International Federation of Surveyors Fédération Internationale des Géomètres Internationale Vereinigung der Vermessungsingenieure



Peter Rabley, ILS

Using ICT to drive Business Process Change within Land Registry Offices

Symposium on Innovative Technology for Land Administration

June 23-24, 2005

Madison, Wisconsin

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Presentation Overview

§ Real Property Context,
§ ICT Enabling Framework,
§ Integrating Cadastre and Registry,
§ Case Studies – National Land Agency, Jamaica and Spotsylvania County, VA.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Context – Real Property

- § Real Property is a principal source of wealth and wealth generation in a society,
- § Real Property rights that provide secure tenure and facilitate broad private ownership enable society to develop dynamic land trading practices and the formation of land markets,
- § Property is a cultural concept of the relationship between people and objects,
- § People can gain the right to process, use, enjoy and dispose of "objects", and
- § The Concept of a "Bundle of Rights" the rights related to the ability to possess, use, enjoy and dispose of real property.

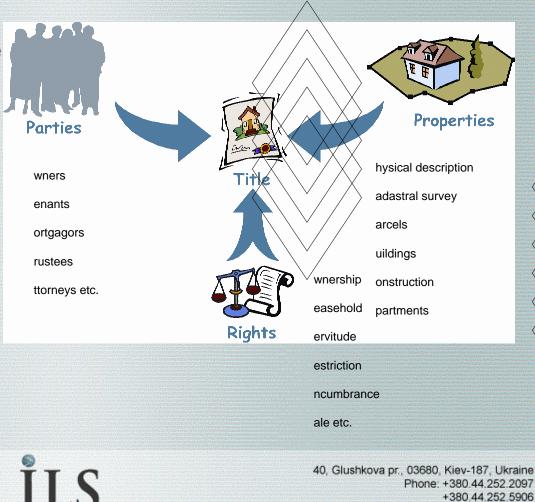
9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Context – Real Property (Cont).

§ "Bundle of Rights"

- Government's role is to define real property rights and to protect those rights.
- § Real property has a legal dimension.
- § Real property has a physical dimension; the things we can gain rights over may be tangible or intangible.
- § Real property has an economic dimension; real property is a store of value, an element of wealth - a safe "harbor".



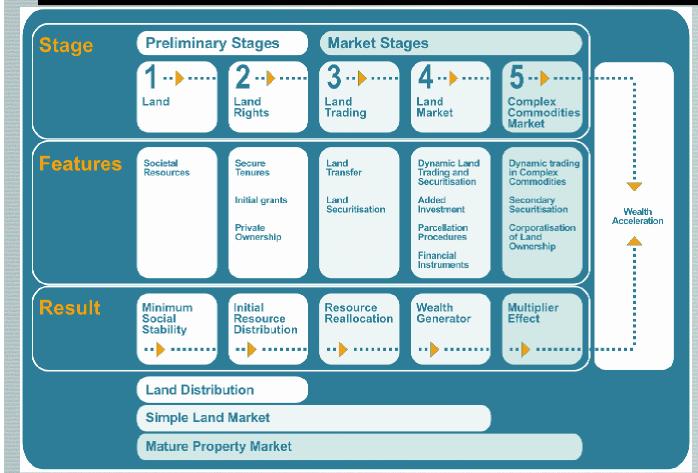
Fax: +380.44.266.4426

company@landsystems.com.ua · www.landsystems.com.ua

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com · www.landsystems.com



Context Real Property (Cont.)



§Markets Mature,

§Land transactions more complex,

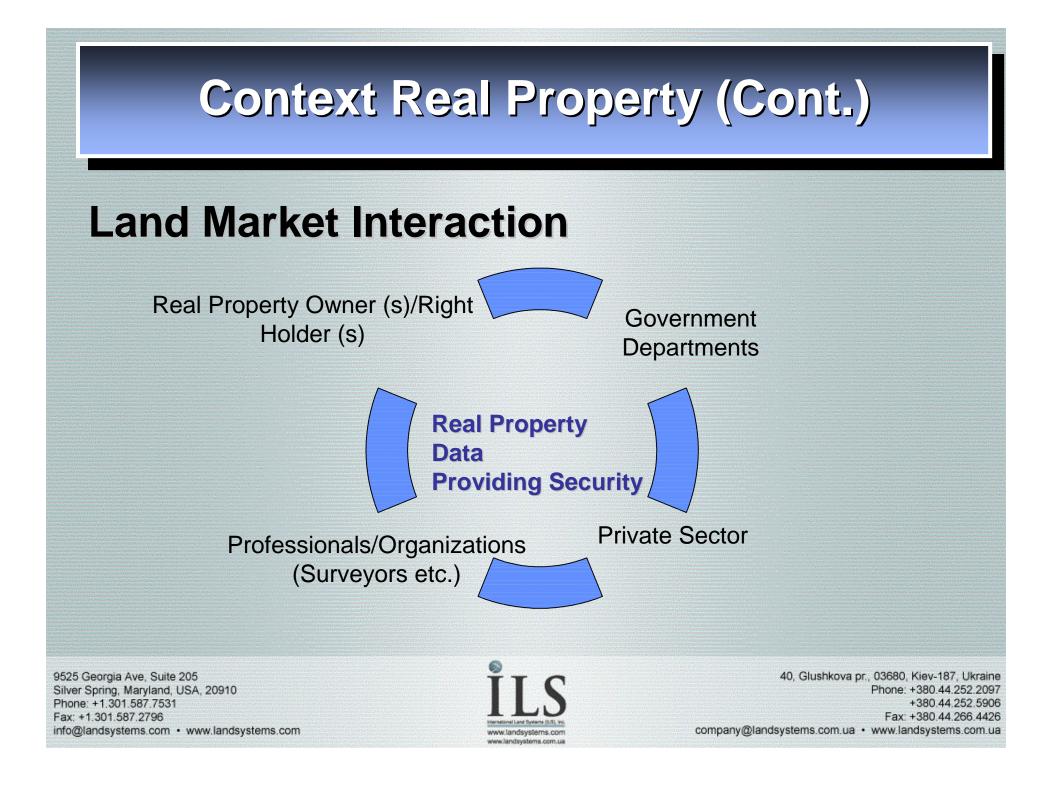
§Demand on Government increases,

§Cost Increase,

§Maintenance.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com





ICT Enabling Framework

Consists of: §Drivers, §Enablers, and §Constraints.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Drivers:

§External:

§Commercial Demand for Rapid Filing,

§Commercial Demand for Rapid Access,

§Public – Better Service and Access,

§Investment Demand – Emerging Economies – Second

homes, Diaspora etc.

§Internal

§Government Drive for Efficiency and Increased productivity

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Enablers:

§Spatial data as the integrating layer,

§Internet and Web Services,

§PKI,

§Modernized legislation i.e. digital signatures etc.,

§Data Standards such as MISMO, LandXML etc.,

§Data Models,

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Enablers (cont):

§N-Tier environments – J2EE and .NET,
§Business Logic and Workflow,
§Data Replication tools,
§Disconnected environments,
§History and archive,
§Lower cost hardware, and

§Database Management Systems (lower cost, more choice).

