SPINA: a 3-layer sw system to support the planning and evaluation of the field activities.

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1. Abstract

The Italian National Environment Agency (ANPA) is currently implementing a global programme to reshape the dataflows of environmental-related information.
The pre-existent star-shaped configuration (form the periphery to the centre and vice-versa) has been moved to a network of peers (SINAnet), whose activity is specialised according to a field of expertise or a territorial domain.
In order to allow the interaction on SINAnet, a thorough effort has been started to harmonise tools and protocols to be exploited by all the involved parties.
In this context, a specific attention has been devoted to support the organisations entrusted with the activity of law enforcing in the environmental sector.
Such organisations in Italy are specialised branches either of the police forces (acting for the Ministry of the Environment) or of the local environmental agencies (managed by the regional governments).
ANPA, which has the responsibility for setting the reference standards at national level, has defined the main functional requirements for data collection and processing.
Such system has been called SPINA, an acronym from the Italian words defining a system managing the information collected during the field activities to control and protect the environment.
Afterwards, ANPA has launched a tender to select the best suitable technical architecture to implement such requirements.

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As a result, a 3-layer architecture has been adopted, fully scalable from local to geographical networks without major modifications. The sw applications, developed according to Open Source standards, are compliant to a large set of hw platforms (to take into account the large independence of the target organisations, as far as the procurement processes are concerned).
Due to the particular content of the information SPINA has to deal with, a special focus has been set upon the security issues, to minimise the risks of not authorised accesses to the data.
Basically, SPINA is based upon two main components, where the first is devoted to data acquisition (also form other on-line systems) while the second one is meant to support the data analysis (to plan the filed activities and/or to evaluate the state of the environment).
Actually, the first stage of implementation has been completed, while a second one is under development.
The specialised command of the Carabinieri, (CCTA, acting directly on behalf of the Ministry of the Environment) has been directly involved in the definition of the GUIs and in the system test. CCTA is currently exploiting SPINA in its operations, while some other local environment agencies are co-operating to refine and extend the system.
The target is to have various SPINA instances installed on different organisations and able to co-operate (e.g. supporting data analysis across administrative boundaries).