

S. I. T. R.

Territorial Information System of Sardinia

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The S.I.T.R. project.

The Territorial Information System of Sardinia (S.I.T.R.) is a federated architecture unitary system, based on the sharing of geographical, environmental, urbanistic, cultural, geo-referenced data of the whole territory of Sardinia Independent Region.

The S.I.T.R., according to the Information Society Development Strategy of Sardinia, represents a homogenous and integrated functional part of it; it grounds itself on the European Union's INSPIRE Initiative.

The partaking of geographic information develops through a tools & technology predisposition, which allows a shared knowledge of the regional area, moving towards a prior evaluation of the prospecting choices. Hence it is needed the generating of a continuous information flow which has to be transferred in the territory government tools, available not only to the regional administration structure, but even to the local authorities, and private & public sectors, who will utilize the S.I.T.R. services, and, in the meanwhile, will give a contribution to the updating of the data.

The established solution, the very first in Italy, designed with affirmed information technology and interoperability technics, offers the possibility to produce and distribute cartography, through which it is possible to set up a territory government policy, universally participated, and referencing to every spatial areas.

Besides, a very important extension of the S.I.T.R. is the S.I.T. 2 COM. project, which is still on launching stage ; that one has the target to bring the territorial services towards the Townships, so that it will be possible to achieve an equally distributed and shared e-governance, and promote the environment & territory development.

The S.I.T. 2 COM. offers exclusive possibilities for the extension of the S.I.T.R. existing services, through the application of interoperability and applicative co-operation principles, utilizing hi-speed connections.

Sardinia Independent Region is aware that only through connected services, between the central Regional Administration and the practically operating local Authorities, it is possible to accomplish a homogenous, shared, effective territory governance.

The S.I.T.R. architecture.

The S.I.T.R. (and the S.I.T. 2 COM.) is structured following an informative architecture based on "n" levels, accomplished with the target to locate every single component and optimize the interaction interfaces between the different application modules, so isolating, typical functionalities and problems of the single layers.

The adopted nomenclature for the single layer mirrors the specificity of the offered system, qualifying the different features.

- *User layer*: it coincides with the ‘Point of Access Domain’; on that level there are gathered the services access functionalities, that the various users have in power to use. The ‘Geographic Navigator’ and the ‘front-ends’ of the applications belong to this layer.
- *Integration layer*: it coincides with the ‘Integration Domain’; inside this layer there are foreseen all the interoperability functionalities needed from the system, in order to manage properly the interaction between its own components that achieve the developed services.
- *Service layer*: it concurs with the ‘Application Domain’ , has been defined like this in order to emphasize its task of service supplier inside the system; it gathers the various services, which operate on shared servers, provided to the user applications.
- *Data layer*: it gathers all the various data typologies possessed at the moment, that constitute a part of the S.I.T.R. repository.

The adopted Standards.

The S.I.T.R. is founded on a ‘service oriented’ architecture, that, following the OGS’s approach about the architectural framework, has been realized according to the SOA’s guidelines; with this background, all the services, supplied by the S.I.T.R., will be realized through the composition of different web services.

The applicative interfaces services will be achieved on the basis of the ‘Open Geospatial Consortium’, and, nowadays, ‘Draft International Standard (DIS) ISO 19128 (Open GIS Reference Model), and then through the use of WMS & WFS, that will be counselable by the ‘Geographic Mark-Up Language’ (GML).

The geographic informations will be documented by the ISO 19115 standard for the Metadata, and will be published according the ISO 19139 profile.

The ‘Domain Port’ has been accomplished using ‘Open PDD’, that allows the interaction with any other authority by means of the ‘E-government Envelope’, designated by the CNIPA (*Translation from Italian: Public Administration Informatics National Centre*).

The exertive solutions and the technologic architecture are consistent with the major regional and national projects, which admire the interoperability and the applicative co-operation, like SIGMATER, (*Translation from Italian: Cadastral & Geographic Integrated Services for Territory Administrative Monitoring*).

The S.I.T.R. has been designed according to the INSPIRE proposal (*IN*frastructure for *SP*atial *InfoR*mation in *EU*rope), together with the target to make available harmonized and high quality geographic informations, in order to give a help about formulating, achieving, monitoring, and evaluating the European Common policies.

The S.I.T.R. & S.I.T. 2 COM. services.

1 - The ‘Thematic Channel’

Inside the Project a general portal has been realized, designed as a ‘container’ and ‘spreader’ of territory government services & informations, approachable as ‘thematic channel’ from the regional official web-site. The institutional mission of the geographic information channel is indeed creating a system that enhances the knowledge & expertise patrimonies of the involved offices, and offering proper services on the web that simplify data circulation and know-how sharing.

2 - The 'Geographic Navigator'

The 'geographic navigator enables the visual surfing of the available cartography through the web; the access is differential basing on the user profile, and allows different users the visualization of different data, and the activation of different functionalities.

3 - The applications

The advanced users requirements, (urban technicians, environment operators, landscape planners, and generic professional ones), are in the S.I.T.R. satisfied by territorial evolved applications, which have been developed either in web/html background ('lite client') either trough the extension of GIS desktop application functionalities ('rich client'). The specificity of those applications concentrates mainly on the back-end layers, where the business-logic is implemented through the development of basic web services typologies, (for example: cartographic localization services, editing services, linear and areal measurement services), and the integration with the pre-existent services. Those basic integrated web services are properly orchestrated trough a process manager, that guarantee the operativeness of the web procedure.

3.1 – Township Urbanistic Plans manager

It concerns the control and the managing of the Township planning (PUC), basing on the Regional Law # 23/1985, and Regional Law # 45/1989.

3.2 – Hotel & Receptive Structures monitoring

It creates and manages a geo-referenced data base of regional hotels and receptive structures; the data base is consistent with the guidelines of the Regional Law # 22/1984, and Regional Law # 27/1998

3.3 – Urbanistic and Building Observatory

It allows the Townships to provide the informations concerning their own building patrimony, through the monitoring of 'implementing plans' and 'building licenses', together with the correlated urbanistic transformations.

3.4 – Seaboard E-Corridor

It is designed as a seaboard patrimony control, protection, and improvement agent; this application is connected with the 'Marine Federal Property System'

3.5 – Web Sardinia Viewer

This application provides a 3D viewer for Sardinia, with an integration, inside, of cadastral and multi-scale data.

3.6 – Environmental and Cultural Patrimony Manager

It provides a variety of tools for the integrated managing geographic data, concerning Sardinia's environmental and cultural patrimony.

3.7 – Headquarter Service

Inside the existing S.I.T.R. Central Lab a 'control headquarter' will be created, in order to manage and integrate the services for the local communities; besides, in every Township it will be installed a local, S.I.T.R. integrated, and interoperable G.I.S.