



PROGRESS ON INTEGRATING CIMMYT'S CROP INFORMATION SYSTEMS WITH ICIS

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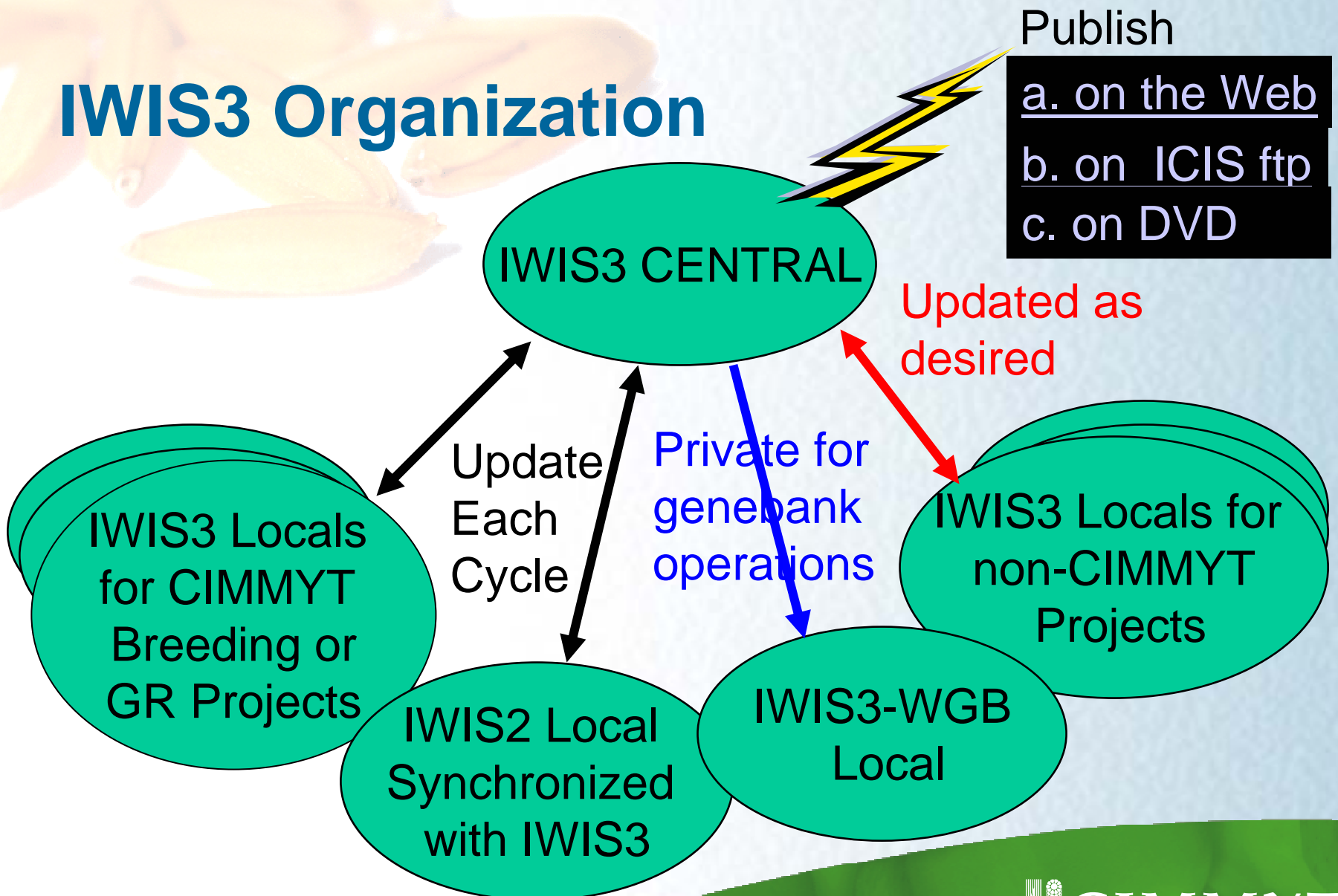
**IRRI-CIMMYT Crop Research Informatics
Laboratory**

