BrApi Hackathon 2016

BMS V.4 Beta 10 - Interop - KDX Integration

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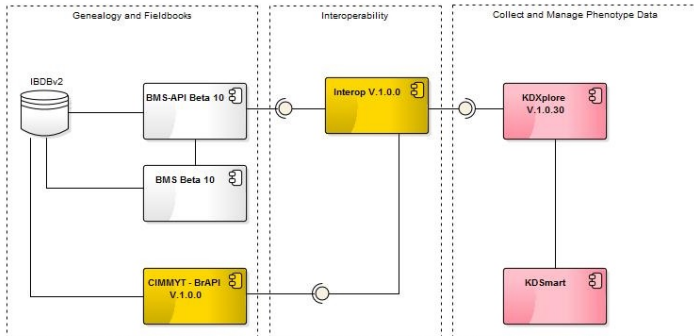July 20, 2016

International Maize and Wheat Improvement Center, CIMMYT

Overview

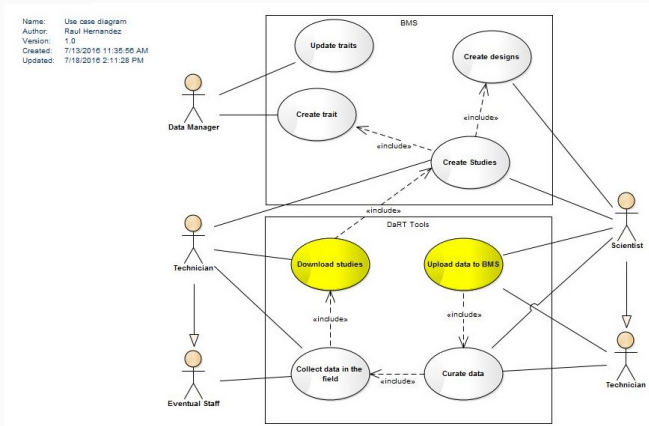Interoperability between BMS and KDX using the Interop System.

- User-Centered Design (UCD)
- Improve performance and get only the data related to the user
- Agile development
- Uses cases:

Uses cases related
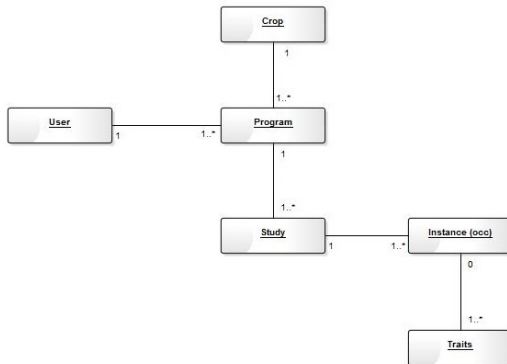
Implementation

Implementation description

CIMMYT data relationship

Name: Concepts Diagram
Author: SIU-CIMMYT
Version: 1.0
Created: 4/14/2016 12:00:00 AM
Updated: 7/12/2016 4:28:16 PM

Implementation description

Services implemented by **CIMMYT** using the BrAPI format:

- Program (by user)
- Study-Instances Summary
- Study-Instance-Plot(s)
- Traits (by instance)
- Locations (by program)
- Update Phenotype Data

Services used from BMS-API:

- Login service

Program List Service		
CIMMYT	BrAPI	BMS-API V4 B10
dbId	programDbid	id
uuid		uniqueID
name	name	name
crop		crop
objective	objective	
leadPerson	leadPerson	createdBy
		members[]
		startDate

- New **userId** optional request parameter was added
- The **uuid** field was added because the BMS database uses two identifiers for each program. Why?
- Question 01: Should we add an **abbreviation** field in future BrAPI releases?
- Question 02: What happens if there are subprograms? In CIMMYT there are many subprograms inside the Global Wheat Program

Get Study-Instance Summary Service		
CIMMYT	BrAPI	BMS-API V4 B10
dbId	studyDbId	Not implemented
number		
name	name	
studyObjective		
studyName		
type	studyType	
location	locationDBId	
startDate		
endDate		
seasons[]	years[]	
	optionalInfo[]	

- In CIMMYT's service: **location name**, in BrAPI's specification: **location Id**. In most cases is more useful the location name
- New **studyType** optional request parameter was added (i.e. nursery, trial, ...)
- Enhance filter functionality: Trials 60%, Nurseries 40%
- Question 03: Should we move **startDate** and **endDate** to default fields?