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Constraints:

- §Lack of funding,
- §ICT not viewed as infrastructure i.e. roads, power etc.,
- §Lack of skilled personnel,
- §Institutional complexity and inertia,
- §Poor data quality,
- **§Outdated Legislation,**
- **§Lack of adoption of data standards SDTS/FGDC e.g.,**
- **§Resistance to change, and**
- §Costs of maintenance.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com

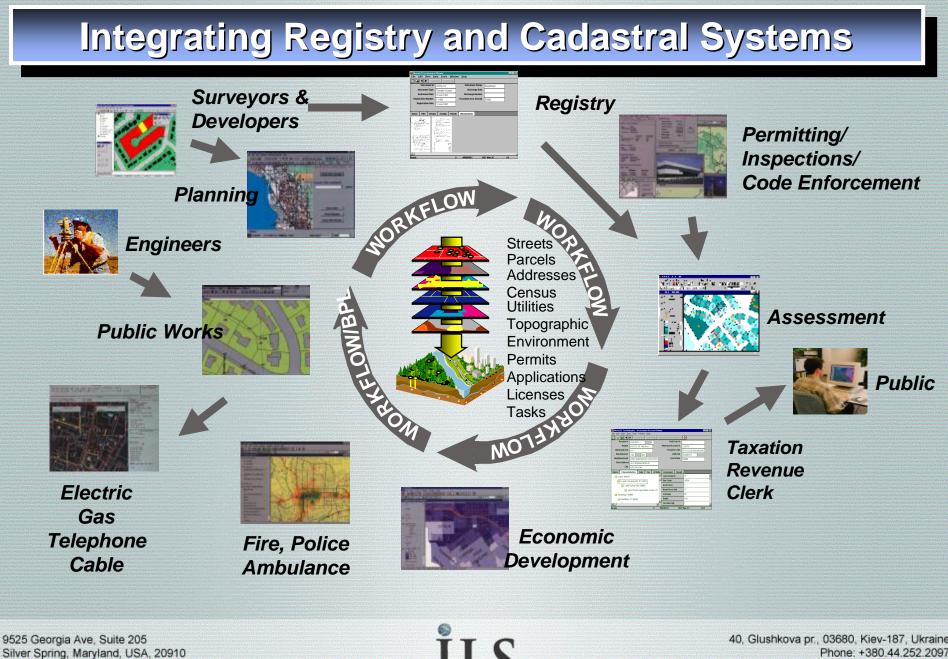


New Models:

§Executive Agencies, i.e. HMLR, OS, and NLA in Jamaica (charge for services and data for recovery), §Public/private i.e. web hosting, royalty schemes, §Concession models, §Technology Funds i.e. TTF in Virginia, Ga, Ia, etc.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com





Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com TILLS

Case Studies (Jamaica and Spotsylvania County, Va)

Common Overview

- § Disparate definition of a cadastre
 - § Lack of a common parcel identifier
 - § Various Numbering Systems
- § Large Volume of Paper Records,
- § Low level of records integration in previous computer systems,
- § The requirement to have minimal negative effect on normal business operations during implementation,
- § Limited previous experience of senior staff in large system implementations,
- § Low level of computer knowledge in general staff,
- § Legislative framework
 - § Need to implement initially in current outdated system
 - § flexibility required for future changes

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Case Studies - Jamaica

- § Registration of Titles Act established in 1889 Torrens Based Registry
- § Registration of Titles in one central office
 - § Approximately 500,000 registered Titles
 - § 50,000 transactions per annum
 - § 6,000 new certificates of title
- § Land Surveyors Act
 - § 15,000 survey plans per annum
- § Land Valuation Act for Property Taxation
 - § 690,000 taxation parcels of Land
- § Deeds System of common law titles also exists
- § Spatial Fabric CADINDEX and CADMAP

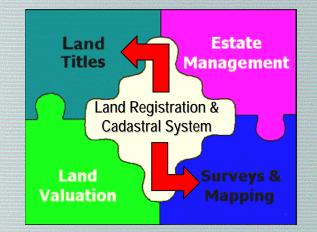
9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Case Studies - Jamaica

Government Recognized

- § Inability of current title registration system to effectively handling current volumes and forecasted demands,
- § The need for a National Spatial Data Infrastructure to provide a foundation for economic development,
- § The need to accelerate the regularization of land ownership in Jamaica, and
- S The need for a modern institutional framework.



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Case Studies - Jamaica

§ National Land Policy

§ "July 1996. Policy recognizes the finite nature of Jamaica's land resources and the need to correct decades of indiscriminate use and poor development practices. The policy aims to complement socio-economic development plans and programmes including poverty eradication, whilst challenging and seeking to remove inefficient, onerous and outdated legal, administrative, management and other barriers."

§ Public Sector Modernisation

- § "In 1999 under a Public Sector Modernisation Project government moved to establish Executive Agencies that were more customer focused and performance based on terms of management. Guided by the National Land Policy, one of the agencies created in 2001 was the National Land Agency (NLA) under the Ministry of Land and Environment. The NLA brought together the core land functions of Government under one roof, and includes: Land Titles; Survey & Mapping; Land Valuation & Estate (Crown Land) Management. "
- § Modernization of Information Technology Use Enterprise solution to drive Business Process Change.
- § Establish Customer Service Office, Business Development Office, and IT Office – all with their own business plans and strategies.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Jamaica - Workflow and Business Rules Concept

- § The registration procedure is workflow-driven and specified by business rules,
- § Workflow is a scenario for performing daily operations under predefined procedures and strict security rules,
- § Business rules define how the workflow should proceed,
- S Each type of transaction may have its own workflow with necessary number of steps and links between them, and
- § Workflows are configurable through definable business rules logic.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



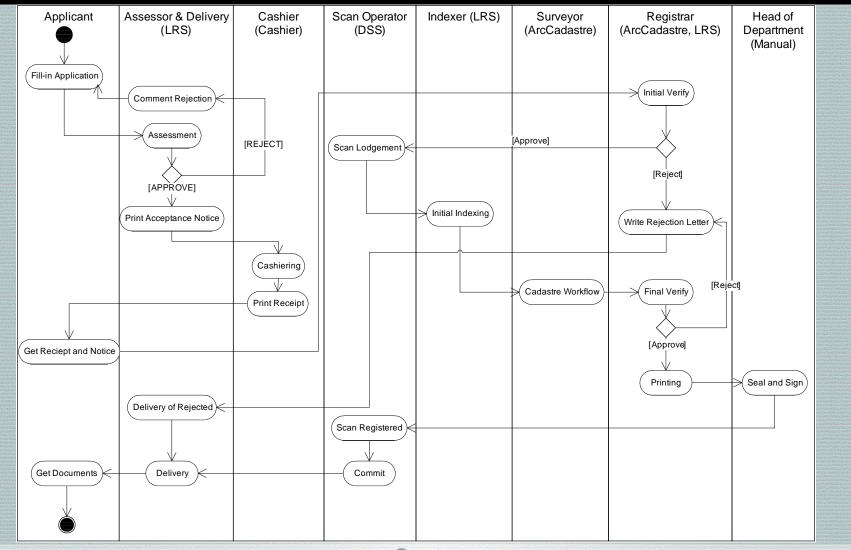
Jamaica – Workflow Defined

- § Assessment get, review documents from party and create new lodgment,
- § Cashiering accept payment for registration,
- § Initial Verify conduct legal review of documents,
- § Scan scanning of incoming documents,
- § Index enter information about transaction into property register,
- **§** Cadastre perform cadastre operation i.e. subdivide, union, create parcel diagram etc.,
- § Final verify and Sign and Seal check, print and sign deed document,
- § Final Scan scanning of outgoing documents, and
- § Delivery deliver new documents to the applicant.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com

