



CIP – RIU selected activities

Information systems for crop and
genebank data management

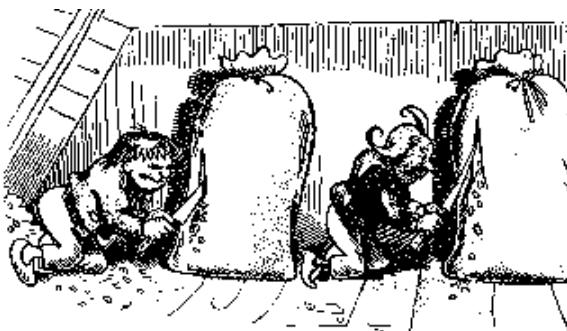
Edwin Rojas (Software Developer Chief),

Reinhard Simon (RIU Head)

ICIS workshop 2006, CIMMYT

The Research Informatics story

Research



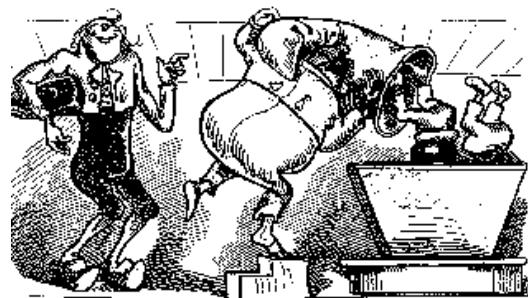
Problematic situation



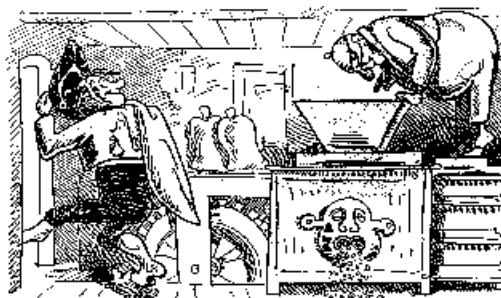
Hypothesis



Data capture



Data/information management



Analytical processing



Standardized reports

Research informatics



Publication for diverse uses/uptake

Presentation to CIP annual meeting 2004
Reinhard Simon

Adopted from: W. Busch:
Max und Moritz, 1865

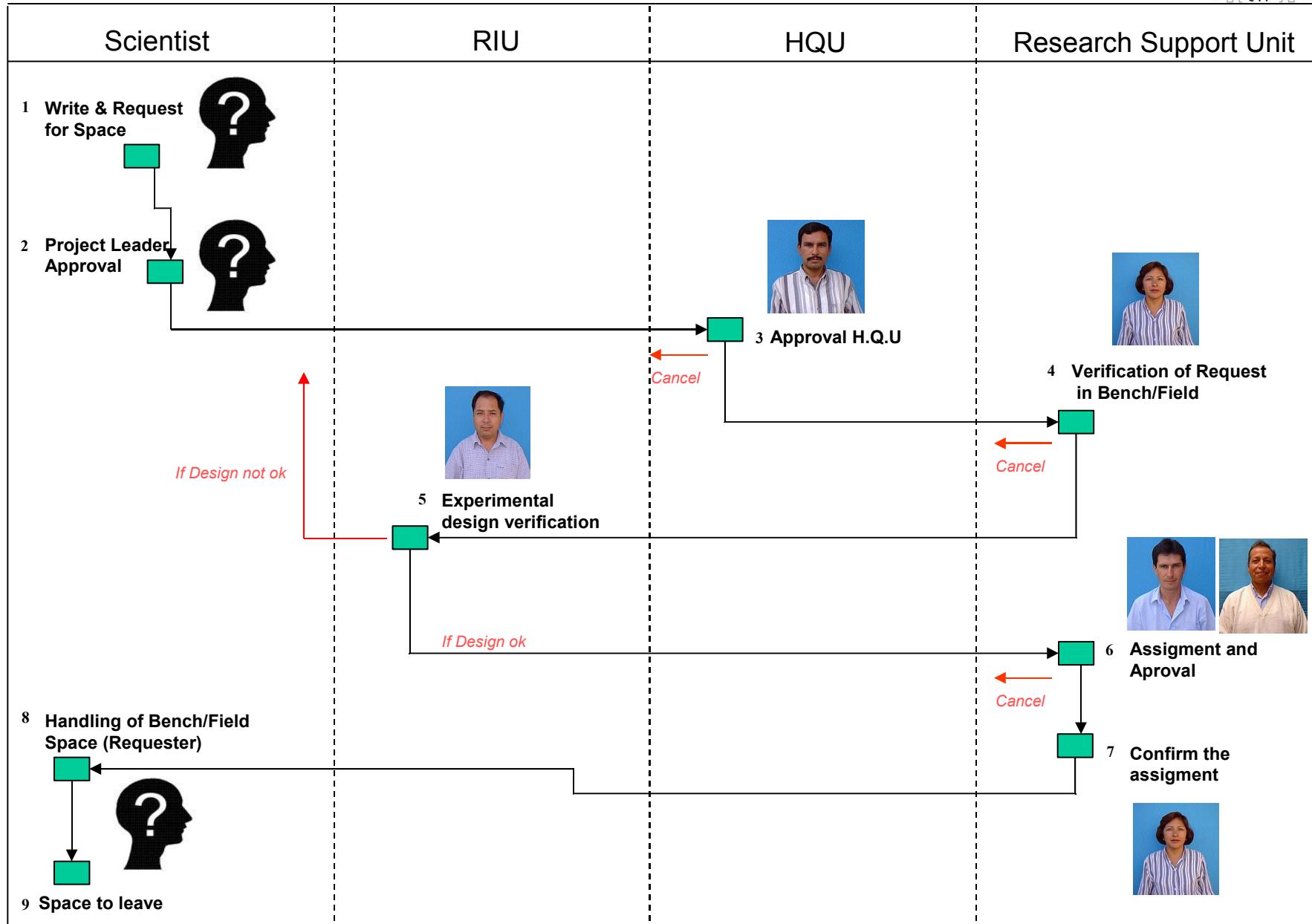
Selected RIU Activities

- Workflows for:
 - CIPSTATIONS (Request Space for Field & Greenhouse)
 - CIPGADC (Request Germplasm Distribution, Acquisition & Cleaning),
 - CIPVIR (Request Pathogen Diagnostic: Virus & Viroids)
- CIPPEX (Register Experiments) research.cip.cgiar.org/cippex
- CIPSTAT (Analysis Experiments) research.cip.cgiar.org/cipstat
- LIMS for molecular marker lab and “quality” lab
- CIPTCL (In-Vitro Genebank Management)
- DIVA-GIS (Free GIS tool) www.diva-gis.com
- Data warehouse for quick & flexibility access to explore data and quality control
- Software development and collaboration tools
- Outlook – harmonization with ICIS database schemes and tools

Benefits of Workflow System

- The power and potential of Workflow
 - As a tracking activities system
 - Reduction of papers, telephones and mails
 - End users can visually orient themselves on the progress of their work
 - Improve archiving and auditing (time activities & cost statistics)
 - If research rules changes then the workflow engine can be updated with the new Workflow by final user
 - Granularity security for each activity in the Workflow

