CIPSER System
CIP Genebank Inventory System for Seed

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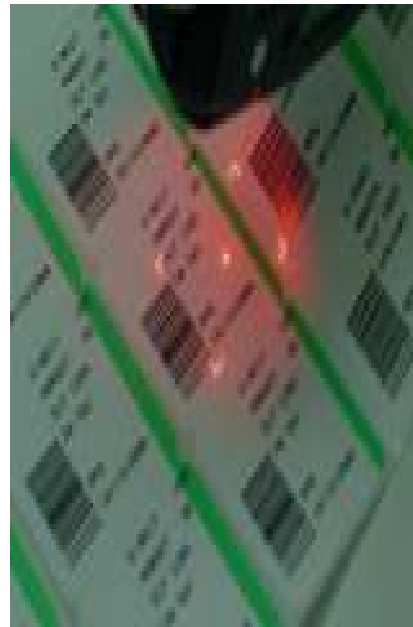
ICIS Workshop 2008
IRRI, Philippines

Overview

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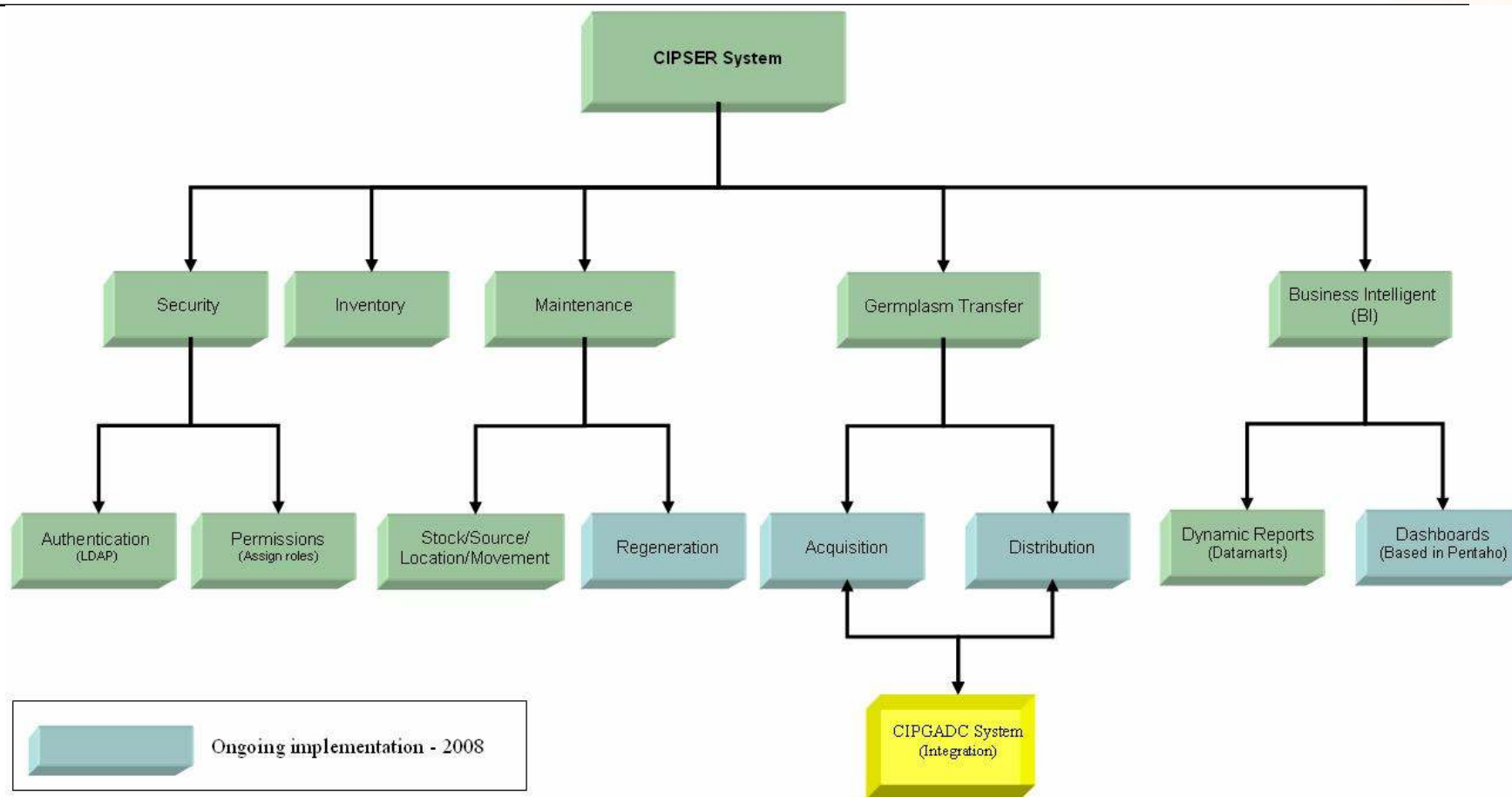- **Available Documentation & Related Links**

