(not-so) OpenLIMS

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Information Management in the Lab

- Theoretical Framework considerations
  - Quality management
  - Change management
  - Knowledge management
  - Content management

Information Management in the Lab

- Theoretical Framework considerations
  - **Quality management**
    - Internal processing standards (ISO9001:….)
    - Quality management handbook

Information Management in the Lab

- Theoretical Framework considerations
  - Quality management
  - **Change management**
    - **Transform a lab from its "current state" to a "better state"**
    - **measure quality; assess progress and effect any changes that are needed to ensure quality**
    - **changes need to be communicated to people**
      - **Training??**

Information Management in the Lab

- Theoretical Framework considerations
  - Quality management
  - Change management
  - **Knowledge management**
    - process orientated – improve the lab's processes/results
    - I.T to support storage and distribution of information

Information Management in the Lab

- Theoretical Framework considerations
  - Quality management
  - Change management
  - Knowledge management
  - **Content Management**
    - **Technical foundation for storage, structuring and accessing info by humans**
    - **Web Content Management Systems**
      - **Access, View and Edit via the web**
      - **people in the lab, experiments, physical hardware, documentation**

Information Management in the Lab

LIMS Features

- Data import and instrument integration

- Generic steps: sample analysis request, analysis, data capture and disposal of sample

Information Management in the Lab

LIMS Features

- Regulation/accreditation
  - ISO17025 - testing and calibrating results
  - Laboratory competences (Good Automated Laboratory Practices)
    - Ensure integrity of all data entered into the LIMS
    - Accuracy and of all formulae and calculations have been verified
    - Ability to audit all data entries and any modifications
    - Change is a consistent and controlled process
    - Follow SOPs
    - Disaster recovery plan is in place

Information Management in the Lab

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  - College of American Pathologists (CAP certificate)
    - Biobank accreditation

Information Management in the Lab

LIMS Features

- Web-based
- Software to support multiple projects;users;
- User-configurable through a browser
- Secure
- Modules integrated

ELEMENTS OF BIOBANK INFORMATICS

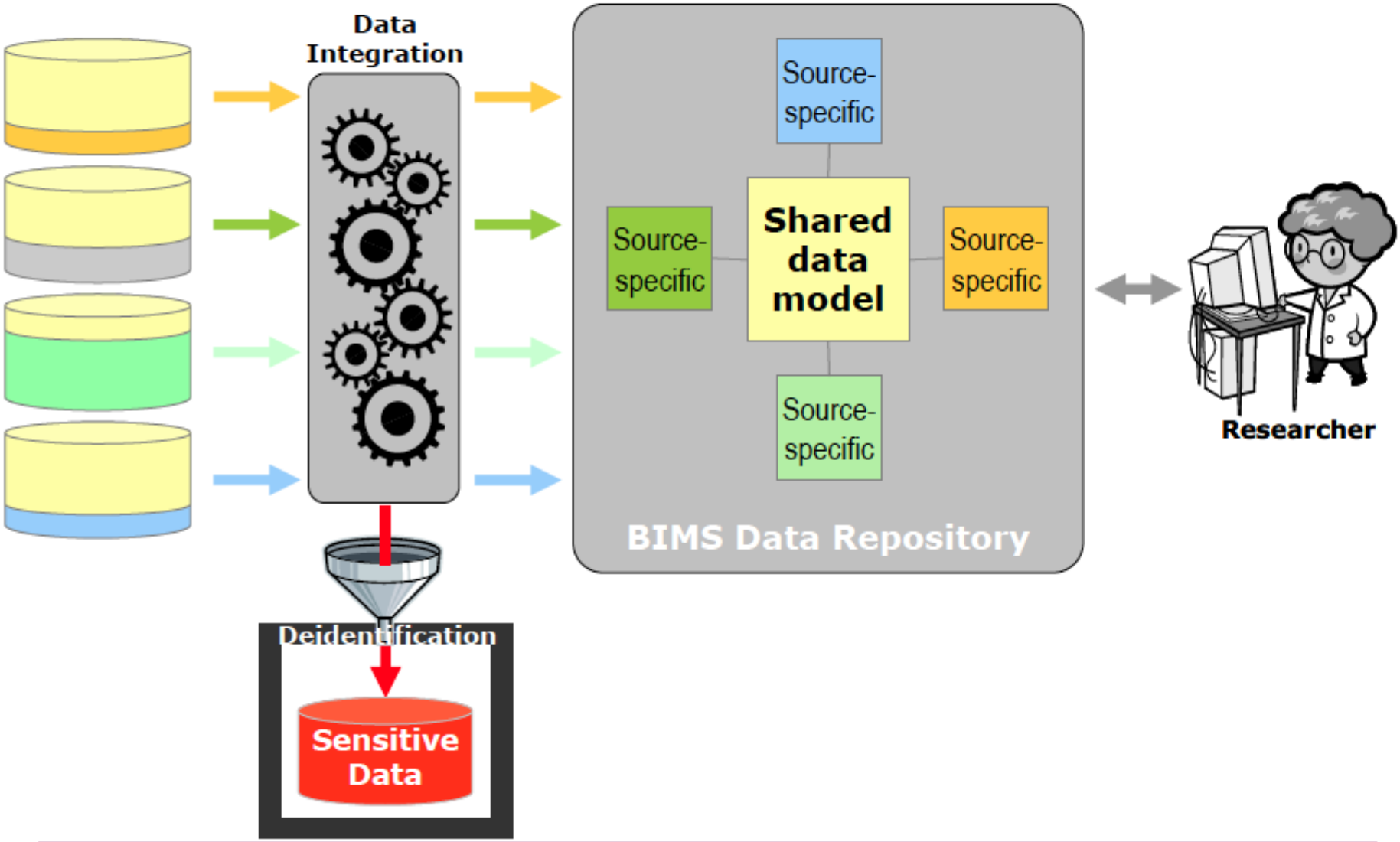
- Sample management
- chain of custody
- request/shipment
- data collection
- data query
- data analysis
- billing info/finance