Workflow Process: Request Space Field, Greenhouse



Workflow Front-End: CIPSTATIONS



Experimental Station Management System (CIP-STATIONS)

Maintenance

► Register a Request

► Search & Reports

► Help



Request for Field Space

Current Activity: Request Finalized

Have files: Yes

New

Save

Edit

Delete

Cancel

Files

Print

Follow up

Return

Year Number

Next Activity

Search by number of Request Space

Year of request:

2004

Number of request:

51

Name Leader:

LANDEO, JUAN

Subleader:

(empty)

Name responsible
approval request:

BONIERBALE, MERIDETH

Date request:

03/22/2004

mm/dd/yyyy

Name Assistant:

GASTELO BENAVIDES, MANUEL ANTONIO

Project:

320203

Crop:

Potato

Other crop:

(empty)

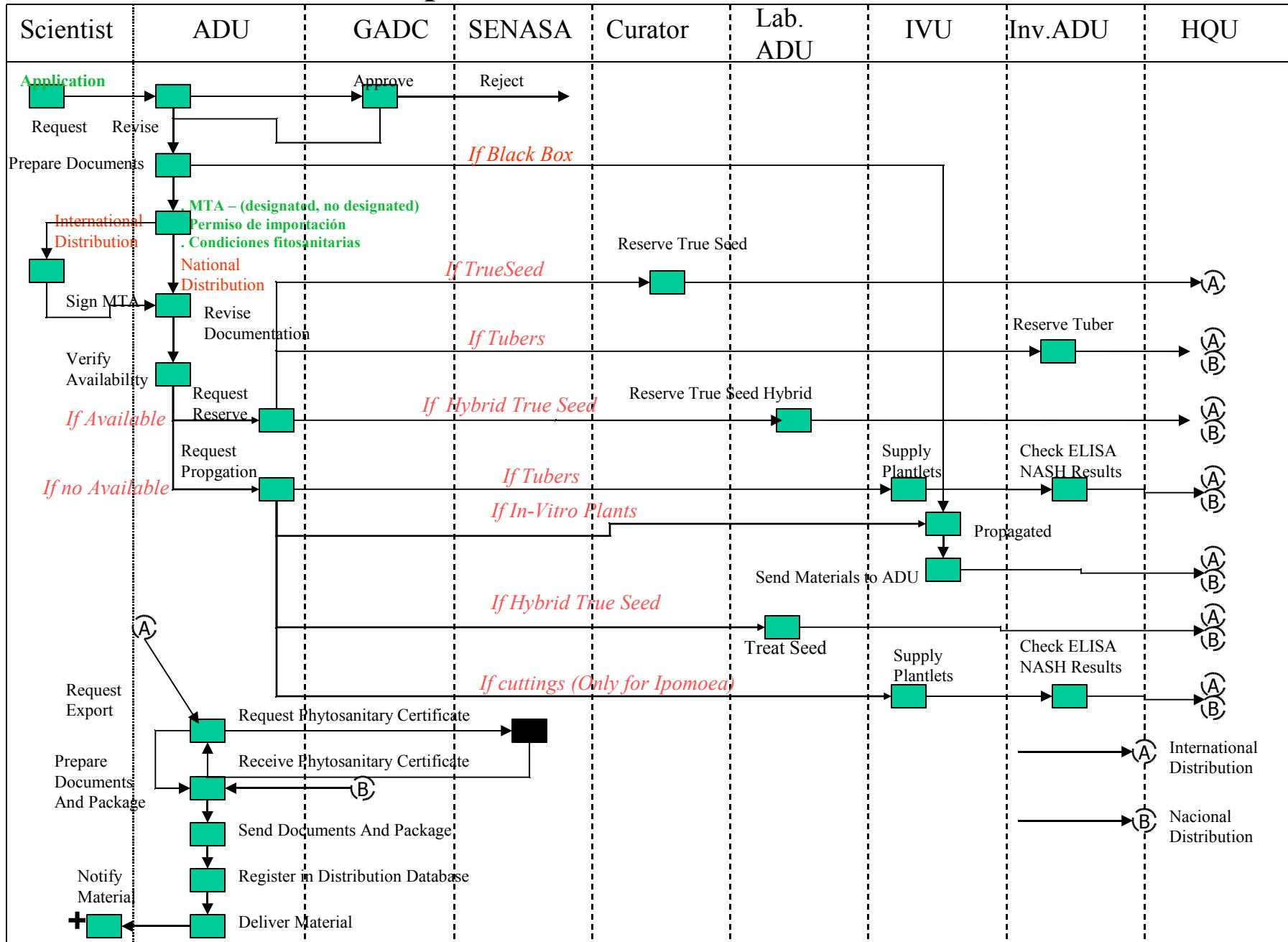
Type Use:

ObservationPlot

Experimental
Stations:

San Ramon

Workflow Process: Germplasm Distribution



Workflow Front-End: CIPGADC

Germplasm Acquisition, Distribution, Conservation and Pathogen Testing
System (CIPGADC)

Maintenance ► Register a Request ► Search & Reports ► Utils ► Help ►

Welcome!



CIPGADC is an informatic tool for managing the Acquisition, Quarantine, Testing, Cleaning, Maintenance, Multiplication, and Distribution of Germplasm in CIP.

Germplasm data provided by 3 Service Units ([ADU](#), [IVU](#) and [PHQU](#)) are integrated into a system that allows users to place their germplasm request online. Follow up status of material acquired or placed under quarantine; pathogen tested; cleaned up; maintained as invitro or [Search a distribution of genetic material](#) search capability and can

CIPGADC evolved from the 2006 and Distribution Committee standards for handling plan regulations concerning plan	<input type="button" value="Search"/>	<input type="button" value="Export to Excel"/>
All	Year of distribution :	All
All	Destination:	All
We welcome any comment	Status:	All
All	Scientist :	All
All	Institution:	All
<input type="text"/>	<input type="button" value="Search by number"/>	<input type="text"/> <input type="button" value="Search old code"/>

n	Date of ADU Request	Date Expected Delivered	Date Distribution	Crop	Consignee	Institution	Country	Scientist	Status
	01/05/2006	02/28/2006	03/06/2006	Potato	Rosario Falcon	CIP - Lima	Peru	Enrique Chujoy	Distributed
	01/05/2006	03/15/2006	04/11/2006	Potato	Rosario Falcon	CIP - Lima	Peru	Enrique Chujoy	Distributed

CIPPEX research.cip.cgiar.org/cippex

- Based on tool for project management (PHProjekt)
- Phenotype data management inspired by ICIS
- Genotype data management inspired by GERMINATE
- Web Public Flash Videos for Training

