

# traffic light REPORT

Magazine for traffic engineering



TRAFFIC LIGHT FACILITY

RADAR / LASER

PARKING

ELECTRIC MOBILITY

INTERNATIONAL

SPECIAL

OUR NEW ONE

# NOSCO

## the Hybrid Camera

Balanced Parking

Using Sensor Fusion (Optics + Radar)  
now more exact than ever  $\geq 99.8\%$

For use in car parks and  
at parking spaces outside

# named NOSCO



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### EDITORIAL

Dear Readers!

To be a developer at RTB, is and will remain exciting. Today we are already seeing the products of tomorrow!

This was the case during the development of NOSCO. The goal was to develop a system to recognize vehicles at the entrance of car parks and parking lots with 100% precision and count them without mistakes depending on direction of travel. Here it is particularly important that other non-relevant objects such as persons are reliably ignored.

Our plan was to record the vehicles with a 3D camera and accurately recognize them with a downstream processing unit. In the first step a suitable camera had to be found. A survey of devices available on the market quickly revealed: none met our high requirements. The wheat was quickly separated from the chaff! It became clear that our own initiative was required.

Recognition of vehicles with the conventional procedure did indeed quickly reveal very good results. In spite of this, we ventured into an alternative implementation with a neuronal network. Deep Learning is the slogan and the results with an unsurpassed rate of recognition were surprising not just for us. This made it clear: everyone talks about artificial intelligence; we use it.

Stay curious about the new products coming from RTB developments!

Sincerely,  
Andreas Hegemann



# PROMINENT SUPPORT

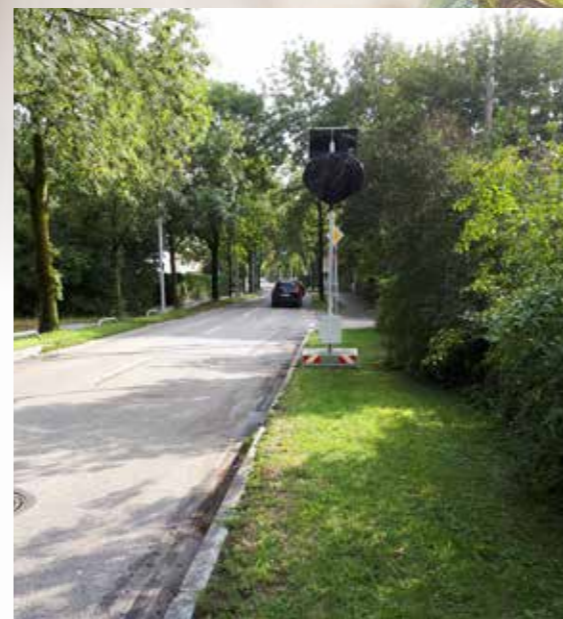
E-Cross Germany goes through North Rhine-Westphalia

Under the banner of electric mobility, the 16th E-Cross Germany, a national rally and road show for electric vehicles, took place at the beginning of September 2018.

A total of more than 60 teams took on the sporting challenge with their electric vehicles. The starting shot for the rally was fired on the campus of the Technical College in Bielefeld. The finish line was in the city of Aachen. On the way there, the starting teams received prominent support. On the stage from Düsseldorf to Aachen Germany's most well-known female racing driver, Jutta Kleinschmidt, joined the event. The winner of the hardest rally in the world, the Rally Dakar, participating in the team Retro Beetle, drove a VW Beetle converted to electric power by the car constructor Dennis Murschel across the finish line. It was particularly important to the prominent supporters, one of whom was the meteorologist Jens Plöger, to encourage the

public to rethink their mobility behavior. People need to be made enthusiastic for emission-free mobility.

With the system KORMO, RTB delivers the necessary battery charging infrastructure. Thus, one can enter a new age of mobility well-prepared.



