

CIPSER System CIP Genebank Inventory System for Seed

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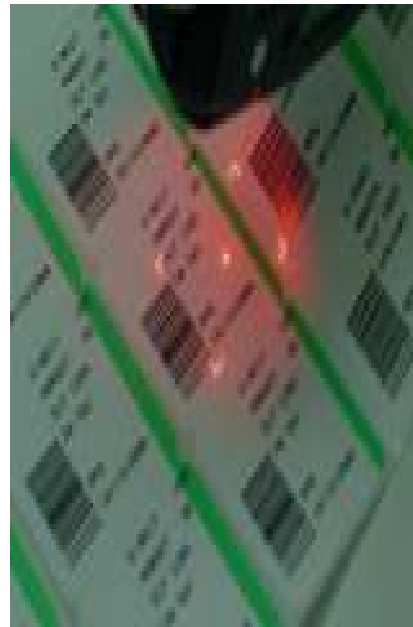
Overview



-
- **About CIPSER System**
 - **CIPSER Features**
 - **CIPSER Modules** (Screenshots)
 - **Relational Models and CIP additions**
 - **CIP Barcode Kit applied to CIPSER**
 - **Software Tools Used**
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About CIPSER System

<http://research.cip.cgiar.org/confluence/display/GIMS/Genebank+Inventory+System+for+Seed+-+CIPSER>



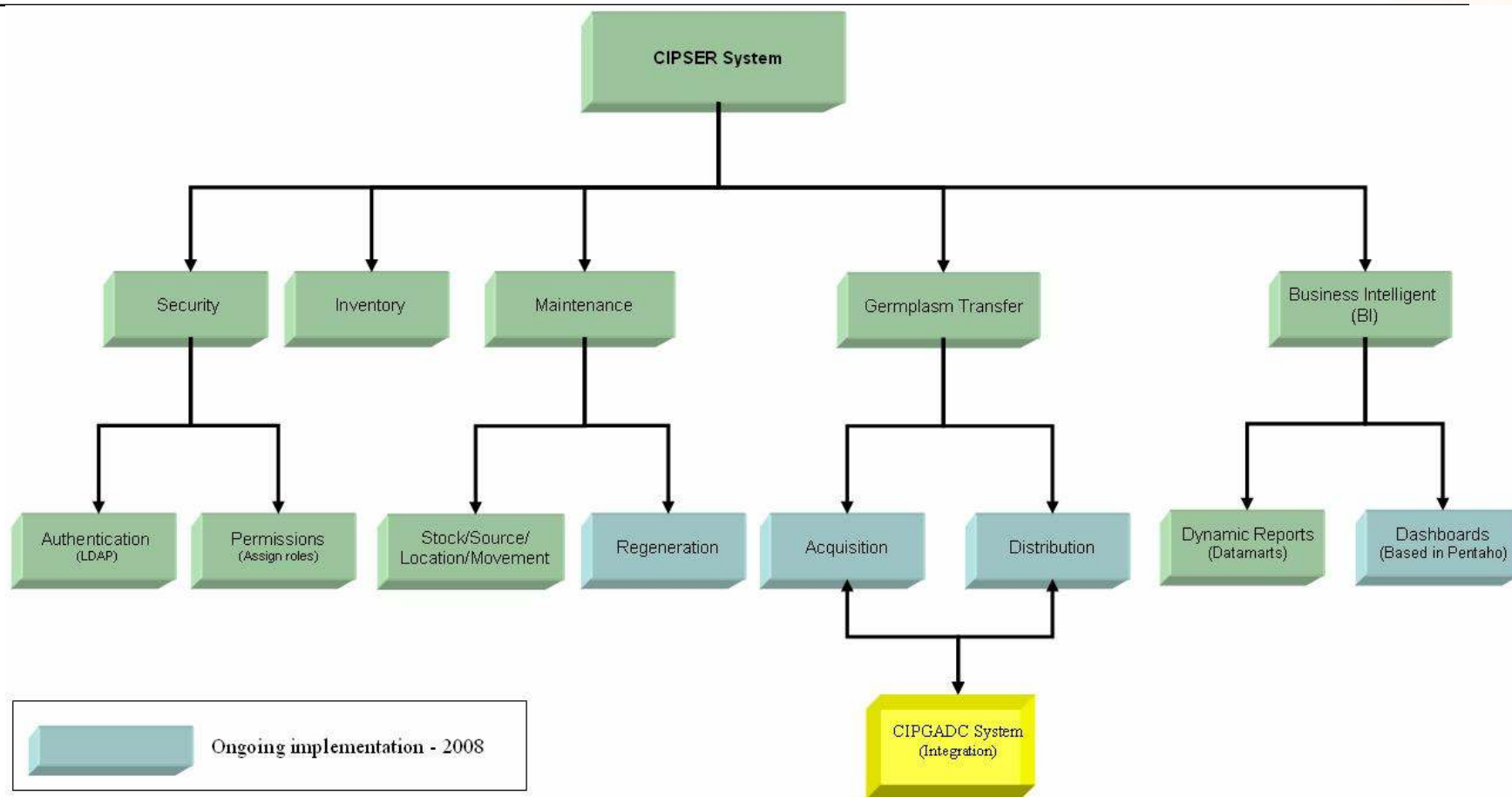
- Is a mobile solution to manage seed stock for curators and breeders
- is an Open Source Solution
- Is integrated with barcodes, wireless, mobile devices (PDAs) and thermal printers
- 84000 lots (envelopes and others)
- 86000 transactions
- 80 millions of seeds

