

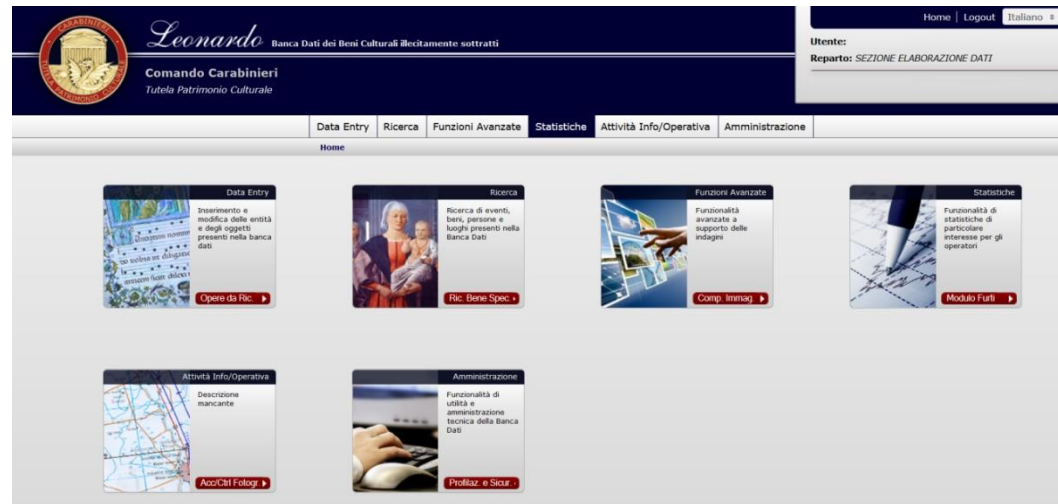
Innovation and technology with artificial intelligence to explore the web in search of stolen works of art – the S.W.O.A.D.S. project

Maj. Salvatore Rapicavoli





Leonardo is fed daily with all the descriptive and photographic information relating to the cultural heritage to be searched; in a computer archive, here are stored also all the data relating to the multiple activities that the Carabinieri TPC Command carries out to protect the cultural heritage of the nation.

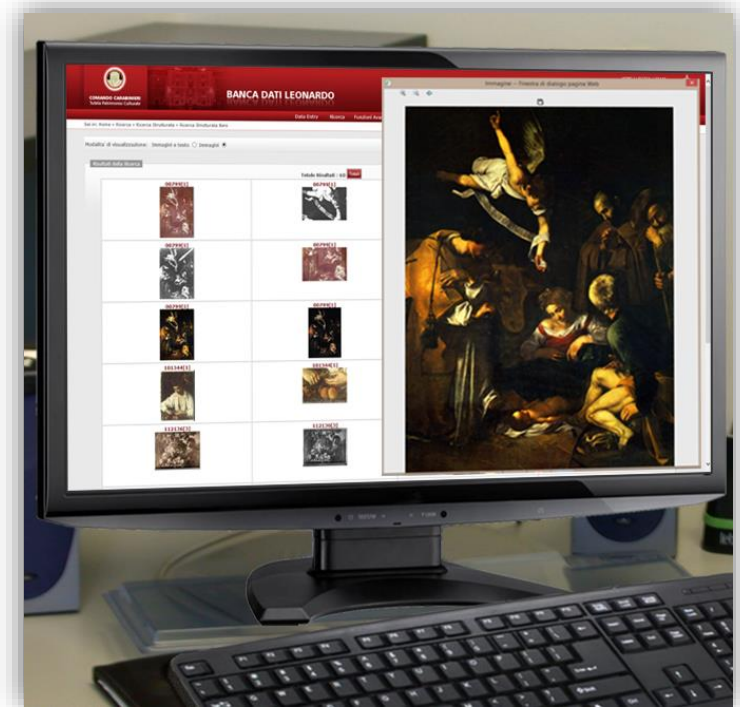


Information and analysis focal point in favor of other Police Forces is the role assigned to the Carabinieri Corps in the specific sector (by Decree of the Minister of Interior, April 28, 2006).

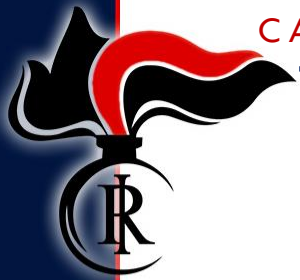


The global information assets consist of:

- *1.301.573 Stolen objects;*
- *949.172 pictures;*
- *66.863 theft cases;*
- *6.970.967 described objects .*



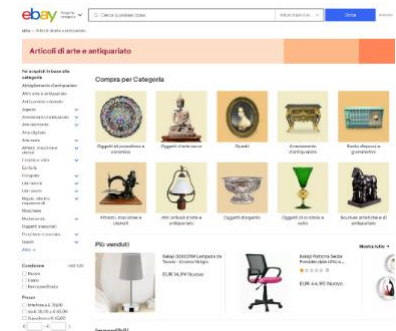
Among the assets described there are also those objects controlled during ordinary preventive activities, representing useful data for possible investigative activities.