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Outline

- IWIS to ICIS Conversion
 - IWIS3 Organization
 - Synchronization with existing applications
 - IWIS3 installation for the Wheat genebank
- Integration of CIMMYT's Maize Info. Systems
 - Connecting the Maize Field Book to ICIS
 - Publishing Maize Genebank Data

IWIS3 Organization



Synchronization with IWIS2

- A clone version of IWIS3 is added to IWIS3
- A Transact SQL program updates and annotates the clone as changes are made to IWIS2
- Each Cycle a formal ICIS local database is extracted from the clone and updated to IWIS3-Central-GMS
- The IWIS3 clone is refreshed with the new central
- International Nursery lists and evaluation data are updated to IWIS3-Central-DMS using batch scripts each cycle

IWIS3-WGB

- Identification of Genebank accessions was not well supported in IWIS2
 - Multiple Introduction Numbers were associated with a single germplasm entity (CID,SID)
 - Introduction numbers were associated with crosses both CIMMYT crosses and external crosses
- Multiple introduction numbers for single germplasm entities were identified and labeled as Alternative Accession Names
- Founding germplasm for all putative accessions was identified in IWIS3 and single introduction number assigned as Accession names

The current tally of accessions

ACCESSION TYPE	Count
F1s from CIMMYT crosses	493
Imported lines with unknown derivative group	19335
Imported lines with unknown group or source	49889
Lines from CIMMYT crosses	63082
Lines from non-CIMMYT crosses	8283
Total number of Accessions	141082

Genebank Samples

- The Genebank secret
 - They don't operate at an accession level but at a sample level
- CIMMYT wheat genebank has records on 603833 samples.
 - They have no distinct CID and SID values so cannot be tracked by IWIS2
 - However they have been tracked from plot to plot in the nursery system
- IWIS3 records have been constructed for each sample in IWIS3-WGB showing its maintenance relationships

INTEGRATING CIMMYT'S MAIZE INFORMATION SYSTEMS WITH ICIS

Basic Parameters

- The ICIS database for maize will be called IMIS
- Minimum disruption of existing applications
- ICIS applications are available now as alternatives but there is no central information
- Integration with ICIS requires a major effort to curate pedigree relationships but a skeleton version can be constructed ignoring relationships
- New required functionality will be developed in ICIS

First steps towards integration:

- develop a skeleton IMIS-CENTRAL-GMS using the list of genebank accessions and the list of germplasm in Maize Finder,
- connect the Maize Field Book system to an IMIS local database,
- integrate the Maize Finder database with the IMIS-CENTRAL-GMS,
- connect the maize Genebank system to a local IMIS implementation, and
- publish Maize accession and characterization data through the Crop Finder web application.

CONCLUSIONS AND NEXT STEPS

Next steps for IWIS

- IWIS3 is ready to use right now!
 - The wheat genebank should start using it immediately and carefully monitor the development of ICIS GRIMS for Rice
 - Researchers working on molecular characterization of germplasm should use ICIS immediately for its sample tracking functionality
 - I would like some wheat breeding programs to start using IWIS3 this year both at HQ and Outreach

Progress

- Pedigree loading tool developed for transferring pedigrees from FieldBook to IMIS GMS
- CropFinder interface developed for Maize Genebank Data
- CroPFinder Database implemented as a warehouse for ICIS
- Historical field data loaded into MaizeFinder
- Preparation for loading genotyping data

Next steps for IMIS

- Curate some major germplasm lists into an IMIS-CENTRAL-GMS
- Implement the updating of an IMIS local with Maize Field Book
- Integrate the IMIS-CENTRAL-GMS with Maize Finder and the genebank system
- Refine the Crop Finder Web Interface for outside access to Maize genebank data