Main CIPSER Features



- Manage seed stocks for curators and breeders
- Manage seed locations for curators and breeders
- Support different CIP crops: potato, sweetpotato and ARTCs
- Support multiple cold chambers
- Manage permission and levels access for each user role
- Support two languages, English and other
- Use barcodes (EAN 128) to simplify identification
- Use thermal printing for high durability
- Use mobile devices (PDAs) to identify envelopes and register seed discounts and seed movement
- Compliant with Multicrop Passport Descriptor – MCPD

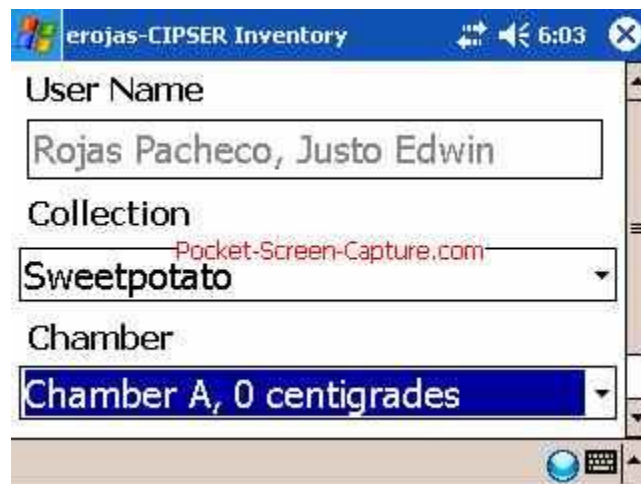
CIPSER Modules (1/7)



CIPSER Modules (2/7) screenshots

Inventory Module

Select crop collection and cold chamber Search by lot container (box,...) to print list



erojas-CIPSER Inventory 6:03

User Name
Rojas Pacheco, Justo Edwin

Collection
Sweetpotato

Chamber
Chamber A, 0 centigrades



40 -erojas-CIPSER Inventory 6:07

1900 Lot Container Se R PRI

Colnumber	Seeds	LotC	Cross	Date	locality	LOTID
ARB 5121	53	1900		1996i		1600
ARB 5122	93	1900		1996i		1601
ARB 5122	4	1900		1996i		1602
ARB 5182	17	1900		1996i		1601
C 1	117	1900		1996i		1600
C 1	117	1900		1996i		1600
C 11	19	1900		1996i		1601
C 12	7	1900		1996i		1601



CIPSER Modules (3/7) screenshots

Inventory Module

Register new lot

The screenshot shows the '2-erojas-CIPSER Inventario' application window. The title bar includes the Windows logo, the application name, and system icons for help, volume, and time (6:10). The window contains several input fields and buttons:

- Buttons: 'C 1', 'Colnum. igual', 'Se', 'Grabar'
- Fields: 'Numero de colector' (C 1), 'Cipnumber' (206025), 'Semillas' (100), 'Tipo de cruzamiento' (Pocket-Screen-Capture.com), 'Localidad de cruza', 'Date - AAAAMMDD Lot Id', 'Contenedor del Lot' (1903 Taper), 'Contenedor de la semilla' (Sobre de aluminio 6x8 cm), 'Comentarios'



Select seed container (envelope,...)