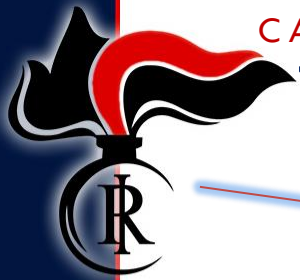


Searching for stolen WOAs

The illicit trade in cultural goods is carried out with traditional methods (antique dealers, auction houses, galleries) and through the Internet that:

- ✓ **allows** to immediately reach infinite number of recipients;
- ✓ **decreases** the business management costs;
- ✓ **makes** difficult to make fiscal and administrative controls.





Leonardo TPC, the Stolen Works of art database and S.W.O.A.D.S.



S.W.O.A.D.S.
Stolen Works of Art Detection System



Stolen Works of Art Detection System

Project n.114.5.1 – Co-financed by EU ISF Program 2014-2020



Total budget: 5.112.500 €

April 2021- June 2023



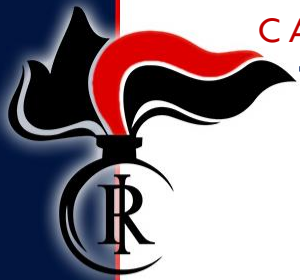
The proposed design solution consists, on the one hand, in the creation of a new system for the search and identification of stolen works of art and, on the other, in the evolution of the existing "Leonardo" system through substantial evolutionary implementation interventions of its main software components, necessary to obtain better results from the interaction with SWOADS.



Leonardo TPC, the Stolen Works of art database and S.W.O.A.D.S.

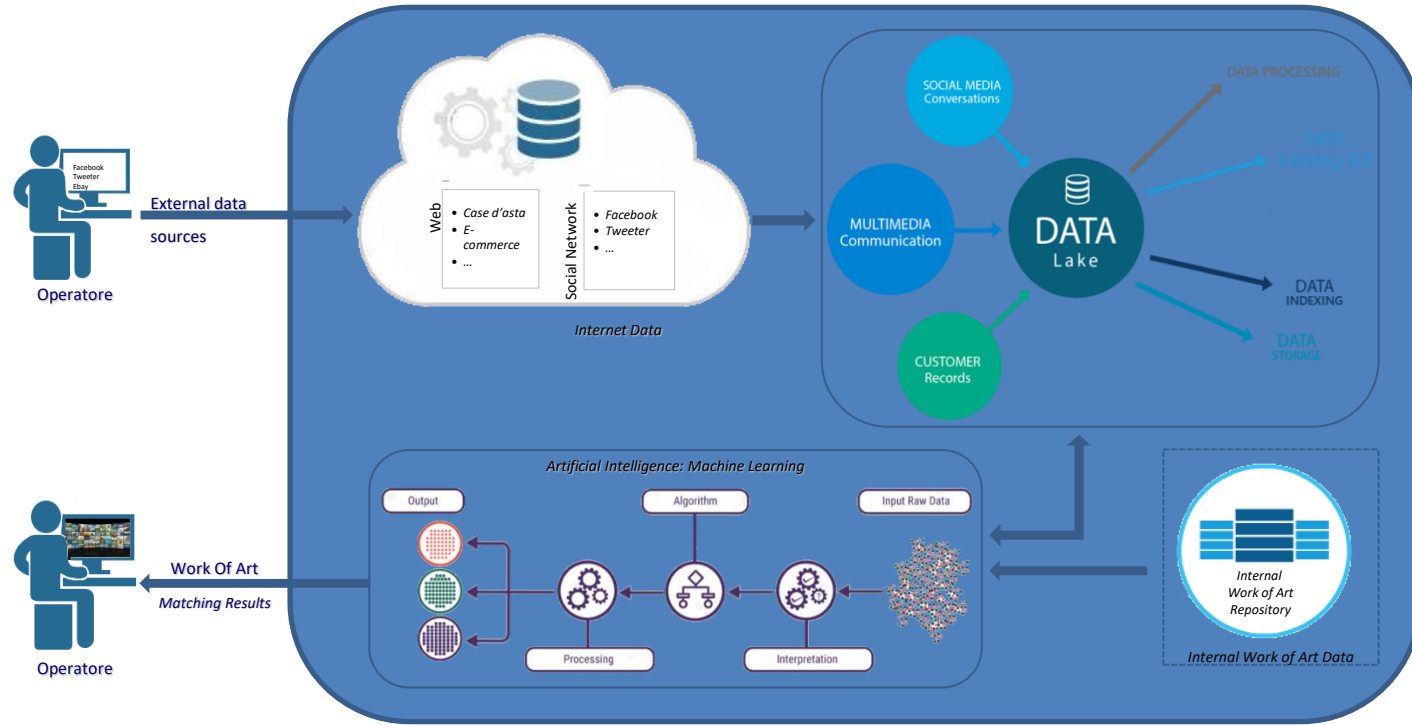
The project aims to create an active support tool in the fight against illicit trafficking of cultural goods, exploiting and implementing state-of-the-art IT solutions that, in addition to managing functional and organizational processes of the CC TPC Command, optimize the monitoring and inspection of the channels through which stolen works of art are placed on the market.





