

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

Tobias Schneider¹, Markus Weiss², Stefan Jablonski¹, Gerhard Rambold³, Dagmar Triebel², Bernhard Volz¹

¹Applied Computer Science IV, University of Bayreuth

²IT Center of the Staatliche Naturwissenschaftliche Sammlungen Bayerns

³DNA Analytics and Ecoinformatics Laboratory, University of Bayreuth

The Diversity Workbench database framework consists of single application components collaborating through agreed software interfaces. Further information about the Diversity Workbench can be found in the contribution "The Diversity Workbench framework as data repository for biological data". 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). The data model used in DiversityMobile is fully compatible with the data model of DiversityCollection which is the component for the storage of collection and observation data within the Diversity Workbench. DiversityCollection provides the possibility to export the data to GBIF via the BioCase-Wrapper in the TDWG standard ABCD.

The field data retrieved via the mobile device using the DiversityMobile client are stored in a database on this device. This local database contains a set of definitions, e.g., lists of taxonomic names and project-specific settings. Moreover, the user can choose to download field data from DiversityCollection, already stored there. Furthermore, it is planned to allow data import directly from web services e.g. for taxonomic or other biological backbone data. As soon as the user starts gathering data in the field, additional data are added to the mobile database. This includes the option that the mobile database contains subsets of data from the central DiversityCollection database. Hence, the upload of field data to the central database and the dataflow to and from DiversityMobile, e.g. to avoid duplicates, needs to be strictly organized by a complex synchronization process which is explicitly described in the poster.

The user can access the synchronization component via a special interface which is installed on his personal computer. This component connects the mobile database with a data repository e.g. via the internet. The synchronization data are stored in a separate database. This database is linking the data items on the client-side with data items on the server-side using Global Unique Identifiers (GUIDs). 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 Staatliche Naturwissenschaftliche Sammlungen Bayerns. There the GUID is connected with a persistent Uniform Resource Identifier (URI). The latter is published and accessed by global networks like GBIF.