

# Architectural and technological aspects for the next generation of SDI

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## **ABSTRACT:**

It is well known that Spatial Data Infrastructure (SDI) offers a set of core elements that is base for its formation, but regard to the early of third generation of SDI, there isn't unanimity, including with respect to their characteristics. For instance, some researchers preach that subnational SDIs are playing the most important role in the third generation and they are creating more and new opportunities for the private sector. On the other hand, a current believes SDIs of third generation employs the Volunteer Geographic Information (crowdsourcing) and Web 2.0 initiatives. Indeed, both approach are relevant for a better SDI and need consider political, sociotechnical and technological aspects. Further, allied with principles like: (1) Openess initiatives (Open: Data, Government, Research, Education/Learning, Community, Software, Hardware, Cloud, Standard etc.) (2) Inverse Spatial Injection and (3) Culture of Participation, will change the role of geographic information for any decision-making sphere at local, regional and national level or simply for better society.

This paper presents architectural and technological aspects for open SDI Ecosystem proposed for the next generation of Brazilian SDI from the user, developer and administrator viewpoint. The first prototype named INDE-CO is being built to data produce and share, to research or to study. So, it could be instantiated by any government institution (federal, state, and municipality) or any community (ordinal citizen, civil society organizations, researcher group and other), in which the data would be in the cloud and anyone could in anywhere participate. This geospatial toolset provides services like: migration, linking, integration, retrieving, creation, visualization, manipulation, processing, analysis, sharing and management for spatial information. On the other side, social aspects (management, assessing, grouping, raking, reputation, following etc) are available for institutions, people and communities. This platform takes into accounts 3 principles and it is being built with open source tools.

**KEYWORDS:** SDI, VGI, Collaboration, Open GIS, Data Integration.