



ARTECO
INTELLIGENT VIDEO SOLUTIONS



*The Power of Seeing...
Without Watching*

Met.Ro.



Metropolitana di Roma s.p.a.

Rome Subway: Solution Story



Problem: After the terrorist attacks on London in July of 2005, Metro systems around the world were challenged with the reality of protecting not only the infrastructure of their transportation systems but the lives of the citizens who use the trains on a daily basis. Italy's largest metro system located in Rome was concerned with potentially harmful abandoned objects at its individual stations similar to those used in the attacks on London. The major concern was that even the most effective guard may become distracted and miss an abandoned object left in a critical zone.

Goal: Enhance the overall security of the Rome Metro through state-of-the-art Intelligent Video to create a more efficient system that alerts security personnel to abandoned objects or other suspicious behaviour in real-time while simultaneously recording every second of the event.

Solution: After Arteco reviewed the site it was determined that many of the existing cameras and CCTV infrastructure could be preserved and used with Arteco IVS. This significantly reduced the cost of the upgrade to the City of Rome since there was very little retrofitting required for the installation. The major concern with achieving the goal of the solution was how the high amount of foot traffic at the busiest stations during rush hour times would reduce the effectiveness of the abandoned object application. Human interference and physical obstruction dramatically affect the ability to detect abandoned objects. All video analytic programs have difficulty effectively detecting abandoned objects when there is frequent and intense change of background (i.e. constant movement) and the Arteco Team was ready to tackle this challenge.

To combat this issue and dramatically increase the effectiveness of the system, Arteco developed two key enhancements to its abandoned object application:

Perspective: This analytics upgrade to the Arteco IVS enhanced the accuracy of the solutions abandoned object application by allowing the system to detect the same sized object in spite of the objects relative distance from the camera lens. This enhancement helps the system accurately detect the same sized abandoned object placed either very close or far away from the camera.

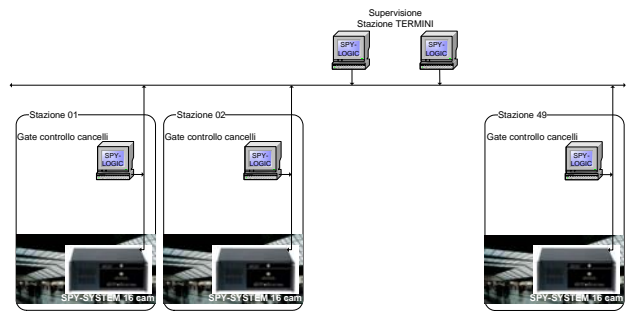
Interference: The second enhancement to the Arteco IVS improved on the industry-high false-alarm filters already present on very channel of the system. The "Traffic Filter" was developed to combat the issues presented by heavy foot traffic or physical obstruction when detecting the abandoned object. This unique background calibration parameter allows the Arteco IVS to accurately detect abandoned objects in the presence of heavy interference (movement) and objects that may be partially blocked by permanent structures (trash cans, benches, pillars).

Result: During the bid process for the Rome Metro, the test installation of the Arteco IVS accurately alerted security to a "drug deal" in progress in the test station. The suspects had a sophisticated "drop" system where first the money was dropped by one individual in a specific location (on top of a vending machine), then a second person picked up the money and left the package of drugs, and then a third individual came by and picked-up the package. Each event was detected and alerted to by the Arteco IVS despite significant traffic in the station and the relative small size of the package. All three suspects were apprehended.

The Arteco IVS is currently installed in 15 different stations of the Rome Metro each with 16 cameras. Over a twelve month period the Arteco IVS will be added to a total of 55 stations.

****IMPORTANT NOTE**:** The software enhancements realized from the Rome Metro have been implemented into the newest version of the Arteco IVS and come standard on all systems distributed to Authorized Arteco Dealers.

SYSTEM DIAGRAM



ARTECO-LOGIC Interface



ARTECO-6000 IVS





ARTECO-IVS SpA

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