

DRIVE ON

AUTOMATED DRIVING
ARE OUR ROADS READY?

SWARCO
TRAFFIC WORLD
TURNS 10!

BIOGRAPHY
OF A
GLASS BEAD

SAFETY RISK
**RED-LIGHT
RUNNING**

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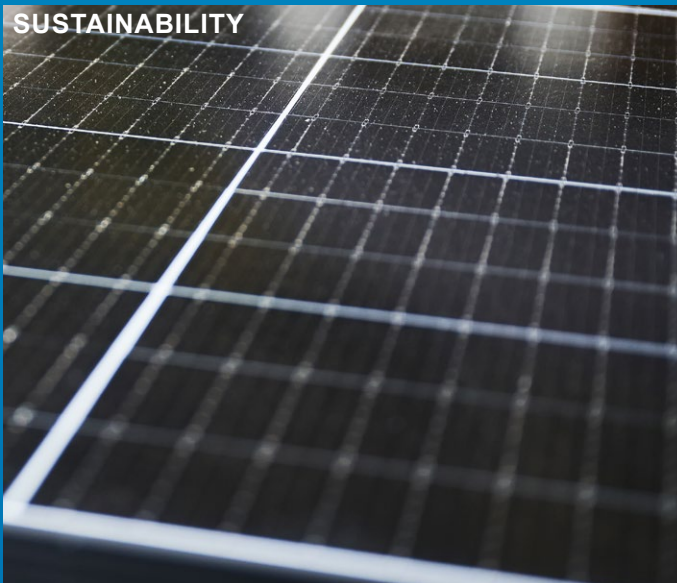
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RED-LIGHT RUNNING –
THE NEW NORM IN THE
US?

NEW MARKING SYSTEM
FOR CYCLE PATHS

EDITORIAL



Günther Köfler
CEO

Michael Schuch
CEO

Manuela Fürst
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DEAR READER!

Welcome to the second edition of our corporate magazine DRIVE ON in 2024, published right in time for the ITS World Congress & Exhibition at Dubai's World Trade Center. You will meet SWARCO as an exhibitor on stand H8-G20 and as a contributor to the congress programme. SWARCO speakers appear in Special Interest Sessions addressing topics like "Towards carbon neutrality: transitioning mobility in cities", "Preparation of the city infrastructure for autonomous driving", "Hybrid technologies in large scale CCAM deployments", "Better Traffic Information, Improved Safety", and the "ERTICO City Moonshot: Experiences of cities on their mobility challenges". We look forward to welcoming you there.

2024 is the year in which SWARCO celebrates its 55th anniversary. We use this opportunity for some flashbacks to important stages of our history. In this issue we highlight the "biography" of one of our core products – reflective glass beads. It was in 1969 when SWARCO founder Manfred Swarovski started his business with these tiny microspheres that improve road safety by giving nighttime visibility to road markings. Another story is related to the 10th anniversary of our permanent showroom, the SWARCO TRAFFIC WORLD at our headquarters in Austria. Thousands of visitors took the opportunity to learn more about the competences, products, and systems made in Austria and many other countries in the fields of road marking systems and intelligent transport systems.

Only a few weeks ago we were able to welcome a new member to the SWARCO Family. Dublin-based Elmore Group – a long-standing customer and friend of ours – joined our Group to intensify our business footprint in Ireland.

By the middle of October we will be supporting the IRF World Congress in Istanbul as an exhibitor and a speaker in the congress programme. Another opportunity to directly touch base with our team and learn more about our software solutions in urban mobility management and our high-performance glass beads and road marking systems. Do not forget that the mobility sector has a significant role in mitigating climate change with sustainable intelligent transport systems, making traffic connected over all modes, more fluid, and environmentally sound.

We would be pleased to personally meet you in Dubai or Istanbul or on any other occasion to tell you more about the evolution of SWARCO, 55 years after its inception.

Yours sincerely,

The SWARCO AG Executive Board

IMPRESSUM

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THIS IS THE MODERN WORLD



SWARCO TRAFFIC WORLD TURNS 10!

DRIVE ON looks back on another chapter in the 55-year history of SWARCO. This time our attention turns to the permanent showroom at SWARCO headquarters in Wattens. In June 2014, SWARCO welcomed the first visitors to its brand new showroom and 10 years later SWARCO TRAFFIC WORLD (STW) is more vibrant and alive than ever, serving as an incredible networking, education and marketing tool for the latest developments in modern traffic technology.



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It all started in 2010, when SWARCO founder Manfred Swarovski decided to add a new wing to the company's headquarters, giving it a bit more 'representative character'.

The company had grown really quickly, with the notable additions of German firms such as Signalbau Huber and Dambach-Werke to the ever-expanding SWARCO family, which meant that workspace had become rather scarce for the growing office staff in central administration. New conference rooms equipped with the latest audiovisual equipment were also required, so when the construction of the new wing was completed in the Spring of 2013, there was a large, quite bare ground floor of more than 400m² that seemed to be the perfect location for the future SWARCO TRAFFIC WORLD.

15 MONTHS OF THOROUGH PLANNING

One question that needed answering was: "How do you build a showroom worthy of the name SWARCO TRAFFIC WORLD?" What should be in it? What would it consist of? What would the concept actually look like? How would such a showroom be efficiently run and maintained over a period of many years?

It was time to proceed, according to Project Management Excellence standards, and form a cross-company team with colleagues from Austria, Denmark, Germany and Italy to elaborate a basic concept with functional and physical design.

Some 15 months later, following dozens of team meetings and approval loops with the Executive Board, the first part of STW, focusing on Intelligent Transport

Systems (ITS), was installed with the help of our then exhibition stand builder and a team of external electricians and media experts.

The room is designed much like a city traffic management centre complete with a huge video wall for various presentation purposes. It contains exhibits and information kiosks dealing with the market sectors of urban and interurban traffic management, parking guidance and public transport. LED-based traffic lights and variable message signs (VMS), single-space monitoring for parking, video content on the history of vehicle traffic and a look into the future developments of road infrastructure were also part of the initial layout. Visitors can see what a set of traffic light look like inside, they can learn about optics in traffic signalling, and they get insight into the role of digitalisation and software in modern traffic management.

PANDEMIC PAUSE USED FOR UPGRADE

In spring 2020, the STW operation came to an abrupt halt due to the COVID-19 pandemic.

Says Neumann: "We used this time, where we were not able to welcome visitors, for a substantial upgrade of the STW, both with hardware and software. Latest LED traffic lights and

VMS, new video content, a feedback wall to get interesting input from our visitors on current issues in traffic, new road markings and a large poster with SWARCO's technology and innovation road map were installed."