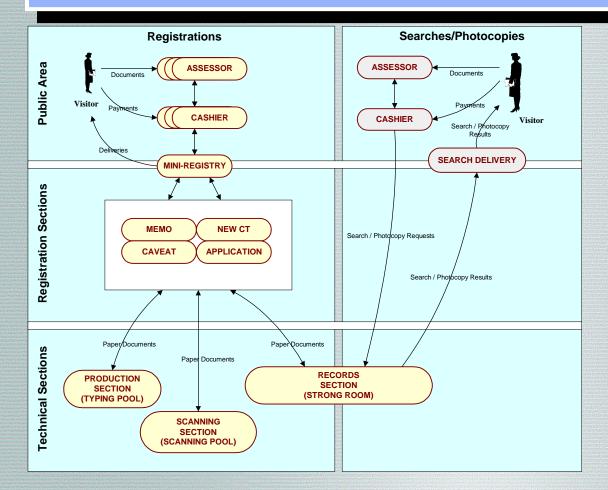


Jamaica - Registration Scenario



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com ILLS www.landsystems.com.u

Jamaica – Enterprise Solution



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com Particular States (US) In: www.landsystems.com.us

Enterprise Solution (LRS) Enables enabling:

Job and staff tracking,

•

.

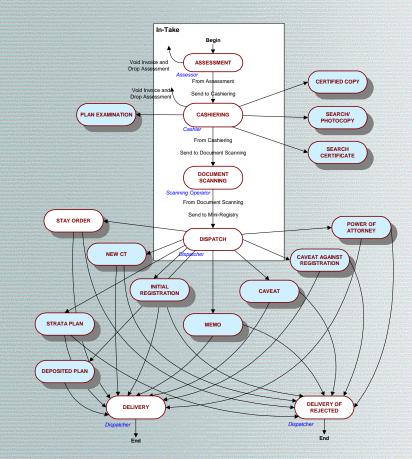
•

•

•

- Concurrent processing,
- Fully controlled access to field level,
- Backfile Integration (digital archives), and
- Full Automation of ALL office registration activities.

Jamaica Workflows (Transaction Types)



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



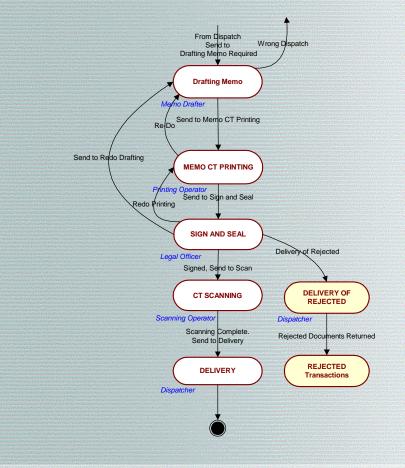
LRS Workflows

- § New Certificate
- § Primary Registration
- § Encumbrances
- Sector Caveat
- § Power of Attorney
- § Deposit of Plan
- § Plan Examination
- § Search

§

- § Search Certificate
- S Certified Copy
 - Manual Processing (for transition period)

Jamaica Simple Workflow

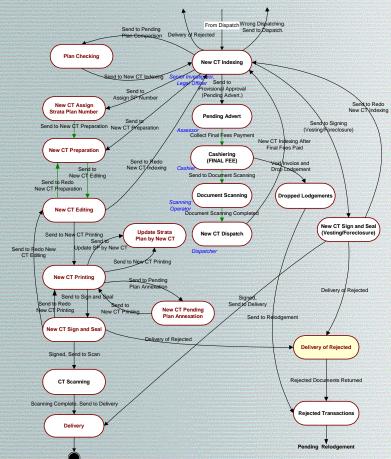


Encumbrances Workflow

- § Drafting Memo
- § Printing Memo
- Sign and Seal
- § Scan Certificate
- § Delivery

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com ILS www.landsystems.com.uk

Jamaica Complex Workflow



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



40, Glushkova pr., 03680, Kiev-187, Ukraine Phone: +380.44.252.2097 +380.44.252.5906 Fax: +380.44.266.4426 company@landsystems.com.ua • www.landsystems.com.ua

New Certificate

- § New CT Indexing
- § Plan Checking
- § Newspaper Advertisement
- § Final Fees Payment
- § New CT Preparation
- § New CT Editing
- § New CT Printing
- § Sign and Seal
- § Scan New CT
- § Delivery

Jamaica – Control

Mattade

Deliver Documents

RID

NR1100001

Date Paid

2/16/2005 11:26 AM

Flight Beginns Date

8/29/1977 1:00 AM

Scenario

Primary Registration

- d ×

LockedBy

company@landsystems.com.ua · www.landsystems.com.ua

LRS Administrator

P R.S. Lond Register Indexer

Instrument No. Instrument

0010002

info@landsystems.com · www.landsystems.com

44 04 04 00 00 00

PRL-Privatization of Land

Applicant

Stace

Invoice No.

Dige M. Dige & Co. Defivery Scan Output Documents Scan Butout Documents Secondary Registration wit 0010003 TBL-Transfer of Land NR1100301 2/17/2005 11:04 AM 2/17/200512:00 AM 0010004 MC-Moltgage CSA/Change State Act Bank of Nowa Asur Ion Amerov Span Output Documents Span Output Documents Scen Bulput Documents Scen Bulput Documents NR0000101 NR0000101 Secondary Registration Secondary Registration with 2/17/2005 11:51 AM 2/14/200512:00.6M 2/17/2005 11:57 AM 2/15/200512:00 AM 0010006 CSA/Drange State Act Dice & Co. Scan Output Documents Scan Dubut Documents NR1100001 2/17/2005 1:33 FM 1/3/2005 12:00 AM Seconday Registration with PREP Property Report PREP Property Report Diga M. Diga L Co. Scan Output Documento Sign and Seal Scen Oulput Documents Sign and Seal Property Report Property Report 0010007 10 NROCODICI 2/17/2006 1:45 PM 12322005 12-00 AM 0010009 NR1100001 2/17/2005 2 04 PM 1/5/2005 12:00 AM **LRS** Administration 12 15 17 18 001001 B CSA-Change State Act Digs M. Penting Ventication Initial Vestication Printing Final Verification Initial Verification NR0000102 2/17/2005 5:31 PM 1/3/2005 12:00 AM Secondary Registration wit LRS Administrator TRL-Transfer of Land MD-Matgage PRA-Plivatization of Apa... 8018012 Beytomov Enill Arou Baytamov Enill Arou NR0000104 NR0000108 2/19/2005 12 58 PM 12/12/2004 12:00 AM Secondary Registration wit Lodgement Form 2/19/2005 3 23 PM 0010013 LRS Administration 3/2/2005 12:00 AM App-atment Primary Registr 0010014 Digs M. Scan Output Documents Scien Bulgut Documents 3/1/2005 3:29 PM 0010015 PFR-Property Formation 19 Property Verification Property Verification 3/4/2005 12:07 PM roperty Formation 1 History **Applications queue** Instrument No. 0010015 History Date/Time Liter Stage at different stages 3/4/200512407 PM Admin Assessment Cashiering 3/4/200512:07 PM Admin 3/4/200512:07 PM 3/4/200512:07 PM 3/4/200512:07 PM Admin Admin Initial Vetification Scan Decuments Dispatching Property Initial Indexing Eadastral Operation Admin **Application** 3/4/200512:17 PM 3/4/200512:17 PM Admin Admin **Processing History** Constants Close Time Nessage Category Ready 12 record(s), 1 selected, 4 locked by you admin 🕑 Connected 📲 start 🔰 🧔 😂 🐂 💾 📓 Microsoft PowerPoint 🗤 S 1.3 Land Register Ind... 6 40, Glushkova pr., 03680, Kiev-187, Ukraine 9525 Georgia Ave, Suite 205 Phone: +380.44.252.2097 Silver Spring, Maryland, USA, 20910 +380.44.252.5906 Phone: +1.301.587.7531 Fax: +380.44.266.4426 Fax: +1.301.587.2796

