SITAR project. New approaches and methods for an open data archaeology of Rome

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SITAR (*Sistema Informativo Territoriale Archeologico di Roma - Archaeological Territorial Information System of Rome*) was launched in 2008 by the Soprintendenza Speciale per i Beni Archeologici di Roma in order to digitize and gather all the scientific data coming from the archaeological excavations and the geological research surveys carried out within the territory of Rome and Fiumicino. Its goal is to ensure the visibility, transparency and dissemination of the scientific data on archaeological excavations in the city of Rome: a digital registry dedicated to Rome's heritage, free for all to access and consult.

In 2020 a new website has been launched, in both Italian and English version, in order to provide more contents to the users (links, useful tutorials, resources, publications, etc) and to share approaches and methods with the community as a whole.

Since the beginning, SITAR main goal was to provide the community involved in the study and preservation of the archaeological and historical heritage of Rome with a useful support for processing archaeological data towards a shared urban co-planning approach. For this reason, unlike other similar experiences at national and international level, feature representation is no longer symbolic, but archaeological data are processed after an accurate georeferencing process carried out by professional archaeologists. To date, the system brings together different types of data, ranging from archival documentation to single archaeological remains found during rescue excavations.

After thirteen years from the development of the first web application, from May 2018 a system re-engineering was started, aimed at merging the three original applications into a single system. The infrastructure is now hosted on the GARR cloud and has a modular architecture, so that each service is allocated on specific virtual machines. This choice stems from a twofold requirement: on one hand, to optimize the response to individual requests, and on the other to ensure specific maintenance of the single services.

Among the main innovations the creation of a Digital Library is to be noted. This powerful tool allows users to explore SITAR documentation (maps, drawings, scientific reports), filtering the results through specific parameters. The new Digital Library is served by the ELK Stack: it uses the Elastic Search as search engine, Logstash for the index creation and Kibana to generate effective view on the data. Digital documents are indexed through an automatic OCR process and the system can retrieve the keywords used to search within every single document.

The final objective of this new re-factoring activity was to align SITAR with the FAIR DATA philosophy and therefore to guarantee an easy and well documented data acquisition. For this reason, SITAR data can now be acquired by any user through direct downloads thanks to the main available OPEN FORMATS (GEOJSON, GML2, GML3, KML; GEOTIFF, GEOTIFF8, SVG, CSV), through specific requests to the dedicated GEOSERVER instance or, at an upper level, thanks to REST API

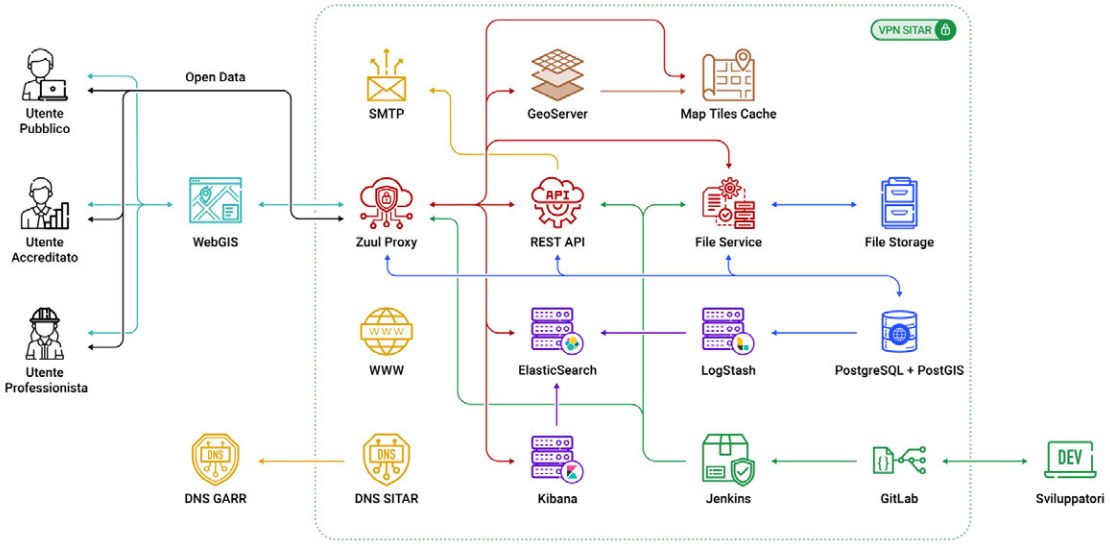

Figure 1.

services. The publication of the API allows the users to dynamically exploit the SITAR dataset, negotiating the protocol and the format according to its specific needs.

It is worth noting that SITAR database – that currently stores more than 6,000 excavations, 25,000 archaeological features and 100,000 attachments – adopts CIDOC CRM Archaeo as semantic model and the data have been extracted and represented in RDF, using the XML language. Moreover, as highlighted above, a new website was launched in 2020 in order to provide more content to the users (links, useful tutorials, resources, publications, etc.) and to share approaches and methods with the community as a whole.

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