

busworld[®] DAILYtimes

EUROPE BRUSSELS TUESDAY 10 OCTOBER 2023



Neoplans Diamond Edition should be treasured



"For years, Neoplan has been renowned for its exclusive and innovative coaches. Over the years, Neoplan has become a cult feeling that you should experience as soon as you step into one of our coaches. For the 20th anniversary of the Neoplan Tourliner, we have created the Diamond Edition, which expresses even more the refined exclusivity that Neoplan stands for," says Sebastian Lindner, responsible for MAN Corporate Communications Bus & Digitalization.

In the past decades, Neoplan has positioned itself as the exclusive coach brand in the industry. The Skyliner double-decker and Cityliner that were introduced about half a century ago were joined by a family member in 2003 with the Tourliner. "The Diamond Edition was designed to celebrate that anniversary, which also took part in the Busworld Awards and can also be experienced on a test drive. There is also a Skyliner and a Cityliner in the Diamond Edition version on the outdoor area. In the near future they will also be equipped with the new, ergonomic digital cockpit into which the intelligent MAN SmartSelect control system has been integrated," indicates Sebastian Lindner.

Sebastian Lindner: "A diamond should be treasured and we have incorporated this philosophy into the overall concept of the Diamond Edition."

» continued article see p. 2



Hall 4, stand 402b

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INTERCITY 2024

Colophon

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» continuation of article p. 1

'DIAMONDS ARE FOREVER'

"The philosophy behind the Diamond Edition is 'Diamonds are forever', which means that our design was based on an exclusive, elegant, timeless and simultaneously contemporary product. Apart from that, you also treasure and take care of a diamond. From this point of view, we place great emphasis on after-sales, after-sales service, service contracts and offering real solutions," Sebastian Lindner stresses.

Anyone entering a Diamond Edition will immediately experience what Neoplan stands for as soon as they see the front row, fully adjustable leather seats in the Tourliner or Cityliner. Nestle into the Skyliner on the front row at the top and enjoy the wide view, thanks in part to the glass

roof. If you prefer things a bit more refined and exclusive, this Skyliner can be fitted with a 'bistro' compartment to pamper the 49 passengers.

The new electronic platform also ensures that the 'Diamond Edition' coaches are equipped with numerous gadgets enhancing safety, driving comfort and efficiency. For example, this coach features a completely new air suspension system that allows the coach to be lowered by about 20 millimetres on highways, which improves aerodynamics.

Furthermore, numerous new or upgraded assistance systems complete the coaches of model year 2024. These include the Emergency Brake Assist EBA+ and the new low-speed collision warning system, the TPMS tyre pressure monitoring system, an Alcolock preparation, Lane Change Support, Lane Keeping and

Lane Return Assist, a Turn Assist System that activates automatically at speeds below 30 km/h and also detects nearby movements around the vehicle.

Other features include Adaptive Cruise Control (ACC) and Traffic Jam Assist that allows the coach to drive along in traffic jams up to 40 km/h but remains activated at speeds up to 60 km/h. ■



The Skyliner in Diamond Edition.



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TRANE
TECHNOLOGIES



Jo Van Pee and Olivier Van Mullem of Multiobus sign the purchase contract for 20 Ebusco 2.2s with Ebusco's CEO Peter Bijvelds (on the right).

20 EBUSCO 2.2 BUSES FOR MULTIOBUS

Belgian bus trader Multiobus purchases 20 electric buses from Ebusco. For Multiobus, it is the fourth purchase contract with Ebusco, which will give them 36 Ebuscos by 2025, including 34 vehicles of the 2.2 variant.

Manager Olivier Van Mullem clarifies the choice of the Ebusco 2.2 instead of the Ebusco 3.0. "We have had positive experiences with the 10 Ebusco 2.2s which largely met our expectations and have driven more kilometres than estimated. With the 20

additional Ebuscos 2.2, we are opting for standardisation of the vehicle fleet, making things easier for maintenance and infrastructure. On the Ebusco buses already in service with us, we will dismantle the pantograph as intermediate loading will no longer be necessary. Overnight charging is sufficient to drive all day, including in rural regions. By the end of 2025, we hope to have greened 50% of our vehicle fleet to meet the operating conditions of Flemish transport company De Lijn". ■

Summary

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Whole family is active at Busworld



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MOBILITY





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HALL 4
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Step 2: Download the app on your phone (use QR code or look in your store for 'Busworld').

Step 3: Login with your e-mail and password. If you forgot your password, click on 'Forgot Password?' and you can set a new password.