> www.landsystems.com www.landsystems.com.ua

Jamaica – Security

🎭 🖍 🗡 👔							
Users	ustometre	Č.	ath Registers Chaet of	Accounts	Fee Schedule Settings	Permissions Transaction (Groups + +
Transaction			Parameters				
Narue	Short Nam Coo	£	 Name 	Туре	Defa.k	Display Name	
Addition of Covenant	Addition of RC		Doc_Number	Text		Instrument No.	
Adjusting Entry Cash			old_val_fals	Text		Volume/Folio	
Adjusting Entry Check			Consideration	Currence		Value of Lend	
Adverse Possession	Adverse P AD	PP.	NumNevyTitles	Integer	1	Number of New Certificates	
Amendment	Amendher AM		ReRegistrationByPlan	Logic	No	Re-Registration by Plan	
Application	Application API		Patent	Logic	No	Registration by Patent	
Appointing Receiver	Appointing AR		AttachPlan	Logic	No	Submitted with Plan	
Assurance Fund	Assurance AF						
By Laws	By Laws BLA		1				
Caveat	Caveal CA		E				
Caveat Against Registration	Coveal Ag CAR	1	Edit Account Fee				1
Certified Copy	Certified D CC		Account 6107; Appl	Instian			DK [
Change of Name	Change N- CN			dule. Fee No. 2			
Court Deder	Court Dide CO		the second second	Duic, Fee No. 2			Cancel
Customer Account Withdraw	Withdraw WD	Á,	Formula Examples Free Days Numb	and the second states	Consideration NumNew Titles, ReRegiste		
Customer Withdrawal	Customer ¹ CW		Linction Lee (Doc"Lingue	eroid_Apificeri	Lonsbelleton, Numrkew Miles, nemegisti	ation8yPlan.PatentAttachPlan	
Death	Death DE		' on Making App	lication H	For Re-Registriation by	Plan .	
Declaration of Trust	Declaration DT		Fra				
Deposit	Depoct DE	2	Fee = 0				
Deposit of Plan	Deposit of DP		If ReRegistrati				
Discharge of Banksuptcy	Discharge DB		If considerat		Dud then		
ischarge of Covenant	Discharge DC		1.44	A. U		<u> </u>	
Discharge of Mortgage or Cha	Discharge DI		End Function			Verity	
Dispensation	Dispenset DIS						
E-Land Depocit	E-Land De ELI		Parameter Values				
Examination of Document	Exerator D EXI	0		nstrument No. *	[
Exchange of Land	Exchange EX			Volume/Fallo			
inal Fee	Final Fee FF			Value of Land *			
Foreclosure	Foredosul FD			A CONTRACTOR OF THE		0.00	
Foreclosuse Dades	Foreclosus FDI	20	Number of Ne	m Certificates *		1	
General Search	Genesal Sc GS				F Re-Registration by Plan		
Runt of Experiment	Grant of F. F.S.				F. Davider Conch. Datast	¥ 3	

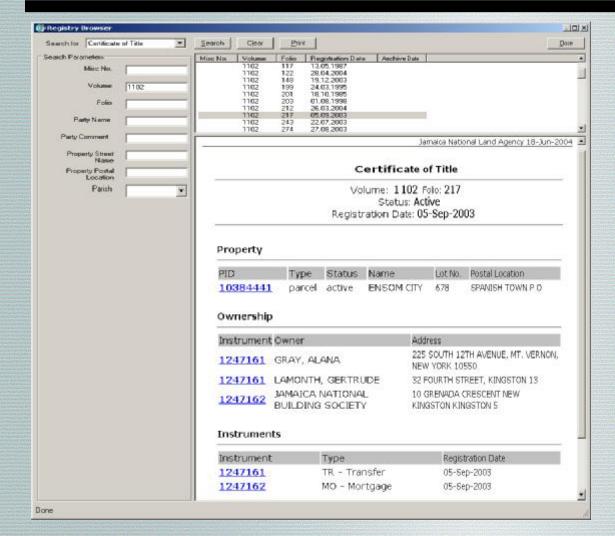
§Functions: fee calculation, receipting, and accounting of fee transactions at the Land Registry.
§Increased security, and
§Increased Fee

Generation.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Jamaica - Access



§Easy access to information, and §Up to date Title data.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Jamaica - Reporting

9	LR Reports Tesk Mar	nager					1
1F.	N Heb Refection New	Edi Delete	Subscribers				
t	Drag a column header here k	n group by that column					
	Tack Nater	Report		🖃 Stat Date 🖃 Err	i Date 🔄 Last Run 🛛	🗉 Nest Run 🔄 En	-
	Staff List	Statt List		3/6/2005	6/5/2005 5:19 PM		•
•	Instruments Ageing	Inditionents Ageing		6/3/2009	5/5/3005 ±07.EM		
	Statt Productivity (Monthly)	Statt Productivity Summary		6/3/2005	6/6/2005 3:04 PM	6/7/2005 3:04 PM	1
1	Memo Pending Details	Memo Pending Details		6/3/2005		6/12/2005 6:06 PM	•
		Task Properties					
		General Schedule	arameters Subscribers				
		O <u>\w</u> eekly O <u>M</u> onthly	E <u>v</u> eny (1	⇒ day(t)			
		Dely frequency ③ Occuss once at ○ Occusse every		and the second se	40:33 PM 2		
				OK	Cancel		

§Staff productivity,
§Financial Statistics, and
§Performance Statistics.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com ELLS www.landsystems.com.uk