The screenshot shows the '40-erojas-CIPSER Inventory' application window. The title bar includes the Windows logo, the application name, and system icons for help, volume, and time (6:05). The window displays a table of seed containers and a dialog box for selection:

Colnumber	Notes	SeedContainer	Cipnumber
ARB 5121	6	Aluminium	206
A	Aluminium Envelope 6x8	er Envelope	206
A	Aluminium Envelope 8x12	er Envelope	206
A	Cutting alum	Pocket-Screen-Capture.com	206
C	Cutting paper	er Envelope	206
C		er Envelope	206
C 11	5	Paper Envelope	206
C 12	2	Paper Envelope	206

Below the table, there are 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a green box.

CIPSER Modules (4/7) screenshots

Inventory Module - Labels



CIPSER Modules (5/7) screenshots

Dynamic Reports (Mondrian Datamarts)

Mondrian/JPIWeb Test Page - Microsoft Internet Explorer

Address: http://huweb.cip.cgiar.org/seed-inventory/testpage.jsp?query=mondrian

CIP Inventory of Seeds (CIPSER)

biological_status_CIP	crop		
	1. Potato	2. Sweetpotato	3. ARTCs
Measures	Measures	Measures	Measures
-1. Cultivated	# Accs	# Accs	# Accs
Improved variety	28	36	
LandRace	102	2,066	373
Native	11,892		
+2. Wild relatives	2,029	1,170	10
-3. Research material	41	352	
Advanced Breeding	1	1	
Breeding Line	18	350	
Hybrid	22		
Weed		1	
+4. Undetermined	986	80	203

Slicer [in_Storage=Yes]

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Mondrian/JPIWeb Test Page - Microsoft Internet Explorer

Address: http://huweb.cip.cgiar.org/seed-inventory/testpage.jsp

CIP Inventory of Seeds (CIPSER)

biological_status_CIP	Measures	crop		
		1. Potato	2. Sweetpotato	3. ARTCs
+1. Cultivated	# Accs	12,022	2,122	373
	# Species	8	1	9
	# IN_VITRO	4,172	1,212	226
	# IT	4,376	2,095	306
	# NON_IT	7,647	27	67
	# NroSeedLots	52,330	8,687	890
	# QtySeeds	176,566,013	3,627,092	-301,163
+2. Wild relatives	# Accs	2,029	1,170	10
	# Species	144	67	3
	# IN_VITRO	13	5	1
	# IT	1,871	1,134	7
	# NON_IT	255	36	3
	# NroSeedLots	12,885	5,004	53
	# QtySeeds	16,532,820	2,494,342	54,138
+3. Research material	# Accs	41	352	
	# Species	1	1	
	# IN_VITRO	23	48	
	# IT	0	0	
	# NON_IT	41	352	
	# NroSeedLots	98	1,349	
	# QtySeeds	505,622	299,240	
+4. Undetermined	# Accs	986	80	203
	# Species	1	1	13
	# IN_VITRO	0	0	18
	# IT	0	0	0
	# NON_IT	986	80	203
	# NroSeedLots	1,910	98	472
	# QtySeeds	3,657,126	11,319	290,811

Slicer [in_Storage=Yes]

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CIPSER Modules (6/7) screenshots