Step 4: Use the app as much as you can.

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AWARDS IN 2023: 3 COMPETITIONS

The renowned Busworld Vehicle Awards



The 20th edition of this competition took place on 30 September with 14 competing vehicles: 8 buses and 6 coaches. And the winners are...



**MERCEDES-BENZ
E-CITARO**
HALL 5 | BOOTH 503



**SETRA
S 516 HDH**
HALL 5 | BOOTH 503

As always, the best performances in the different sub categories are awarded with a best of category label.

BUS

- **Label of Excellence DESIGN**
VDL Bus & Coach - Citea New Generation
- **Label of Excellence COMFORT**
Mercedes-Benz - e-Citaro
- **Label of Excellence ECOLOGY**
Ebusco 3.0
- **Label of Excellence SAFETY**
Anadolu Isuzu - Citivolt

GRAND Mercedes-Benz - e-Citaro
runner up Ebusco 3.0
runner up Anadolu Isuzu - Citivolt

COACH

- **Label of Excellence DESIGN**
Yutong T15 E 14
- **Label of Excellence COMFORT**
Setra S 516 HDH
- **Label of Excellence COMFORT**
Van Hool - T16 Astron
- **Label of Excellence ECOLOGY**
Yutong T15 E 14
- **Label of Excellence SAFETY**
Setra S 516 HDH

GRAND Setra S 516 HDH
runner up MAN Truck & Bus - Neoplan Tourliner L
runner up Van Hool - T16 Astron

The new Busworld Digital Awards, spotlighting digitalization in bus and coach



Acknowledging the growing importance of digital technologies in the bus and coach sector, Busworld, is proud to present the Busworld Digital Awards. This exciting new competition aims to recognize and celebrate the groundbreaking digital innovations that are transforming the bus and coach experience.

Shortlist in the 4 categories

Out of the 35 candidates, the jury selected a shortlist of 3 candidates per category. The final winners will be announced at the Digital Mobility Solutions Conference on Wednesday 11 October.

DIGITAL OPERATIONAL EXCELLENCE

- **Iveco Bus**
IVECO ON Heavy Buses Digital Services
Hall 4 | Booth 402B
- **TOTT UP**
GPS Training Partner
Hall 11 | Booth 1114
- **ZF Group**
SCALAR
Hall 5 | Booth 537

E-MOBILITY MANAGEMENT

- **Chargepoint**
Battery Health Package
HALL 9 | Booth 937
- **MAN TRUCK & BUS**
eManager
Hall 4 | Booth 401
- **Rampini**
Hy4Drive
Hall 6 | Booth 606A

DIGITALLY ENHANCED DRIVING

- **Anadolu Isuzu**
V2X
Hall 4 | Booth 403
- **Daimler Buses**
Active Drive Assist 2
Hall 5 | Booth 503
- **Karsan**
Autonomous e-ATAK
Hall 5 | Booth 501

DIGITAL ON-BOARD COMFORT

- **Actia**
ACTiVi solution
Hall 4 | Booth 409
- **MAN Truck & Bus**
New Digital Cockpit and MAN SmartSelect for Model Year 2024
Hall 4 | Booth 401
- **Navaho Technologies**
Navaho Transport Systems
Hall 6 | Booth 689

Busworld Innovations, your opinion counts



In 2023, visitors can decide if an Innovation Nominee is innovative for them or not? Out of 26 candidates 10 nominees were selected by the Busworld Awards jury. Go to their booth, evaluate the new product, scan the voting QR code and... vote! If the product gets 50% or more YES votes, it will become an official Busworld Europe Innovation 2023.

**INNOVATION:
✓ OR X?
YOU DECIDE!**

- **C Trine Engineering**
EcoRapidBusDesign
Hall 11 | Booth 1182B
- **Generation Phoenix**
ELeather
Hall 7 | Booth 718
- **IRIZAR**
Irizar i6S Efficient hydrogen
Hall 6 | Booth 602
- **Jaakko-Tuote Oy**
JTSolar glass
Hall 8 | Booth 861
- **Konvekta AG**
Konvekta CO2 heat pump thermal management system for electric doubledecker buses
Hall 5 | Booth 508
- **Robert Bosch Automotive Steering GmbH**
ServoE
Hall 5 | Booth 510
- **Saint-Gobain Sekurit**
Transport Reflexcontrol
Hall 7 | Booth 760B
- **Superlee Corporation**
3 in 1 DRL/DI/POS combination light
Hall 9 | Booth 958
- **Thermo King**
Athenia ENVI heat pump with R744
Hall 4 | Booth 426
- **Twiliner**
Twiliner coach seat
Hall 2 | Booth 227

BUSWORLD CONFERENCE PROGRAM

A full day of interesting conversations and valuable insights is awaiting you during day 2 of the Busworld knowledge program. From the European market, vehicles and infrastructure of **zero emission buses** to hot topics as **driver shortage and driver safety** as main dish. A sweet dessert in the form of a **network dinner** is being served from 18:00 till 22:00.