Jamaica - Integration

0010003	Property Initial Indexing	F4 F5									
	·	1.1. 1.9	1.9 1.1		Source Prope	rty{s)					
	Instrument	RID		Property Type	18	Property N	ame				
	1.0	NR0000108		Private property	-			-			
	₩ ₩∕	Type of P	art Cadastral 103-126	No. 💌 Area 1458.97 sg. met.	Address		City Sikirtabat	Nam	e of Part		
	Parties	land	103-126	1400.37 sq. met.			Sikiitabat			1000	
					New Propert	v{s]					
	Property Initial Indexing	RID	4	Property Type		Property N	ame				
		NR1100001		Private property							
		Type of P	art 🛛 💌 Cadastral	No. 💌 Area	Address		🖬 City	💌 Na	me of Part		
	View	land		400.00 sq. met.			Sikirtabat				
ľ	to										
		T								Subo	division o
	Property Info	<u>j</u>			able Property C	bjects			217		
	5	Type of Part	💌 Cadastral			Area	Address			prop	erty invo
		land	103-126	INRC	000108	1458.97 sq. met.					-
	Rejection Letter	land				400.00 sq. met.				oper	ations to
	Tõ)			Ta	Do List for Are	adastre				norf	ormed in
		Instrument ID	💽 Instrument	🔄 Instrument Creati			reate Date 🖬 C	adastral No.	🔽 Cadastral	hein	
	History	0010003	Subdivision	04.04.2005 14:09:32	NR0000108	Parent	1	03-126	Subdivisior	cada	stre offic
		0010003	Subdivision	04.04.2005 14:09:32	NR1100001	Child			Subdivision	cada	
Time M		•									
							Back	Finish	Cancel		
r	Esc - Cancel E2 - Fir	oish F3-Back F4	L - Add Property, E5 - Add	Property Object F6 - Delete	Becord E7 - Viel	w/Edit Becord, E8 - Co	Property Object, F	9 - Delete Prope	tu Object		
<u>_</u>							py i topcity object i	o Delete Hopel	9 00/000		
eady							1 record	s), 1 selected	admin 📴 Cor	inected	
	ve, Suite 205 Maryland, USA,	20910			P	IC			4	0, Glushkova	pr., 03680, Kiev-187 Phone: +380.44. +380.44.

Jamaica – Integration (Cont.)

Until full - Archlig - Archife				- 19 X
Elle Edit View Invent Selection	Inois Window Heta			
	× + 1 3.787			
Parcel Editor - Update Lond V	/aluation Numbers 💌 🛐 🖏	1 * * * B 0 @	0.9.8	8 G X 9 9 9
A state of the second se	Sector and the sector of the s	Tarnet Inde OTE (and Dar	A CONTRACTOR OF	
	Parcel Edit Form	and avenue of the second		
H E sde SOE Land_Parcel	Hodfied Data	Modfied A	attor: [19]	
all other values>	Version Number: E	Parori Status:	Larthe A	THE AND A SKI
PARCEL_STATUS	Strata Extension: Eccol	Parcel Type:	Crohary 3	adjustice of a start had
Active Supercedes	Land Valuation No: 105C1W0310		1391	
Deleted	Legal Area: 678.31	Toko:	105	
Periding Readow Kingsond	Survey Status: Surveyed	Registration Status:	Raigilbares	BARRY PORT OF THE ASS
Ensue Mar Connecto	Linit No:	Deposited Plan No:	1590	The second state of the second state
isplay Source Map Generals	Lot Nos 405	Esan No:		
	Street No: [160	Record Index No.		Party Parallet La V 199
Ipdate Land Valuation N	Street No Suffor: A	Street Profix Or:	[The Life distant with the second state of the
F POMS .	Street Prefix Type:	Street Namei	REDHILLS	and
	Street Type: ROAD	T Street Deaction:		
F Add Co.	Online Street Name: Disk & MCD etc.	15 6540		
□ Select	Scherre Name:	Postal Location:	KINGSTON 19	The second of the second second
and the second s	District: CARIBBEAN	TERR# Parishi	ST.ANDREW	thread and and the second
🗆 Digitize. 🗊 🛃	Online Address: 180 A RECI HE	TE READ (THEIR CHURCH)	ALERANCE ST. MOREN	Providence
T Select 2 10	And	F		Contraction of the second
	Parent Parcel Id:			Purse and I and French and
F Select.				to have a forman to and the day of a
T Snake . 👪	Highlight 44	1 1 2 34 ++	Report	In the market of the second
Paral 2				CONTRACT BUILDED AND
		06	Cancel	
-	30 81	and a second	A WITCH LLE	THE REAL PROPERTY OF THE PARTY
A DIA	CO.A.S. Assessment The Delivery Constant			الد ا
Drawing - h 🗇 🗖 -	W. S. T.S. Jana	±]10 ± B Z	A. a.	
				769384.02 654605.61 Meters

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Jamaica – Results

§Transaction times cut from 60 days on average to 15 – goal is 3 days turn around by 2006,
§Business processes reduced from more than 100+ to less than 50 in daily use,
§Customers know exactly where their application is,
§Much closer to creating a 'one stop shop', and
§Fee Collections are up 250%.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Problem Set:

- § Population 110,000,
- § 35,000 land parcels,
- **§** Growing rapidly dormitory of metro Washington DC
- **§** Recorders office was 4 months behind,
- § Older technology not flexible,
- **§** Low level of technology skill and awareness in staff,
- § Deed legacy system data not integrated,
- **§** Not integrated with rest of County land processes, and
- **§** Public and commercial sector increasingly frustrated.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Solution:

- § Use TTF,
- **§** Replace older legacy system more flexible open system,
- **§** Force use of the VA Cover Sheet Agent level 1 E-filing,
- **§** Integrate backfile legacy data,
- **§** Integrate with Assessors and planning office through Novalis LRF,
- § Use Web Delivery,
- **§** Use E-Filing (ERX ILS and ACS),
- **§** Provide extensive training,
- **§** Recordings now live no backlog,
- **§** Legacy data converted back 40+ years and work ongoing, and
- **§** Staff productivity greatly increased.

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



lân t

P4 Create

Workflow

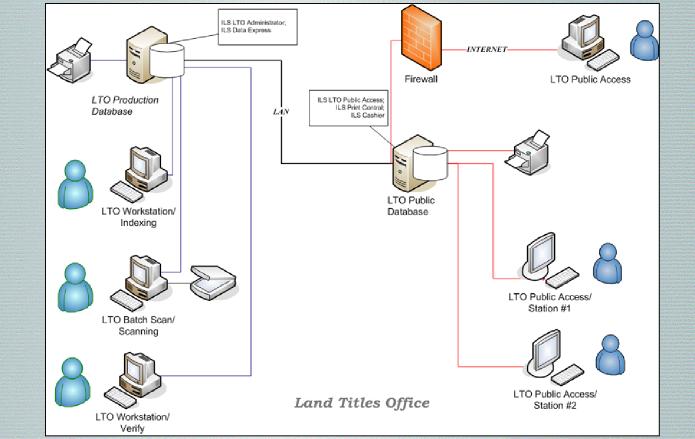
- § User roles,
- § Flexible workflow,
- § Controlled 'jobs'.