A new highlight of the upgrade is the Augmented Reality experience, a second reality laid over the existing STW geometry.

"It helps us explain the complexity of ITS, the software components and the infrastructure-to-vehicle communication," confirms the tour guide. "In 2022, we were able to re-open the STW to the public and to bring its operation back to normality. SWARCO TRAFFIC WORLD is playing an increasing role in our Employer Branding activities, presenting SWARCO as an attractive place to work.



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ADDING ROAD MARKING SYSTEMS

However, STW would not have been complete without the business that SWARCO started with in 1969: road marking systems, a sector that in 2024 represents one third of SWARCO's annual revenues.

In 2015, a new project team was formed to design and implement SWARCO TRAFFIC WORLD, presenting the topics of glass beads, road marking materials, road marking services and road marking systems under different lighting conditions. The visitor groups are particularly interested in this field because although the striped markings are omnipresent on the streets and roads, very few people reflect on the ingredients of road markings, the tiny (0.1mm-1.5mm

diameter) glass microspheres that create night time visibility of pavement markings.

The markings are not just made of paint, though. There is a huge variety of materials, from two-component paints via preformed thermoplastic, and spray plastics to tapes. Of course, all the exhibits can be touched in SWARCO TRAFFIC WORLD, and visitors also have access to a microscope that magnifies the material samples. Retroreflectivity measurement complements the overall programme.

So, who is coming to see SWARCO TRAFFIC WORLD? "We have many different visitor groups who make an appointment with up to six weeks' lead-time in order to get a full guided tour", says Richard Neumann, SWARCO AG's

Corporate Communication & Event Manager. "School classes, university students, CEOs from other B2B companies, our own colleagues from the various SWARCO sites around the globe, SWARCO Academy attendees, international customers, politicians and governmental delegations, not to mention associations or private clubs are all interested in learning more about the secrets of modern traffic management."

SWARCO TRAFFIC WORLD is also used as an event location for university lectures, business breakfasts for financial institutions, press conferences for the SWARCO RAIDERS American Football team and symposia related to sustainable mobility. It can also be turned into a studio to be the forum for Innovation Talks, webinars or a global Town Hall meeting.



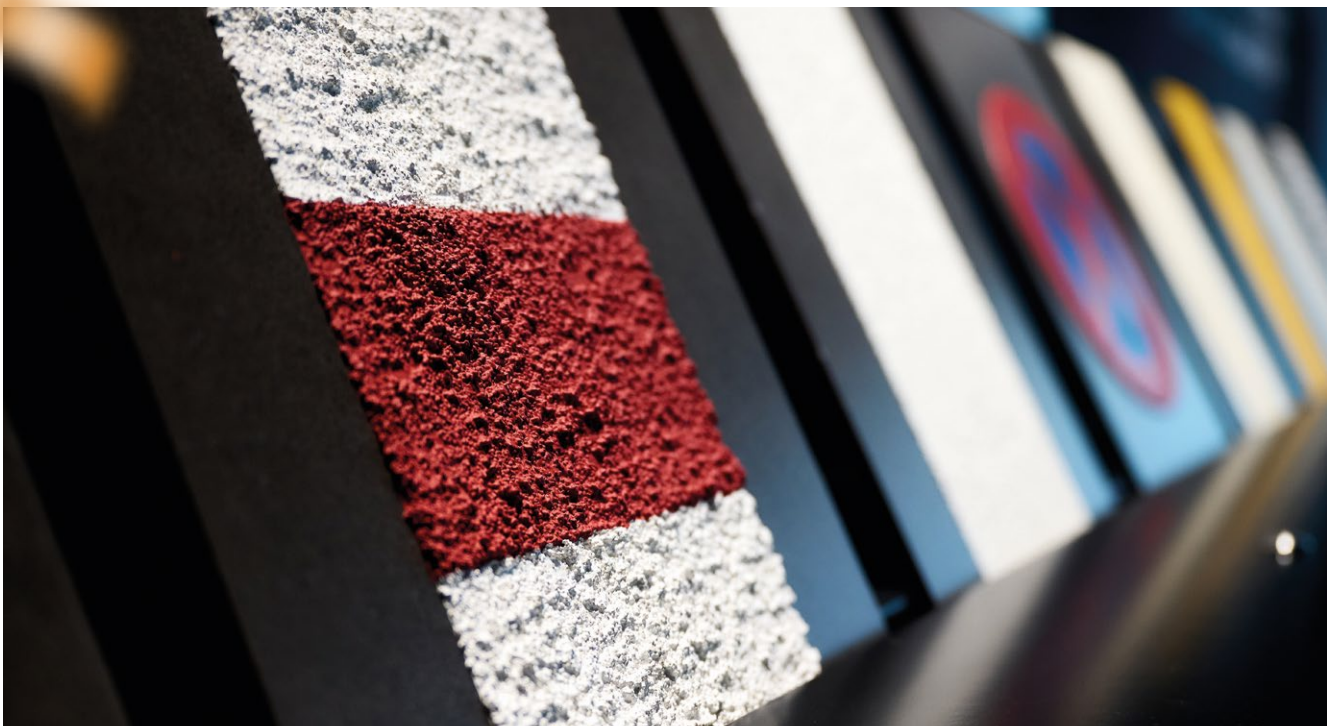
CELEBRATING THE 10TH ANNIVERSARY

On 2 July 2024 – roughly 10 years after having received its first visitors from a parking company in Norway – it was time to celebrate this most successful marketing tool. The SWARCO AG workforce gathered in the event location where TRAFFIC WORLD tour guide Richard Neumann gave a 45-minute review of the project and its development over the past decade.

Football-themed balloon decorations were a reminder of EURO 2024, and

from 6pm the STW's videowall became a giant TV screen for the assembled throng to watch the game between Romania and the Netherlands. But before that, colleagues had the opportunity to try out the SWARCO GoGreen Virtual Reality Experience before enjoying a hearty barbecue buffet. According to colleagues the event was extremely well received and appreciated. Our thanks go to our facility manager Hannes Klingenschmid and our colleagues on reception and from HR for the excellent preparation and logistics of the event.

We look forward to the next decade of SWARCO TRAFFIC WORLD!
 Tour reservation requests can be addressed by email to stw@swarco.com.



PIONEERING PRODUCTION SUSTAINABILITY

In an era where sustainability and environmental protection are increasingly important, the development of sustainable high-performance, future-ready offerings for the human eye and beyond to our customers is on SWARCO's daily agenda.



