

## Design and Development of a Platform for Analyzing Spatio-Temporal Data from Wireless Sensor Networks

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**Abstract :** The development of sensor technology (such as microelectromechanical systems (MEMS), wireless communications, embedded systems, distributed processing and wireless sensor applications) has contributed to a broad range of WSN applications which are capable of collecting a large amount of spatiotemporal data in real time. These systems require real-time data processing to manage storage in real time and query the data they process. In order to cover these needs, we propose in this paper a Snapshot spatiotemporal data model based on object-oriented concepts. This model allows saving storing and reducing data redundancy which makes it easier to execute spatiotemporal queries and save analyzes time. Further, to ensure the robustness of the system as well as the elimination of congestion from the main access memory we propose a spatiotemporal indexing technique in RAM called Captree \*. As a result, we offer an RIA (Rich Internet Application) - based SOA application architecture which allows the remote monitoring and control.

**Keywords :** WSN, indexing data, SOA, RIA, geographic information system

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