The same of the stream of t			
Dec en un d'Anne Marin elemente la Carle Hyper (pare reflect () (41.52 reg (ref Reg Connect () Fore à per retainent marine and local hand, element (). Registri d'anne () Fore à per retainent marine and local hand, element (). Registri d'anne () Fore à per retainent marine subjerg () const () const en retaines and local Registri d'anne () Fore à per retaines () const en retaines () const () retaines () retain			
Dec en un d'Anne Marin elemente la Carle Hyper (pare reflect () (41.52 reg (ref Reg Connect () Fore à per retainent marine and local hand, element (). Registri d'anne () Fore à per retainent marine and local hand, element (). Registri d'anne () Fore à per retainent marine subjerg () const () const en retaines and local Registri d'anne () Fore à per retaines () const en retaines () const () retaines () retain			
Decrement of these final measures to that the figure (specified control (MCC co		 Prominent Coste Same contents of Special Single exercicy's "Same (in a method). 	
Decrement of these final measures to that the figure (specified control (MCC co			
Desprocement if hire bits instantantia and data built behaviour, st. Redigit bits at a control is an exercise to be being to too bits for your to state Redigit bits at a control is an exercise to be being to too bits of your too state Redigit bits at a control is a		*	
Bitspicement / File Extra Inducements and data bank address bank address in a second of a second marked in sole of a location of a second marked in sole of a location of a second marked in sole of a location of a second marked in sole of a location of a second marked in sole of a location of a second marked in sole of a location of a second marked in sole of a location of a		The ment and Cares Shad estimates to Task to install the and of Articlet CAL (and and	
Bookpath Contract of Market Solved			
Society Officiency Construction and the society of construction agriculture of the society of t			
Society Officiency Construction and the society of construction agriculture of the society of t			
Bookpath Contract of Market Solved		*	
Society Officiency Construction and the society of construction agriculture of the society of t		States downsel of his set is true between any set and deat land taken as it.	
Water of Landow of Algorithms (2004) - 0 x 17) waveledences Webward of Data Solid France of Algorithms (2004) - 0 x 17) waveledences Accessed algorithms (2004) - 0 x 17) waveledences Product Management Product Management Ward Management Strategement St		Compared with the state of the	
Biologicang Dataset of Algobia (and algobia on the second dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of al			
Biologicang Dataset of Algobia (and algobia on the second dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of algobia dataset of algobia dataset of algobia dataset of algobia dataset. Done dataset of al			
Between enclosely three, solved the analyzed weeks, to regard 9. December 2014 Product Manager Optics: Person material college Optics: Person mat		 -code sub-metory is ensure a residue out to order of code since out of work or plant 	
Between enclosely three, solved the analyzed weeks, to regard 9. December 2014 Product Manager Optics: Person material college Optics: Person mat			
Between enclosely three, solved the analyzed weeks, to regard 9. December 2014 Product Manager Optics: Person material college Optics: Person mat			
1. Nonumer Statisting Product Manuality Option: Print or matter that is a loss the provides Option: Print or matter that is a loss the provides Option: Print or matter that is a loss the provides Option: Print or matter that is a loss the provides Option: Print or matter that is a loss the provides Option: Print or matter that is a loss the print of th		Story map is a construction of a light prices () - prior in your education	
A Access Staticg Rode Headle of the option research or invalues headled, which because gives Option: Price on that Case Book Programmers Option: Price on that Case Book Programmers Option: Price on that Case Book Programmers Option: Price Option Option: Price on that Case Book Programmers Option: Price Option Option: Price Option Price Option Option: Price Option Option: Price Option Option: Price Option Price Option Option: Price Option Option Option: Price Option Option Option: Price Option Option Achieve Option Price Option Achieve Option Price Option Achieve Option Price Option Achieve Option Price Option		1 · · · · · · · · · · · · · · · · · · ·	
A Access Staticg Rode Headle of the option research or invalues headled, which because gives Option: Price on that Case Book Programmers Option: Price on that Case Book Programmers Option: Price on that Case Book Programmers Option: Price Option Option: Price on that Case Book Programmers Option: Price Option Option: Price Option Price Option Option: Price Option Option: Price Option Option: Price Option Price Option Option: Price Option Option Option: Price Option Option Option: Price Option Option Achieve Option Price Option Achieve Option Price Option Achieve Option Price Option Achieve Option Price Option			
Production Option: Price control or to addict heading which because gates. Option: Price control of the local frequencies Option: Price control control frequencies Option: Price control frequencies Option: Price control control frequencies Option: Price control frequencies Option: Price control frequencies Option: Price control frequencies Option: Price control for the local for control for the local frequencies Option: Price control for the local for control for co		Serious social form, solved his and print result. Sr Appent	
Biolet Interaction of the contract of the selection description of the selection of the sel			
Biolet Interaction of the contract of the selection description of the selection of the sel	-		
Optic: Preconsult Cos Stress Programmer Over: Interview reader second Over: Interview reader second Stress Preconsult Cos Stress Preconsult France Interview reader second Stress Preconsult Cos Stress Preconsult France Interview reader second Stress Preconsult Cos Stress Preconsult France Interview reader second Stress Preconsult Preconsult France Interview reader second Stress Preconsult Precons		X Documen Safecay	
Optics: Price watch Cose Stress Programmer Over: end on an end of a		· · · · · · · · · · · · · · · · · · ·	
Over the train states second Image: Second Sec		Except interaction are there in on-scient for the subject learning a store by service rights.	
Over the train states second Image: Second Sec			
Over the train states second Image: Second Sec			
Builded for one capture under die to sole Cons Circo on Commission (norm		Option: Principal cave Stopp find provided	
Builded for one capture under die to sole Cons Circo on Commission (norm			
Builded for one capture under die to sole Cons Circo on Commission (norm			
Multiple control compare an electric for a conservation of control of control community of control while electric control descriptions of the control of control of control of control while electric control of control of control of control of control Rest, we control control of control of control of control of control Rest, we control control of control of control of control Rest, we control control of control of control of control Rest, we control control of control of control Rest, we control control of control Rest, we control contres, we control Rest, we control Rest, we control Rest,		north risk, nen suster Serbore	
Multiple control compare an electric for a conservation of control of control community of control while electric control descriptions of the control of control of control of control while electric control of control of control of control of control Rest, we control control of control of control of control of control Rest, we control control of control of control of control Rest, we control control of control of control of control Rest, we control control of control of control Rest, we control control of control Rest, we control contres, we control Rest, we control Rest, we control Rest,			
Multiple control pages to deal and provide Control for the one commendant for the one of the o			
Multiple control pages to deal and provide Control for the one commendant for the one of the o		 Recursed/fact time and liter in the inter- 	
Arren of the section of the sec			
Arren of the section of the sec		Transfelds such and partners, a relevant and provide: "Your Street and dominant/during residual set of the	
A process Version State Street for the "Trig of Steel Street procession Core, source interest Street Street for the "Trig of Steel Street procession Ref. many endows - ment to extree the copy street for the street of the street process in the ment of the street process in			
A process Version State Street for the "Trig of Steel Street procession Core, source interest Street Street for the "Trig of Steel Street procession Ref. many endows - ment to extree the copy street for the street of the street process in the ment of the street process in		+	
A process Version State Street for the "Trig of Steel Street procession Core, source interest Street Street for the "Trig of Steel Street procession Ref. many endows - ment to extree the copy street for the street of the street process in the ment of the street process in	12	Concerning and an end of a second second sector of a lateral of a lateral of the second secon	
research interaction and dama meeting you entered this to all Place the Durations Simulti Samt Annues Zettree Land for well fractions or of the meeting of t	,3 –	I receive a construction of the construction of the second of the sec	
research interaction and dama meeting you entered this to all Place the Durations Simulti Samt Annues Zettree Land for well fractions or of the meeting of t	b		
research interaction and dama meeting you entered this to all Place the Durations Simulti Samt Annues Zettree Land for well fractions or of the meeting of t	σ.	 Browners Manager and 	
research interaction and dama meeting you entered this to all Place the Durations Simulti Samt Annues Zettree Land for well fractions or of the meeting of t	- 2		
research interaction and dama meeting you entered this to all Place the Durations Simulti Samt Annues Zettree Land for well fractions or of the meeting of t	8		
In the circle with size the size from the size of the	3	CTD TTTT A REAL CAME RECEIPTING COULD THE REPORT OF TTT AND	
In the circle with size the size from the size of the	. A	~	
In the circle with size the size from the size of the	125		
In the circle with size the size from the size of the	19 H	Return ong not experiment to existen and lowers e.g. of plate to Flanning & Zoning	
In the circle with size the size from the size of the	S		
Level disordiones Lettrie : and Part of the Second Table Second : the rest Notes : Second Automatic Second Second :	- C	The second se	
Level disordiones Lettrie : and Part of the Second Table Second : the rest Notes : Second Automatic Second Second :		Increasing a second second provident increases entered inter Land Reports Patchase	
Active Like Barrow Tax Source 1: the more wood 1: Service Automatic generation of the Active Tax Source and the Active Source and the Active Source Active A			
Active Like Barrow Tax Source 1: the more wood 1: Service Automatic generation of the Active Tax Source and the Active Source and the Active Source Active A			
Active Like Bornel Darksen Pritter works Since A		5 Junit / Scarth direct	
Automatic production of an extension of an ext		*	
Automatic presentes of an extension and an extension of an ext		A writing I and Pachool Party research 1 line men across Service	
definition of the second secon			
definition of the second secon			- 2
definition of the second secon			-4
definition of the second secon		* *	
determined polecticity of define executive of and reconcilence of any determined and the reconcilence of any determined any determined any solution of the reconcilence of any solution any			
determined polecticity of define executive of and reconcilence of any determined and the reconcilence of any determined any determined any solution of the reconcilence of any solution any			
daily sees of registration and the internal for courty shall.			
		data er so al at alexa er s	
the reserver of the public			
		Point sector values and the public	

