VAISALA

Portable Traffic Counters in Southeast Europe

With more than 28 thousand kilometers of roadway, 86% of which are paved, the small European country of Croatia is dedicated to making the most use of its transportation system. Nearly 4.5 million people live and work in Croatia's stable, service-based economy, and with economic trends expected to enter a faster and stronger period of growth in 2008, enhancing the roadway system is imperative. Traffic studies are a vital part of this need for the country to maximize its existing roads and plans for future expansion.

Companies and government agencies throughout Croatia are currently performing traffic studies to monitor areas where improvements are needed. Many of these are using portable traffic counters as their primary tools of measurement and study.

Many of the portable traffic counters in use are manufactured by Vaisala, Inc. in the United States. The Vaisala Nu-Metrics Portable Traffic Analyzers are small, self-contained units designed to detect count, speed and classification of vehicles. The sensors utilize Vehicle Magnetic Imaging technology. Vehicle Magnetic Imaging (VMI) technology works by detecting vehicles as they move through the Earth's magnetic field. Every motor vehicle has parts that are constructed from iron. When a vehicle passes over a Nu-Metrics Portable Traffic Analyzer, the iron parts interfere with the Earth's magnetic field. This disturbance creates electrical signal changes in the traffic sensor, and as a result, the traffic sensor can determine vehicle presence, count each vehicle, measure vehicle speed, and record vehicle length.

Croatian Government Utilizes Traffic Analyzers

Croatian Roads (Hrvatske ceste) is the principal Government agency for managing roads and making authoritative transportation decisions in Croatia. It covers state roads, interstate roads and highways in its jurisdiction.

Within the last decade, Croatian Roads has acquired 120 Vaisala Nu-Metrics Portable Traffic Analyzers for use in traffic studies. The units are used on state, regional, and county roads. In rare cases, they are used for studies on highways and city roads. Vaisala's traffic analyzers are used for volume and structure, and subgroup studies. The purpose of gathered data is to determine if further analysis is needed in particular areas. Each traffic counter is used for at least two months per year. Due to high frequency of usage, the Nu-Metrics Portable Traffic Analyzer meets their demanding needs.

Regional Road Authorities

Croatia is divided into regions, similar to US states, with each of these regions having a certain level of independence in order to function more efficiently, including individual road departments for each of its regions. One such road department is the Regional Road Managing Department of Istria.

The Regional Road Managing Department of Istria uses traffic analyzers two to three times per month on roadways outside the city of Pula, where its offices are located. The department uses the data to determine the differences in traffic volume between summer and winter, and also to count truck traffic volume in total numbers of vehicles.

The Regional Road Managing Department of Istria has six units and each is deployed for about 15 days per month. They chose the Vaisala Nu-Metrics Portable Traffic Analyzer units because they are "mobile, compact and practical", and can quickly and easily deployed – then moved to another location - once a study is complete.

Similar to the Regional Road Managing Department of Istria, Croatian Roads chose Vaisala's traffic analyzers because they are mobile, compact and easy to set up and remove. In addition to performing their

own studies, Croatian Roads has been using companies like Prometis d.o.o. to perform traffic studies for them. Prometis has conducted many studies as well in the city of Zagreb, which is the capital and also the largest city in Croatia.

Another Croatian regional road authority, the Regional Road Managing Department of Primorsko-goranska zupanija, is headquartered in the city of Rijeka and has been conducting studies with the Vaisala Nu-Metrics Portable Traffic Analyzer NC200 model and its coordinating HDM Portable Traffic Analyzer Software.

After a recommendation from the Regional Road Managing Department of Istria, the Regional Road Managing Department of Primorsko-goranska zupanija purchased two Vaisala Nu-Metrics Portable Traffic Analyzer NC200s, protective covers, HDM Portable Traffic Analyzer Software, 230V chargers, and connection interface materials from Selekta-prima d.o.o. (Vaisala's local distributor in Croatia). The agency is a relatively new user of the product and with Selekta-prima's help, successfully installed the software and conducted studies on the roadway.

"On the roads of Primorsko-goranska zupanija we have designated ten locations where we have placed a pair of NC200s to gather traffic data," states a representative of the agency. "We are using a period of one week as a default for making studies, and the final data will be used to form a PGDP database for each location (PGDP=AADT=Average Annual Daily Traffic). Our experience so far tells us that the NC200s are working flawlessly."

The data collected by the units and stored within the HDM Portable Traffic Analyzer Software offers the department many possibilities. "Multiple studies can be shown in reports and graphs, and the raw data export

is admirable because it allows further analysis out of HDM," comments the agency. "This is very important for sending files via email."

Beyond the Croatian Border

Extending beyond the Croatian border, in Bosnia and Herzegovina, and in Vojvodina, Serbia, agencies are also using traffic analyzers for studies. The Constructing University Mostar, located in Bosnia and Herzegovina, implemented Vaisala's traffic counters into their learning process, and regularly perform traffic counting studies. They maintain 14 units and conduct studies on state and regional roadways, small highways, and city roads. The Constructing University Mostar was drawn to the Vaisala product because it is portable, has a compact design, and is easy to set-up and remove. Each unit is active for over six months per year, and the University uses them mainly for traffic counting (less for speed and classification purposes).

In the province of Vojvodina, Serbia, the head road department, Vojvodina Roads, is utilizing traffic counters for road rehab and visibility studies. Vojvodina Roads has five Vaisala traffic analyzers, and use them four to five days per month on open roadways throughout the province.