

# Get INSPIREd to become really SMART!

How the integration of Spatial Data Infrastructures with Smart Solutions might trigger new capabilities.

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## Themes

"Smart" is a fashion term used by a wide range of initiatives based on the application of new information technologies to improve processes and operations in different contexts of use, usually of general or public scope as cities (Smart Cities), Utilities (Smart Grids), or agriculture (Smart Agriculture). In general, (1) various actors are involved to whom are assigned specific roles (individuals, public and private bodies), (2) different instruments (Smart Devices) and technologies are used to allow generate, process and/or consume in an ubiquitous manner large volumes of data, thus controlling real-time decisions to make them more efficient, and (3) they are implanted on a restricted area which is modelizable covering entities (physical and logical), operational capabilities (smart things, smart citizens), data flows and potentially external factors that have influence over them. These solutions can also co-exist and interact with third systems, potentially sharing actors, entities, data and/or functionality.

Although usually linked to concepts like Big Data, Internet of Things, Citizens as Sensors or Web 2.0, by its definition and scope "Smartization" raises obvious synergies with those principles and objectives from the SDIs, which leads us to the following question: Might a solution become really "smart" without exploiting the geospatial component and without interoperability with other operational infrastructures as SDIs? Seeing from another perspective: Would it be really 'smart' duplicate efforts and resources developing data infrastructures on domain specific silos without interoperability among components having so many factors in common? Answer to both questions is clearly not, and its is justified listing the potential mutual benefits that would arise from the integration of both initiatives under a common architecture framework, highlighting: resource optimization, scalability of functionalities, quality and quantity of data available and the increment of user community.

Sustainability within an economic development and quality of life improvement framework (decoupling), is a recurrent aim for "Smart" initiatives which is mentioned several times also in those use cases described by the INSPIRE data specifications. On the basis of these common scenarios, Data Specifications are intended as reference material and starting point for discussion about integration of models and platforms. Special mention is done for "Facilities" and "Utilities" scopes (Annex III Themes: AF, PF, US) where the "Smart" issue was raised openly during the process and even pilot projects were outlined (i.e SGDI Project for SmartGrids - CIM). In this context Smart Solutions could play a very interesting role also for the INSPIRE Maintenance and Implementation Framework (MIF).

In order to effectively manage such integration, ensuring their consistency and scalability following a long term strategy at different levels of Government (local, regional, State, European), this article proposes in addition to put in place Architecture Methodologies (i.e ISO/IEC/42010, TOGAF) (1) a global vision based on the identification and re-usability of components, and (2) a common terminology to facilitate the dialogue among different communities and stakeholders.

## PALAVRAS-CHAVE

SDIs, Smart Solutions, Smart Cities, Smart Grids, INSPIRE Data Specifications, Data Architecture.