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The geographic information systems in the era of big data: The impact on society

Marco Antonio Lopez Vega

Institute of Geography UNAM, Mexico

In the age of mobile devices, applications based on global positioning systems, social networks and mass storage systems in the "cloud". Geographic Information Systems take a step forward in their evolution, by implementing new technologies and integrating all the sources of information provided by the Internet with the objective of spatial data analysis. GIS (Geographic Information Systems) and web-based applications have always had a close relationship especially if we take into account the use of the Internet in the last decades. One might think that the elements of a spatial data infrastructure have not changed over the years, but in recent years new organizational structures have been established, shattering current paradigms. The new times require us to change our GIS developments, for the next step in the evolution of digital platforms. Today, advanced space systems are infiltrating the Terabyte fields and approaching Petabyte day by day. Borders have been overtaken by new spatial data sources. Different problems have been observed when sharing such data in the "WEB". The solutions that have been implemented in the last decade have been exceeded in their capacities in the field of hardware as well as software. In this talk we will address the issue of spatial data, how they can impact on issues of interest to society and what new technologies are being implemented in their analysis.

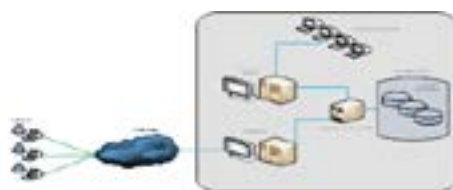


Fig 1. GIS-BigData System Architecture

Recent Publications

1. Lopez M, Couturier S, Barrera K.(2015). Design scheme for spatial database of climatic and environmental variables in Mexico, interating Big Data Technology 55:503-513.
2. Lopez M, Couturier S, Lopez J.(2016) Integration of No SQL Database for analyzing spatial information in geographic information system 1:351-355.
3. Lopez Vega, M.A, Couturier S.(2017) Design of a Big Data GIS platform for a near-real-time environmental monitoring system based on GOES-R satellite imagery 1:1-3.
4. Aguirre R, Lopez M, Salmeron O.(2002) Base de Datos multitemporal de la distribución de clorofila "a" en los mares mexicanos. 13:25-30.
5. Lopez M, Paredes C, Rodriguez N.(2002) Implementación de la base de datos ORACLE 8i para la organizacion y analisis de datos geograficos. 10:40-43.

Biography

Marco Antonio Lopez Vega completed his Engineer in Communications and Electronics from the National Autonomous University of Mexico UNAM, with a Master's Degree in Information Systems. It has Certification: DBA by ORACLE, System Manager by Silicon Graphics and Microsoft Systems Engineer. Developer for more than 15 years of Geographic Information Systems. Professor of undergraduate, postgraduate and diploma in Geomatics of the UNAM. The research lines it mainly supports are: Geographic Information Systems, Spatial Data Infrastructure, Spatial Databases Systems and Geotechnology. It also has international publications on Big Data and GIS.