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Pan-information Location Map

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Abstract. A huge amount of information, including geographic, environmental, socio-economic, personal and social network information, has been generated from diverse sources. Most of this information exists separately and is disorderly even if some of it is about the same person, feature, phenomenon or event. Users generally need to collect related information from different sources and then utilize them in applications. An automatic mechanism, therefore, for establishing a connection between potentially-related information will profoundly expand the usefulness of this huge body of information. A connection tie is semantic location describing semantically concepts and attributes of locations as well as relationships between locations, since 80% of information contains some kind of geographic reference but not all of geographic reference has explicit geographic coordinates. Semantic location is an orthogonal form of location representation which can be represented as domain ontology or UML format. Semantic location associates various kinds of information about a same object to provide timely information services according to users ' demands, habits, preferences and applications. Based on this idea, a Pan-Information Location Map (PILM) is proposed as a new-style 4D map to associates semantic location-based information dynamically to organize and consolidate the locality and characteristics of corresponding features and events, and delivers on-demand information with a User-Adaptive Smart Display (UASD).

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