CIP databases:
passport, charact, eval.
data

CIP-Workflow
Engine

Project and experiment
management:
PHProject

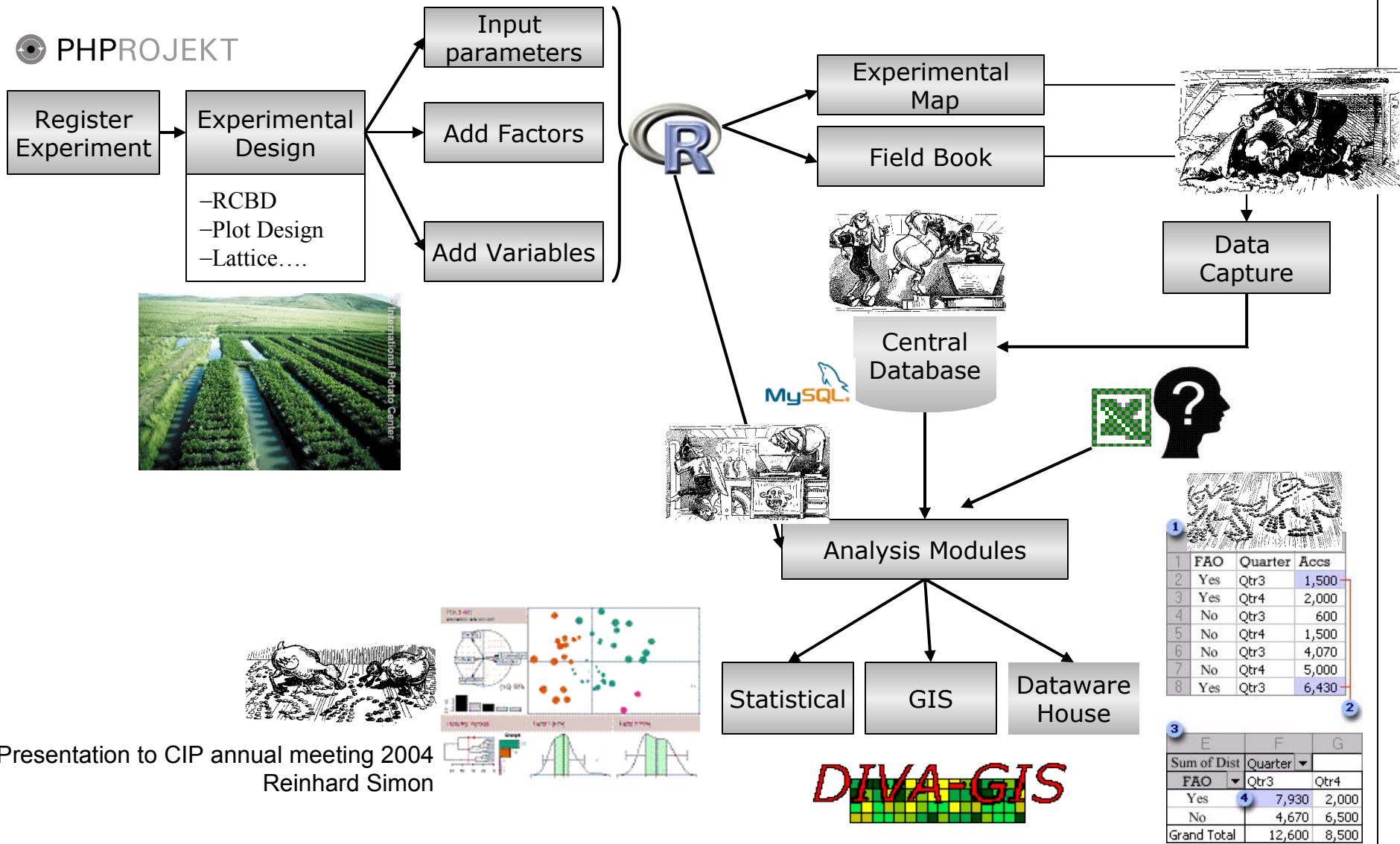
Resource scheduler:
MRBS

Breeding data:
adaptations from
ICIS

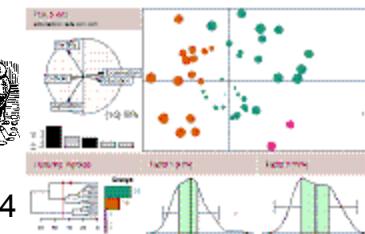
Molecular data:
adaptations from
Germinate

Diagram of the Experimental Design & Analysis Generator Module for the CIP-PEX System

PHPROJEKT



Presentation to CIP annual meeting 2004
Reinhard Simon



DIVA-GIS

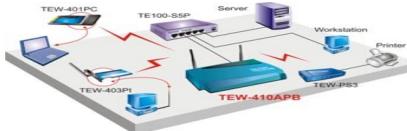
CIP Mobile/Barcode Infrastructure Status 2006-01

	Barcode	Pockets	LAN Wireless							
Areas	Potato			Sweet potato	ARTC					
 LIMA	In vitro Chamber	 123456789005			 123456789005			 123456789005		
	Cold Chamber for Seeds	Pending		Pending	Pending	Pending	Pending	Pending	Pending	Pending
	Cold Chamber for Tubers	Pending	Pending	Pending	—	—	—	—	—	—
	Greenhouses	 123456789005			 123456789005			Pending	Pending	Pending
	Field	Pending			Pending	Pending	Pending	Pending	Pending	Pending
	Laboratories (Molecular/Processing)	Pending			Pending	Pending	—	—	—	—
	In vitro Chamber	 123456789005	Pending	Pending	Pending	Pending	 123456789005	Pending	Pending	
 JUNIN	Greenhouses	 123456789005		Pending	Pending	Pending	Pending	Pending	Pending	
	Field	 123456789005		Design completed by I.I.U.	Pending	Pending	Pending	Pending	Pending	
	Storage Room	Pending	Pending	Pending	—	—	Pending	Pending	Pending	
	Laboratories	 123456789005			Pending	Pending	Pending	Pending	Pending	
	In vitro Chamber	 123456789005	Pending	Pending	Pending	Pending	 123456789005	Pending	Pending	

Notes: The barcode includes the use of labels, thermal printers and reader guns. The symbol “—” means that the specific crop does not have the respective facility.



First Pilot in
In vitro Potato



Infrastructure Design for all In vitro & Greenhouse



Infrastructure for all In vitro & Lima-Greenhouse



Applications



Improve Infrastructure and Wireless Coverages (from 11MB to 54 MB)

2000

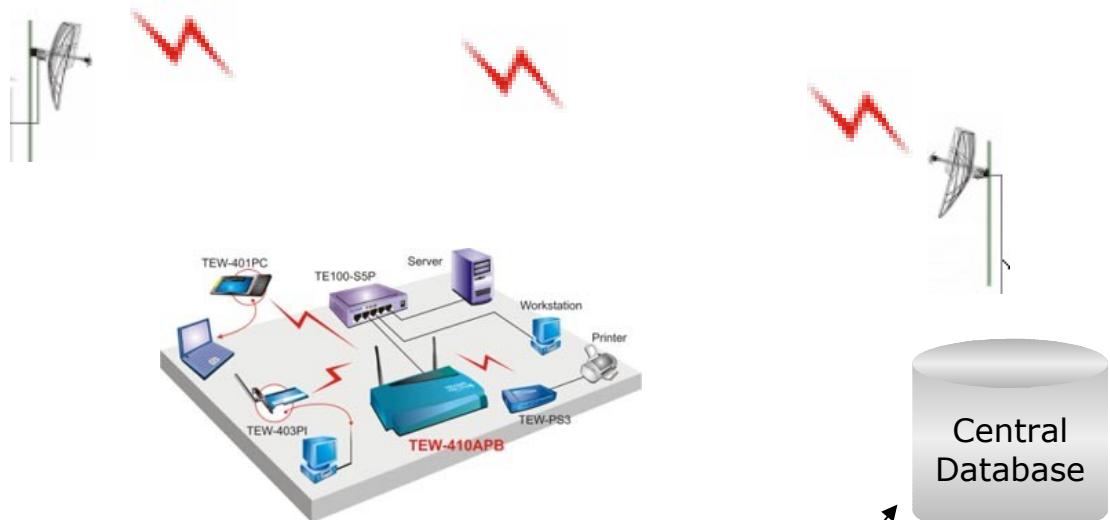
2003 January

2003 November

2004

2005-2006

Environment Experiment Data Capture with Mobile Device



In-Vitro Genebank Performance Indicators

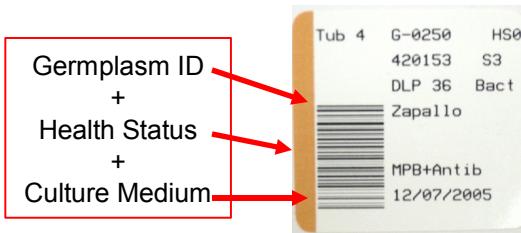
In-Vitro Genebank Activities	Barcode and Mobile Solution Technologies	Prior to Implementation Technologies
Locate a material by any staff	5 seconds	1800 seconds
Create a list for a “grid” of 15 entries	30 seconds	90 seconds
Print 90 labels for a “grid”	20 seconds	120 seconds
Clients request germplasm availability for distribution	10 seconds (by on-line web)	1 or 2 days (by email, phone)
Inventory report for stock and locations	1.5 weeks by 2 staff	6 weeks by 2 staff
Migration to barcode	100% of germplasm use autoadhesive labeled with barcode identification	100% of germplasm used paper labeled and eye identification

Genebank Innovations for Better Performance

1. Mobile Computers (Pocket PCs)



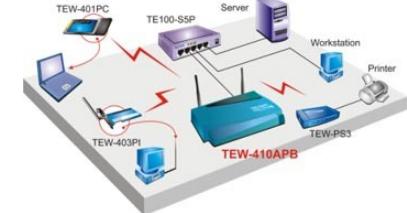
2. Barcode (1D)



3. Thermal Printers



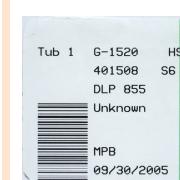
4. Wireless Networking



5. Hand Barcode Readers



6. Media: Labels and Ribbons



CIPSTAT

research.cip.cgiar.org/cipstat

- Web interface for users (via web forms) and software (via WSDL web services) to statistical routines
- Statistical routines packaged in a library ‘Agricolae’ written in R
- Presently access to 29 routines covering frequently used at CIP for experimental planning and analysis
- Web Public Flash videos for Training

CIPSTAT – screenshot

research.cip.cgiar.org/cipstat

File **Statistics** Graphics Help

CIP

Variables

Code	▲
Spp	▼
Plants	▼
yieldp_pl	▼
tuber_pl	▼
Oil_absorption	▼

Treatment
Cipnumber

Location
Loc

Dependent
yield

Show Ranks

submit **Cancel**

Application R PHP interface Statistical Engine R

Copyright (c) 2004 International Potato Center (CIP) Copyright (c) 2004 R foundation

Developed by CIP-RIU

Contact cip-riu@cgiar.org Contact www.r-project.org

Version 0.9.0 Version 1.8.1

[View Textual Report](#)

[View Graphics](#)

[Download](#)

Cipnumber x Loc Table of yield means computed from data

	1	2	3	4	5	6
374080.5	8966.667	3382.8333	15450.373	4300.000	4150.0000	NA
380389.1	7283.333	2767.5000	15058.053	2133.333	2183.3333	7716.667
700234	9200.000	3479.5000	15083.170	3116.667	4833.3333	7183.333
700313	6083.333	4897.5000	12408.667	4858.333	3616.6667	3966.667
700787	10833.333	2709.5000	16299.170	5725.000	3833.3333	6016.667
701165	7366.667	1194.1667	8335.000	1675.000	3250.0000	1933.333
701273	9916.667	4170.6667	15804.667	5833.333	5166.6667	6183.333
701515	11183.333	5517.5000	14497.667	6025.000	4016.6667	5133.333
701675	8050.000	3639.0000	17256.080	3833.333	5100.0000	3266.667
701997	10366.667	2194.1667	12865.980	4125.000	5186.6667	6233.333
702363	8216.667	6151.5000	16683.437	4491.667	5350.0000	4383.333
702395	7283.333	3682.0000	13662.067	3275.000	3700.0000	3116.667

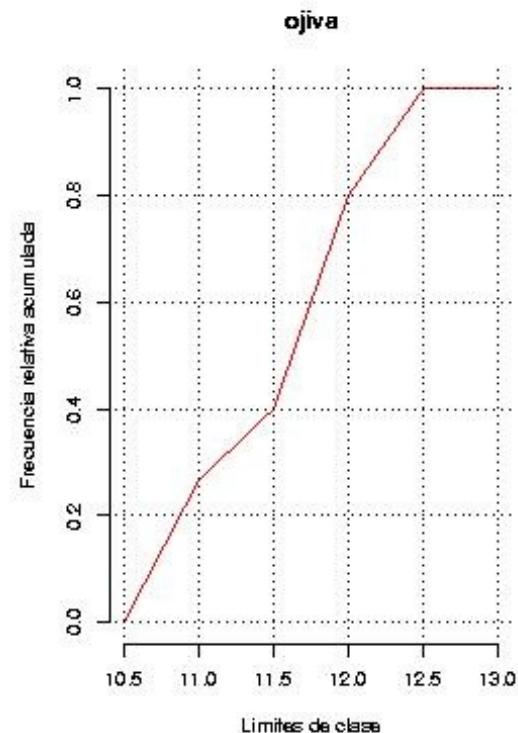
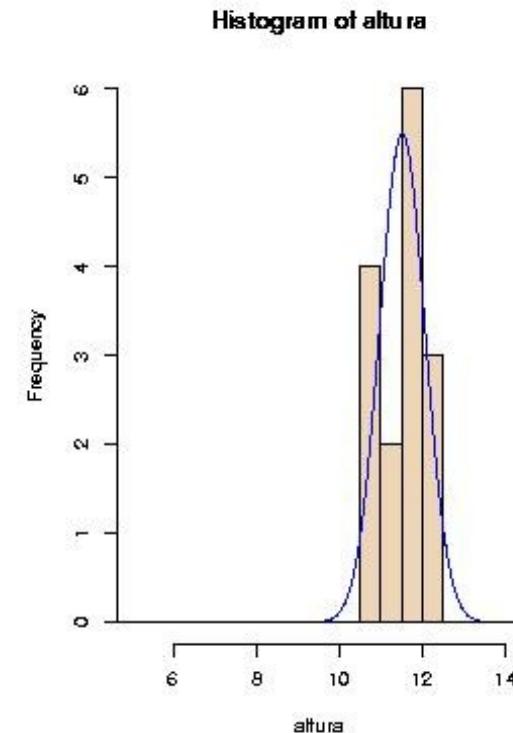
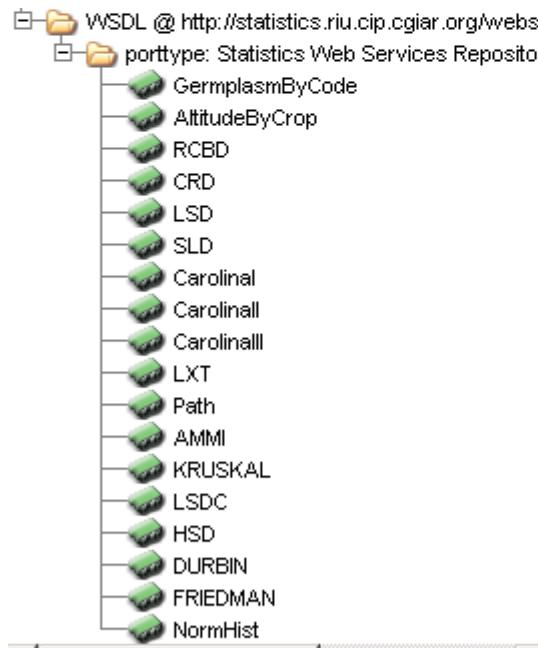
[Done](#)