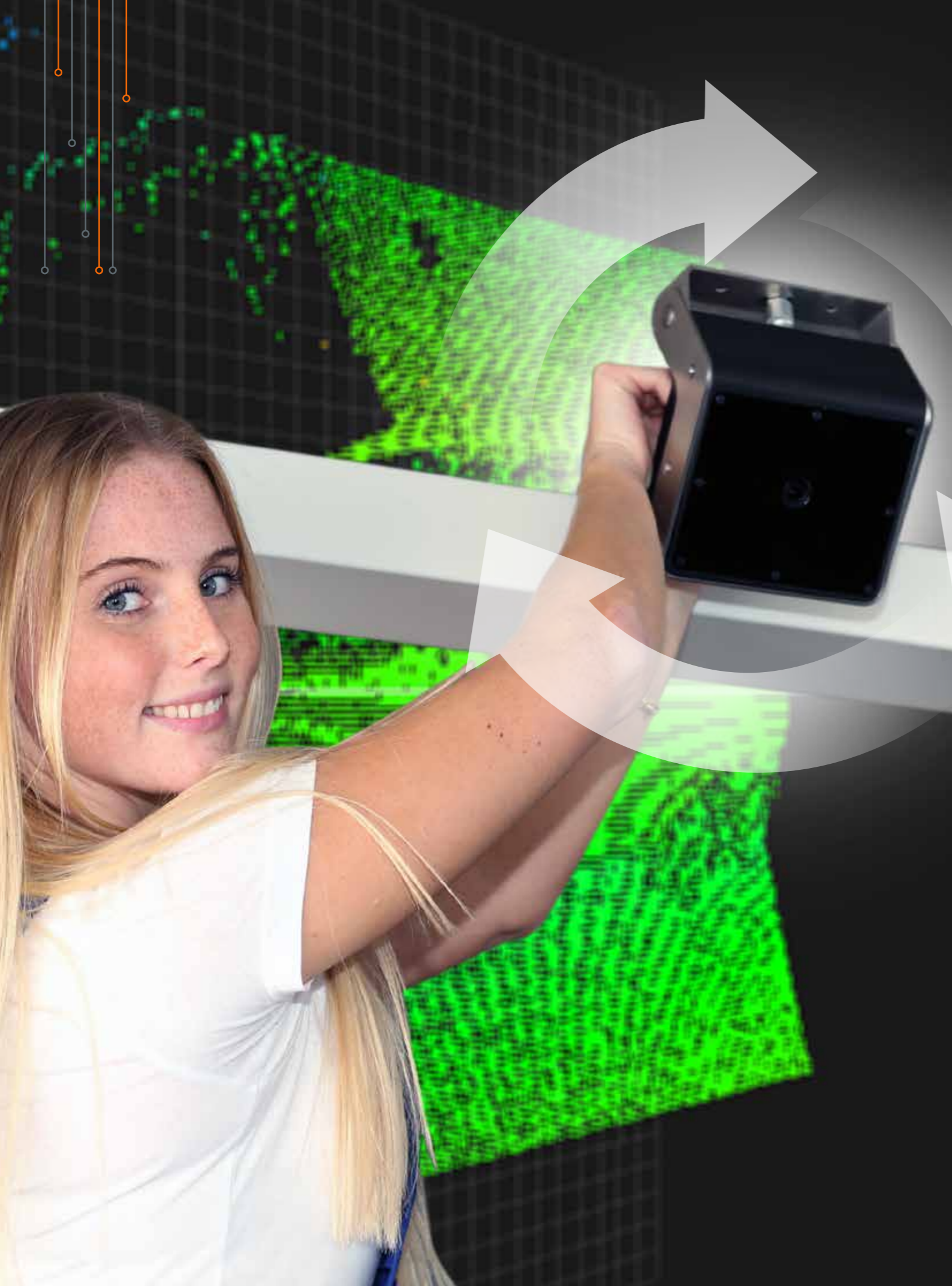
# SAFE INTERACTION

Dialog-Display Test Phase in Munich

A total of ten Dialogue-Displays were recently installed at a variety of locations in the state capital of Munich. It is the goal to take a further step in the direction of "Vision Zero".

