

Customer Success Story



Railway protection

system prevent animal and train collisions



Improved railway safety for man and animal

The wild animals do not regard trains on the railway tracks as their natural enemies; they get used to the noise produced by these machines and accept them as part of their own habitat. Furthermore, the speeds that are developed today by trains, frequently around 160-200 km per hour, exceed the speeds that these animals have become familiar with during their natural existence in forests, on fields or meadows. The time to react, to escape is too short for an animal to give it a chance to survive an encounter with a train. Such collisions are not only fatal for animals but also very dangerous for trains. Many methods were used to solve this problem such as separation grids or aboveground passageways for animals but all these solutions resulted in liquidation of natural animal trails leading to environment degradation.

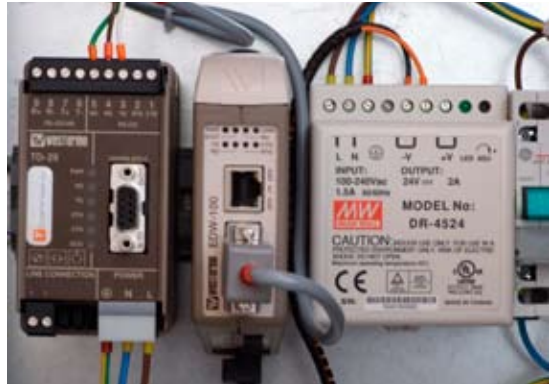
After numerous consultations with ecologists, scientists and experts in the field of wild animal behaviour, NEEL Ltd. in cooperation with Bombardier Transportation (ZWUS) Polska Sp. z o.o. and Forestry Research Institute has developed a state-of-the-art solution to the problem. This unique worldwide animal deterring system uses Westermo TD-29 modems and EDW-100 adapters as a communication basis. It is designed

Westermo supplier:



System manufacturer:





When receiving a telegram the container PLC determine the required time delay, the sequence warning type used for the next pass and the duration and level of sound generated, depending on the environment conditions

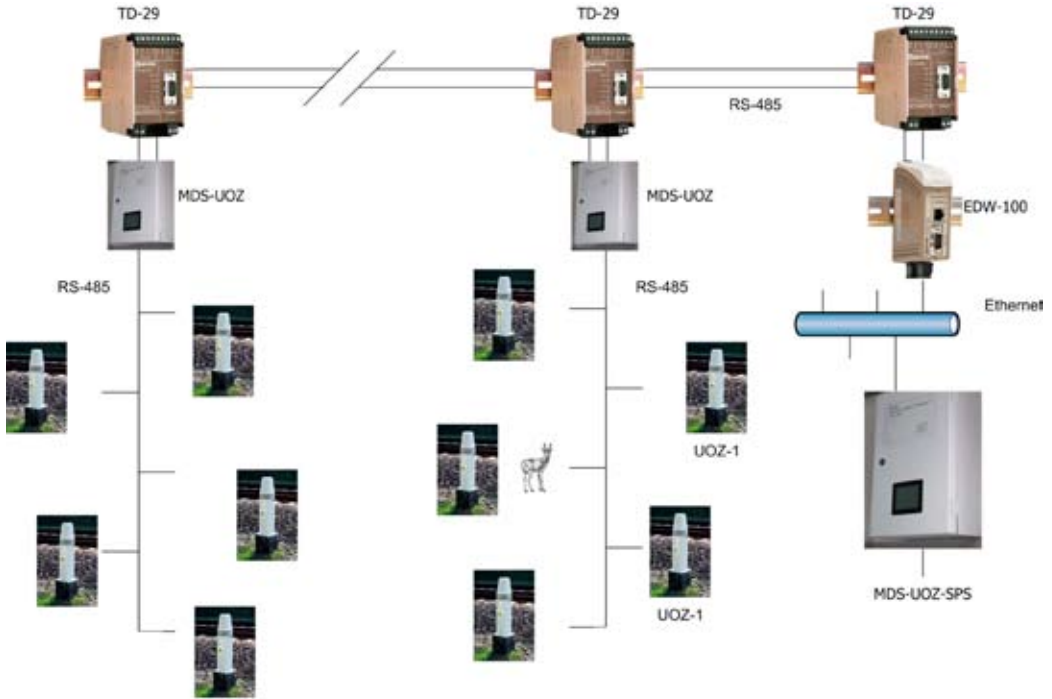


UOZ-1 devices have been installed and are operational along the E-20 railway track between Minsk Mazowiecki and Siedlce on the heavily frequented Warsaw-Terespol route. Next systems are currently mounted on modernized E65 Warsaw – Gdansk and E30 Legnica – Wegliniec tracks.

to prevent such game as the roe-deer, the red-deer, the elk, the bison, the wild boar or the fox from migrating through railway tracks directly at the time of a passing train. This system limits to the minimum the loss in the wild animal population caused by collisions with fast moving trains and yet allows these animals to pass across the tracks when there is no danger of such collisions.

UOZ-1 devices operate through sound signals, which deter animals from coming near the tracks. The signals are emitted by the UOZ-1 device for

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a certain time, directly before a train approaches the site. The animals perceive the sounds as a real warning and react as they do when coming across a natural predator or another danger that they are genetically programmed to avoid.

The essential information concerning the status of selected elements of the structure are transmitted through Ethernet to the controller, located at the station, in the control-diagnostic module MDS-UOZ. This module contains Westermo EDW-100 industrial Ethernet adapter which converts data to RS-485 standard. After analyzing the data obtained from the station and determine the location and speed of approaching train, station PLC sends results to the container PLC via TD-29 modem from Westermo. Data transmission takes place between all attached devices (multipoint topology) with a speed of 2400 bit/s.







A product range to meet every demand

Westermo provides a full range of data communication solutions for such demanding applications as railways, aeronautics, defence, water treatment, substation automation, roads and tunnels. The staff at Westermo can provide the highest levels of service and technical support to help our customers to choose, configure and install the best solution for each specific application requirement. Our knowledge goes far beyond our own product range; we have a unique competence regarding your environment whether it is on a train, in an aeroplane, on the seabed or in a substation. To ensure a close relationship with the customer, Westermo has a local presence in more than 35 countries. The Westermo product line includes more than one thousand different types and versions of our modems, switches, routers, time servers and converters.

Westermo products used in this application

Product/Art. no	Description	Connectivity
TD-29 3193-xxxx 	2- or 4-wire leased line V.23 modem for point-to-point or multidrop applications. Transmission rates up to 19200 bit/s	Leased line Serial RS-422/485 Serial RS-232
EDW-100 3616-0020 	Serial to Ethernet converter with RS-232 and RS-422/485 ports.	10/100BaseT Serial (RS-232) Serial (RS-422/485)