Dynamic Reports (Mondrian Datamarts)

cross_year	Measures	1. Potato	2. Sweetpotato	3. ARTCs
1957	# Accs	1		
	# QtySeeds	400		
1965	# Accs	3		
	# QtySeeds	337		
1966	# Accs	1		
	# QtySeeds	100		
1969	# Accs	5		
	# QtySeeds	8,725		
1970	# Accs	7		

cross_year	Measures	crop		
		1. Potato	2. Sweetpotato	3. ARTCs
1957	# Accs	1		
	# QtySeeds	400		
1965	# Accs	3		
	# QtySeeds	337		
1966	# Accs	1		
	# QtySeeds	100		
1969	# Accs	5		
	# QtySeeds	8,725		
1970	# Accs	7		
	# QtySeeds	7,600		
1971	# Accs	22		
	# QtySeeds	15,212		
1972	# Accs	14		
	# QtySeeds	3,140		
1973	# Accs	16		
	# QtySeeds	26,007		
1974	# Accs	506		
	# QtySeeds	730,747		
1975	# Accs	2,263		
	# QtySeeds	2,726,904		
1976	# Accs	41		
	# QtySeeds	36,447		
1977	# Accs	4,671		
	# QtySeeds	9,403,406		
1978	# Accs	5,628		1
	# QtySeeds	13,103,791		10
1979	# Accs	4,366		
	# QtySeeds	12,382,668		
1980	# Accs	2,267		1
	# QtySeeds	11,146,154		22
1981	# Accs	1,639		
	# QtySeeds	6,361,518		

CIPSER Modules (7/7) prototypes

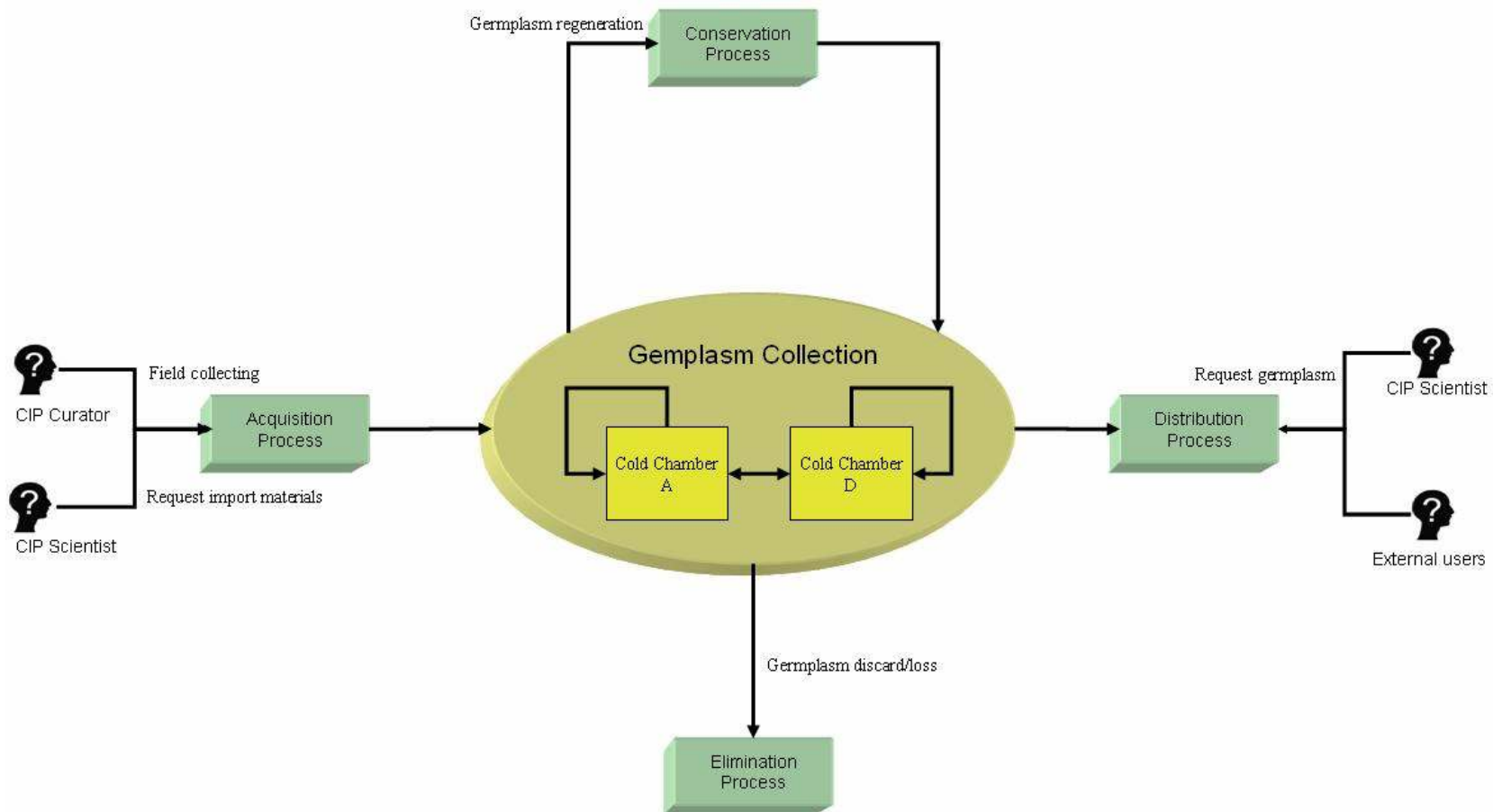
Dashboards (Based in Pentaho) <http://www.pentaho.org>
Pentaho world's most popular enterprise open source BI suite

