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Biobanking and
BioMolecular resources
Research Infrastructure
The Netherlands

Towards Global Biobank Integration by Community Review and Implementation of Minimum Information About Biobank Data Sharing (MIABIS) 2.0

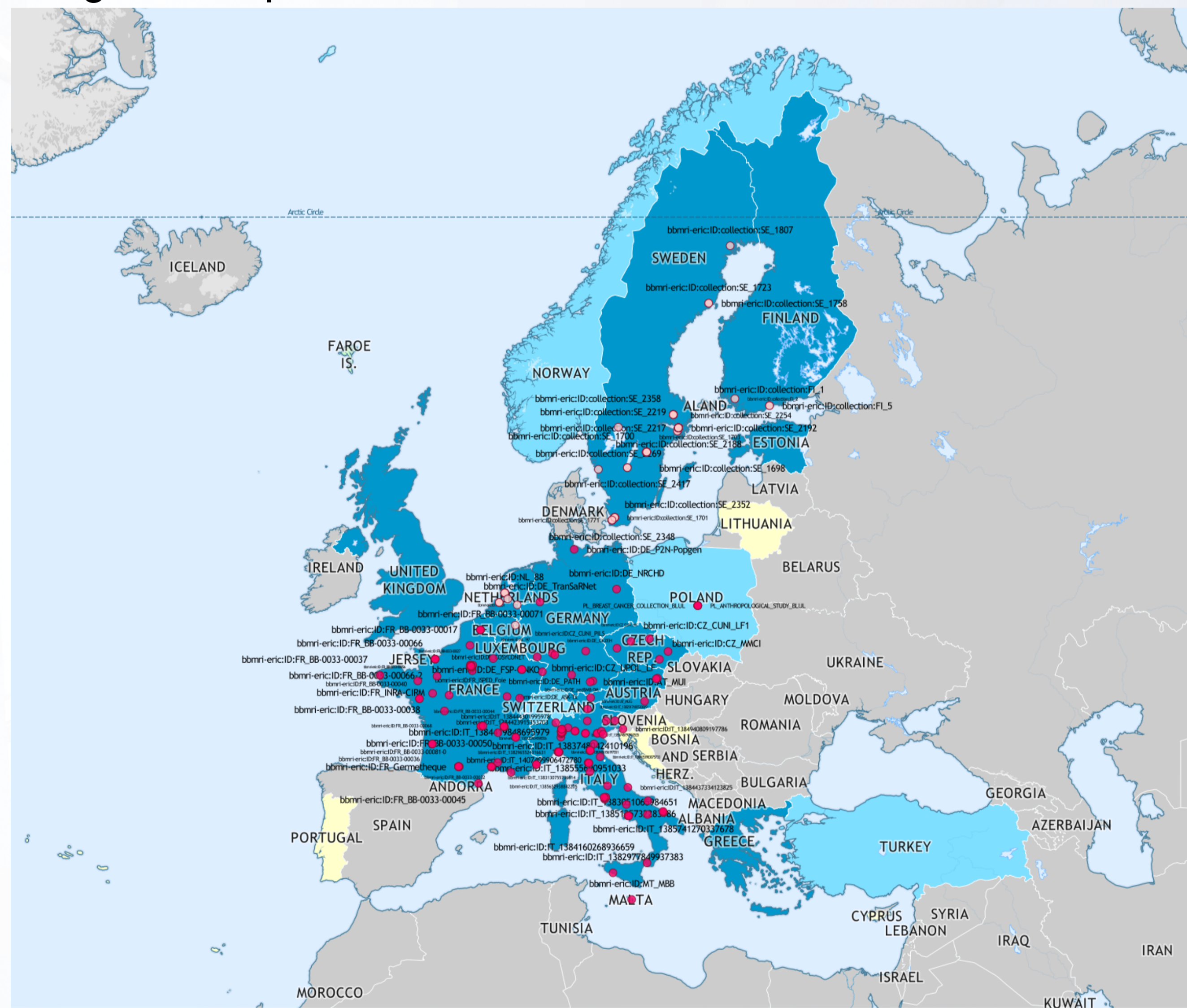
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Introduction

Research into complex and rare diseases requires high quality biological samples. However, it is costly and time consuming to create novel sample collections of appropriate size and quality. At the same time biobanks have large collections that are underutilized, because discoverability and access to the samples is hard. Several catalogues have been published to facilitate the use of biobanks in research, but these catalogues are often incomplete and outdated. In 2013 a working group was formed within BBMRI-ERIC in order to update the MIABIS Minimum Information Model to facilitate the exchange of information between biobanks and research groups using biological samples.



