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AGENAMES - A web-tool for the identification of stratigraphic terms in geological texts

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A common task for earth scientists is the search for stratigraphic background information on a certain rock unit, e.g. its age and properties and its position within the hierarchy of stratigraphic units. Due to their general nature, bibliographic metadata in library catalogues are not referenced in time and space. Spatio-temporal information is only implicitly encoded in the title and abstract given in bibliographic databases and library catalogues. To decode spatial information from texts has become commonly avaliable though gazetteers and geocoding services, but the paleotemporal information remains elusive.

The international stratigraphic guide gives a nice example of the problems earth-scientists typically encounter, when they try to get more detailed information on stratigraphic units: "Any stratigrapher will readily understand if a colleague states that he has been studying the Jurassic, or the Miocene, or the Turonian of some area. However, if only the name of a formation, or of a biostratigraphic zone, or of some other type of more local stratigraphic unit is mentioned, stratigraphers in other part of the world may not be able to recognize even approximately the position of the unit within the stratigraphic column."

AGENAMES is a web-service offered by Stratigraphy.net to parse geological texts and identify stratigraphical terms. The service has both a web-based GUI and a REST interface. The stratigraphical terms are stored as RDF triples. The database records the stratigraphical rank of a chronostratigraphic or lithostratigraphic unit and the hierarchical relations between terms. All lithostratigraphic units are related to chronostrati-

graphic units. As an example, AGENAMES would identify the "Prince Albert Shale" as a formation of the Ecca Group of Permian age with a type-location near the town of Prince Albert in the Western Cape Province of South Africa.

The AGENAMES web-service can also be used to augment library catalogues. At present, searches in library catalogues only allow for explicit term searches. A query for texts covering the Permian of South Africa would miss all text that do not make implicit mention of the term "Permian" through lithostratigraphic terms relating to that chronostratigraphic epoch. AGENAMES can be used to generate indices to infer the relations of library catalogue entries to the approximate geological epoch that is covered in a text. This allows to include stratigraphic age into a catalogue search without the need to specify all possibly relevant terms in complex queries.