The special thing in Munich is that those responsible are relying on a new method to evaluate the effectiveness. Thus, the devices are covered for a period of two weeks so that no direct influence can be exercised on the drivers. However, the speeds driven will already be recorded. With this, a comparative value is created. Following this first phase, the devices will be put to their intended use and give the drivers direct feedback in the form of praise – THANKS – when the speed limit is observed and scolding – SLOW DOWN – when the speed limit is not observed. In the third phase the Dialogue-Displays are covered again, to see how the drivers' behavior changes. The locations for the displays are locations for which the speed limit of 30 km/h applies and where speeding would have particularly bad consequences, for example in front of kindergartens and schools. During the project test duration of two years, the devices should be used at least twice in each city district in Munich. Afterwards the results will be evaluated and a decision about further action will be made.

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# HIGHEST PRECISION

## Artificial Intelligence Provides Perfect Accuracy

**NOSCO - RTB's hybrid camera system provides a very high recording accuracy in car parks and thus leads to an optimal utilization of available parking spaces.**

The innovative system NOSCO, consisting of a sensor unit as well as a signal processing unit – NOSCO.engine – can be optimally integrated in the parking system LOBO. The new thing is that the NOSCO sensor unit consists of a camera and a radar sensor and consolidates the data recorded by both sensors.

In addition to the 3D distance images of the recorded area (entrance, exit, ramps in the car park), the collected data of the radar sensor for direct determination of speed and direction of the travel are also provided.

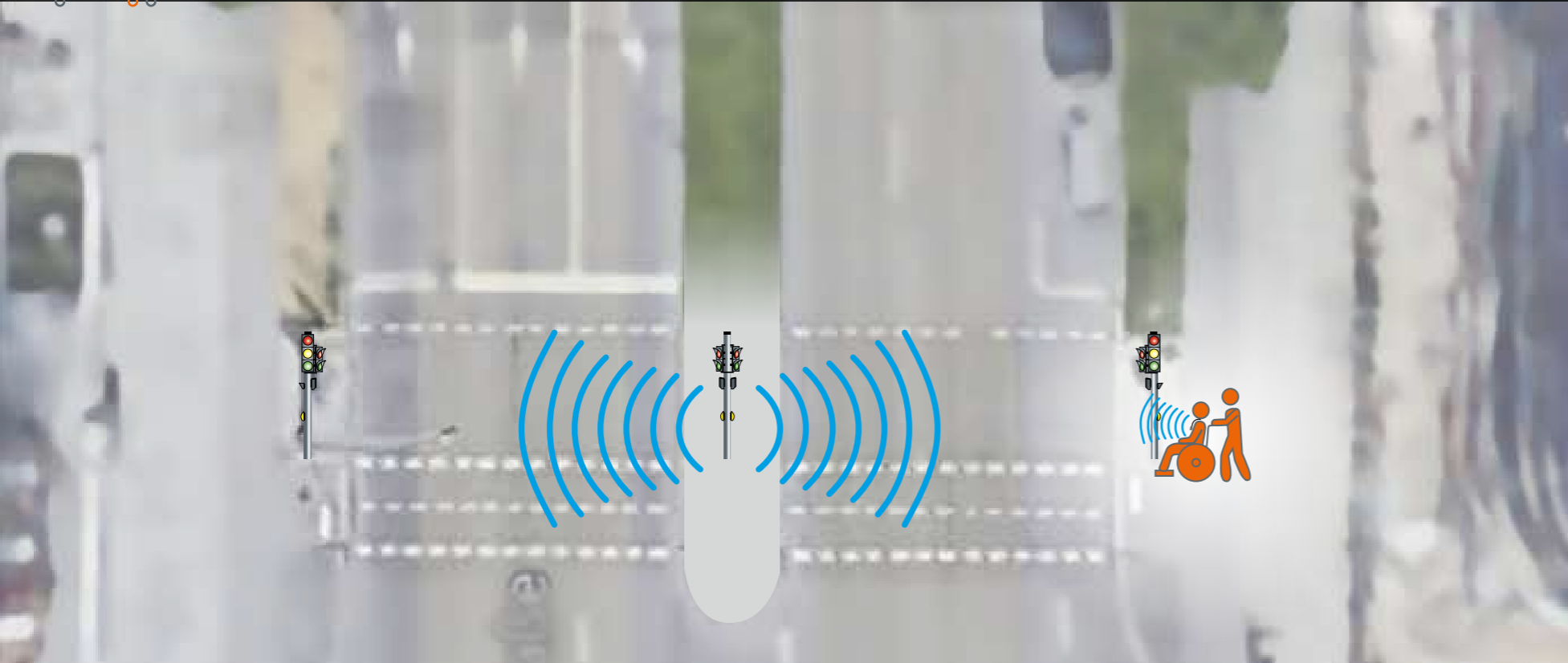
Based on a neuronal network and using Deep Learning, the data collected is further processed. The signal processing unit determines the current state of occupancy using a balancing counting procedure and transmits this to the parking guidance server which then controls the displays in the car park. The great advantage is that even in case of interference at one sensor, e.g. through adverse conditions in the surroundings such as fog or dust, the other sensor continues to provide correct data independently. Through intelligent fusion and analysis, the interference can be reliably recognized and reported to the processing unit.

