PLACE NAMES ONTOLOGIES

HEĆIMOVIĆ Z.
Croatian Geodetic Institute, ZAGREB PP.19, CROATIA

In this article is discussed possibility of development of place name (toponyms) ontologies as knowledge background for building semantic web. Place name is complex object. Its definition includes more elements. The name should be assigned to place (fea-ture/object). Time is usually not explicitly defined. But, without time distinction between historical and present toponyms cannot be made. Because standardization of geographical names is bounded to present geographical names without time entity it cannot be formally defined. Place name conceptual domain ontology approach is dis-cussed as possibility to develop platform for Semantic Web and bet-ter Internet interactions. Ontologies may be developed at different levels. Global, domain, and application ontology levels can be rec-ognized. The domain ontology defines concepts that are specific to a body of knowledge and in this work to problem of place names. It requires more detail development focused on knowledge base. Ap-plication ontology defines concepts that are specialized within a giv-en context or a specific usage. Elements of global ontology and do-main oriented ontologies are discussed on the examples of UNGEGN World Geographical Names Database, EuroGeoNames (INSPIRE) European infrastructure of geographical names and Croatian experiences. Influence of ISO/TC 211 geographic informa-tion ontology standards on standardization of geographical names is discussed. ISO geographic information standards are using feature catalogues and application schema in description of semantics of geographic information. This kind of approach corresponds to the application ontology level. Ontological approach of the problem support interoperability across toponym language, feature type, fea-ture shape, feature position and time. It would allow association of concepts across applications and domains, and give background for solving problem of place name as complex problem that is defined in more disciplines. The main relationships between place name on-tological objects are defined. Examples are given for: functional, in-verse functional, transitive, symmetrical, antisymmetric, reflexive and irreflexive relationships. The ISO/TC 211 geographic informa-tion standards, INSPIRE and EuroGeoNames are also using UML schema as object oriented semantics in description of the place name model.

KEY WORDS: