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Subject: Position statement for the W3C workshop on the standardization of graph data
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Position statement by Manolis Koubarakis

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In the last 8 years my group has been working on adding geospatial and temporal constructs to RDF and SPARQL and developing software to support these extensions. This area of research is now called linked spatiotemporal data. The most used query language for linked geospatial data today is GeoSPARQL which is an OGC standard. My group, independently and at the same time, has developed stSPARQL which has similar expressivity and constructs with GeoSPARQL but it also has a temporal dimension (time validity of triples).

The relevant data models, languages and (open source) systems developed by my group are discussed briefly in the following invited Internet Computing article:

<http://cgi.di.uoa.gr/~koubarak/publications/2017/ic4ld-manolis.pdf>

We have also done a lot of work on applications using our own systems, especially in the area of Earth observation and satellite data.

During the workshop, I would like to give a presentation or lead a discussion about what additional temporal and geospatial functionality we need in the data models and graph query languages like Cypher so that they can be used to support use cases where the data is incomplete, uncertain, probabilistic etc. For example, the use cases discussed in the article <http://trajectorymagazine.com/past-present-future-geospatial-data-use/>

I can also show very nice demos with spatiotemporal information e.g., the one you can find here in preliminary form <http://test.strabon.di.uoa.gr/SextantOL3/?mapid=m8s4kilcarub1mun>
This demo is about finding the greenest administrative area of Paris over a period of time.

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