



CASE HISTORY

Leonardo Company S.p.A. Copenhagen Metro

Aitek technology for the *Metro* of the future



Although it sounds futuristic, this is already a daily feature for commuters in Copenhagen, who travel on fully-automatic underground trains that are run through a sophisticated driverless traffic control system.

The solution

Since 2019, the two existing city lines will become part of a new Cityringen route, serving downtown Copenhagen via 15.5 km.s of newly-built rail tracks and 17 stations.

Leonardo Company - project suppliers of the CCTV, access control and anti-intrusion systems - have chosen Aitek's AiVu platform for the video monitoring of the new line. One thousand video camera units ensure security on-board trains, at stations, at depots and along the tracks.

Aitek's fully-optional, all-features-included solution brings together video security and state-of-the-art video analytics functionalities for a secure and highly reliable monitoring.



On board security...

Our Cityringen solution includes 10 fixed video-camera and 2 digital video-recorders (NVR) on-board of 28 trains.

What's more, Aitek has developed an innovative video-analytics module for the real-time detection of people inside depot-bound convoys. This Empty Coach Detection (ECD) software module scans and compares live footage of trains leaving and returning to the depot for differences. Especially designed by Aitek for *driverless* systems, this ECD module is an absolute novelty on the panorama of transportation. Cityringen will be the very first underground to adopt this cutting-edge functionality.

...and infrastructure security

All video-cameras will be managed by an AiVu-NVR digital video-recorder that acquires, records and forwards video-stream to the control centre.

A range of Aitek video-analytics modules will monitor for threats (to people or facilities) including intrusion, overcrowding, tampering of video-cameras, crossing the yellow line, unattended items, persons/objects in restricted areas, such as on tracks and in depots.

Video Management Software

AiVu-VMS makes for user-friendly access to control and setting functions, such as live and recordings, alarms, *pan-tilt-zoom* functions for full display of details.

In order to guarantee top-level context-sensitive security, AiVu-VMS will be installed onto a highly reliable virtual platform supplied by Leonardo Company.

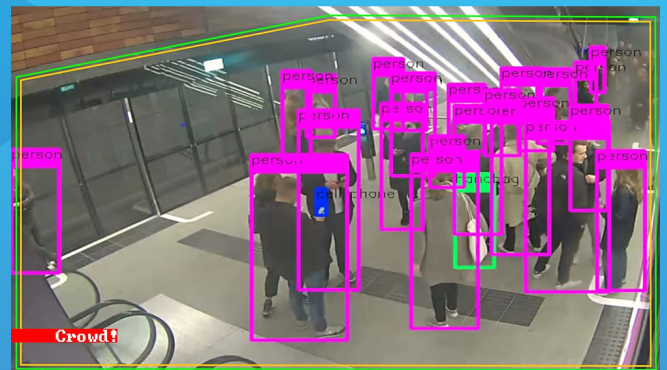
A new metro where security, technology and efficiency are key

Cityringen will help improve mobility in Copenhagen with shorter travelling times and greater comfort.

This excellent solution deploys quality of Aitek technology - the reliable partner in global projects demanding top performance.

Main functionalities

- Video monitoring of the new Cityringen line (17 metro station and 15.5 km.s of rail tracks)
- +1000 fixed and PTZ video-cameras
- Supply of an on-board CCTV system: 28 trains are equipped with 10 video-cameras and 2 NVR devices
- Video analytics for real-time event detection: obstacles/persons on the tracks, overcrowding, track crossing, abandoned objects, tunnel intrusion, tampering, intrusion into off-limits areas
- Innovative video-analytics module for the real-time detection of people inside depot-bound convoys





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