbia
- PRB – Professional Regulatory Body



The EFS project so far...

- First discussions in June of 1998
- EFS Committee meeting since then
- Legislation in 1999 (Bill 93)
- 3 contractors....system in “user acceptance” testing in the fall of 2003
- Bill 90 in Nov. 2003
- December 2003 LSBC/Juricert recognized as a “CA” under the 1999 legislation
- “Production Pilot” filings started 7 Jan 2004
- Continuing Legal Education programs for 1300 registrants in March, 2004
- Full Availability as of April 1, 2004





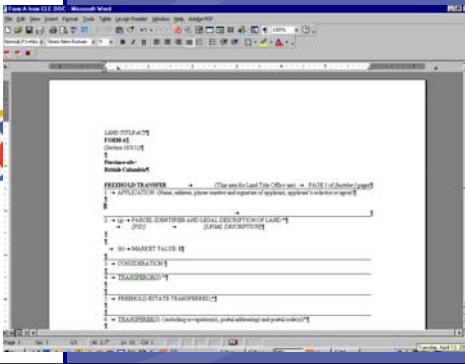
- ### Key principles implemented
- No change to property law
 - No significant change to the process and procedures of conveyancing
 - Current roles and responsibilities kept in place
 - Minimal investment by law firms – “COTS” software
 - Public interest protected by enhancing the Torrens system, keeping lawyers involved, and implementing appropriate security measures

- ### The first filing(s) – January 7, 2004
- CA2 and CA3 – test filings
 - Decided to do a line of credit mortgage for the Bank of Montreal...
 - Documents had already been prepared, so the mortgage was redone using the Acrobat Form B...
-

Roz does up the new form in Acrobat v. 6



For most firms they typically use Word to create forms



Really, it is very easy....



The mortgage form...

FORM 8_V1

[PID] **Use Schedule** [legal description]

performance of its obligations in accordance with the mortgage terms referred to in item 3 and the borrower(s) and every other signatory agree(s) to be bound by, and acknowledge(s) receipt of a true copy of, those terms.

Officer Signature(s)

Execution Date		
Y	M	D
04	01	07

 Borrower(s) Signature(s)

PETER W. DEMEO
Barrister & Solicitor
102 - 3930 Shelbourne St.
Victoria, BC, V8P 5P6

JOHN HENRY WILKINSON

PATRICIA MARY WILKINSON

BORROWER(S) (MORTGAGOR(S)): (including postal address(es))

STC? YES

Pick up STC?

3. BORROWER(S) (MORTGAGOR(S)): (including postal address(es) and postal code(s)) **Use Schedule**

JOHN HENRY WILKINSON, Dental Mechanic

After the clients are gone, Peter digitally signs the form and stares at the camera. (Note: camera and grin not required)

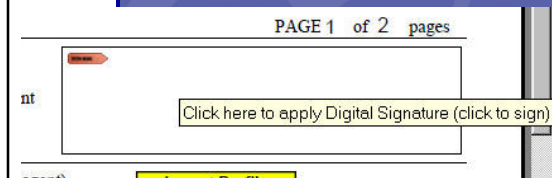


More than one "kind" of certificate can be used with Juricert and e-filing

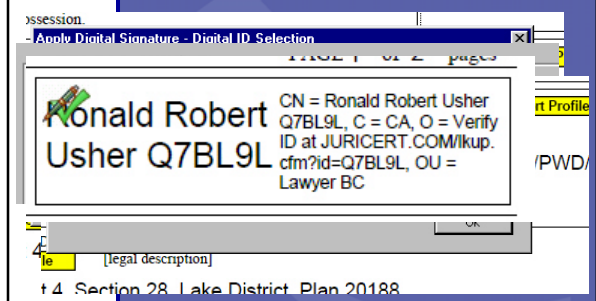


- Un-managed Acrobat certificate created by Juricert staff (only for use in Acrobat 6)
- Managed cert created by a Lotus Domino system (useable in email but root unknown)
- Fully Managed and recognized certificate from IdScript / DST-Identrus – root certificate known

The form is opened on his computer and the signing box is selected..



