Application of RDF to Digital Gazetteer

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Area studies are interdisciplinary researches comprehensively to understand areas, and then accumulating and sharing of knowledge are essential to accomplishing this object. Area Informatics is a new paradigm to apply information science/technologies to area studies, whose purpose is to convert data into knowledge by building big repositories, developing quantitative analysis methods, and devising links between entities, events and phenomenon in repositories.

Place names are one of key information flexibly to link entities, events and phenomenon in repositories. We have developed the digital gazetteer of Japanese historical place names, which is lists about historical place names (rivers, lakes, mountains, shrines, temples, houses, monuments, villages, towns, counties, states, etc.) of present and past with their attributes and locations (longitudes and latitudes). A digital gazetteer is a necessary step to organize place names in digital form but not enough for advanced usage to link with other kinds of information such as Wikipedia.

We are trying to introduce Semantic Web technologies to develop intelligent information infrastructures, which can describe meaning/structure of data, link data flexibly and realize intelligent data retrieval. These are essentials to discover new knowledge from repositories. As its first trial, we have reconstructed our digital gazetteer of Japanese historical place names. In this reconstruction, we designed data model of place names, defined vocabularies to describe palace names, defined schemas by RDF, defined necessary URI, and then developed RDF store and retrieval interfaces using SPARQL. Recently, we are trying to expand the data model to be able to describe place names of Thailand.

This presentation will explain detail structure and usage of the new digital gazetteer and discuss its availabilities as intelligent information infrastructures for "Knowledge of Areas."