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Being market-leader in Intelligent Transportation Systems and Road Marking Systems, advocating for green traffic management solutions is crucial to supporting cities from all around the world in meeting ambitious climate objectives (e.g. European Green Deal). No matter which products or solutions customers are asking for, they can be sure that helping them in improving their ecological footprint is one of our top priorities.

But that's not the end of the story - as the trusted choice for future-ready mobility solutions, Corporate Social Responsibility (CSR) is firmly rooted in our mindset.

WHAT DOES THAT MEAN?

Having a look at our production facilities, we demonstrate our integrity by producing our portfolio with respect to social values and environmental protection and align our commitment to sustainability with international standards to reinforce our credibility as a promoter of eco-friendly practices.

One of our frontrunners in this matter is our innovative production company SWARCO Futurit in Neutal (Burgenland), the world's largest traffic light producer and producer of SWARCO's Variable Message Signs (VMS). The factory has taken up the challenge and aims to become energy self-sufficient through the use of a photovoltaic system.

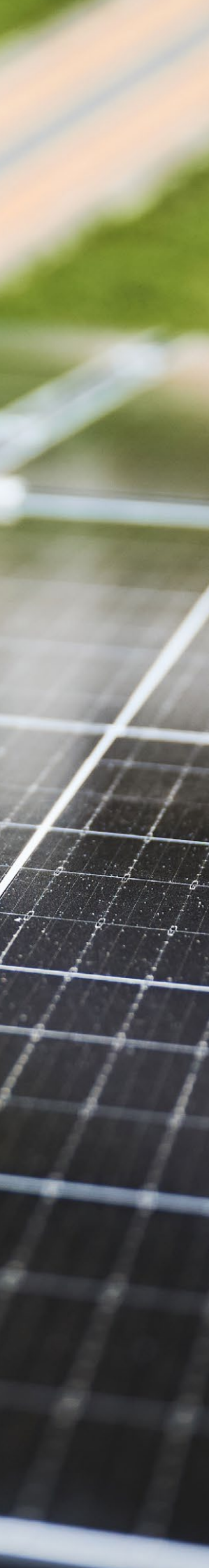
Of course, huge production volumes lead to a high energy demand. In this case we are talking about approximately 3 million kilowatt hours a year. Being aware of this, the question was raised on how to produce this amount of energy in a more environmentally friendly way, so SWARCO Futurit has opted on a photovoltaic system.

This system, installed between November 2023 and February 2024, was put into operation immediately after completion. With a total amount of 2.228 panels coupled to 9 inverters, it is capable of producing a peak of 914 kilowatts per hour in ideal circumstances. In as early as February, a month with very little hours of sunlight and a flat angle of solar radiation, it was possible to operate production energy self-sufficiently during parts of the day. These are ideal conditions for supplying our injection moulding machines, which are used to manufacture the plastic parts for traffic lights and signs, with green energy.









A special characteristic of energy is, that it is never really “consumed”. It is only converted into another form of energy and in the interests of sustainability, we want to take advantage of this. The photovoltaic system, for example, converts light energy into electricity using solar cells to run the injection moulding machinery.

During operation, a considerable amount of the electricity from the photovoltaic system is converted into kinetic energy in the hydraulic system, but not all of it – because these machines also produce a lot of heat in the hot runner mould.

And that's exactly where we have applied the next lever: In order to prevent damage, these machines need coolants (in this case water). The waste heat generated is therefore absorbed by the water and fed into a heat pump, which then raises the temperature level even further and thus ensures the desired temperature for the heating water cycle. Instead of 12°C - 14°C from the water pipe, the heat pump works

with the 30°C - 35°C cooling water. This is a significant energy saving because the rise to 40°C - 60°C required heating temperature is much more efficient. Although the heat pump also needs some electricity, the total savings in the factory are significant.

Having a look at the consumption of gas used for the heating of the buildings, the implementation of these measures reduced the need for this fossil energy source by more than 50%, which is an important step forward towards a greener production.

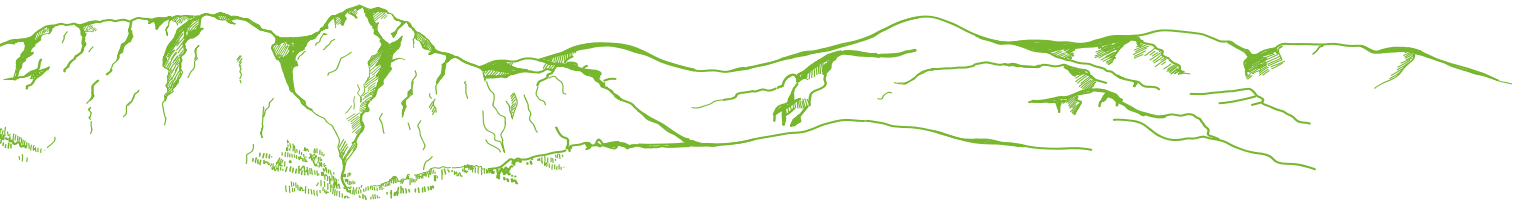
In a time where climate change and environmental pollution pose global challenges, the production facilities of SWARCO Futurit in Neutal demonstrate that sustainable business is possible. Through the use of renewable energy and the implementation of sustainable production practices, we set the benchmark for environmentally conscious action in the industry and contribute to creating a greener future for generations to come.

SWARCOBLAST

COMBINING OPTIMAL BLASTING RESULTS WITH
ECOLOGICAL RESPONSIBILITY



*A traditional Tyrolean wooden house before and after a surface treatment using SWARCOBLAST glass blasting granulate.
Photo credit: Strahltechnik Lechner GmbH*



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At a time when sustainability and environmental protection are becoming increasingly important, companies are faced with the challenge of finding innovative solutions that both improve the performance of their products and minimize any adverse environmental impact. SWARCO Indusferica's environmentally friendly SWARCOBLAST glass blasting granulate combines optimal blasting results with ecological responsibility.

A WIDE RANGE OF APPLICATIONS AND ENVIRONMENTALLY FRIENDLY PRODUCTION

The versatile SWARCOBLAST glass blasting granulate can be used in injection and pressure blasting processes for the surface treatment of wood, concrete, metal, cast or 3D printed parts, consistently delivering first-class results. Thanks to the Ecochain Helix software solution, emissions in the supply chains and production processes can be precisely calculated and continuously optimized. These analyses have shown that the SWARCOBLAST glass blasting granulate has an average carbon footprint of only 0.1 kg CO₂-eq per kg of product, setting a leading standard when compared to competitors' products.