“signing” is just a few clicks



Roz then sends the mortgage to the LTB via BC Online..



I wonder if it will work...



Off it goes...to the network hub



Into the Fiber Optic Internet Connection...



**Off to 4300 Seymour in
Saanich, B.C.**



B.C. Government Data Centre

**Where Government
technology staff wait
anxiously..**



**Meanwhile, over at the Land
Title Branch
Headquarters...**



Staff try to stay calm..





Darcy and Denis check the time...

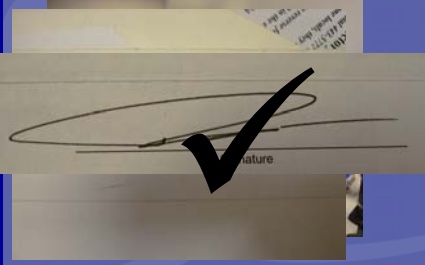



Did it work??

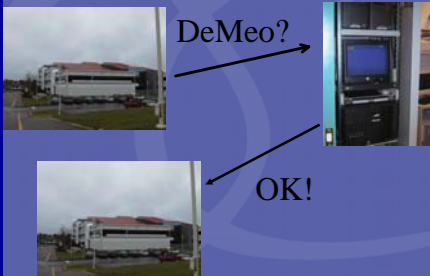


 **Meanwhile.....**

 **DeMeo's membership status and digital signature is checked by Juricert at the Law Society**



 **(Actually the LTB's computer checks with the Juricert system)**





Once the signature had been validated and other basic “edit” checks were completed by the LTB systems...the mortgage was accepted into the system...and electronically “marked up”




Huston, we don't have a problem! (at least with the mortgage...)



“numbers” and the stamped document are received in less than 2 minutes.

PAGE 1 of 2 pages

Rece
5)  Peter DeMeo IPP2VL 14

Digitally signed by Peter DeMeo IPP2VL
DN: CN = Peter DeMeo IPP2VL, C = CA, O =
= Verify ID at www.jurioert.com/LKUP.cfm?
id=IPP2VL_OU = Practising Lawyer BC
Reason: Officer Certification for L.T.O.
purposes
Date: 2004.01.07 12:48:49 -0800

gent) **Import Profile** SUB BCOL ACCT: 995327

Vilkinson 33445/PWD/ab/rg

When printed the yellow boxes and the red "X" do not show

CA4



Document Copy

PAGE 1 of 2 pages

Peter DeMeo
IPP2VL

Digitally signed by Peter DeMeo (IPP2VL), DN: cn = Peter DeMeo (IPP2VL), o = CA, c = BC, email = peter.demeo@bc.ca, ou = BC, st = BC, serial = 13117613, version = 1.0, purpose = I have performed the function of signing this document. Date: 2004.01.07 12:46:40 -0500

(or agent)

SUB BCOL ACCT:
995327

Wilkinson 33445/PWD/ab/rg

Fees taken from the firm's BC OnLine account are noted on the document

Fee Collected for Document: \$55.00

RTGAGOR(S): (including postal address(es) and postal code(s))

V8Z 3E9

STC Fee Collected for Document: \$9.00

Interest Rate:

(c) Interest Adjustment Y

The image was available from BC OnLine a few minutes later...



PENDING

VICA4

M39824 2004-01-07-13.06.54.416552



REGISTERED VICA4

M43508 2004-01-12-16.43.49.007359

LAND TITLE ACT
1 B (Section 225)

Received Land Title Branch: VIC
Jan-07-2004 12:49:49.001

CA4

So what did not happen in regard to this filing?



Off to the courier...



