ARS | Traffic & Transport Technology

BICYCLES MONITORING SERVICES (TDW-B)

Powered by ARS T&TT

The ARS T&TT Bicycles monitoring services (TDW-B) provide highly accurate aggregated traffic data on two-wheeler (bicycle and mo-ped's) traffic flow. With TDW-B, road managers can monitor the usage of bicycle paths.

Fossil fuel driven cars have a huge negative impact on sustainability. Bicycle use supports the modal shift from cars to very sustainable transport with the additional positive health impact. Monitoring the actual bicycle use, helps to manage this important modal shift.

Our remote bicycle monitoring technology is one of the most accurate, reliable, and economical technologies available today. The TDW-B sensor was already applicable for car monitoring but can be used now for bicycle monitoring as well, making it a truly exceptional multimodal product.

The technology, both the roadside technology as well as the cloud-based data processing software was developed and manufactured by ARS T&TT. At this moment we provide TDW-B to many road authorities in the Netherlands, the prime bicycle country in Europe.

Performance

The ARS T&TT TDW-B provides bicycle counts and speed categorizations with an accuracy over 95%. The cloud-based data processing system has a guaranteed availability of 99%, which makes TDW-B a highly **reliable** system.
TDW-B is a **cost-effective** solution using wireless Internet connectivity. TDW-B operates on low power electronics, batteries and solar power suffices for both monitoring and near real time wireless synchronization of the cloud data services.
We provide **easy access** to the data collected with TDW-B though a web-service on a pull or push basis, on-line and off-line.

The TDW-B sensor can be implemented in all sorts of road surface material, including tiles, asphalt, paving stones etc.

Sensor technology

The TDW-B sensor is based on highly reliable inductive loop detection technology. Based on loop transitions of two adjacent loops, both the number of vehicle passages (intensities) and driving speeds can be determined. Cyclists tend to ride next to each other on one lane and ride in opposite direction. The **TDW-B technology** recognizes all these movements.

The TDW-B services can be used on any bicycle path or mixed traffic road due to their low energy consumption, solar panel power and mobile Internet connectivity. The TDW-B may work as a stand-alone counting system, or as trigger device for other systems. TDW-B is intended for fixed installations and permanent use, though the counters can be easily interchanged between sensor locations.

Quality management

- Nearly 3,000 TDW units have been successfully deployed and operated during the past years.
- TDW-B can be remotely monitored and maintained.
- TDW-B automatically sends a status update at a configurable time interval (1 minute – 1 day).
- Replacements of the TDW-B units can be done with minimal traffic hindrance because of the modular design.

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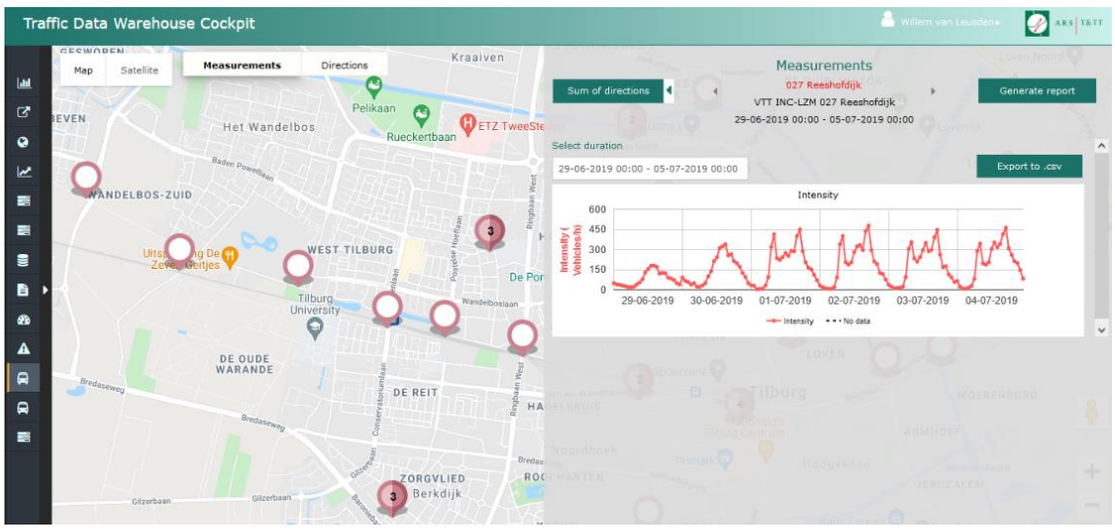

From raw data to traffic information

The traffic data from the ARS T&TT TDW-B service is input to put of a Traffic data warehouse which contains a database with historical and on-line traffic information. From this dataset, high quality traffic information and forecasts is derived by filtering and data fusion technologies. The results are applied in traffic information, traffic management and traffic engineering domains.

ARS T&TT has implemented traffic monitoring and numerous data warehouse services from 2008. The Dutch National Data Warehouse (NDW) is an important example, with nearly 10 million traffic data updates per day from over 6.000 km of road network.

Speed estimation

TDW-B provides accurate assessments of travel times between multiple loop deployments on road segments based on average spot speed measurements. The travel time estimates arrive at an accuracy of 95%.

Fault tolerance

TDW-B is equipped with solar integrated power-supply with backup. Dual wireless internet connectivity with a failover SIM card or the usage of national roaming technology provides redundancy for network connectivity. Built-in abundant storage capacity enables TDW-B to avoid loss of data. Any data backlog is sent to centralized systems interleaving it with real time data.

ARS T&TT TDW-B specifications

Max. number of loops	8 single loops or 4 loop pairs
Telemetry	GPRS/3G/4G
Max. number of SIMs	2 (1 for backup network)
Positioning & Time Sync	GPS
Supported detector cards	Any NEMA compatible
Configuration	Local (via RS232) and Remote
Remote Monitoring	Operational status, Charging characteristics and device temperature.
Individual passages	Yes
Aggregation mode	Yes (1 min. intervals)
Voltage	10.5 – 16.0 VDC
Power	1.5 W (average, with 8 loops)
12 VDC Battery Charger	Built-in
Operational Temperature	-15 ºC - +65 ºC
Dimensions (WxHxD)	244 x 138 x 219 mm
Weight	2.3 kg

Why ARS T&TT

ARS T&TT is an independent private company with a multidisciplinary and international work force of nearly 350 experts. Activities include operation of ITS systems, traffic engineering services and all related activities including hardware and software development, installation, Consulting and maintenance. We have been the supplier of the National Datawarehouse solution in The Netherlands since 2008. The Dutch National Data Warehouse (NDW) delivers nearly 10 million traffic data updates per day from locations all over the Netherlands with an innovative business model. Online data services for NDW include traffic intensities, vehicle classifications, speeds and estimated and realized travel times. The data from NDW is distributed to all traffic information service providers and major road operators in the Netherlands.

Contact us:

Tel: 0031 70 3608559
E-mail: info@ars.nl
www.ars-traffic.com