[Download this image in a Postscript Format](#)

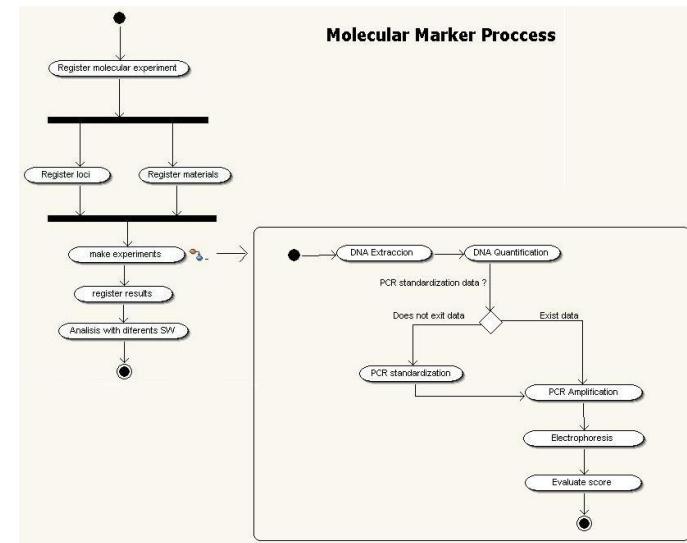
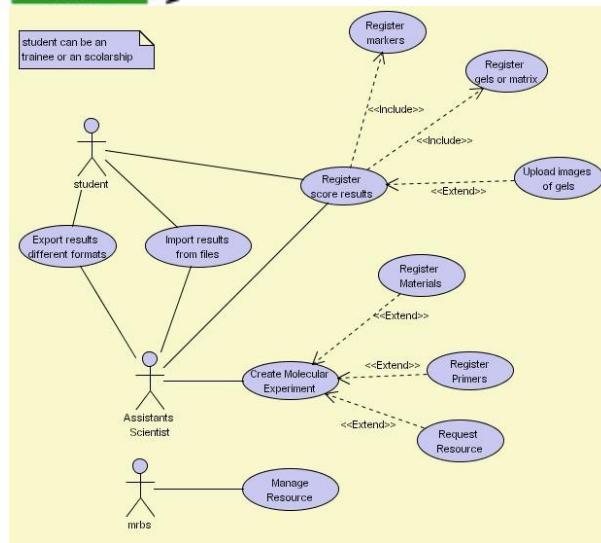
Boxplot of yield by Loc