SWARCO INDUSFERICA: OUR COMMITMENT TO THE CIRCULAR ECONOMY

The glass blasting granulate is made from melted soda-lime glass cullet. By

sourcing high-grade recycled glass (post-industrial waste), SWARCO Indusferica uses significantly less energy. The origin of the glass can always be traced, and it is purchased in the region near the different production facilities to avoid transport over large distances. For the delivery of SWARCOBLAST glass blasting granulate, customers are offered combined road-rail transport to further reduce transport emissions. SWARCOBLAST glass blasting granulate packaging is resource efficient with a focus on highly recyclable materials. Waste heat from the production process is recovered to heat our buildings or supply heating energy to neighbouring industrial companies. SWARCOBLAST glass blasting granulate is inert and waste treatment does not result in any appreciable downstream emissions. "We are deeply committed to the circular economy and energy efficiency and concentrate all our efforts on making our products as sustainable as possible," says Krisztian Seres, Key Account Manager at SWARCO Indusferica.

BEST PRACTICE

Hager & Braitto Strahltechnik Lechner GmbH: Hager & Braitto Strahltechnik Lechner GmbH uses SWARCOBLAST glass blasting granulate to restore wooden houses in Tyrol, the province of Salzburg, and Bavaria. "The SWARCOBLAST glass blasting granulate won us over with its consistently high quality of the particle-size distributions, reliably available delivery quantities, and SWARCO's personalized advice," says Alexander Lechner, emphasizing the granulate's precise and gentle properties. "We use it on a daily basis to meet our requirements for outstanding precision and first-class quality." Blasting technology makes it possible to remove dirt, weather-related discoloration, old paint and loose material from the wood using air pressure, without damaging the natural grain. In this way, beautiful traditional farmhouse living areas, wooden ceilings steeped in history and any other wooden fixtures are brought back to life. After the treatment, the wood looks like new again and is ready for a new coat of paint or other protective coating.

FOR FURTHER
INFORMATION SCAN



In 2024 the question has been completely turned on its head.

Connected, Cooperative and Autonomous Mobility (CCAM) technology has moved on at an incredible pace over the last few years and the question is now: "Are Europe's roads ready for CCAM?" Perfectly placed to provide insightful answers are Steve Penn, SWARCO UK's Head of Innovation ITS Division and Daniel Lenczowski, SWARCO's Germany-based CCAM sales executive.

"To be perfectly honest," says Steve, "the simple answer is no – or not yet. From my perspective, there are a lot of isolated projects and deployments across Europe, but if we look at the support from the European Commission, where central funding comes from, I would say there's still a huge gap in relation to how that money is invested. Infrastructure is digital

and we have a foundation where services can be built on for future technology evolution."

Billions of Euros have been invested into CCAM projects but, Steve adds, there still seems to be a lot of confusion when it comes to interoperability.

"There's a difference in countries' knowledge of what they need to do for the future. We're heading towards Level 4, even Level 5 autonomous vehicles in the future but there are still a number of steps we need to climb along the way to get there. I also look for the positives but this is the reality of what we're finding as a global player having to make massive investments of our own to keep up with standards."

"That's not an easy question to answer in just few a sentences," half-jokes

Daniel, "but there's definitely quite a number of positive things going on right now in Europe in terms of opportunities. The technology, and that's both from the infrastructure and the vehicle side, is already there. It's good enough to support CCAM services and to support the increasing automation levels. From the infrastructure perspective, I think we can also highlight that SWARCO was committed for at least the last 15 years in developing, standardizing and creating an open ecosystem for those services to be implemented in the right manner.

"The goal is that you can drive from Portugal to Finland and throughout the journey the services are seamless. So, in that sense, I would say this is a very positive situation."

One word that continues to appear

STOP TALKING &

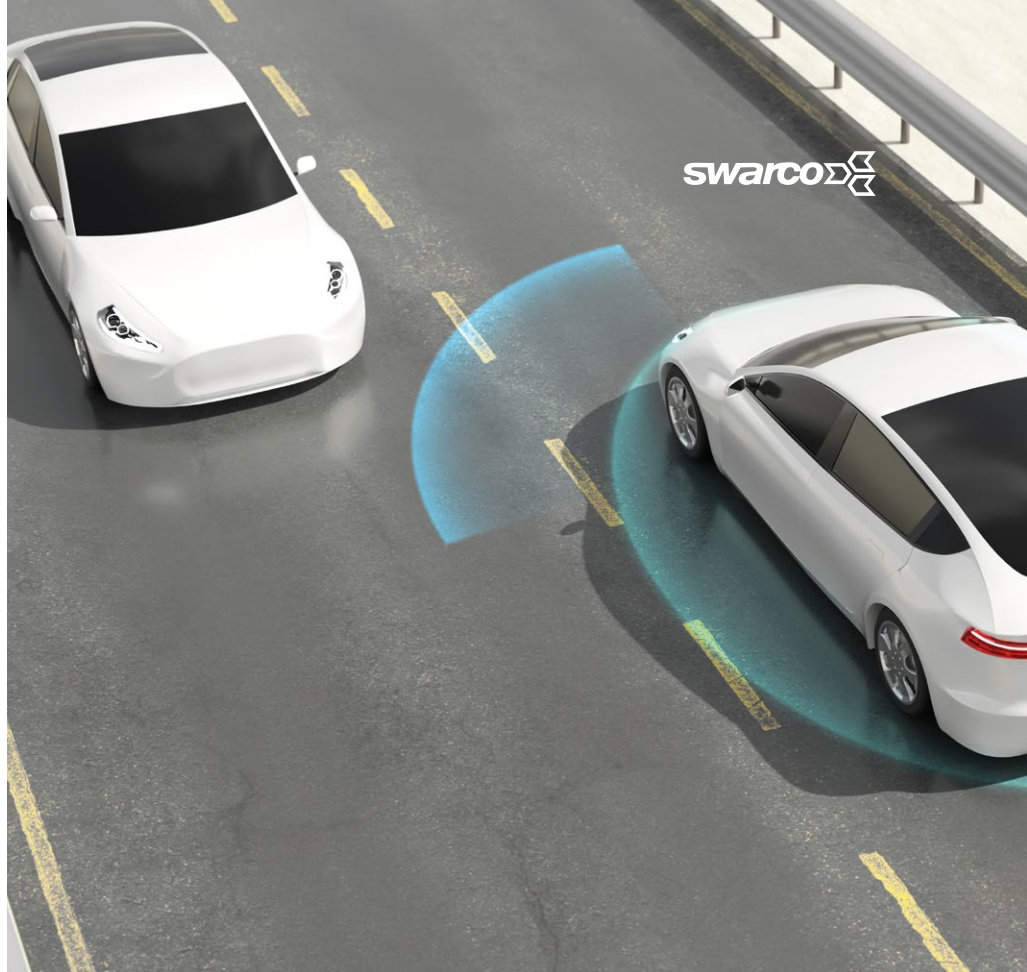
*WE'RE HEADING TOWARDS LEVEL 4, EVEN LEVEL 5
AUTONOMOUS VEHICLES IN THE FUTURE BUT THERE ARE STILL
A NUMBER OF STEPS WE NEED TO CLIMB ALONG THE WAY TO
GET THERE*

Steve Penn, SWARCO UK Head of Innovation ITS

in transport technology-related publications is 'trust'. Users have to not even give the notion of trusting the technology a second thought.

