Visy has been delivering Rail OCR portals for DB Netze locations in Germany since 2018. One of the most important requirements set by the customer was to have extremely high quality images of passing cargo, to which the Visy solutions answered. Today, Visy Rail OCR portals around Germany deliver to DB Netze high OCR hit rates of 98%, as well as high quality images that are used in making repair assessments.
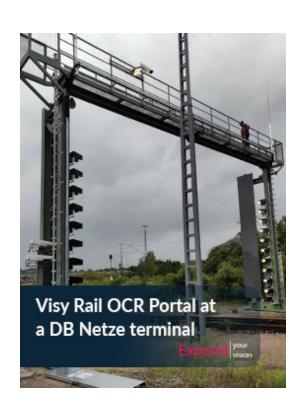
DB Netze AG is the rail infrastructure company of Deutsche Bahn AG in Germany. DB Netze is responsible for a rail network spanning 33,300 kilometers, making it Europe's largest rail infrastructure provider. As a massive player in the rail space, DB Netze creates all the prerequisites for safe, environmentally friendly, and sustainable mobility in Germany and Europe.

DB Netze selected Visy as its OCR and Train Gate solution provider in 2018. The first site to go live was in Nuremberg. Having met all the strict testing and performance criteria, DB Netze made Visy its preferred OCR provider and rolled out the Train Gate solution at 6 other locations including Hagen, Maschen, Mannheim, Munich, Seddin, and Seelze. There are more than 12 Visy Rail OCR portals deployed in these locations.

DB Netze has experienced growth in throughput capacity after the implementation

Every month, up to 35,000 wagons pass through each location carrying cargo worth hundreds of millions EUR. Thanks to the real-time data collection technology behind Visy Rail OCR portals, trains can travel at their normal operational speeds thus allowing increased throughput capacity at each site. Indeed, Nuremberg broke a throughput record with 38,000 wagons shortly after going live with Visy Train Gate.
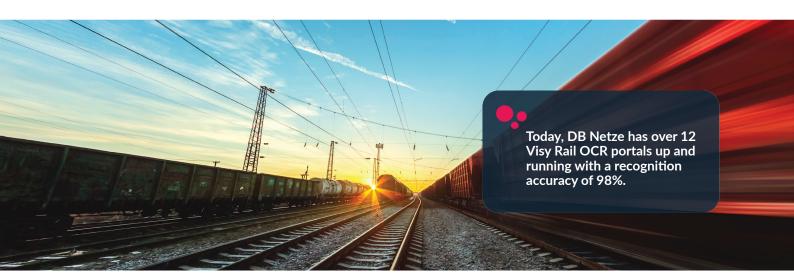
DB Netze offers its customers images of the passing vehicles as a new service. One of their customers is DB Cargo, Europe's leading freight railway. DB Cargo uses the images to digitize their maintenance processes especially to identify damage on their vehicles.

Visy Rail OCR Portal at a DB Netze terminal

Before the implementation of Visy Train Gate systems, DB Cargo faced 3 main challenges:

1. Wagon numbers are often in bad condition or even obstructed and therefore difficult to verify for human

2. The damage assessment process was slow, dangerous, and costly as it was performed by a clerk working on the tracks conducting physical inspections

3. A standard OCR solution could not meet the individual site requirements due to the limited possibilities of portal placement and the terrain which forced trains to vary their speeds

The Visy Train Gate system has helped DB Cargo to resolve all operational challenges. Visy Rail OCR portals provide extremely high OCR recognition rate results of above 98% in all the locations. This is due to Visy's Deep Neural Network (DNN) which consistently provides the highest OCR read rates in the industry. For those wagons with obstructed numbers, Visy implemented RFID to ensure that the wagons have transponders which allow automated wagon verification.

Today, DB Netze has over 12 Visy Rail OCR portals up and running with a recognition accuracy of 98%.

The portals' functions are optimized with a speed measurement feature

Visy Rail OCR portals are equipped with up to 9 ultra-high resolution cameras which provide the foundation for OCR and allow clerks to perform their damage inspection duties from a remote location. This means that cargo continues to move and does not need to stop for inspection purposes. Upon viewing images from the safety and convenience of a remote office, clerks can verify that the cargo is safe for travel or flag it for repairs. This method of working increases the efficiency of each clerk allowing them to inspect a much larger number of assets per day as compared to the previous inspection process.

The site challenges affecting train speed are managed with Visy Measurement Portals (VMP). The laser-scanner based system measures train speed in real time and adjusts how the cameras and lights function relative to the changes in asset speed. This means that the train conductors are free to operate as they see fit without any concern about how the OCR system may react. The trains operate in a safe and efficient manner while the Visy system responds to the trains' movement patterns and performs its imaging and OCR functions.

Direct data exchange from Visy Train Gate to DB Netze's internal system

One of the most important features of the DB Netze OCR system is its interoperability with third-party systems. VisyXMLGate automatically shares wagon and cargo data with the InfraView system. This integration allows exporting all Visy system data directly to DB Netze's internal user interface. Therefore, any new way of working for the DB Netze staff is created by their internal processes and not based on the requirements of a third-party system. The DB Netze staff, as far as they are concerned, are using their own, internal system and do not need to switch to third-party screens. Behind the scenes, their existing computer system is automatically updated with information from the Visy system, but their front-end system remains in their control with their desired feature set.

Visy's German partner, LMT GmbH, played a critical role in the delivery of the system and provides aftermarket support and maintenance services. By having a physical presence in Germany, the LMT team is prepared to respond to any DB Netze site within a strict SLA window. The local partner model means that the engineers who deployed the system are also involved in support services which results in fast resolution times to any system abnormalities which may affect performance. Together Visy and LMT provide the highest system uptime in the industry and DB Netze keeps their cargo moving to meet or exceed all key performance indicators.

Visy Oy

Visy provides process automation ecosystems to manage the flow of traffic, cargo and personnel in transportation hubs and logistics centers. Every asset that goes in or out of a facility, whether by road, rail or quay, can be managed by Visy technology.

Using vision technology and other data collection tools, Visy ecosystems manage more than 5,000,000 automation tasks per day in over 25 countries.

Visit www.visy.fi to learn more.

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