

CASE HISTORY

ACCIAIERIE BERTOLI SAFAU S.p.A.

Gate automation for railway gate control

The ABS plant in Pozzuolo del Friuli is the first Italian steel plant equipped with the innovative Aitek's system for the automated control of railway wagons loaded with scrap iron entering the plant.



The use of scrap iron in the steel production cycle has always been one of the distinctive elements of the Italian steel industry. The lack of raw materials, above all coal and iron ore, but also the extraordinary properties of this material, which is practically infinitely recyclable, have led Italy to first place in Europe for the production of recycled steel from ferrous scrap.

In a steel mill, scrap supply control activities are therefore strategic. All plants are organised to receive continuous, daily deliveries in order to ensure production continuity. In this scenario, the automation of control and inspection activities of incoming scrap iron loads is crucial to increase the operational efficiency of the plant.

Acciaierie Bertoli Safau S.p.A., a leading company in the production of crude steel in continuous casting, ingots, rolled products and special steels, has chosen Aitek technologies to equip the railway junction that leads to the production plants in Pozzuolo del Friuli (Udine) with an innovative system for the remote control of wagons loaded with ferrous scrap.

In order to automate the procedures of load inspection and checking the integrity of wagons in transit, the solution uses the software modules of the Sesamo platform, specially designed by Aitek to manage transit control activities at road and rail gates.

Advanced video technology

Arriving trains must pass at moderate speed through a metal-framed portal, positioned at the access track, on which a set of hardware devices consisting of six HD cameras and a laser scanner has been installed to detect the start of each wagon and the direction of the trains (incoming or outgoing).

Specifically, the images acquired by the cameras positioned on the metal portal allow - by means of panoramic shots from above - the visual inspection of the loads contained in each wagon.

For each passing train, the number of wagons is automatically detected, while a special software module of the Sesamo suite uses OCR technology to process the images from the cameras positioned on the portal and detect the UIC code of each wagon. All videos of visible surfaces are associated with the corresponding UIC code and are immediately available to the gate operators.

▶ **Easy-to-use operator interface**

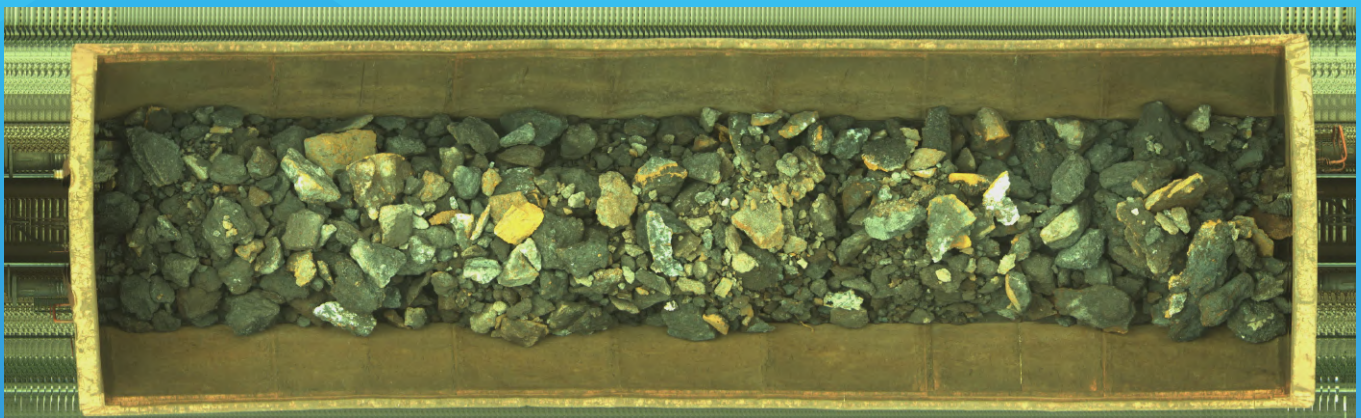
All the information acquired by Sesamo through the on-field devices is available in real time on a web interface, where operators can control the railway gate without the need to physically man it. The gate operators can carry out remote inspections by accessing the acquired HD images, search the transit archive and check the operating status of the devices using special diagnostic tools.

The transit archive displays the list of trains, each identified by date/time, transit duration and number of wagons detected. After selecting the train of interest, operators can inspect the loads and the integrity of the surfaces of each wagon.

▶ **The first solution for remote inspection of ferrous loads**

Maintaining high technological standards in all steps of the production process is essential to produce high quality steels: non surprisingly, the ABS plant in Pozzuolo del Friuli is one of Italy's cutting-edge steelmaking centres.

This solution for the automated control of the rail gate helps to strengthen the technological leadership of ABS, the first Italian steel company to be equipped with a system for the remote inspection of ferrous scrap that replaces the traditional control operations carried out by personnel when the train is stationary.



Above: an image of a railway wagon load acquired by the camera positioned at the top of the portal.

Right: an image of a UIC code of a railway wagon acquired by a side camera.





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