💶 🕹 💐 関 ·	10			Commonwe Land Record			Cieate
Instanent Central # 2003 00002373	Back #		Page #				on of
Instrument Type DTCL	Cover Sheet Date 03/	8/2002	Recording	03/06/2002	• 11.27 AN	4	
C City @ County SPOTSYLVANIA	the second se		Date/Time ber of Pageo				Eanin
Transler		anteres anteres					6
Tupe Last Name	Erantor Frst Name	s & Grantoex	Nidde Name	Suffix	Corporation	Tula	0
Type Last Name R SIDK	EDWARD		Nidole Nate	I SUTTRE	No	No	
E WILLIAMS	THOMAS		F	JR TRUS	TNo	No +	
Ū			o.	1.557.020.0		2	1000
Property Description1	Property Description2	Tax Nap II	PIN	0.0.1 =	Prior Page II	Incore	- 117
LDT 105, SMOKETREE, SECTION		225-3-105	PR	PROF 500K #	Plitt Page #	PROFI	9.9
	Gol A					2	3.4
Grantee Address	10202333377022					1	
Name WILLIAMS, THOMA	AS F. JR., TRUSTEE						
Address 1 321 WILLIAM STR	EET	Address 2 g					
City FREDERICKSBUR	5	State VA	¥	Zp 22401			
Consideration \$900.00	Assumption Bal		Evid	ingDebt \$0.00			
Insturient Prepared By	Creation ground a set	and prove	A.CO.	address from		-2	Fid
Recording Paid For By						-84	Judg
Beturn Recording To							Fre
Nane							Skale
Address 1		Address 2					Ma
Eb		State	*	Zip			Ge
Lap		94946		200		distant.	Nincel

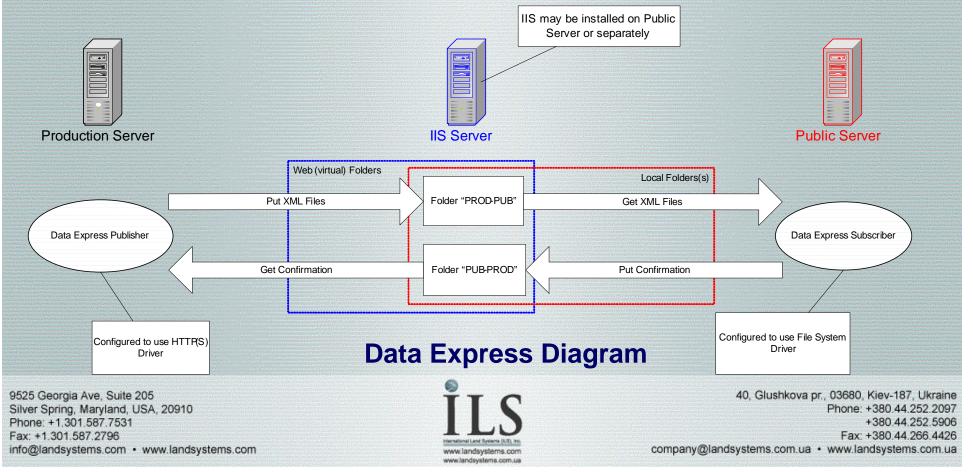
9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com ILS www.landsystems.com www.landsystems.com www.landsystems.com

Architecture



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com ILLS

- **§** Remote Backup and/or "Mirror" Storage
- **§** Microfilm production shop (Archive)
- **§** Clearinghouses for bulk data redistribution (portals) and data mining
- § ERX E-Filing 30 second recording.



Intranet Access

§100+ intranet users daily,
§12 million records,
§750 transactions daily, and
§40+ years of data.

ddness 🔄 http://pubck/lto/		_		💌 🔂 Go Links
Name Search Inst	ument Search		3 1151 TO № Public Access Microsoft Advance England Statement #200100001 (1) Mot logged in Close	iblic Access
Batters Ratine Alf rescerds Alf rescerds and Records Alf rescerds and Records Toma 1/3/2001 from: 1/3/2001 Toma 2/21/2005 from: 2/21/2005 1:01 PM Wis Microsoft form: 2/21/2005 1:01 PM Bacting Statements From: 1/2/2003 from: 2/2/2003 2:04 PM Bacting Statements From: 1/2/2003 from: 1/2/2003 2:04 PM Bacting Statements From: 1/2/2003 from: 1/2/2003 Sentral Hiscollaneous from: 1/2/2003 Sentral Hiscollaneous from: 1/2/2003 Sentral Hiscollaneous from: 1/2/2003 Sentral Hiscollaneous from: 1/2/2005 Sentral Hiscollaneous from: 3/3/1/2005 Sentral Hiscollaneous from: 3/3/1/2005	LR WL FA JD Search Results - Lan Brief List Current P Results 1-20 of 200+ Patty JE JAMERSON & SONS INC MINI STORAGE LLC JAMERSON, J E FOUR SIXTY MINI STORAGE LLC MUCLEAR POWER PEDERAL GREDIT UNON HUNTER, E BRETT CORINTHIAN MORTGAGE CORP GALLIER, JAMES W GALLIER, KELLIE E BANK OF AMERICA NA HARRIS, JAMES T	Sume Sume	<text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text>	si m Logon 5 6 7 8 9 10 20 5 6 7 8 9 10 20 5 Images Status 2 10 2 2 10 2 2 10 2 1 10 10 10 10 10 10 10 10 10 10 10 10 10
	HARRIS, JAMES T	81	Page 1 of 2	2

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com TILS Menutorial Land Spitants (US), Inc. www.landsystems.com, us www.landsystems.com, us

Data Replication

§ Live to internet Every 3 minutes.