Says Daniel: "We're on the right path to create trust and to create a structure in which the parties involved, be they producers or consumers of the data, can take ownership of the system performance, which is most definitely a good step forward."

The challenges are clear, so is it even realistic to expect European roads to be ready, when you consider how much technological know how and research has gone into the whole idea of CCAM? After all, as ITS expert Phil Tarnoff wrote in 2005, we've got 21st century technology in 20th century cars driving on 19th century roads.



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START DOING!

Twenty years or so ago it would have been appropriate to ask this question: "Is connected vehicle technology as advanced as we'd like to think it is?" Not that we would have called it 'connected vehicle technology', of course.



“It’s all about preparation,” interjects Steve. “It’s something that we push internally at SWARCO. We build initiatives and campaigns, we do all sorts of things to try and help different countries and authorities and road administrators to understand where the market is going. Preparation for us is the fundamental key thinking right now, because even countries that may say, ‘we’re 10 years away from being ready’, they should start planning now. Germany and the UK are good examples. They invest for 10, 15 or even 20 years.”

“In the UK there’s been a large amount of funding made available to upgrade ITS infrastructure. However, there was no scope to make it C-ITS-ready. My question would be, ‘why not?’. It’s a perfect opportunity. In Germany, for example, we’re working with certain cities that are doing exactly that. So everything they do at the intersection, they make sure it’s C-ITS-ready.”

Steve further advocates the notion of preparedness in the deployment of cooperative, connected and autonomous mobility solutions.

“Let’s make sure that the right infrastructure is in place”, he insists, “so

when more connected vehicles are on our streets, there will be more use cases there, and a larger ecosystem. But of course you can’t start that unless you have the right infrastructure.”

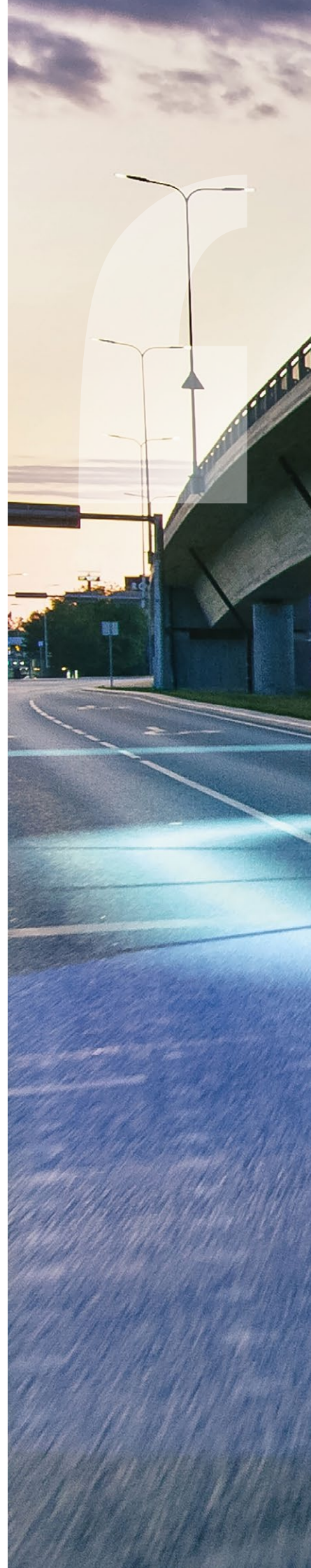
On the positive side of things, the roads are a perfect example of how the industry at large, partners from OEMs and the road operators can be glued together in order to start speaking the same language and having the same goal, as Daniel elucidates.

“I think that we are very well set to get started. We can take the examples of Western Europe and start deploying in Central and Eastern European countries, such as new members like Lithuania, Slovakia and the Western Balkans. The technology is well tested and well prepared so we can start scaling it up using the EU’s significant financial aid. We can start deploying the latest technology to solve the problems from the past.”

Daniel has the last word and issues something of a rallying cry.

“The technology is there,” he insists.

“We’re approaching the last mile, so it’s time to stop talking and start doing.”



*I THINK THAT WE ARE VERY WELL SET TO GET STARTED NOW.
WE CAN TAKE THE EXAMPLES OF WESTERN EUROPE AND
START DEPLOYING IN CENTRAL AND EASTERN EUROPEAN
COUNTRIES*

Daniel Lenczowski, SWARCO CCAM sales executive, Germany



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Harald Mosböck, SWARCO's vice president of Road Marking Systems for Europe, and also the European Road Federation's current President, takes his turn to answer the loaded question that was so skilfully handled by Steve Penn and Daniel Lenczowski earlier in this issue. This time the focus is on road markings



Are Europe's roads ready for CCAM? It's a good question, but perhaps the bigger question is if they aren't, why are they not ready... and when will they be ready?

"I can tell you what's happening in Europe if we are talking about road markings and automated driving," says Harald. "In autumn 2019 the European Council decided that Europe must do something and that we should not fall back in comparison with Asia and the US. As part of the 3rd mobility package of the EC the Council voted for two legislations that time: one was the general safety regulations, and the other was the road infrastructure safety management directive," he explains.

