

# ANAGS: THE HEALTH REGISTER SYSTEM OF REGIONE SARDEGNA (REGION OF SARDINIA)

With the AnagS project, the Regione Autonoma della Sardegna (Autonomous Region of Sardinia) set itself the target of creating a system to manage its health register, in support of the whole regional electronic healthcare system. The central point of the project is a model that aims at overcoming the traditional difficulties of aligning and certifying the population data that is at the basis of managing the Regional Health System (the Region, 377 municipalities and 8 Local Health Authorities within the area). In fact the main aim of the AnagS project is to align the health register of Sardinian citizens with the databases located at the municipalities (for population and residence data), those at the Local Health Authorities (for relations with GPs) and the register of the Ministry of Finances (for tax codes).

## SCENARIO

The Autonomous Region of Sardinia wished to solve the delicate and equally important problem of aligning the registers of both the municipal and medical sectors that traditionally experience communication problems.

In fact, faced with a real opportunity presented by the go-live of the of the INA-SAIA operating flows, the Regione Autonoma Sardegna implemented a synergetic strategy compared with the one started by the Interior Department, seizing, at the same time, the chance to launch the Anagrafe Sanitaria Regionale (Regional Health Register) and the conditions that allow future enhancements of the System towards wider reaching sharing processes, both towards the Local structures (ASL) and towards internal structures (other regional General Departments) and central managements (MEF and Interior Department). This activity involved all the Sardinian municipalities (377) and the ASLs (8).

The AnagS project therefore created a regional database containing:

- Master data and residence data aligned by the municipalities
- Medical Reporting Data aligned by the ASL and the master data of operators
- Tax codes of patients and GPs aligned with the Ministry of Finance

The centralisation of this information, which until now had been spread over the local area, and its constant updating, allowed the problem of redundancies caused by the presence of wrong or redundant data at the Local Health Authorities to be solved, highlighting areas where the management of patients among the various ASLs overlapped and regarding GPs and allowing the timely registration of events regarding the citizen's life.

The establishment of a "certified" database containing master data allowed the Regione Sardegna to use AnagS as a master "brick" for the other regional healthcare systems such as SISAR, MEDIR and RTP. In order to proceed according to the laws on privacy and sensitive data, master data was also de-coupled via an anonymisation/de-anonymisation system integrated with ANAGS.

## SOLUTION

The entailed System can be represented as in the following figure, illustrating the macro-components that characterise it.

### **AnagS-Services**

It is the regional health register equipped with relevant components: with regard to the persistence of the master data, a powerful and reliable Oracle RDBMS, configured with maximum availability is managing the application logic of elementary and/or composite services, with highly modular logical components developed with Open-Source (J2EE, JBoss, ...) technologies; two powerful servers are delivering services towards Municipalities, ASLs, other Authorities and citizens via Web-based user interfaces and by providing Web-Services for access to consulting services.

The AnagS-Services module includes automated procedures for the mass and formally correct management of data flows and a series of application services addressed to users, exposed via Web-based interfaces. In its AnagS-Services component, the AnagS system enables the use of a set of functional services for the automated updating of master data coming from ASLs or Municipalities and for managing the same data automatically, semi-automatically or manually.

### **AnagS-Host**

This is the component that receives the data sent by the municipalities and by the ASLs, maintaining the history of communications and allowing the registration/updating of the Patients Master of the Regione Autonoma Sardegna.

### **AnagS-Client Comune (AnagS-Client Municipality)**

This is the software module supplied and installed at the municipalities that allows upload towards the AnagS-Host module and towards the Centro Nazionale Servizi Demografici (National Centre of Population Services), of data concerning master changes according to INA-SAIA protocol; the AnagS-Client software module has following features:

- based on Open-Source technology,
- totally portable (independence from operating systems)
- requires very low consumption of system resources (it is also fully operative on PCs not of the latest generation)
- it does not restrict municipal Administrations and ASLs in any way
- complete with a system for historization and search of communication data

Through **AnagS-Client ASL** (similar in concept to the AnagS-Client Comune) the Sardinian Local Health Authorities will be able to upload master data updates regarding their relevant areas (domiciled, temporary residence,...) and updates regarding:

- GP lists
- Lists of Paediatricians that can be selected freely
- Patient-Doctor associations managed via proprietary systems for Selection and Repeal

The AnagS System is completed with the Selection and Repeal module that allows the following categories of information to be managed:

- master data of Patients and potential Patients
- master data of GPs, nursing homes and association forms
- master file of Specialist Doctors
- lists and statistics

Finally, via components for exposing the services of the AnagS-Services module, the systems of the Sardinian Electronic Healthcare (SISAR, MEDIR; RTP, etc..) can access the regional master data to call up a list of consultation services, certification and master data alignment in an anonymised mode.

## REPLY VALUE

Santer Reply has managed the project in the capacity of agent in close direct contact with the contractee and in a synergetic manner with the other partners of the group, achieving the objectives in the envisaged timescales. The added value provided by Santer Reply can be described in the following terms:

- **projectuality:** the project respected all the envisaged milestones, based on the number of municipalities involved, in spite of the objective difficulty in applying a model of circular master data within municipalities/regions/ASLs different from the pre-existing national formats;
- **capillarity:** the project reached nearly all the local authorities, thanks to a close synergy with the reference general department, ANCI and the local companies responsible for the business systems of the local authorities;
- **integration:** Santer Reply provided a team of resources able to cover autonomously all the project aspects, both of a functional type (competences on municipal and healthcare master data) and of a technological type (service-oriented architecture based both on components developed ad hoc and on legacy components).

Santer Reply offers the market its own competences and solutions for carrying out other master data integration projects both at local and regional level, able to considerably raise the level of master data certification.



Santer Reply is the Reply Group company specialized in the development, implementation and management of vertical application and services for Local Health Authorities, Hospitals, Municipalities and Regions. Santer Reply aims at helping the healthcare system and public administration during the change process, thanks to its ability to plan, develop and manage web-based solutions having high innovative content.

Santer Reply offers: integration capability and project management; knowledge and skills specialized in the healthcare market, as well as in the administrative, hospital, territorial and managerial sector; delivery quality; knowledge and competence specialized in Public administration, services to citizens and service management for public consortiums; strong application focus, consistent with the infrastructures and the services offered by the Social Security Information System.