- For delivering key metrics in an attractive and intuitive visual interface
- Are rich in interactive visual elements like maps, graphs, reports and indicators



Relational Models and CIP additions (1/4)

Seed movement inside cold chambers



Relational Models and CIP additions (2/4)

Seed Germplasm Transactions

(an atomic scope of work performed mainly by curators/assistants)

Transaction Status

Committed (1)
Anticipated (0)
Cancelled (9)

Transaction Type

Store (1)
Remove (2)
Move/Transfer (3)

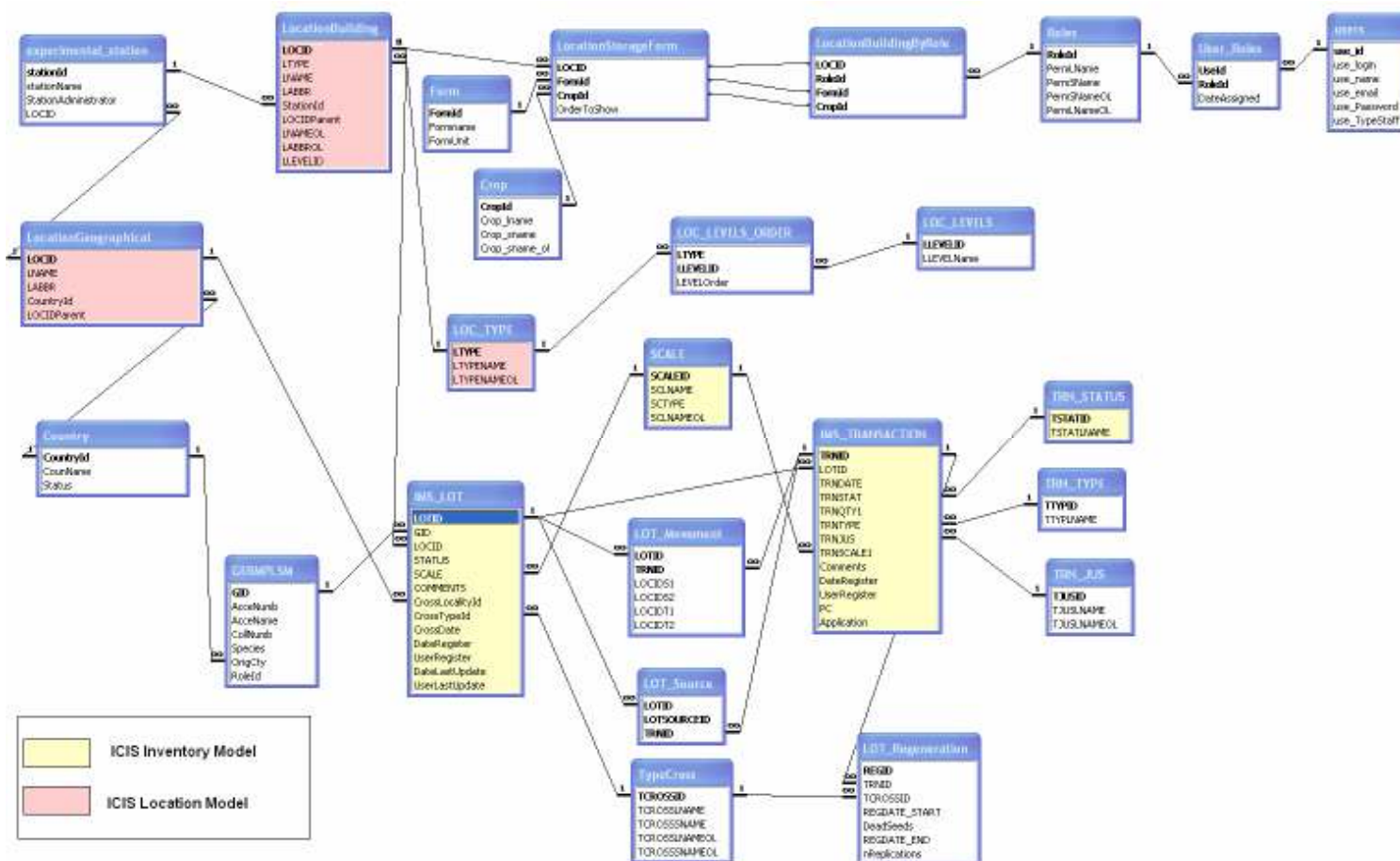
Transaction Justification

Regeneration for Conservation (1)
Stock Corrections/Adjustments (Add-Remove) (2)
Discard/Loss (3)
Acquisition (4)
Distribution (5)
Inventory (6) (Add, Remove, zero)
Other (9)

Relational Models and CIP additions (3/4)

ICIS Location Model and ICIS Inventory Model in CIP Inventory Model

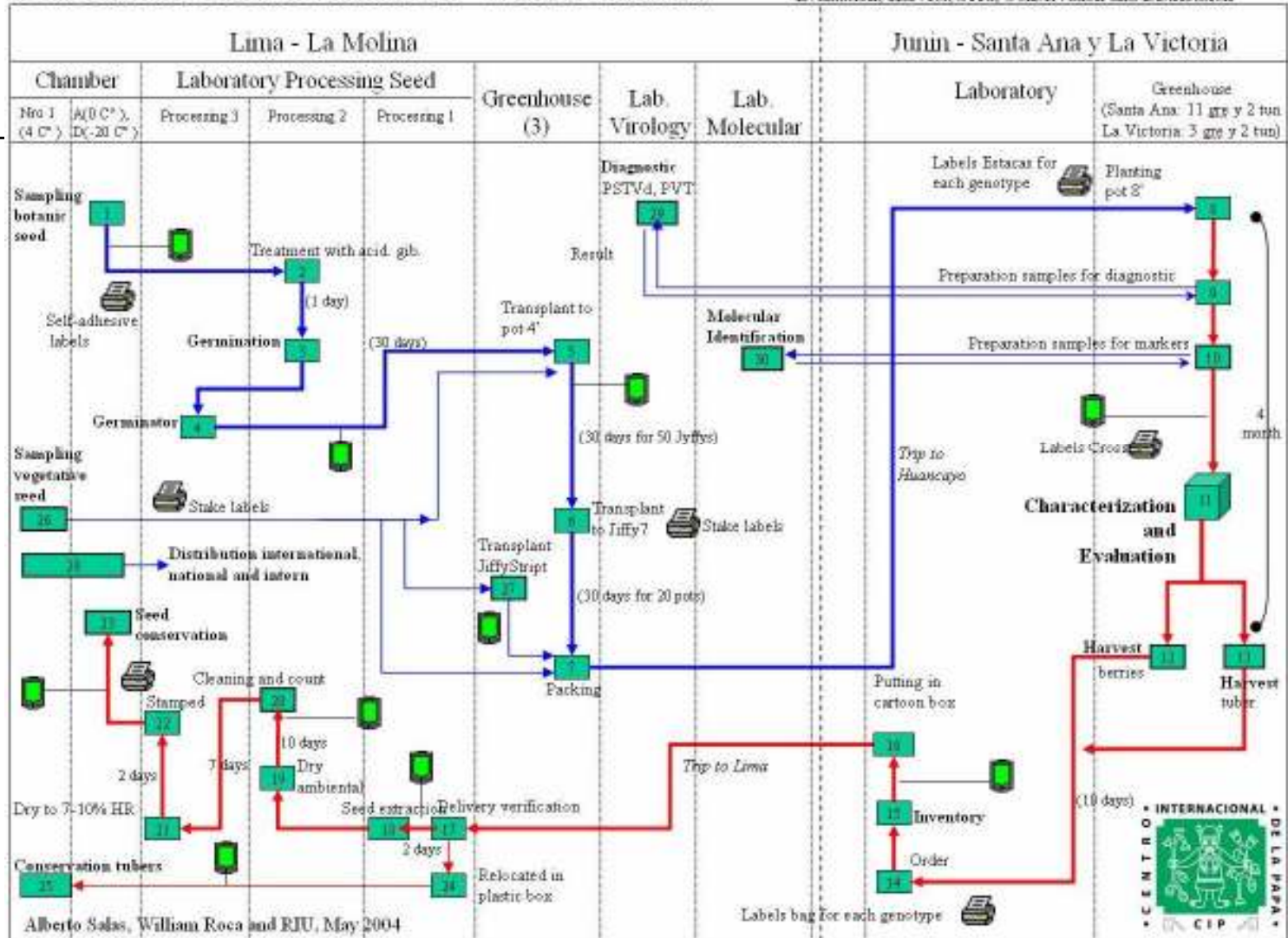
http://cropwiki.irri.org/icis/index.php/TDM_Location_Management_System & http://cropwiki.irri.org/icis/index.php/TDM_Inventory_Management_System