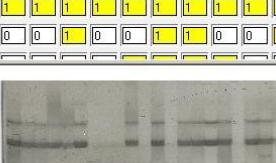
CIPSTAT – screenshot

Interface for tools via WSDL – e.g. Taverna

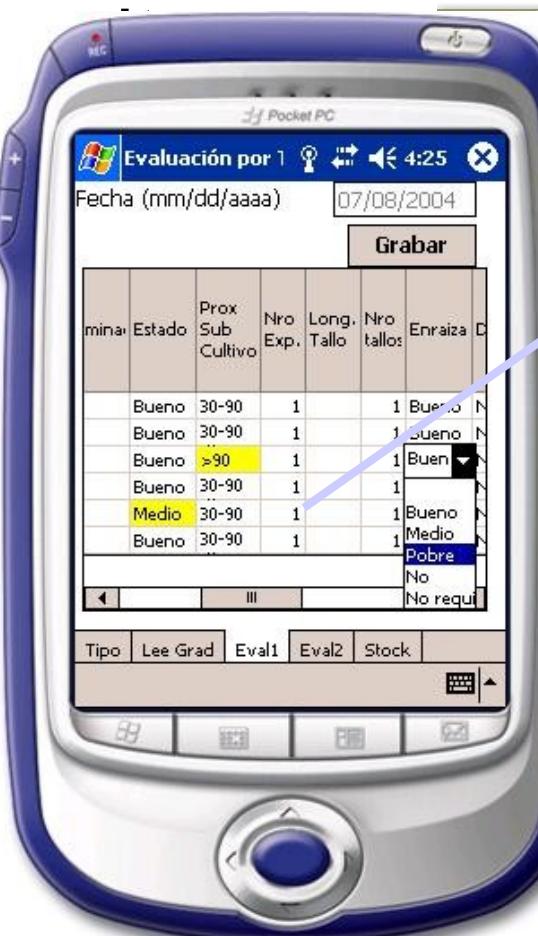


CIPPEX – LIMS molecular data



Summary	Calendar	Files	Notes	Todo	CIPPEX	!	Foto	?	⑧	x																																																																																																																																																																																																																																																																																																																																																																																																																																		
<p>Short Name: 4x-2x Pop Structure Analysis</p> <p>Begin: 03/23/2005 End: 12/31/2005</p> <p>Crop: Potato Category: Working</p> <p>Leader: Ghislain, Marc</p> <p>Student: Nunez, Jorge</p> <p>Type of experiment: Diversity assessment</p> <p>Type of marker: ssr</p> <p>Status [%]: 0</p> <p>Priority: 1</p> <p>Sub-Project of: Generation Challenge Program</p> <p>List:</p> <p>Dependency:</p>																																																																																																																																																																																																																																																																																																																																																																																																																																												
<p>Title: <input type="text"/></p> <p>Description: <input type="text"/></p> <p>Comment: <input type="text"/></p>																																																																																																																																																																																																																																																																																																																																																																																																																																												
<p>Select Primer: IB-R08</p> <table border="1"> <tr><td>200</td><td>207</td><td>214</td><td>216</td><td>217</td><td>218</td><td>220</td><td>224</td><td>226</td><td></td><td></td></tr> <tr><td>201</td><td>208</td><td>215</td><td>217</td><td>218</td><td>219</td><td>221</td><td>225</td><td>227</td><td></td><td></td></tr> <tr><td>202</td><td>209</td><td>216</td><td>218</td><td>219</td><td>220</td><td>222</td><td>226</td><td>228</td><td></td><td></td></tr> <tr><td>203</td><td>210</td><td>217</td><td>219</td><td>220</td><td>221</td><td>223</td><td>227</td><td>229</td><td></td><td></td></tr> <tr><td>204</td><td>211</td><td>218</td><td>220</td><td>221</td><td>222</td><td>224</td><td>228</td><td>230</td><td></td><td></td></tr> <tr><td>205</td><td>212</td><td>219</td><td>221</td><td>222</td><td>223</td><td>225</td><td>229</td><td>231</td><td></td><td></td></tr> <tr><td>206</td><td>213</td><td>220</td><td>222</td><td>223</td><td>224</td><td>226</td><td>230</td><td>232</td><td></td><td></td></tr> <tr><td>207</td><td>214</td><td>221</td><td>223</td><td>224</td><td>225</td><td>227</td><td>231</td><td>233</td><td></td><td></td></tr> <tr><td>208</td><td>215</td><td>222</td><td>224</td><td>225</td><td>226</td><td>228</td><td>232</td><td>234</td><td></td><td></td></tr> <tr><td>209</td><td>216</td><td>223</td><td>225</td><td>226</td><td>227</td><td>229</td><td>233</td><td>235</td><td></td><td></td></tr> <tr><td>210</td><td>217</td><td>224</td><td>226</td><td>227</td><td>228</td><td>230</td><td>234</td><td>236</td><td></td><td></td></tr> <tr><td>211</td><td>218</td><td>225</td><td>227</td><td>228</td><td>229</td><td>231</td><td>235</td><td>237</td><td></td><td></td></tr> <tr><td>212</td><td>219</td><td>226</td><td>228</td><td>229</td><td>230</td><td>232</td><td>236</td><td>238</td><td></td><td></td></tr> <tr><td>213</td><td>220</td><td>227</td><td>229</td><td>230</td><td>231</td><td>233</td><td>237</td><td>239</td><td></td><td></td></tr> <tr><td>214</td><td>221</td><td>228</td><td>230</td><td>231</td><td>232</td><td>234</td><td>238</td><td>240</td><td></td><td></td></tr> <tr><td>215</td><td>222</td><td>229</td><td>231</td><td>232</td><td>233</td><td>235</td><td>239</td><td>241</td><td></td><td></td></tr> <tr><td>216</td><td>223</td><td>230</td><td>232</td><td>233</td><td>234</td><td>236</td><td>240</td><td>242</td><td></td><td></td></tr> <tr><td>217</td><td>224</td><td>231</td><td>233</td><td>234</td><td>235</td><td>237</td><td>241</td><td>243</td><td></td><td></td></tr> <tr><td>218</td><td>225</td><td>232</td><td>234</td><td>235</td><td>236</td><td>238</td><td>242</td><td>244</td><td></td><td></td></tr> <tr><td>219</td><td>226</td><td>233</td><td>235</td><td>236</td><td>237</td><td>239</td><td>243</td><td>245</td><td></td><td></td></tr> <tr><td>220</td><td>227</td><td>234</td><td>236</td><td>237</td><td>238</td><td>240</td><td>244</td><td>246</td><td></td><td></td></tr> <tr><td>221</td><td>228</td><td>235</td><td>237</td><td>238</td><td>239</td><td>241</td><td>245</td><td>247</td><td></td><td></td></tr> <tr><td>222</td><td>229</td><td>236</td><td>238</td><td>239</td><td>240</td><td>242</td><td>246</td><td>248</td><td></td><td></td></tr> <tr><td>223</td><td>230</td><td>237</td><td>239</td><td>240</td><td>241</td><td>243</td><td>247</td><td>249</td><td></td><td></td></tr> <tr><td>224</td><td>231</td><td>238</td><td>240</td><td>241</td><td>242</td><td>244</td><td>248</td><td>250</td><td></td><td></td></tr> <tr><td>225</td><td>232</td><td>239</td><td>241</td><td>242</td><td>243</td><td>245</td><td>249</td><td>251</td><td></td><td></td></tr> <tr><td>226</td><td>233</td><td>240</td><td>242</td><td>243</td><td>244</td><td>246</td><td>250</td><td>252</td><td></td><td></td></tr> </table> <p>Add Markers: <input type="checkbox"/> Create Matrix: <input type="checkbox"/> Transpose: <input type="checkbox"/></p> <p>Choose the materials you require</p> <table border="1"> <tr><td>DLP 822 - 1</td><td>DLP 807 - 2</td><td>DLP 790 - 3</td><td>DLP 791 - 4</td><td>DLP 876 - 5</td><td>DLP 792 - 6</td><td>DLP 800 - 7</td><td>DLP 824 - 8</td><td>DLP 2864 - 9</td><td></td><td></td></tr> <tr><td>401396</td><td>401390</td><td>401381</td><td>401382</td><td>400898</td><td>401383</td><td>401388</td><td>401489</td><td>401447</td><td>401522</td><td>401151</td></tr> <tr><td>200</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>207</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>214</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>216</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>217</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>218</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>220</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>224</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>226</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table> <p>Select matrix: Mabix 1 -> IB-R08</p> <p>Select gel: Gel 1-1</p> <p>Upload image: <input type="button"/> View image: <input type="button"/> Convert format: <input type="button"/></p> <p>Delete 1 matrix: <input type="button"/> Delete All matrix: <input type="button"/> Close window: <input type="button"/></p> <p>Save gel: <input checked="" type="checkbox"/> Is resume gel? <input type="checkbox"/> Ok</p> 											200	207	214	216	217	218	220	224	226			201	208	215	217	218	219	221	225	227			202	209	216	218	219	220	222	226	228			203	210	217	219	220	221	223	227	229			204	211	218	220	221	222	224	228	230			205	212	219	221	222	223	225	229	231			206	213	220	222	223	224	226	230	232			207	214	221	223	224	225	227	231	233			208	215	222	224	225	226	228	232	234			209	216	223	225	226	227	229	233	235			210	217	224	226	227	228	230	234	236			211	218	225	227	228	229	231	235	237			212	219	226	228	229	230	232	236	238			213	220	227	229	230	231	233	237	239			214	221	228	230	231	232	234	238	240			215	222	229	231	232	233	235	239	241			216	223	230	232	233	234	236	240	242			217	224	231	233	234	235	237	241	243			218	225	232	234	235	236	238	242	244			219	226	233	235	236	237	239	243	245			220	227	234	236	237	238	240	244	246			221	228	235	237	238	239	241	245	247			222	229	236	238	239	240	242	246	248			223	230	237	239	240	241	243	247	249			224	231	238	240	241	242	244	248	250			225	232	239	241	242	243	245	249	251			226	233	240	242	243	244	246	250	252			DLP 822 - 1	DLP 807 - 2	DLP 790 - 3	DLP 791 - 4	DLP 876 - 5	DLP 792 - 6	DLP 800 - 7	DLP 824 - 8	DLP 2864 - 9			401396	401390	401381	401382	400898	401383	401388	401489	401447	401522	401151	200	0	0	0	0	0	0	0	0	0	0	207	1	1	1	1	1	1	1	1	1	1	214	0	0	1	0	0	0	1	0	0	0	216	1	0	1	1	1	1	1	0	0	0	217	0	0	0	0	0	1	0	1	0	0	218	0	0	0	0	0	0	0	1	0	0	220	0	1	0	0	1	0	0	0	0	0	224	0	0	0	0	0	0	0	0	0	0	226	0	0	0	0	0	0	0	0	0	0
200	207	214	216	217	218	220	224	226																																																																																																																																																																																																																																																																																																																																																																																																																																				
201	208	215	217	218	219	221	225	227																																																																																																																																																																																																																																																																																																																																																																																																																																				
202	209	216	218	219	220	222	226	228																																																																																																																																																																																																																																																																																																																																																																																																																																				
203	210	217	219	220	221	223	227	229																																																																																																																																																																																																																																																																																																																																																																																																																																				
204	211	218	220	221	222	224	228	230																																																																																																																																																																																																																																																																																																																																																																																																																																				
205	212	219	221	222	223	225	229	231																																																																																																																																																																																																																																																																																																																																																																																																																																				
206	213	220	222	223	224	226	230	232																																																																																																																																																																																																																																																																																																																																																																																																																																				
207	214	221	223	224	225	227	231	233																																																																																																																																																																																																																																																																																																																																																																																																																																				
208	215	222	224	225	226	228	232	234																																																																																																																																																																																																																																																																																																																																																																																																																																				
209	216	223	225	226	227	229	233	235																																																																																																																																																																																																																																																																																																																																																																																																																																				
210	217	224	226	227	228	230	234	236																																																																																																																																																																																																																																																																																																																																																																																																																																				
211	218	225	227	228	229	231	235	237																																																																																																																																																																																																																																																																																																																																																																																																																																				
212	219	226	228	229	230	232	236	238																																																																																																																																																																																																																																																																																																																																																																																																																																				
213	220	227	229	230	231	233	237	239																																																																																																																																																																																																																																																																																																																																																																																																																																				
214	221	228	230	231	232	234	238	240																																																																																																																																																																																																																																																																																																																																																																																																																																				
215	222	229	231	232	233	235	239	241																																																																																																																																																																																																																																																																																																																																																																																																																																				
216	223	230	232	233	234	236	240	242																																																																																																																																																																																																																																																																																																																																																																																																																																				
217	224	231	233	234	235	237	241	243																																																																																																																																																																																																																																																																																																																																																																																																																																				
218	225	232	234	235	236	238	242	244																																																																																																																																																																																																																																																																																																																																																																																																																																				
219	226	233	235	236	237	239	243	245																																																																																																																																																																																																																																																																																																																																																																																																																																				
220	227	234	236	237	238	240	244	246																																																																																																																																																																																																																																																																																																																																																																																																																																				
221	228	235	237	238	239	241	245	247																																																																																																																																																																																																																																																																																																																																																																																																																																				
222	229	236	238	239	240	242	246	248																																																																																																																																																																																																																																																																																																																																																																																																																																				
223	230	237	239	240	241	243	247	249																																																																																																																																																																																																																																																																																																																																																																																																																																				
224	231	238	240	241	242	244	248	250																																																																																																																																																																																																																																																																																																																																																																																																																																				
225	232	239	241	242	243	245	249	251																																																																																																																																																																																																																																																																																																																																																																																																																																				
226	233	240	242	243	244	246	250	252																																																																																																																																																																																																																																																																																																																																																																																																																																				
DLP 822 - 1	DLP 807 - 2	DLP 790 - 3	DLP 791 - 4	DLP 876 - 5	DLP 792 - 6	DLP 800 - 7	DLP 824 - 8	DLP 2864 - 9																																																																																																																																																																																																																																																																																																																																																																																																																																				
401396	401390	401381	401382	400898	401383	401388	401489	401447	401522	401151																																																																																																																																																																																																																																																																																																																																																																																																																																		
200	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
207	1	1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																		
214	0	0	1	0	0	0	1	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
216	1	0	1	1	1	1	1	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
217	0	0	0	0	0	1	0	1	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
218	0	0	0	0	0	0	0	1	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
220	0	1	0	0	1	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
224	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		
226	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																		