CARABINIERI COMMAND FOR THE PROTECTION OF CULTURAL HERITAGE

Leonardo TPC, the Stolen Works of art database and S.W.O.A.D.S.

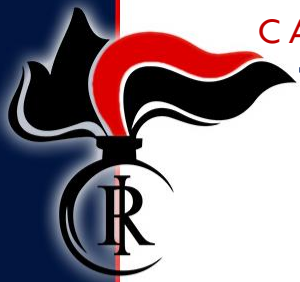




MAIN GOALS:

- massive increase in the number of positive feedback on websites and in the expansion of the force of action to be able to investigate both social media and the "deep web" with automatic search processes of data of interest;
- simplicity of request and numerical increase of photographic assessments, required by the National LEAs;
- creation of an Italian SWOADS "cell" as a starting point for further transnational projects, for the exchange of information and collaboration between specialized sections of the LEAs of EU member countries.

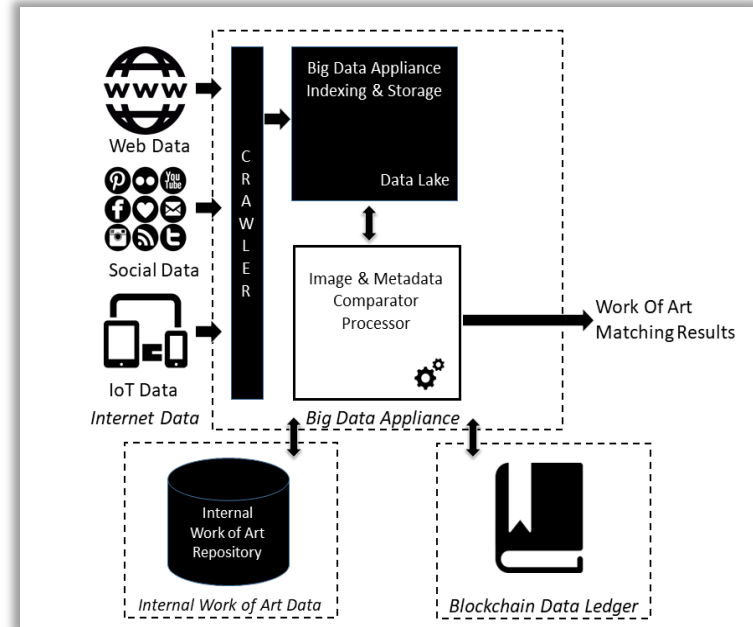




Leonardo TPC, the Stolen Works of art database and S.W.O.A.D.S.

SWOADS allows the automatic collection of potentially useful data from the web, the deep web, social media and those deriving from the transmission, carried out by LEAs operators through a web interface and a mobile application, of photographs of assets obtained during operational activities.

This information, merging into a single container ("Data Lake") is reorganized and structured, to be analysed with tools for the automatic comparison of images and advanced search of textual and descriptive contents, of the stolen works contained in the reference databases (Database of illicitly stolen cultural heritage, managed by the TPC).