Based on this innovative combination of different sensor principles, the NOSCO system achieves a recording accuracy of  $\geq 99,8\%$ .



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# OPENED DISCUSSION



## LOWER PRICE!

Due to heavy demand and the resulting increase in production, we are able to sharply reduce prices!



### Green Light for Seniors and Walking Impaired Persons

**In traffic planning the demographic shift must be considered. All of us are getting older and this necessitates solutions to guarantee safe mobility.**

A safe crossing within the allotted time at intersections is often, particularly for older persons and walking impaired persons, a difficult task. The green phases at the traffic light facility often are not long enough for this. There are various approaches to alleviate the problem. One of these has recently been started in Ebersberg in Upper Bavaria in the form of a unique nation-wide pilot project "Senior Traffic Light":

The background of this project is the fact that particularly older or walking impaired persons can't deal with the present green phase of 10 seconds and often even turn around rather than complete the crossing. Especially at this heavily

travelled road, including truck traffic, this led to resentment and insecurity. In order not to extend the green phase generally but at the same time to specifically help the persons in question, the chairman of the Seniors' Council, Thomas John, supported a solution that he had observed while on vacation. Using a request chip that is held to the traffic light push button, the green phase is extended by additional 6 seconds. Thus, 16 seconds are available for the street crossing. Those persons needing the chip can pick it up at the city's Citizens' Office by paying a deposit and can then use it immediately. Also, persons with temporary mobility limitations can profit from this and simply return the chip once they have

recovered.

Technically seen, the "Senior Traffic Light" contains the so-called Near Field Communication (NFC) in the RTB push button. This is based on the most modern transponder technology. When the chip is held on the push button, the release request and the green phase extension are triggered.

The second technical solution is the LOC.id system based on Bluetooth. This was used in Munich. At an intersection near a multi-lane street, the transmitter is integrated in the RTB acoustic unit on the middle traffic island. The effective range is beamed into both crosswalks (cf. diagram). If a walking impaired person who is connected via handheld transmitter with the system crosses the crosswalk and enters the effective range, the green phase is immediately extended from 17 to 22 seconds. Thus, a com-

fortable crossing is possible. The application of LOC.id is especially recommended in the vicinity of agencies for seniors or clinics. Dealing carefully with this topic is important so that seniors and walking impaired persons don't feel forgotten and at the same time, a general influencing of traffic doesn't take place.

In any event it is important to take care of the needs of an aging society. The discussion is opened. We will be happy to consult with you!

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# CONSIDERATE DRIVING



## First Dialogue-Display to Reduce Noise in Osnabrück District

Residents of the village of Holte, located near Bissendorf in the Osnabrück countryside are happy that something is being done about noise pollution created mainly by motorcyclists.

The authorities responsible in the Osnabrück district, aware of successes achieved in southern Germany, decided, under the leadership of County Councilman Winfried Wilkens, to use the Dialogue-Display to reduce noise. The first solar-powered display was installed in a combination with a TOPO guide post census device. If the volume of a passing vehicle goes over the default value of 84 Decibel, the demand to drive "QUIETER" appears. In addition, the TOPO system records the speed and vehicle data, making a determination of the types of vehicles involved

possible. The data collected provides the basis for further decisions in the fight against noise. The system is being used at different locations on county road 330. The Federal Association of Motorcyclists was involved in the decision for the installation and welcomes the initiative of the Osnabrück district to call to order those cyclists who don't take consideration so seriously...