Relational Models and Pending CIP additions (4/4)

Process on Conservation for Wild Potatoes

Germmination, Growing, Multiplication, Healthy, Identity, Evaluation, Harvest, Seed, Conservation and Distribution



CIP Barcode Kit applied to CIPSER (1/3)

Innovation for Better Performance

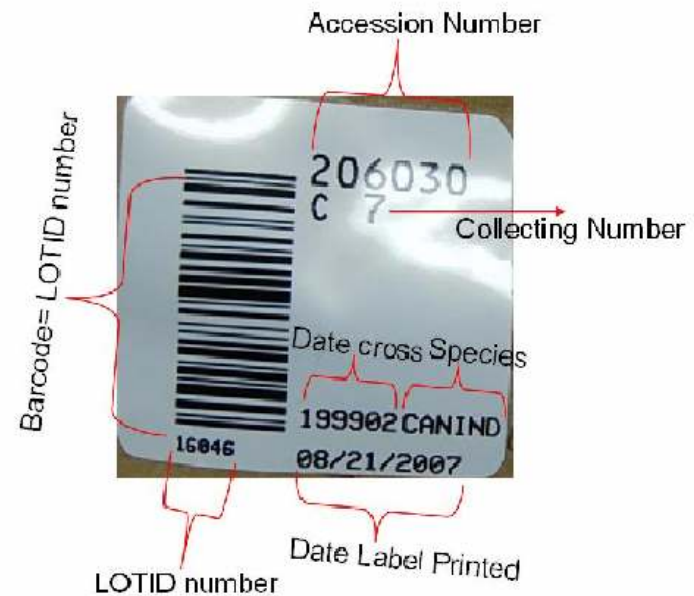
1. Mobile Computers (PDAs)

- Enterprise-level solution to combine mobile computing, data capture and wireless networking for an integrated solution
- "Super shock protection IP54" – rugged design to enhanced durability for frequent and extended use.
- Imaging technology to read poorest barcodes.
- Reliable performance in variable conditions.
- Storage capacity and high-speed CPU performance help ensure that data is safely captured and stored.
- Smart battery to ensure maximum uptime.