About CIPSER System

- 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
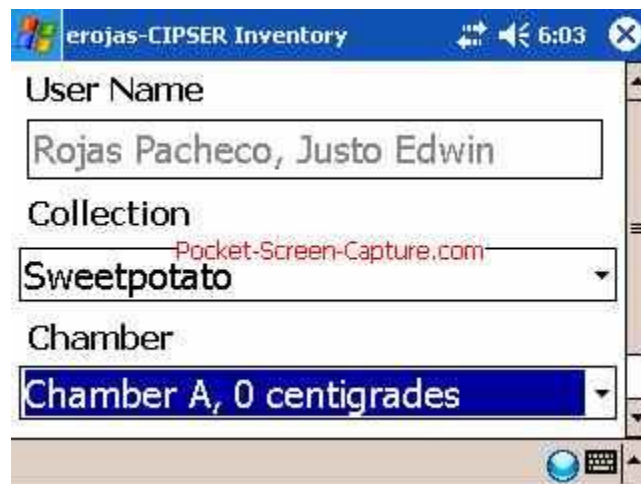- Compliant with Multicrop Passport Descriptor – MCPD

CIPSER Modules (1/7)

CIPSER System

- Security
  - Authentication (LDAP)
  - Permissions (Assign roles)
- Inventory
- Maintenance
  - Stock/Source/Location/Movement
  - Regeneration
- Germplasm Transfer
  - Acquisition
  - Distribution
- Business Intelligent (BI)
  - Dynamic Reports (Datamarts)
  - Dashboards (Based in Pentaho)

CIPGADC System (Integration)

Ongoing implementation - 2008

CIPSER Modules (2/7) screenshots

Inventory Module

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

CIPSER Modules (3/7) screenshots

Inventory Module

Register new lot

Select seed container (envelope,...)

Inventory Module - Labels

CIPSER Modules (5/7) screenshots

Dynamic Reports (Mondrian Datamarts)

CIPSER Modules (6/7) screenshots

Dynamic Reports (Mondrian Datamarts)