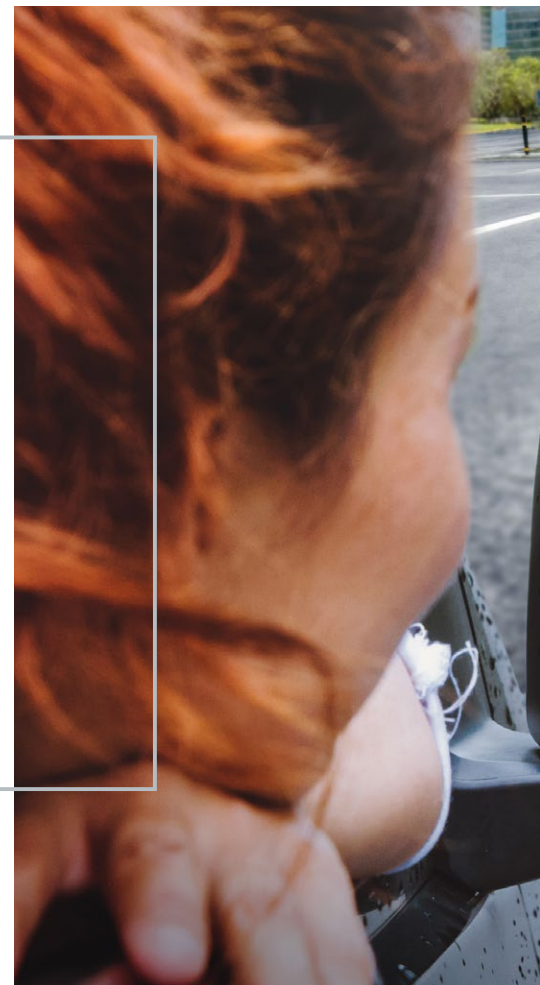
VISIBLE IMPROVEMENTS

General safety regulations have made it mandatory for every new car sold in the European Union from July 2024 to be equipped with several sensors and safety features, for example, emergency lane keeping assistance, and this is where road markings play a leading role. The visibility of road markings becomes more crucial.

"The positive example here is Germany and the national performance requirements for Highways," explains Harald. "Germany is probably the only large European country whose performance criteria for lane markings focuses very much on visibility on wet roads in rainy conditions."

GERMANY IS PROBABLY THE ONLY
LARGE EUROPEAN COUNTRY WHOSE
PERFORMANCE CRITERIA FOR LANE
MARKINGS FOCUSES VERY MUCH ON
VISIBILITY IN RAINY CONDITIONS.

Harald Mosböck,
SWARCO AG



PAINT A POSITIVE PICTURE

“My hope is that road maintenance budgets will be adjusted in line with the inflation rate of the last few years in order to maintain road infrastructure properly. But if we truly want to support the deployment of cooperative connected and autonomous vehicles then the levels of funding and investment needs to be increased.”

PREPARE FOR PROGRESS

So - much more needs to be done. Could do better. So what does Harald think can be done and whose responsibility is it to actually do it?

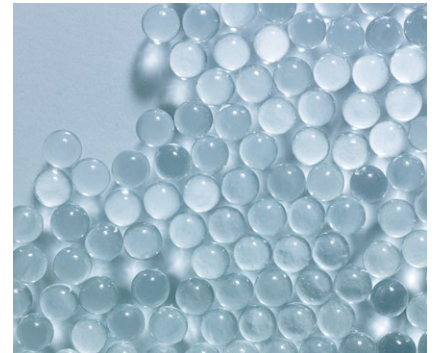
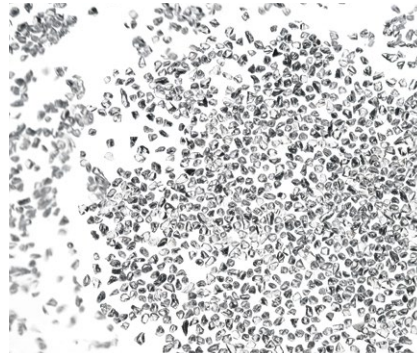
“The aviation and maritime industries are built upon a global framework of laws and regulations and while there have been attempts to harmonize road network organization and standards, significant differences remain.” he replies

“Our goal is to optimize the role of road markings so that cameras can ‘see’ lane lines, perceive pedestrian crossings and identify designated bike lanes. Consequently this will help to maximize the value of automated driving technologies, to create a safer, sustainable and more efficient road network.”

Harald’s primary concern, however, is that despite the progress being made all over the continent, in terms of road-readiness Europe is in danger of losing touch with China and the United States. In China thousands of kilometres of roads are in the process of being prepared for fully automated vehicles.

“If Europe is to remain competitive in global markets while advancing climate objectives, we cannot fall behind when it comes to automated freight. We need to at least remain on par with the United States and China.”





THE BIOGRAPHY OF A GLASS BEAD

In 1969 Manfred Swarovski founded his first glass bead factory in Austria. 55 years later, SWARCO is the world's leading manufacturer of high performance road marking systems that contain glass beads – still the most economic way to make road markings visible at night. DRIVE ON met “Reflecty” to learn about the lifetime journey of these illuminating beads.

Hello! My name is Reflecty and I would like to take you on a journey – from my conception via my birth to my life full of suspense and meaning.

Firstly I must introduce you to my ancestor, Flatty. Flatty is a family member of flat glass cullet, shards of broken windows or doors that are no longer needed in the glass producing industry. However, Flatty's life is not yet at its end on a dump or a recycling centre. He lives on but – as with human beings – has to undergo some transformation over the course of his life. Flatty prefers to live in huge heaps

FAMILY VALUES



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pipsqueak no taller than 0.1 to 1.0 mm in diameter, but he is strong and robust enough for his future endeavours. In the next phase of his life, Reflecty gets some clothing. Where it was very hot before, it is now colder and time for a coat for protection against humidity or supporting Reflecty's tackiness. This is Marky, a member of the road marking material family. Reflecty now mingles with brothers and sisters of other sizes and meets his friends from the Skiddy family, anti-skid particles supporting the grip of road marking systems. Jointly they are filled into their new home, a 25 kg paper bag. Forty of these bags are palletized and the journey continues and might in fact lead Reflecty to a new country somewhere on our globe where he finds his calling.

During transportation, Reflecty and friends can think about the meaning of their lives, but their fate is already predetermined: They are supposed to meet a Marky family member and propose marriage.

The wedding also hurts a bit as Reflecty is squeezed through a bead dispenser pistol and dropped onto Marky. For Marky this is the fulfillment of his dreams. He knows that thanks to Reflecty he will now shine on at night, show the way to the road users, and thus drastically improve road safety. Reflecty is happy to have found a new home where he can interact with the headlights of vehicles and protect Marky for a longer life.

Once again we learn that life is about relations, teamwork, togetherness and understanding appreciating our differences and strengths. Only when Flatty, Grany, Reflecty, Skiddy and Marky lead good functional lives will driving on our roads be safer. As an added bonus the roads will thus become readable for automated vehicles in the future.



of cullet, but his life is jeopardized by a giant wheel loader which from time to time comes with its massive shovel to pick up a load of Flatties and transport them into what could best be described as a noisy hell. Flatty gets smashed into smaller pieces, first in a jaw breaker, then in a hammer mill, and last but not least in a centrifugal rotor crusher. By this point Flatty has shrunk and become Grany: glass granulate.