CIPTCL – LIMS for GR



Mantenimiento y Evaluaciones

Papa
Camote

Evaluaciones - [Evaluaciones por tubo]

File Cleaning Utilities Menu Contextual Window

2004 ▾

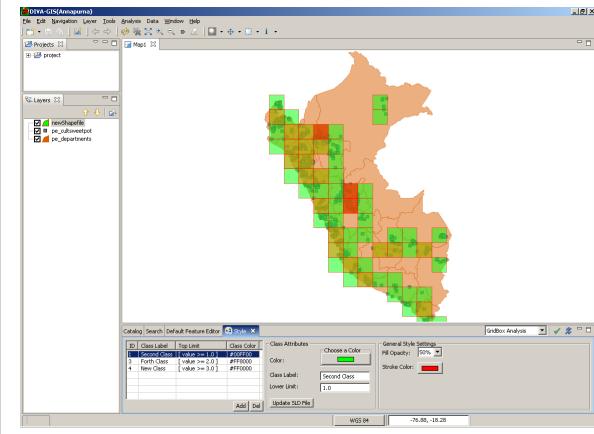
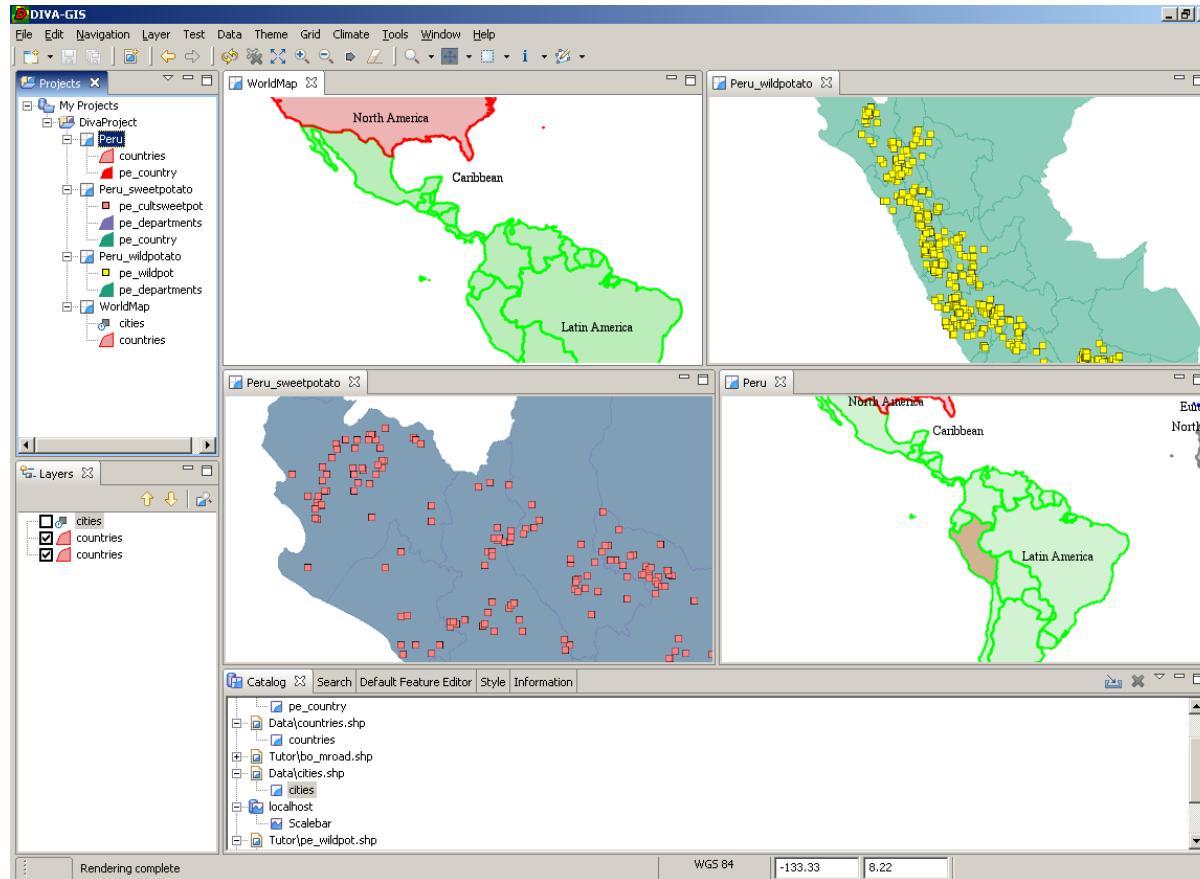
Cont	Estado	Prox Sub Cultivo	Nro Exp.	Long Tallo	Nro tallos	Enra	Defo	Cloro	Ptros Blanq	Muer yema	Feno	Calic	Vltri.	Otros Descr	Op
MCB	No	Buer	30-90	1		1	Buer	No	No	No	No	No	No	No	No
MCB	No	Buer	30-90	1		1	Buer	No	No	No	No	No	No	No	No
MCB	No	Buer	30-90	1		1	Buer	No	No	No	No	No	No	No	No
MPB	No	Buer	30-90	1		1	Buer	No	No	No	No	No	No	No	No
MPB	No	Buer	30-90	1		1	Buer	No	No	No	No	No	No	No	No
MPB	No	Buer	30-90	1		1	Buer	No	No	No	No	No	No	No	No