To the Agents reception area



Processed by the agents



Over to the LTO



Documents processed by the cashier



Agents wait for markup



Scanned and marked up



Back to the agents



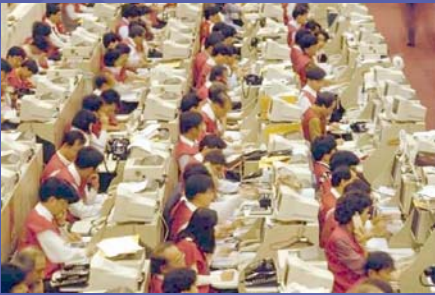
Courier back to you



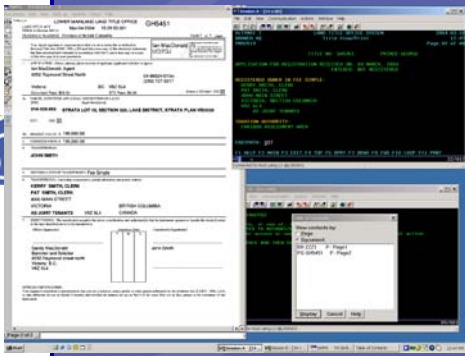
Handled by the receptionist again, and then



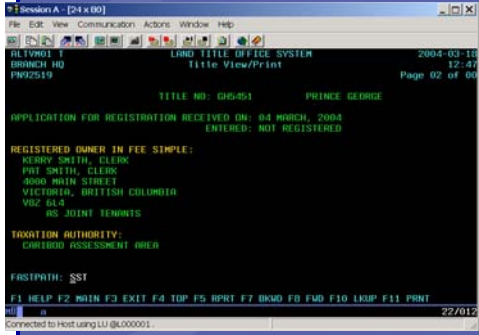
Back to the conveyancers



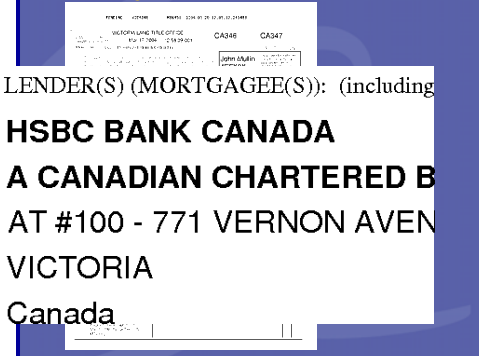
The major benefit to the LTO...



Much of the typing is done for the examiners...



The image the examiner looks at is very clear...

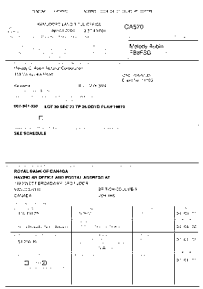


LENDER(S) (MORTGAGEE(S)): (including
HSBC BANK CANADA
A CANADIAN CHARTERED BANK
AT #100 - 771 VERNON AVENUE
VICTORIA
Canada

Examiner Screen with a EFS document



On receiving the PDF File...



- Checks the form version
 - Checks for changes to the document post signing
 - Validates the signers status by comparing SHA1 Hash values
 - Ensures there is a valid property identifier ("PID")
- THEN
- Date, Time, and Number stamps the PDF
 - Extracts the data for posting to the DB2 Database
 - Creates a TIFF image for ImagePlus data base
 - Creates new "draft title" for the examiner
 - Processes fee payments
 - Reports to submitter

Success...



- From creation of the document to "stamped" and "bankable" document back in less than 15 minutes
- Courier and agents fees saved
- STC ordered with no extra paperwork
- Could immediately report to the bank
- Accounting details reported to the firm's bookkeeper (via email delivery of filing report)
- Both secretary and lawyer quickly able to finish the work on the file
- Approximately \$400 Million of Property Transfers and Mortgages filed so far
- Survived "DOS attack" by another system that went live at the same time for Corporation filings

We tried to find the "right"...



- Level of Security
- Technical Simplicity
- Balance of benefits (between gov. and others)
- Division of human labour and computer processing
- Allocation of costs (LTO/Juricert/Users)
- Fee Level (\$2.50 per digital signature)
- Extensibility (eg. digital survey plans)
- Amount of process change
- Respect for a system that was already "world class" for the government and consumers (and their lawyers)
- Platform for future refinement and development



**Thank you for your time and
interest. Please call if you
have any comments,
questions or concerns.**

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