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TaxonConcept, a new taxonomic information system

R. **Huber** (1) and J. Klump (2)

(1) Marum - Zentrum für marine Umweltwissenschaften der Universität Bremen, (2) GeoForschungsZentrum Potsdam

TaxonConcept was created to help resolve taxonomic ambiguities in biostratigraphy as part of the Stratigraphy.net initiative. Its workflow is based on the principles of 'open nomenclature'. Open nomenclature allows researchers to comment the identification of a specimen which cannot exactly be determined and is frequently used in synonymy lists. The use of such synonymy lists in TaxonConcept allows to work with taxonomic classifications that are uncertain, or where several versions exist. The system can be used to store and compare differing taxonomic opinions both of authors of print publications and of registered TaxonConcept users. The use of such synonymy lists in a taxonomic information system allows interesting search options for the user, ranging from tracking name changes to the investigation of coplex taxonomic topologies. In addition to its advanced synonymy management capacities, TaxonConcept allows to store many other information categories such as textual descriptions (eg. Diagnoses and comments), images, bioevents and specimen and collection data. Ecological information is scheduled for a later stage of the project. TaxonConcept allows the direct linking of taxon names to PANGAEA's paleoenvironmental data, interfaces to other third party databases are also planned. PANGAEA stores environmental, marine and geological research data and frequently uses taxon names in its parameters. By linking TaxonConcept and PANGAEA, synonym names can be included e.g. when searching for stable isotope data measured on microfossils. Furthermore, TaxonConcept is a project oriented tool. Projects can use the system to find a taxonomic consensus, e.g. to define a taxonomic framework for biostratigraphic studies. Both, the project specific hierarchical classification of selected taxa, as well as a project specific selection of any other information categories is supported by TaxonConcept. The results of such a taxonomic consensus can be used to create 'Fossilium Catalogus' style summaries in various output formats which can later be used to create online or print publications.