Implementation description

Get Study-Instance-Plots Service		
CIMMYT	BrAPI	BMS-API V4 B10
instanceDbId	studyDBId	plotNumber
plotDbId	plotDbId	seedSource
plotName	plotName	environmentNumber
timestamp	timestamp	entryNumber
uploadedBy	uploadedBy	entryType
operator	operator	uniqueIdentifier
germplasmName	germplasmName	germplasmId
gid	obserVariableDbId	germplasmDesignation
replicateNumber	obserVariableName	replicationNumber
entryNumber	value	measurements[
plotNumber		measurementId
obserVariables[		measurementValue
dbId,name,value]		traitId,traitName]

- In BrAPI implementation the relation is 1 plot 1 observation
- In CIMMYT implementation the relation is 1 plot N observations
- In BrAPI implementation there are no *gid*, *replicate number*, *entry number*
- In BrAPI implementation there is no *plot number*

Implementation description

Trait (by study) Service		
CIMMYT	BrAPI	BMS-API V4 B10
dbId	traitDbId	Not implemented
id	traitId	
name	name	
description	description	
defaultValue	defaultValue	
datatype		
valRule		
observationVariables	observationVariables	

Implementation description

- New **valRule** field was added
- New **dataType** field was added
- The validation rule and the data type should be part of the meta-data
- New optional **studyId** request parameter was added

Implementation description

Location (by Program) Service		
CIMMYT	BrAPI	BMS-API V4 B10
dbId	locationDbId	dbId
name	name	name
countryCode	countryCode	countryCode
countryName	countryName	countryName
latitude	latitude	latitude
longitude	longitude	longitude
altitud	altitude	altitude
abbreviation		abbreviation
attributes[]	attributes[]	attributes

Implementation description

- New **abbreviation** field was added
- Get locations is filtered by program

Implementation description

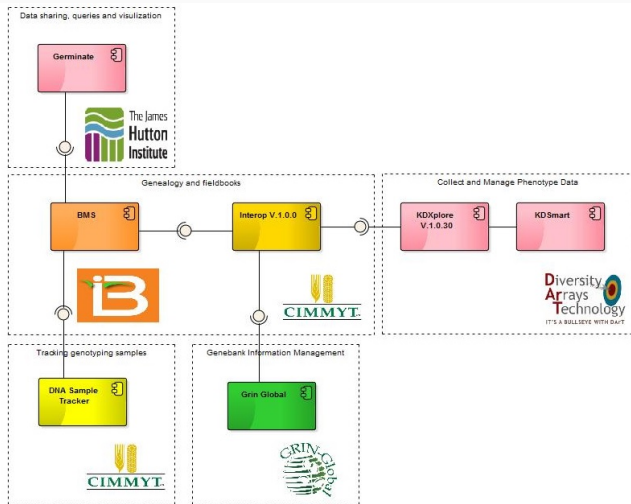| Update observations Service		
CIMMYT	BrAPI	BMS-API V4 B10
studyId	Not implemented	measurementId
plot		traitId
trait		traitName
traitId		measurementValue
value		plotNumber
		seedSource
		environmentNumber
		entryNumber
		entryType
		uniqueIdentifier
		germplasmId
		germplasmDesignation
		replicationNumber

- Minimum data required to update data collected

Proposals

Proposals

- Improve the BrAPI-Login service
- Remove the **result** top level member in JSON response
- Add **location type** in Location service

Future work

Acknowledgment

People involved in this effort:

- Ernesto Briones
- Raul Hernandez
- Diego Cantañon
- Jorge Rojas

Thanks for you time