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
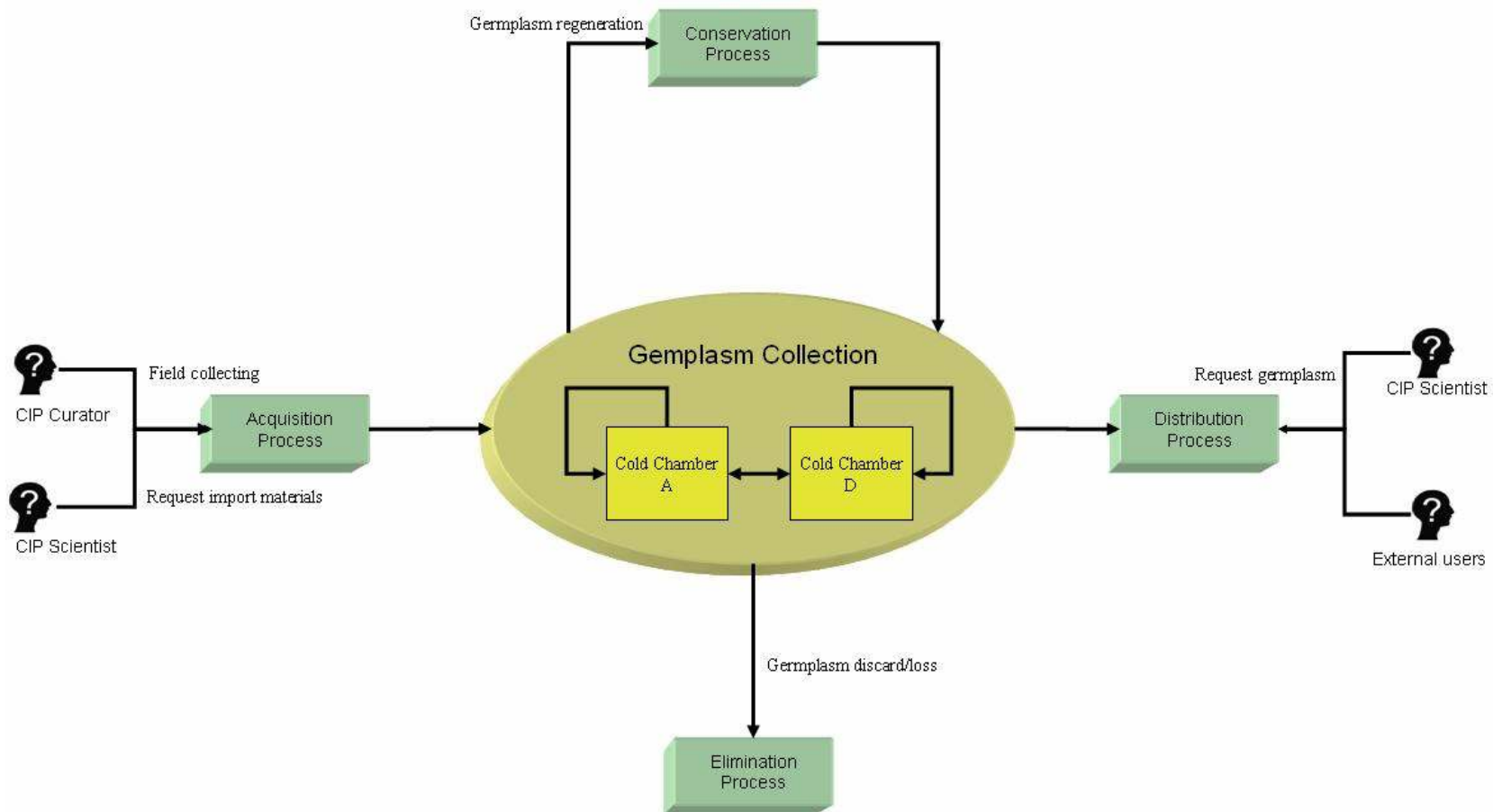
Relational Models and CIP additions (2/4)