Countries participating in the BBMRI-ERIC directory

Material & Methods

The working group has revisited the existing MIABIS recommendation to simplify it and make it more flexible:

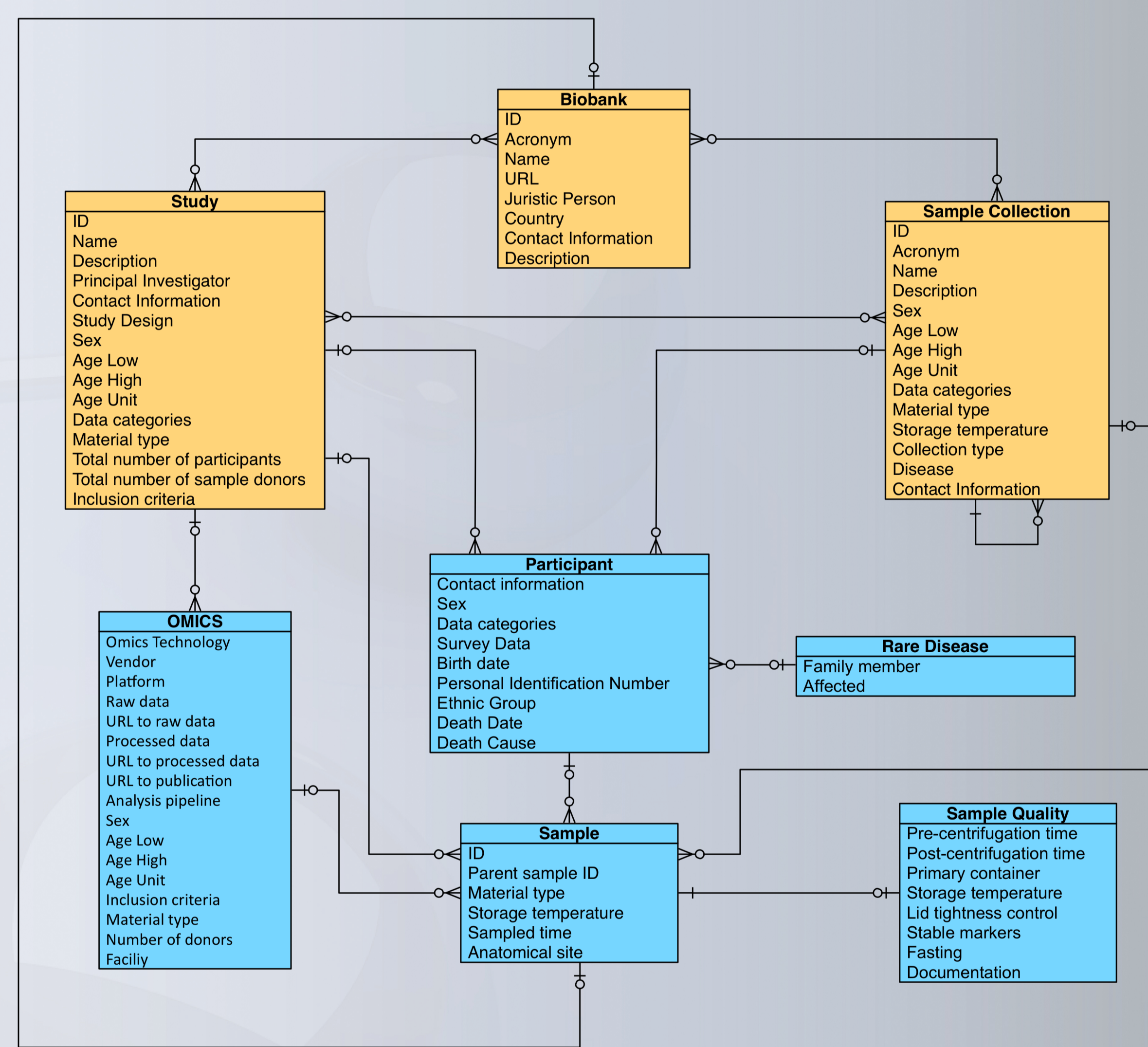
- The model has been split in core components: biobanks, sample collections, and studies, and supporting components: sample, participant, biological experiments and rare diseases;
- The number of elements has been reduced;
- Data structures have been defined for several elements.

For each of the modules we carefully reviewed and discussed the attributes. The representatives from each country then classified the attributes according the MoSCoW classification and we used a voting process to select the final attributes of the module.

Results

MIABIS represents the minimum information required to enable the exchange of biological samples and data. MIABIS consists of three "core" components: Biobanks and Samples Collections and Study. Among others additional components for detailed information about participants and samples are currently under evaluation.

The model has been successfully implemented using MOLGENIS in BBMRI-NL, BBMRI-ERIC and RD-Connect and various other software in the BBMRI National Nodes, BiobankCloud, EUDAT, BioMedBridges and IARC.



Discussion

A minimal information model enables interoperability between different systems. MIABIS facilitates automated exchange of information between several systems in the biobanking workflow such as Biobank Information Systems, Catalogues and Workflows for sample request and access. However, other components are needed to unlock the full potential such as Standardization of terms in ontologies and Globally unique identifiers such as BRIF for biobanks, samples collections and samples.

Participate in MIABIS at <https://github.com/MIABIS/miabis/wiki/>

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