## INNOVATIVE SHOPPING

### LOC.id in Use at the Largest North German Fashion Store in Osnabrück

L&T Lengermann & Trieschmann is, with around ten million visitors a year, the largest owner-managed fashion store in Northern Germany and it uses RTB technology.

Fashion fans discover L&T in the middle of the inner city of Osnabrück. Additionally, a highly modern L & T sports store was opened in the spring of last year. A highlight there is the standing wave where surfing enthusiasts can test their skill under expert supervision. To make sure that everyone, even those with mobility limitations, can enjoy the numerous facilities of the fashion store, RTB's LOC.id technology comes into play. Directly in front of the entrance there is a post

equipped with a push button and LOC.id. Blind and low vision persons, who use the LOC.id transmitter, are guided to the post by an orientation tone and receive an automatically triggered speech message with further information about the fashion store. Furthermore, the entrance door opens automatically. With this kind of innovative visitor guidance, access for handicapped persons becomes much simpler and more comfortable.

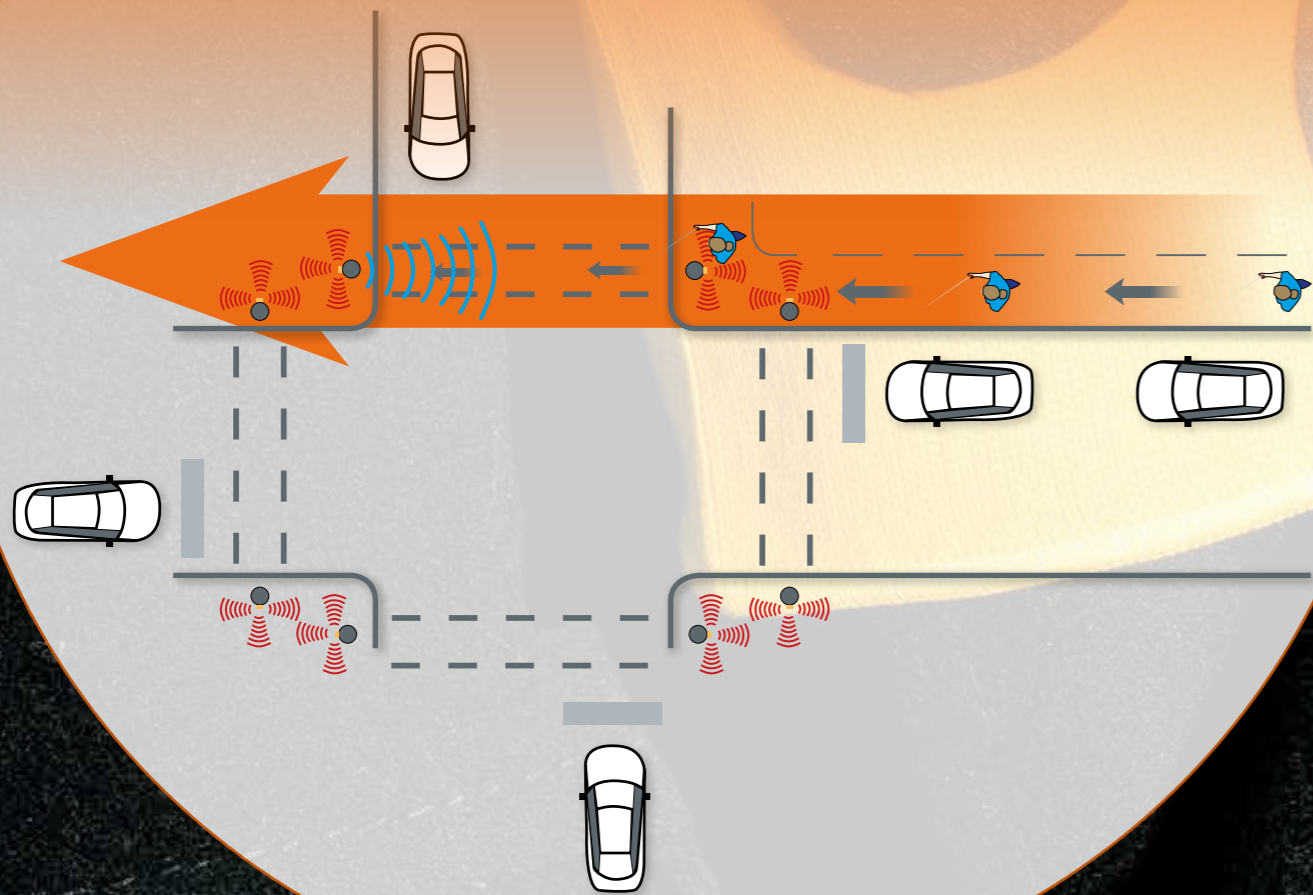


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NEW

# DANGER

How do blind and low vision persons move in street traffic?



Modern mobility creates a new danger that must be taken seriously, especially for persons who can't see well or can't see at all.

In order to deal with this problem, one must first try to put oneself in the situation of a blind person. Particularly at heavily travelled streets and intersections a variety of challenges present themselves and they must be mastered. A blind person on a sidewalk usually orients himself to the parallel traffic flow on the one side and to the inner shoreline on the other side. Here the sounds created by vehicles are particularly significant. In this way, the rolling sounds of moving vehicles can be perceived and differentiated from the sounds of standing or accelerating vehicles. An additional aspect that must be especially considered by blind persons when moving about is the fact that pedestrians and bicyclists often share the same path. Using the long cane can lead to dangerous situations in this context. A safe and, above all, goal-oriented guidance is therefore essential.

An example can be used to describe this situation more clearly:

Assuming a blind person is moving parallel to the traffic flow on the right side of the street approaching an intersection. At the same time parallel to this, a vehicle with start/stop automatic waits in the right turn lane and an electric vehicle approaches from the right. The person

in question cannot perceive either of these vehicles at this moment. The plan is to cross the intersection straight ahead. The signalization transmits the appropriate release signal but the vehicle turning right also gets a green light and starts its motor. Putting oneself in the situation of the blind person who is in the street and suddenly notices the vehicle directly beside him, will perhaps make clear what kinds of fears this can trigger.

For exactly this reason, a clear signalization for finding the traffic light pole and the reciprocal consideration of all participants in street traffic are more important than ever. It is true that due to the pressure exerted by the associations of the blind, decisions have been made to have electric vehicles in the future sound like motorized vehicles. The implementation and comprehensive distribution will take a great deal of time.

Do you have question to this topic? We always like to consult with you! Or you may use our free training offer!

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## EXPERIENCING INCLUSION

At the recent state horticultural show in Bad Lipburg, intensive work was done to create a better understanding on the part of persons without handicaps for persons with handicaps. One contribution to this was a specially constructed inclusion obstacle course. There visitors could get an idea of everyday obstacles that are daily confronted by persons with mobility limitations. For example, travelling in a wheelchair along a sidewalk with both lateral and perpendicular inclines or through sand and gravel. RTB was involved in the inclusion obstacle course with LOC.id and could, once again, clearly demonstrate appropriate guidance for blind persons at traffic lights.



## FULL OF ENERGY

... in the new year! The year 2019 holds numerous changes for all of us. The developments progress constantly. Particularly in our field, traffic technology, a lot will happen in regard to electric mobility and digitalization. Let's tackle it and hit the ground running to master the challenges facing us.

# 2019

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RTB GmbH & Co. KG, Geschäftsführer Rudolf Broer  
Schulze-Delitzsch-Weg 10, 33175 Bad Lippspringe  
Tel. 0049 5252 9706-0, Fax 0049 5252 9706-10  
E-Mail: [info@rtb-bl.de](mailto:info@rtb-bl.de), [www.rtb-bl.de](http://www.rtb-bl.de)