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, cero)
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
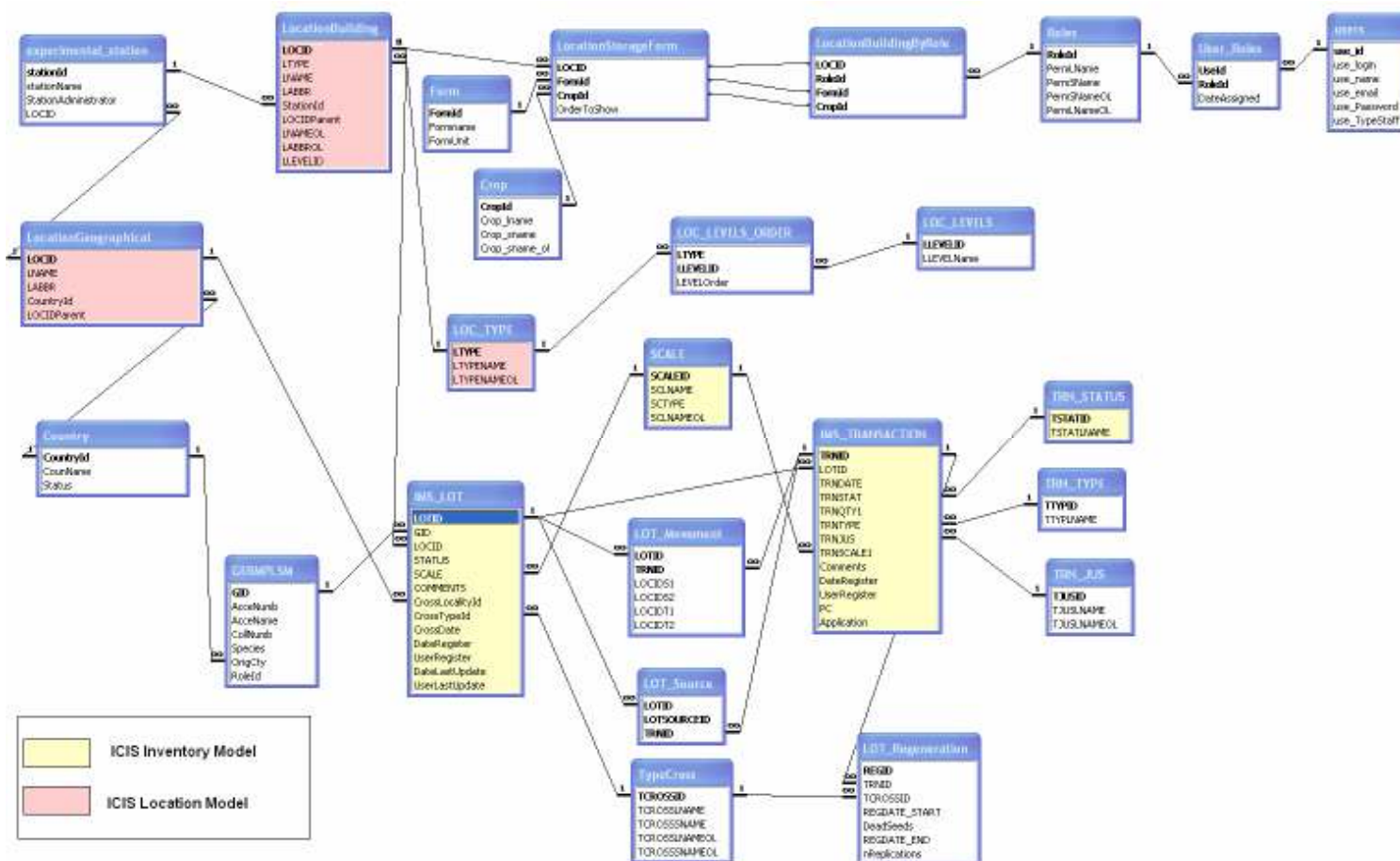
Relational Models and Pending CIP additions (4/4)