Glass granulate is, so to speak, the "sperm", making itself on its way to create and give life to Reflecty. We know that giving birth can be a painful process, and this also applies to the life of Grany.

Grany is injected into a shaft furnace and exposed to unimaginable temperatures of up to 1200°C that make him sweat. Grany is now subject to melting into a round shape. Surface tension is the key phenomenon in this process to give Grany the shape of a microsphere. Reflecty is born!

Reflecty is sweating as well but soon after cools down and falls into the shuttle that transports him to the first exciting phase of his life: Reflecty gets shaken all over in a sieve and finds his friends of similar size. Size might be a misleading word in relation to the dimensions of Reflecty's body. He is very much a

MOVING FORWARD WITH MYCITY

SWARCO's modular and scalable urban mobility management suite MyCity is gaining more and more ground around the globe. The new release 2.7 integrates quality and feature adjustments for an even better performance.



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SWARCO MyCity plays an important role in tackling the challenge of rapid urbanisation by helping city leaders and urban mobility managers improve traffic flow, reduce the risk of congestion, reduce air pollution, make better use of existing infrastructure, and shorten travel times. It also encourages more people to choose alternative forms of mobility and generally makes cities cleaner, safer and more attractive places to live and work. All this is done through a single, easy-to-use, intuitive and modular solution only requiring a single login. MyCity is also scalable, so new features can be added as needed. Gabor Schuchmann, Head of Sales and Go2Market with Berlin-based SWARCO SOLUTION CENTER GmbH reports: "We see very positive developments in Hungary's second largest city with 200,000 inhabitants, Debrecen, where MyCity now integrates 87 traffic light controllers compared to 29 in December 2023", adds Schuchmann. The same applies to the 90,000-inhabitant city of Zwickau in German Saxony, where now 81 traffic light controllers are run

by MyCity, four times as many as seven months ago. Further MyCity extensions are reported from Antwerp (Belgium) and Cambridgeshire (UK). Helmond in the Netherlands and the Austrian states of Upper Austria and Styria are happy customers using MyCity with the integration of TomTom traffic data. Thanks to the support of our Latin America branch SWARCO ANDINA in Bogotá, there are new opportunities for MyCity arising in Peru, Colombia, Bolivia, and Mexico. Customers in Latin America and Asia who used to work with an alternative SWARCO product are now migrating to the MyCity platform. "I am particularly delighted to read the feedback of our customer in Zwickau, after some initial technical hiccups we were able to solve", says Schuchmann. Stefan Weiss, working in Zwickau's department for traffic planning and roads and bridges, wrote in a letter to SWARCO: "The traffic management system is working properly including the Adaptive and Analytics modules, fulfilling our

technical requirements, letting us successfully manage the everyday traffic situations. With SWARCO MyCity, we always have an eye on the traffic and our corresponding infrastructure in Zwickau and can control it centrally. The system grows with our requirements through the various modules and the cloud solution. MyCity Adaptive, for example, not only takes the current traffic volume into account, but also creates a short-term forecast and optimally adapts the control of our traffic lights. Thus, we are fully satisfied with the software platform MyCity as well as the professional services of SWARCO." An idea about the capabilities of SWARCO MyCity can also be gained within the Virtual Reality experience the company created to support cities engaging in the ambitious goals of the European Green Deal. Diving into a 3D world with various traffic scenarios, users get a better understanding of how SWARCO solutions already today help reduce emissions, keep traffic more fluid, better organise parking, and improve the safety of vulnerable road users.



For more information on SWARCO's urban mobility management software and the related software product for highway and tunnel management, please refer to

WWW.SWARCO.COM



RED-LIGHT RUNNING –

THE NEW NORM IN THE US?

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Red-light running has become a deadly epidemic in the US. The increase in red-light running is another dangerous driving behavior affecting the safety of our roadways and road users. In this article, we will explore what's fueling the increase in red-light running and how it's a dangerous addition to the many other daily distractions, such as mobile phone usage, eating food, applying makeup, and other common distractions.

The alarming rise in red-light running at traffic intersections is more than just missing the signal change from yellow to red. It involves drivers intentionally running red lights even when they have enough time and distance to stop safely. To make matters worse, this identical driving behavior and attitude towards others and the laws designed to protect them also manifests itself at stop signs and when drivers should yield to others in the traffic flow.

Intentional red light running puts everyone at risk, drivers and pedestrians alike. A recent study by the Insurance Institute for Highway Safety showed that a red-light violation happened approximately once every 20 minutes. In 2021, 1,109 people were killed in crashes involving red light running, up from 846 deaths in 2019, according to AAA Newsroom. Driver behavior is getting worse, not better.

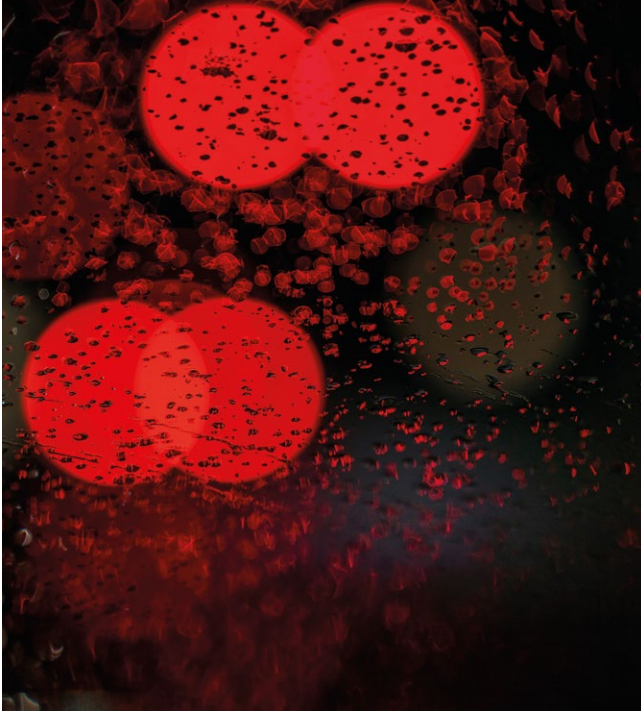
So who is at fault? YOU!...OK, well, perhaps everyone. We all share the responsibility and duty to drive in a way that protects everyone on the road. Given that, what is the solution? The first solution is for all of us to drive responsibly. The remaining options are compliance and law-based; however,

drivers seem less concerned with abiding by laws and penalties associated with breaking them.