					– Database Settii	-	
					DE Database	: LRSNAData	ssVLR Select
<i>.</i>	vity Mo						
Entry Then To re	duce sy		is in completed items d specify age of entr	es you are interested in.			Start
ems F	rocesse	ed by DE:					Datastorages and Transports
D	Entity	Item_UID	ltem_Desc	ErrorText	Datastorage	Transport	Activity Monitor
120 119			200400003335	item confirmed by Transport item confirmed by Transport	VLR PRODDataSto		Preferences
	164 164		200400003334	item confirmed by Transport	VLR PRODDataSto		 Synchronization
	164 168		200400003334 200400004281	item confirmed by Transport item confirmed by Transport	VLR PRODDataSto		
115 	167	3488	200400001225	item confirmed by Transport	VLR PRODDataSto	r VLR DATA tra	Settings
				To retry processing of selecte	ed item click this button	r Retry	Close
7 At	ito Refr	esh				Close	

🧱 DataExpress Admin Utility

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com

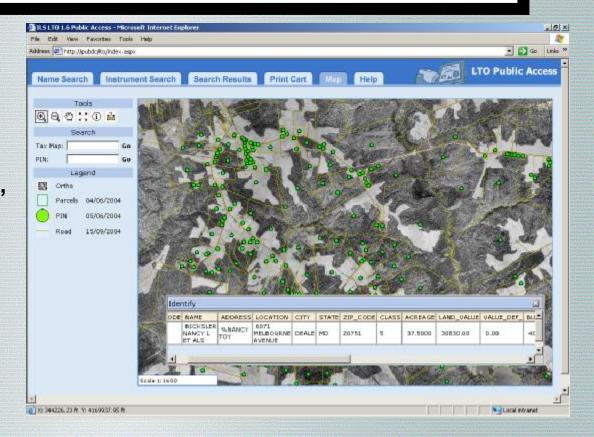


40, Glushkova pr., 03680, Kiev-187, Ukraine Phone: +380.44.252.2097 +380.44.252.5906 Fax: +380.44.266.4426 company@landsystems.com.ua • www.landsystems.com.ua

_ 🗆 🗙

Web Access

- **§** See the parcel on map,
- **§** Review parcel information,
- § Simple map view functions,
- § See all registry data,
- § Fee based subscription,
- **§** Royalty Sharing, and
- § 'One stop shop'.

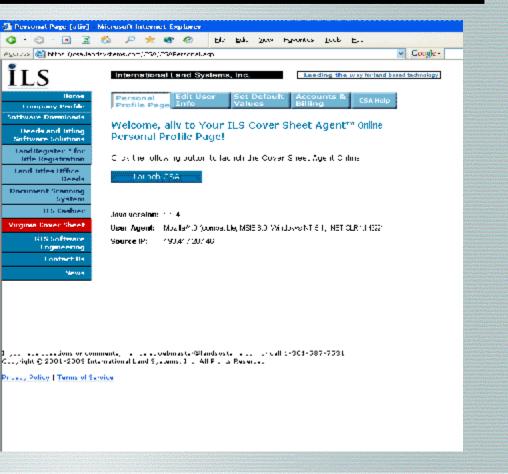


9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Cover Sheet Agent –

- E Filing Level 1
- § Authorized Access per subscription
- § Set personal profile (save processed data and define default fields values)
- § Generate Cover Sheet



9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com ILS www.landsystems.com www.landsystems.com.us

§

Cover Sheet Agent for Commercial/Public Use

Parcel Reference Screen Ş

952 Silv Ph Fax

Verification Screen

Coversh	neet Online [yas] - Microsoft Internet Explorer	Validate Coversheet	
	itle Grantors Grantees Parceks Database	This Coversheet is not filled properly:	
New	4459)83478122, 5435342342, Albemarle County, 0, House, , 1-st street, , Quebec, , , 123, 123, 12	Grantee State has not been entered (warning) Grantee Zip has not been entered (warning) Recording Paid For By has not been entered (warning) Return Name has not been entered (warning)	
		Return Address has not been entered (warning)	
Del		Return City has not been entered (warning)	
		Return State has not been entered (warning) Return Zip has not been entered (warning)	
		Parcel 1: State has not been entered (warning)	
		Parcel 1: Zip has not been entered (warning)	
	Prior Instr. Recorded At 🔿 City 💿 County Albemarle County 💌 Perc. in this Juris. (%) 0		
	Book 123 Page 123 Instrument Number 12		
	Parcel ID (PID) 4459i83478122		
	Tax Map Number 5435342342		
	Short Property Description 1 House		
About	Short Property Description 2		
	Address (Address 1) 1-st street		
Help	Address (Address 2)		
	Address (City, State Zip) Quebec		
Retrieve	d 5 Coversheets		
	🔒 🧔 Internet 🤃	Print anyway Cancel	

Cover Sheet Agent - Output

- **§** Printout Preview
- § 2D Barcode Data Coding

ht faulter 😰	
applied a mailter land Oline over Store the	
000-0010-000-00-00-00-00-00-00-00-00-00-	
Commonwealth of Ying nia	
Land Record Instruments	
Cover Sheet - Form A	
(15 Color Backage (Cales 114)	
E Brot a fact to the fact the	
Files and the second seco	
a Lan with strain 17 1	
Σ αις Παραγιατική γαλογιατία (γαραγιατική) Γ	
northers (Carters Contern Restance Conterns (Conterns (Conte	
Annual access of the second seco	
international (2010) Anno 1990 (2010) Anno 1990 (2010) (2010) (2010) (2010) (2010)	
Back (1773 - 500 1725 - [1106 50] *** Inter Astronomica Astronomica - 4/100/1835/173 - 22	
Tar Pap Han (Tallen) Ban (Ti) (347).245.245. B. Daga (Ban Lang) (H.)	
Same-Severatives, Assential, ("An assess Constantial Constants") (1) (adjutantikupan (Constants) (1)	
nde sual memory and france	
 Detail to react the two sets of the two sets of the two sets of the two sets of two sets	
City State 20.1	
Carten Care N (Close Patrix)	
副權權的理論新聞的意思。	distantia.
· 洛欧河岸市 经收益 经按照通	
seenale) ageoriku	
	1.11

9525 Georgia Ave, Suite 205 Silver Spring, Maryland, USA, 20910 Phone: +1.301.587.7531 Fax: +1.301.587.2796 info@landsystems.com • www.landsystems.com



Thank you



ILS, Inc.

9525 Georgia Ave. Suite 205, Silver Spring, MD 20910-1439 USA Phone: +1 301 587-7531 Fax: +1 301 587-2796 info@landsystems.com www.landsystems.com