Actividad	Camara	Repiza	Gradil	Usuario	Lic	Code	Status	HealthStatus	Medium	TubeType
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	-	52	Jose Luis Martinez Ordinola	G-0778	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	-	54	Beatriz Lucila Pillaca Muñoz	G-1008	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	-	54	Beatriz Lucila Pillaca Muñoz	G-1008	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	-	54	Beatriz Lucila Pillaca Muñoz	G-1008	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	-	54	Beatriz Lucila Pillaca Muñoz	G-1008	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	-	54	Beatriz Lucila Pillaca Muñoz	G-1008	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	-	54	Beatriz Lucila Pillaca Muñoz	G-1008	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2019	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2019	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2019	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2019	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2019	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2019	5	H80		MPB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2025	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2025	5	H80		MCB	
Mant. del Germoplasma	Invitro Camara Activa	294	58	Jose Luis Martinez Ordinola	G-2025	5	H80		MPB	

DIVA-GIS overview

www.diva-gis.com

DIVA-GIS is a free and Open Source geographic information system (GIS) application that is used specially on GIS support for genebank curators & breeders.



Data warehouse

- MS based solution for genebank and GADC
- OS based solution for breeding experiments
(and others)

Data warehouse – CIP Intranet



This page and the dynamic

Dynamic Reports for

With **Dynamic Reports for Genetic Resources**, you can quickly access data, compare information and view reports from the CIP's genebanks. The intranet contains data from CIP's genebanks since 1979 and Genebank Reports from Microsoft Excel. The intranet also includes reports from the CIP's genebanks since 1979 and Genebank Reports from Microsoft Excel.

How to use Pivot Tables?

Explore the Dynamic Reports on the

	A	B	C
1	FAO	Quarter	Accs
2	Yes	Qtr3	1,500
3	Yes	Qtr4	2,000
4	No	Qtr3	600
5	No	Qtr4	1,500
6	No	Qtr3	4,070
7	No	Qtr4	5,000
8	Yes	Qtr3	6,430

E	F	G
Sum of Dist	Quarter	
FAO	Qtr3	Qtr4

You can look for Dynamic Reports on the following main entry points:

1. [Holdings by Biological Status](#)
2. [Holdings by Health Status](#)
3. [Holdings by Continent-Country](#)

A1 = Health Status

A	B	C	D	E	F	G
1 Health Status	All Health Status					
2 Camara	All Camara					
3 Time	All Time					
4 Propagator	All Propagator					
5 Activity	All Activity					
6						
7			Crop			
8 Medium Use	Medium Sname	Data	Potato	RTA	Sweetpotato	
9 Conservation	MCB	Vessels				2862
		Accs				878
10	MMC22	Vessels		108		
		Accs		29		
11	MOC22	Vessels		42		
		Accs		14		
12	MOC32	Vessels		1521		
		Accs		473		
13	MSM33	Vessels		33		
		Accs		7		
14	MU22	Vessels		180		
		Accs		60		
15	MU32	Vessels		33		
		Accs		11		
16	S22	Vessels	4488			
		Accs	1604			
17						
18						
19						
20						
21						
22						
23						
24						

Sheet1 / Sheet2 /

Data warehouse – examples solutions

1. <u>Holdings by Biological Status</u>	Totals of accesions by biological status.
2. <u>Holdings by Health Status</u>	Totals of accesions by health status.
3. <u>Holdings by Continent-Country</u>	Totals of accesions by administrations (continent and country).
4. <u>Distribution by Accession</u>	Specific information about accessions by region and country of distributed materials from CIP-Lima.
5. <u>Distribution by Institution Type</u>	Distribution materials by accessions, crop, type institution (CGIAR centers, NARS, NGO, etc).
6. <u>Distribution by Country</u>	Number of consignments by country and crop distributed by CIP-Lima.
7. <u>Distribution by Biological Status</u>	Distribution materials by accessions, crop, type form and biological status.
8. <u>Distribution in Invitro Form</u>	Invitro distributions from internal (CIP), national and international distributed materials.
9. <u>Distribution by Region</u>	Distribution materials by region. It includes the number of approved requests by region and crop.
10. <u>Morphology</u>	Morphology of native potato with status active.

Software development practices

- Use of RUP documents for planning and documentation
- Visually Model Software: EclipseUML - Omondo
- Languages: VB/.NET; Java, PHP, R, SAS, (JavaScript, Delphi, Perl, C, C++, Fortran, Python)
- Standardized on Eclipse editors for Java, PHP, C, R
- Reuse a UI Component Framework: Eclipse RCP
- Use of Tortoise for CVS access for VB, etc
- Use of CVS and Subversion for all software development
- JIRA (Tracking Issue management), Confluence (Wiki)
- Evaluating: Tools for automating builds and software development quality control

Outlook

- Stronger collaboration with ICIS team for better harmonization of tools developed at CIP for potato and sweetpotato data management
- Planning using GMS, GMSSRCH & SETGEN to integrate to CIP Systems
- Statistical quality control tools for process management
- Integration of ontologies for data capture and quality control