Process on Conservation for Wild Potatoes

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

Alberto Salas, William Roca and RIU, May 2004

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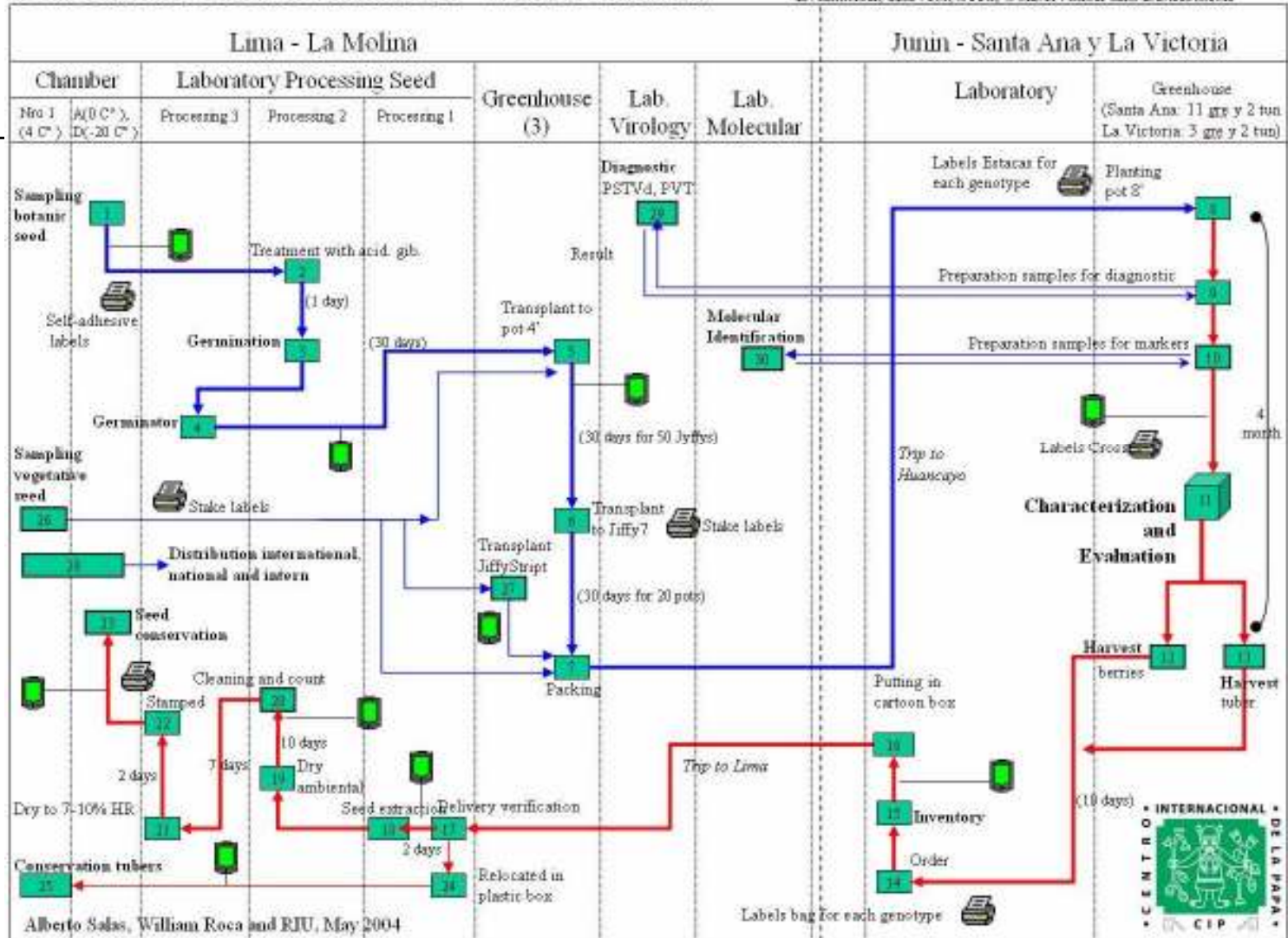
- Code 128/UCC-EAN provides excellent density for all-numeric data and good density for alphanumeric data.

Accession Number

Barcode= LOTID number

206030
C 7

Collecting Number

Date cross Species

199902 CANIND
16046   08/21/2007

Date Label Printed

LOTID number
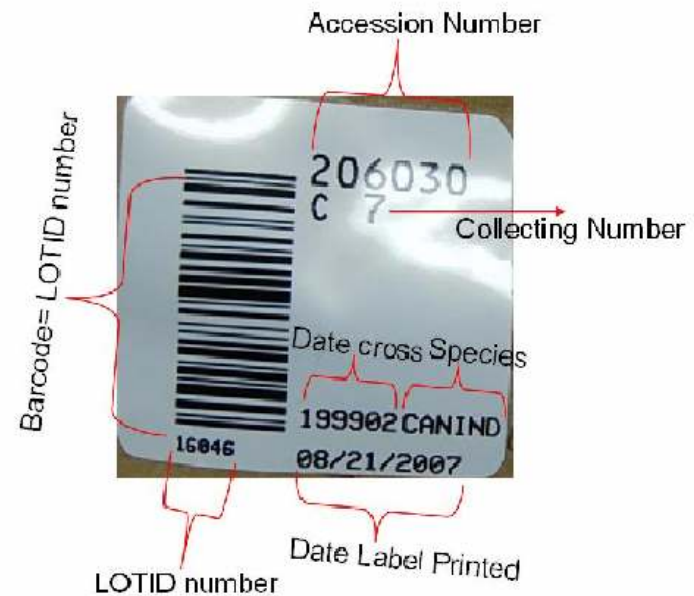
CIP Barcode Kit applied to CIPSER (2/3)

Innovation for Better Performance

CIP Barcode Kit applied to CIPSER (3/3)

Innovation for Better Performance

5. Hand Barcode Readers

- 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.

Symbol LS-4000

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
Multicrop Passport Descriptors, MCPD	http://www.bioversityinternational.org/Publications/pubfile.asp?ID_PUB=124
Seed Handling in Genebanks	http://www.bioversityinternational.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!