The Diversity Workbench Framework: Data Retrieval with DiversityMobile and Dataflow from DiversityMobile to GBIF

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The gathering of data in the field is organized in the component DiversityMobile which is set up to enter, modify, or – if necessary – delete ecological and biological monitoring data in the field via a mobile device (www.diversitymobile.net).

DiversityMobile Synchronization is transferring the data from DiversityMobile to DiversityCollection (and vice versa) via the internet. For every DiversityMobile client exists a separate synchronization database with the table SyncItem. For each object on the client or the server side exists an entry in the synchronization database containing the GUID and a hash value calculated from the values of the primary data. According to the values of the entries in this table the state of the synchronization is calculated.

The synchronization database contains a table named FieldState for conflict detection. In this table, for every field of an object a hash value is calculated. In case of a conflict the hash values differ in the associated entries.

The field data retrieved via the mobile device using the DiversityMobile client are stored in a database on this device and associated with a Global Unique Identifier (GUID). This local database contains a set of definitions, e.g. lists of taxonomic names and project-specific settings.

The data are stored in the local master database DiversityCollection. For a further consistent data flow it is crucial that the database is set up at an institutional data repository which acts as GBIF data provider like the IT Center of the Bavarian Natural History Collections. There the GUID is connected with a persistent Uniform Resource Identifier (URI). The latter is published and accessed by global networks like GBIF.

DiversityMobile Synchronization Database
- SyncItem
  - GUID
  - GUID
  - GUID
  - GUID

DiversityCollection
- Institutional data repository
- BioCASE
- PyWrapper
- Data Export
- ABCD
- GBIF