

Reference report Traffic & Transportation

Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina

Central control center “Drivusa” and Tunnel “1. Mart” in Bosnia Herzegovina

To ensure the uniqueness of the European transport system a Pan-European network of ten main transport corridors has been defined. The main objective of this initiative was to achieve a corridor agreement with common standards, technical elements, traffic parameters and levels of service.



One of them is Corridor Vc which connects Kiev (Ukraine) to the Adriatic Sea through Lvov and Budapest (Hungary). It consists of three branches, and branch Vc follows European route from Budapest (Hungary) to Ploče (Croatia), via Osijek (Croatia), Sarajevo (Bosnia and Herzegovina), interrelating with Corridor X on the route Zagreb - Belgrade.

At the territory of Bosnia and Herzegovina there is the longest part - 335 km - Vc arm of this corridor, which extends by its central area, mainly through valleys of Bosna and Neretva rivers, and areas with the highest concentration of population, natural resources and the work created ones.

Construction of motorway on Corridor Vc improves the connectivity of Bosnia and Herzegovina with neighboring countries and advances the potential for economic development. The project has strong support from the government of Federation of B&H, and it is expected to allow better integration of the country within the European economic and social structures.

Along Corridor Vc Tunnel “1. Mart” is located between Gorica and Biljevo. With almost three kilometers in length, it is the longest tunnel in Bosnia and Herzegovina and is one of the most modern and best equipped tunnels, which

Reference report Traffic & Transportation

Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina

has been automated with the SCADA system SIMATIC WinCC Open Architecture (WinCC OA) by BS Telecom Solution d.o.o.

Central control system in Drivusa, which is also based on WinCC OA, has been established as supervisory system for tunnel "1. Mart" and for more tunnels in Bosnia Herzegovina to come.

End user

PC Motorways FB&H Ltd. Mostar (Public Company Motorways of the Federation of Bosnia and Herzegovina Limited Liability Company)

System integrator

BS Telecom Solutions d.o.o. Sarajevo, Bosnia

BS Telecom has been established in 2002. It is a WinCC OA Solution Partner, and is present on the market as a manufacturer and supplier of complete information systems and telecommunications systems.

Realization

2014

Description

All subsystems are integrated into the SCADA system and can be controlled in separate tabs.

The control room is equipped with a large video wall and two identical command posts for two operators. Each of these places has the ability to control all subsystems in the tunnel.

The control center is connected to the tunnel with two parallel communication networks. One network is used just for the video system, and the other network is used to connect all the other subsystems. Both networks have the capacity of 1Gbps and are based on a redundant ring topology over fiber optic cables.

All end devices in the tunnel communicate over TCP/IP protocols with the control center. To collect signals from more sophisticated systems such as ventilation and lighting systems Siemens PLCs, such as SIPLUS 1214C are used.

Subsystems:

- Traffic information system (variable message signs, traffic counters, weather stations)
- Video system (video surveillance system and automatic incident detection system)
- Telephone calling system

Reference report Traffic & Transportation

Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina

- Fire alarm system
- Ventilation system
- System of tunnel lighting
- Radio system
- Sound system
- Water supply of the tunnel
- Tunnel substations

Technical data

Tunnel "1. Mart":

- 2 redundant WinCC OA Server, distributed system with central control system Drivusa
- 7,500 I/O's
- 46 PLC's SIMATIC S7-1200

Central control system Drivusa:

- 2 redundant WinCC OA server, distributed system with tunnel "1. Mart"
- 2 WinCC OA operator stations
- 50 panels
- 50,000 I/O's

Advantages / Benefits

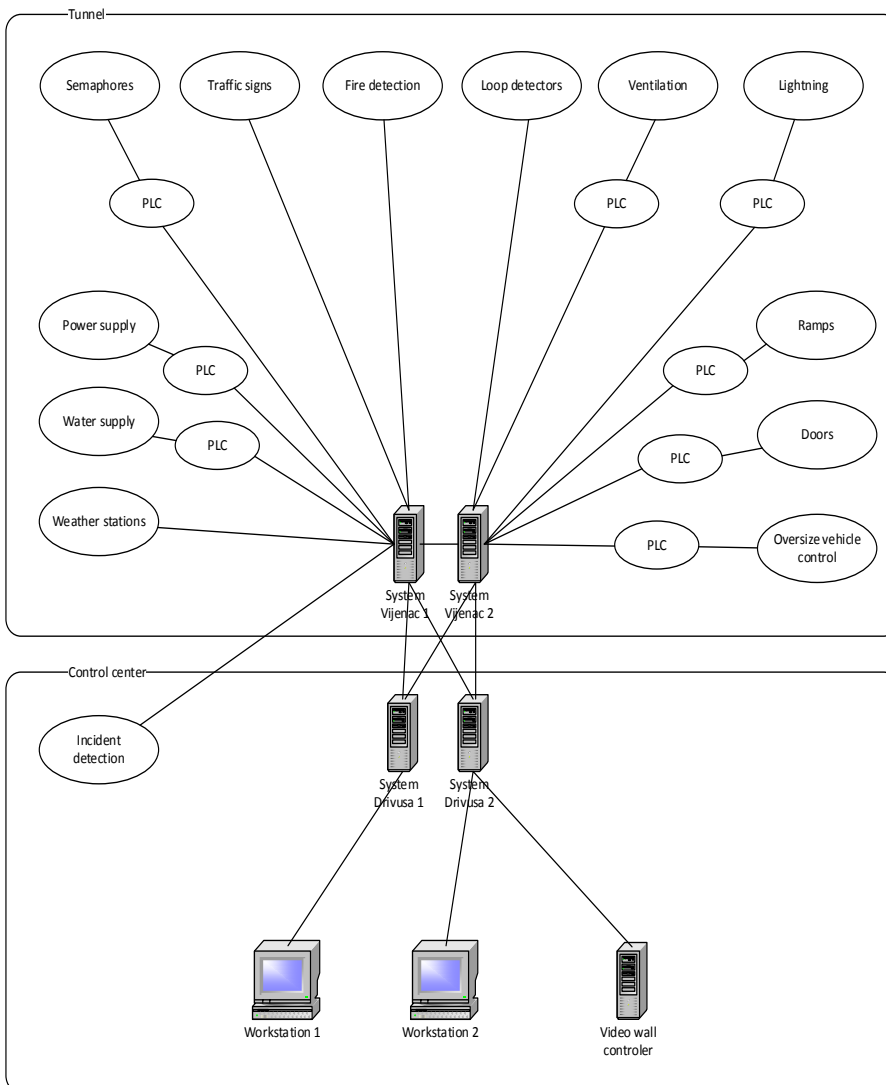
BS Telecom Solutions decided on WinCC OA because of its openness and flexibility to integrate various systems through different interfaces and control scripting.