- data integration

LIMS Software	Language	applications
AGL-LIMS	Java	Crop genotyping
WIST	PERL	NOT a LIMS but a toolkit to develop a LIMS
Crystallography LIMS	Java	Protein crystallography
LIPAGE		2-D Page proteomics
Screensaver	Java	High throughput RNAi screens
BIKA	Python [PLONE]	Health;biotech;geology;
GNU health lab module	python	Lab management; plugs into other modules
ARK	Java	Clinical studies; analyses; lims
caTISSUE caBIG	Java	Clinical (pathology); NCI

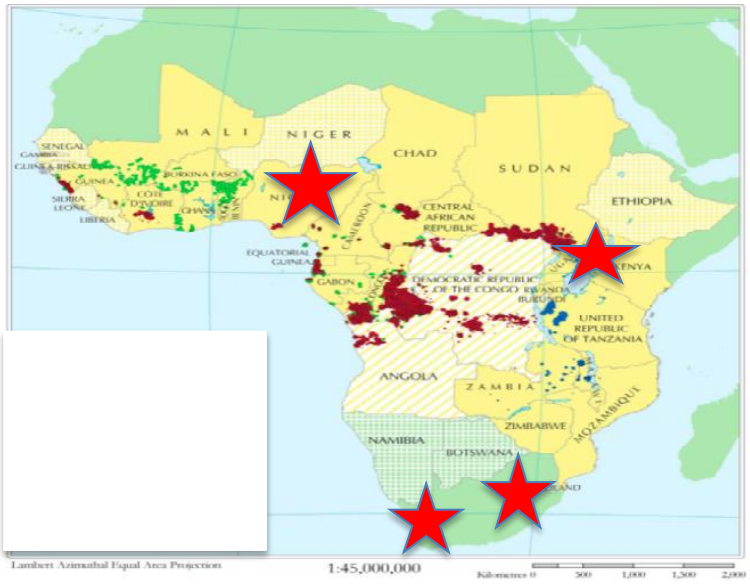
Data integration

…where Data is Remodelled and Categorized



CONNECTING BIOBANKS INTERNATIONALLY

International community



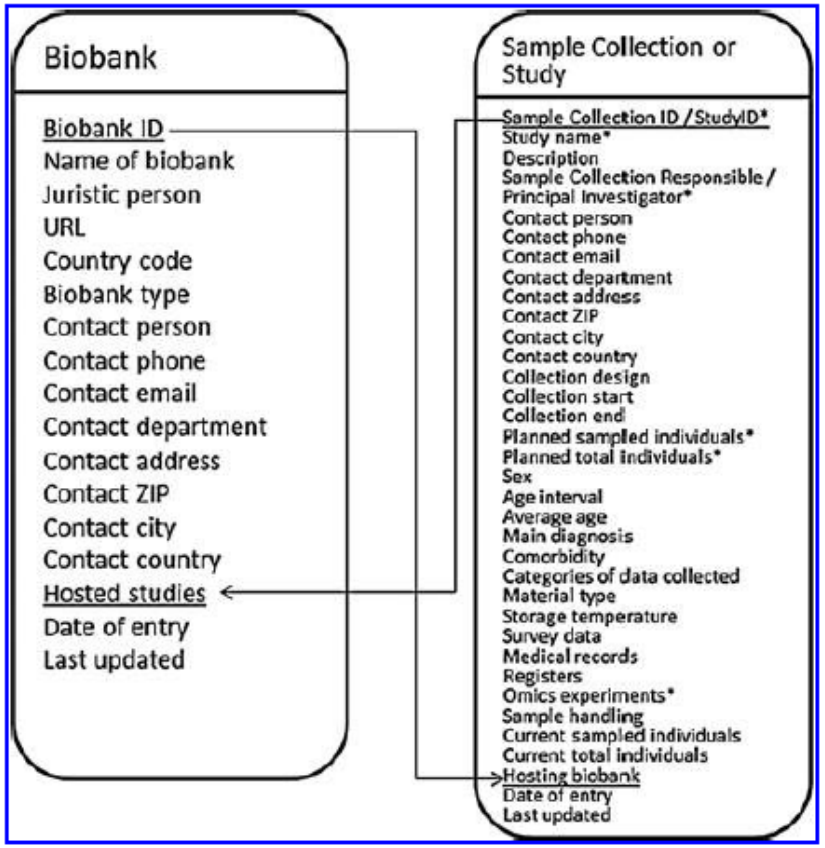


FIG. 1. The relationship between the types of attributes. *highlights attributes relevant for studies only.

Jan-Eric Litton et al., 2011

CONNECTING BIOBANKS INTERNATIONALLY

Journal of Biomedical Semantics

BioMed Central

Internationa

Developing a semantically rich ontology for the biobank-administration domain