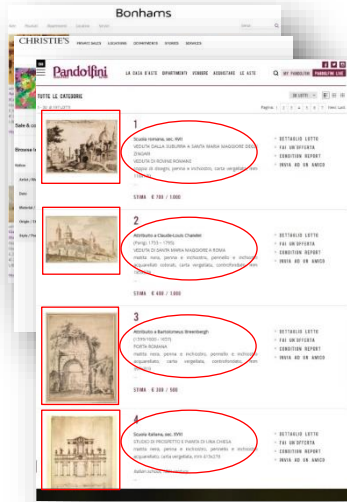




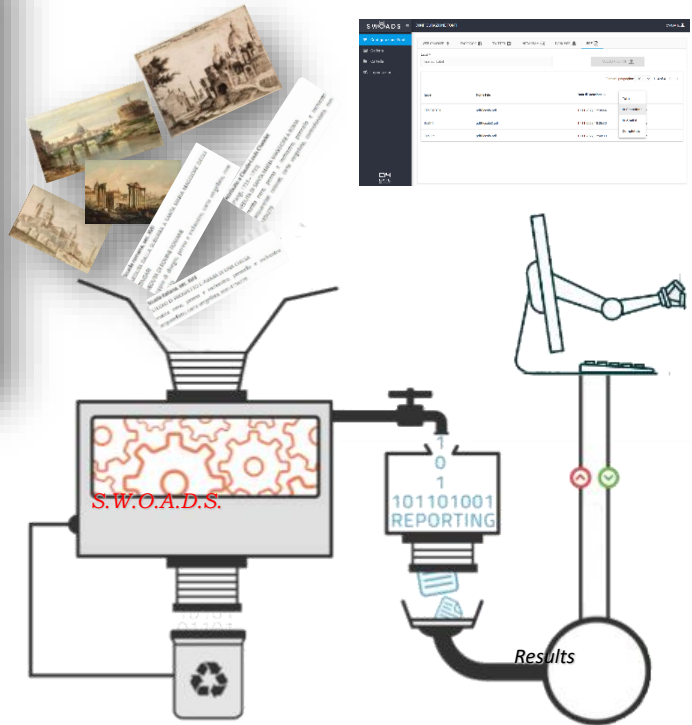
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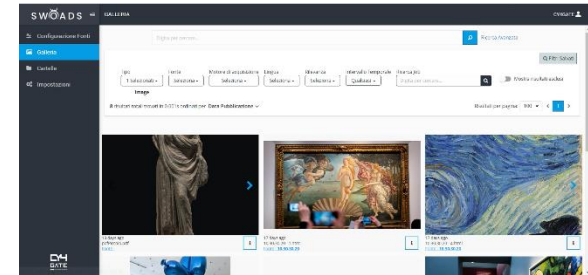
External sources



Data processing



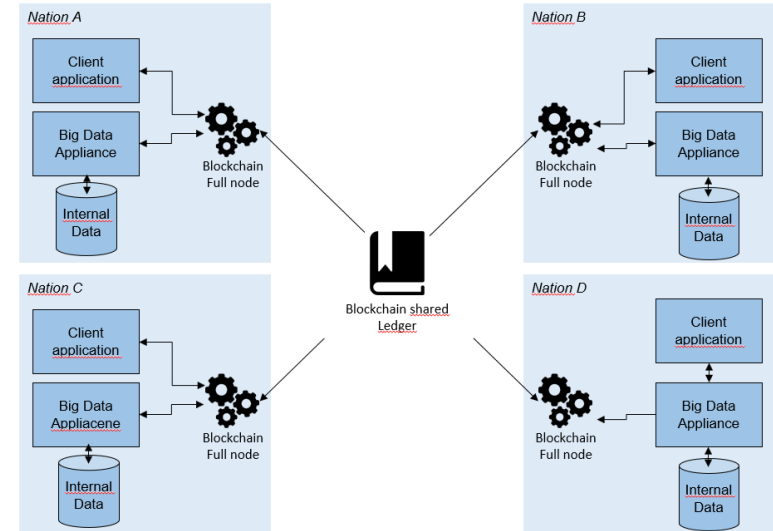
Results

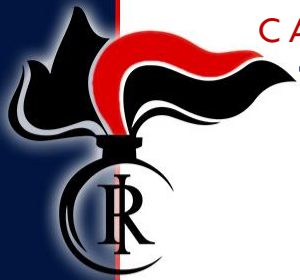


Numero Immagine	Fonte Immagine	Sito Originale	Data Creazione	Immagine	Azione
63901.jpg_3.jpg	gfm	hermannsburg.com	1671522746250		Dettaglio Immagine
63901.jpg_3.jpg	gfm	hermannsburg.com	1671522746250		Dettaglio Immagine
73271.jpg_1.jpg	gfm	hermannsburg.com	1671522746257		Dettaglio Immagine



The software package of the SWOADS cell is available to be shared with all countries wishing to install this system, with the aim of acquiring the ability to automatically search for stolen cultural heritage, present in their national databases, as well as to be able to join the SWOADS network and thus have the possibility to locate their assets abroad, in countries where SWOADS will be used.

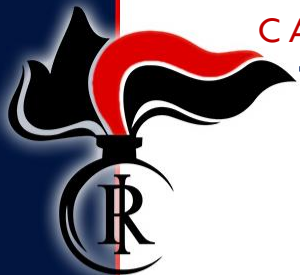




WORLD POLICE SUMMIT

The S.W.O.A.D.S. project led the Carabinieri Corps to win the Innovative Police Force Award as the best project in the Innovative Police Force Of The Year category at the World Police Summit 2023 (Dubai, March 7-9).





Thank you.

Maj. Salvatore Rapicavoli