It is planned to modernize further tunnels and integrate them into the existing system. Therefore the scalability of WinCC OA and the possibility for future expansions was a major benefit of WinCC OA.

Reference report Traffic & Transportation

Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina

Architecture



Reference report Traffic & Transportation

Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina

Pictures / Panels



Reference report Traffic & Transportation

Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina



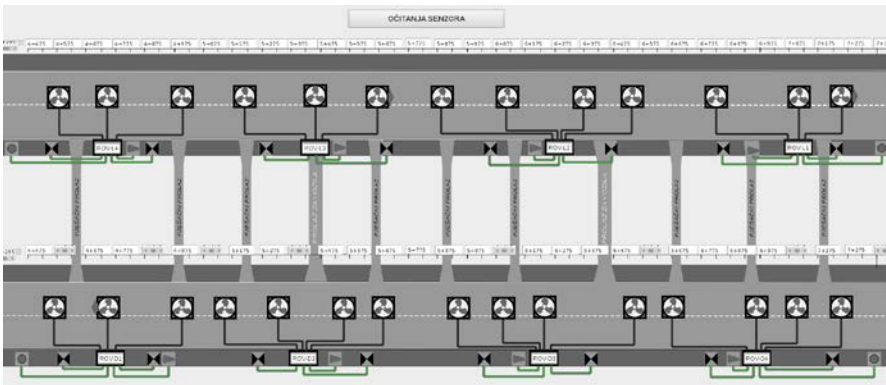
Panels



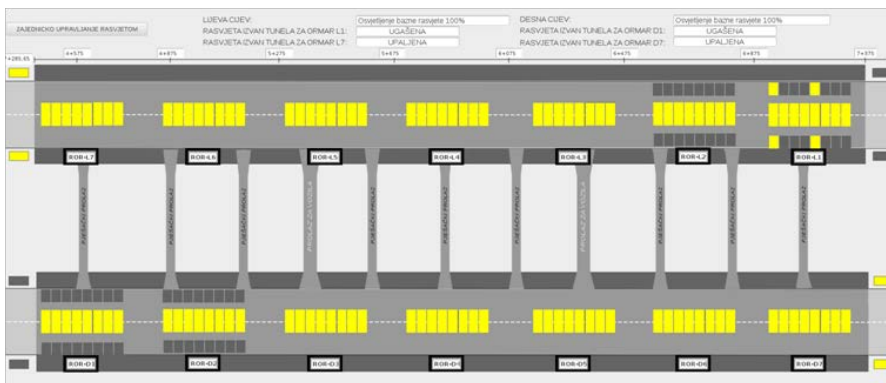
Traffic signs, semaphores, incident detection cameras, fire detectors, loop detectors, SOS telephones

Reference report Traffic & Transportation

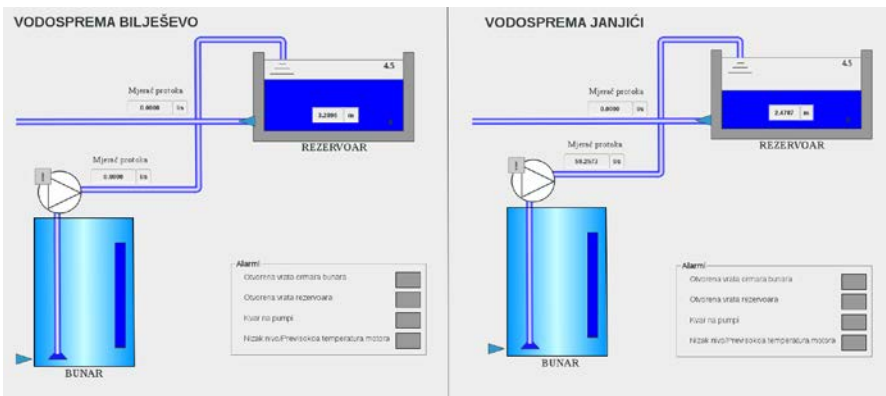
Central control center Drivusa and Tunnel 1.Mart in Bosnia Herzegovina



Ventilation



Lighting



Water supply