Additionally, a recent study published in ScienceDirect highlighted the dangers and risks associated with our inability to assess risk while driving accurately. The study points out that many drivers have a false sense of control and safety and make dangerous driving decisions based on this false perception. This lack of perception fuels dangerous driving behaviors, such as speeding when road conditions dictate slower speeds, such as when rain is present.

So why does it seem that dangerous driving and red-light running have worsened exponentially in the past five years? The simple answer may be a result of the pandemic. There is a direct correlation between the timing of the pandemic and an increase in traffic fatalities. The change in driving behavior is widely believed to be a result of the damaging effects of the pandemic and regulations limiting citizens' movements and mobility. Less traffic, increased speeds, and a reduction in law enforcement led to aggressive driving behaviors that have remained.





While industry solutions exist to counter red-light running, they are not implemented at all intersections. Unfortunately, many intersections that do have the technology in place do not have it enabled or configured correctly.

One solution is dilemma zone warnings, which can reduce the possibility of a driver running a red light. However, this only works for a single driver and doesn't protect all those at an intersection when a driver accidentally or purposefully runs a red light.

Another solution is red-light cameras. While initially effective, these systems are expensive, and only a limited number of states in the U.S. have laws allowing them.

Red light protection is the standout solution. It is low-cost and can be applied throughout an entire traffic signal system. Typically, red light protection is embedded in the traffic system controller software.

While multiple red light protection offerings are available, the best solution protects the intersection from a red-light runner, NOT the driver, from running a red light. While this seems obvious, not all solutions approach the dangers of red-light running in this manner. A well-designed, effective red light protection solution must provide maximum safety benefits while satisfying agency requirements and have the following features and functionality:



FEATURES AND FUNCTIONALITY

Provide a user-programmed red protection period for any potential Red-Light Runner

Provide a limit to the number of Red-Light Runners per cycle to reduce disruption on coordination if desired

Limit the number of Red-Light Runner activations per cycle or per time period (headway) to maintain coordination

Work while in coordination or free modes

Provide alerts and alarms while logging all activations in both HiRes data logs and controller logs

Predict the red-light running event and be detector and detection technology agnostic



ADDITIONAL BENEFITS

Protect ALL at the intersection, NOT just the red-light violator

Shouldn't be a constant Red Clearance interval that drivers can learn

Doesn't teach drivers bad behavior

Should be inexpensive and easily added to any existing intersection with proper detection

Qualifies for funding as a safety enhancement

Can be used with ATSPMs

Effective at holding conflicting traffic

Can be applied at all intersections in the system



Effective traffic safety solutions like red light protection safeguard everyone, including indigenous and underserved locations and groups. Protecting ALL who are at an intersection is paramount. We must remember those with disabilities, such as hearing and sight-impaired pedestrians, who are at an increased risk when a red-light violation occurs. Traffic intersection red light protection saves

lives and protects all at the intersection, not just the red-light runner.

Funding is always a consideration for cities, towns, and agencies when evaluating upgrades to traffic infrastructure. Grant funding for safer streets is available in the United States (and other countries). These grants include funds that advance safety

initiatives such as Vision Zero and your agency's traffic management improvement projects.

The issue of dangerous driving, including red-light running, can only be solved with driver education, effective traffic control technology, and toughening of legal consequences when drivers knowingly disregard traffic laws.

NEW MARKING MATERIAL FOR CYCLE PATHS



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SWARCO Road Marking Systems is launching a new, environmentally friendly marking system for cycle paths. The premiere took place in Darmstadt.

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The bicycle continues to enjoy increasing popularity as an environmentally friendly means of transport. However, this also increases the need for space for cyclists - and consequently the demand for cycle path markings. SWARCO Road Marking Systems is keen to offer environmentally friendly alternatives to conventional products for cycle paths and cycle lanes. One such product recently celebrated its world premiere in the 165,000-inhabitant city of Darmstadt in Germany: SWARCOPLAST ECO friction plastic. The binding agent used in the product,

made by the German company Röhm, consists of more than 30 per cent recycled material. As a result, the newly formulated product has a significantly lower CO₂ footprint than a comparable product.

MODERN MARKING MATERIALS FOR THE MOBILITY ARTERIES OF THE FUTURE

In urban areas, new routes are constantly being developed for cycling and existing routes are being renewed

or improved. This applies to Darmstadt, where the share of cycling in the traffic mix is set to rise to a third, as well as to many other metropolises around the world. 'As a global player for marking systems, we want to provide the most environmentally friendly marking materials possible for these new mobility arteries in cities,' explains André Peiter from SWARCO Road Marking Systems, who was responsible for the application of the new product in Darmstadt.

POSITIVE FEEDBACK

Markings for cycle paths and cycle lanes

WITH A GREEN PLUS



are essential for the safety of all road users: they provide cyclists and all other road users with the necessary orientation and hint at potential accident blackspots. Cycle lane markings can therefore significantly increase road safety. To ensure that the environmentally friendly SWARCOPLAST ECO friction plastic marking material can be used in as many cities and municipalities as possible in the future, everything had to work at the premiere in Germany. The feedback from the road marking service providers at Herbert Ruch GmbH, who applied the two-component marking material in

Darmstadt, was very positive: "The new material is very easy to process. It even feels smoother, which means we can work faster and more efficiently."

André Peiter's conclusion afterwards was also positive: "The SWARCOPLAST ECO friction plastic has passed its first test. It will become increasingly important for cities and local authorities to open up new and safe routes for cyclists. They can now rely on a new, environmentally friendly material - and on our expertise with which we are happy to support them on their way to future-oriented micromobility."



FACT-BOX

SWARCO Road Marking Systems generally works to produce marking materials in the most environmentally friendly way possible, whether through energy-efficient production processes or the use of bio-based and recycled ingredients. Such marking systems are summarised under the SWARCO ECO-LINE product line. It includes materials for a wide range of applications - from water-dilutable paints and cold spray plastics to preformed thermoplastics.

AI in intersection control

– a win-win situation

The management of urban corridors with signalized intersections can benefit from the responsible use of Artificial Intelligence.

SWARCO's SmartAI solution for intersection control outperforms vehicle-actuated control, saves time and costs for programming, configuration, and deployment, evaluates itself, and simplifies prioritizations for traffic modes.

We at SWARCO are convinced that AI-supported traffic management is a win-win situation, lowering costs for the road owners and minimizing delays for the road users.



The Better Way. Every Day.

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