2. Barcode

- Code 128/UCC-EAN provides excellent density for all-numeric data and good density for alphanumeric data.



CIP Barcode Kit applied to CIPSER (2/3)

Innovation for Better Performance

3. Thermal Printers



Zebra 284 Plus



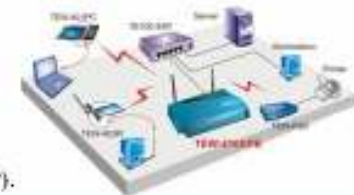
- For optimum print quality and performance.
- Fast processing of labels to minimize waiting time for demanding jobs
- Print methods: Thermal transfer or direct thermal.
- Good resolution with 300 dpi (12 dots/mm) option.
- Offers a rugged, competitive mid-range solution.
- Upgradeable to grow with changing needs.
- Support broad range of bar code symbologies: Linear and 2-Dimensional.
- Back-lit LCD control panel.

4. Wireless Networking



DLink DW-2100AP

- Wireless access to networked resources.
- Compatible with IEEE 802.11b wireless devices.
- Compatible with IEEE 802.11g wireless devices.



- Transfer rate 108Mbps.
- Easy web browser configuration (HTTP).



CIP Barcode Kit applied to CIPSER

(3/3)

Innovation for Better Performance

5. Hand Barcode Readers



Symbol LS-4000

- Ergonomically correct form factor.
- For high bar code scanning performance with maximum user comfort.
- Rugged construction to stand up to everyday use with accidental drops and bumps in a wide variety of user environments.



6. Media: Labels and Ribbons



- Enhanced smudge and scratch resistance (polyester).
- Auto adhesive labels for tubes, shelves and grids.
- Resistant to cold chambers and chemicals.
- With colors for different groups.
- Thermal transfer print for long term durability.
- Ribbon is resin enhanced.
- Excellent edge definition.
- Allows long term removability.



Software Tools Used



For Lots repository: MSSQL 2000

Development Tool for PDAs: MS Visual Studio .NET 2005

For OLAP repository: MYSQL

For Dynamic Reports & Dashboards: Pentaho Project

Application Server for Pentaho: JBOSS

Issue Tracking System: JIRA

User Manual Documentation & Others: Wiki-Confluence

Available Documentation & Related Links (1/1)

- **Report about ICIS models reused in CIP**

http://cropwiki.irri.org/icis/index.php/CIPSER_System

- **For CIPSER System**

<http://research.cip.cgiar.org/confluence/display/GIMS/Genebank+Inventory+System+for+Seed+-+CIPSER>

- **For CIP Mobile Solutions**

(barcode + thermal printing + mobile devices + wireless)

<http://research.cip.cgiar.org/confluence/display/GIMS/Home>

- **For Svalbard Labels Documentation**

<http://research.cip.cgiar.org/confluence/display/GIMS/Labels+Documenta>



Available Documentation & Related Links (1/2)

Reference	Link
CIP Mobile Solutions Documentation	http://research.cip.cgiar.org/confluence/display/GIMS/Home
<u>Multicrop</u> Passport Descriptors, MCPD	http://www.biodiversityinternational.org/Publications/pubfile.asp?ID_PUB=124
Seed Handling in <u>Genebanks</u>	http://www.biodiversityinternational.org/Publications/pubfile.asp?ID_PUB=1175
CIAT Wireless	http://webpc.ciat.cgiar.org/wireless
GCP Domain Models	http://pantheon.generationcp.org/
ICIS Location Model	http://cropwiki.irri.org/icis/index.php/TDM_Location_Management_System
ICIS Inventory Model	http://cropwiki.irri.org/icis/index.php/TDM_Inventory_Management_System
IRRI Genetic Resources Information Management System (GRIMS)	http://cropwiki.irri.org/icis/index.php/GRIMS
Operational Manual for IRRI Genebank	http://www.knowledgebank.irri.org/grcOpsManual/default.htm
Mobile Devices from Symbol Manufacture	http://www.symbol.com , http://support.symbol.com/
Thermal Printers from Zebra Manufacture	http://www.zebra.com/

Thanks!