Mathias Brochhausen, Martin N Fransson, [...], and Jan-Eric

OBiBa

OPEN SOURCE SOFTWARE FOR BIOBANKS

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Welcome to OBiBa

OBiBa is a collaborative international project whose mission is to build high-quality open source software for biobanks.

OBiBa is a core project of the **Population Project in Genomics Consortium (P3G)**, an international organization that provides tools and resources to foster collaboration and knowledge sharing for population genomic studies.

Partners

P3G

Ontario Institute for Cancer Research

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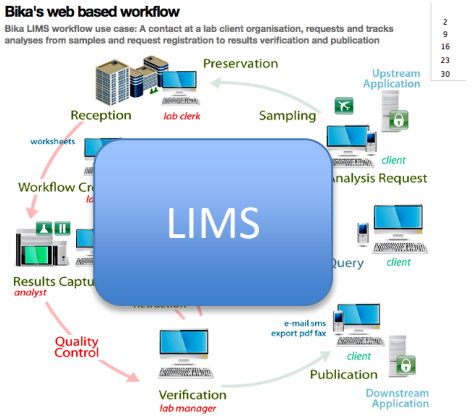
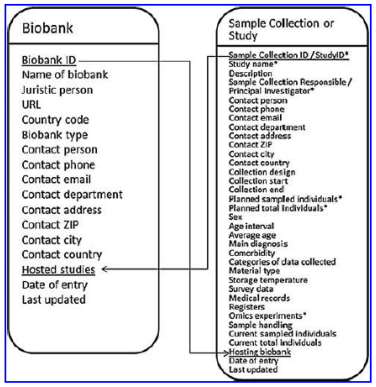
Summary
Data Management (LIMS)





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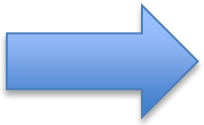

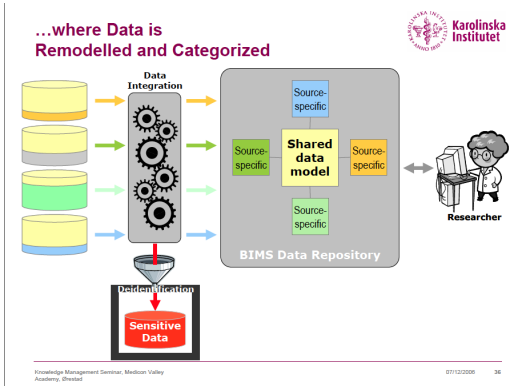

- ALL LIMS products require customization over time
  - Lab-specific needs/SOPs