Wednesday, third day of the knowledge program also means third half day of the **European Zero Emission Bus Conference**. Time to investigate how financially viable the switch to zero emission buses is today, and what business models are possible for you to implement in your business.

Are you more into the digitalization of your business? Don't miss out on the **Digital Mobility Solutions Conference** starting at 09:30. From digital tools in your daily operations, to smart energy management for electric buses to autonomous vehicles and the role of bus and coach in a multimodal digital passenger transport world. Fasten your seatbelt as we are shifting gears! ■

TODAY (TUESDAY OCTOBER 10TH, 2023)

ZERO EMISSION BUS CONFERENCE (PAID)

LOCATION: MEETING CENTER HALL 7, AUDITORIUM 500

STATE OF PLAY AND PERFORMANCE OF ZEBS (2/2)

- **09:30:** Opening Address
- **09:35:** Electrifying Public Transport: RATP's ZEB Journey in Paris and Beyond
- **09:50:** The Other Electric Bus – A California Agency Deploys 33 Fuel Cell Buses & Additional Developments From the US ZEB Market
- **10:10:** Data Analytics – Optimizing Operational Fleet Performance and Planning Future Fleet Decisions
- **10:50:** Efficient Hydrogen Refueling Solutions – Performance and Innovations

THE INFRASTRUCTURE CHALLENGE: BATTERY AND HYDROGEN

- **11:30:** Panel – HRS Infrastructure: Challenges and Solutions
- **12:15:** Challenges When Scaling: How to Ensure Operational Readiness at the Lowest Cost in the EV Transition
- **12:25:** Panel – Charging Infrastructure: Challenges and Solutions
- **13:10:** Closing

DRIVER SAFETY SEMINAR (FREE)

LOCATION: MEETING CENTER HALL 11, LEVEL 3, ROOM 1122

- **14:00:** Opening
- **14:15:** Launch of Academic Report on Bus Driver Safety
 - Keynote: Available and Possible Risk Reducing and Consequence-Reducing Measures in Bus Transport
 - Panel Discussion: Perspectives on Safety From Bus Drivers and Soft Road Users
- **14:45:** Safety Systems, Solutions and Requirements
 - Keynote: Introduction to the EU General Safety Regulation
 - Panel Discussion
- **15:45:** Policy Making for Improved Safety of Bus Drivers and Passengers
 - Keynote: Towards a European Standard for Driver Safety in Low Floor Buses
 - Keynote: Safety Learning System Based on Analysis of Recent Accidents
- **16:15:** Implementation of Safety Tools and Measures by the European PTAs
 - Panel Discussion
- **17:00:** Closing

DRIVER SHORTAGE ROUNDTABLE (FREE)

LOCATION: MEETING CENTER HALL 11, ROOM 1121B

IRU, the voice of commercial transport operators, is happy to invite you to an **IRU roundtable at Busworld, "Driver shortages in the road passenger transport industry"**, featuring decision-makers and road transport representatives. The roundtable will explore the work that is currently being done, and the steps that are still needed to tackle the shortage of drivers.

Take part in the discussion and share your ideas, best practices and solutions!

NETWORK DINNER (PAID)

TIME: 18:00 – 22:00

LOCATION: MEETING CENTER HALL 11
PRICE: 125 EUR PP

European Zero Emission Bus Conference and Busworld Foundation Network Dinner. A great opportunity to meet with vehicle manufacturers, suppliers and major European public and private transport agencies & operators, as well as speakers from the various conferences taking place during Busworld Europe.

TOMORROW (WEDNESDAY OCTOBER 11TH, 2023)

ZERO EMISSION BUS CONFERENCE (PAID)

LOCATION: MEETING CENTER HALL 7, AUDITORIUM 500

ECONOMICS OF ZEBS

- **09:30:** Opening Address
- **09:35:** Total Cost of Ownership Case Study on BEBs and FCBs
- **09:55:** Panel – Building a Strong Business Model for BEBs (Battery Electric Buses)
- **10:45:** Hydrogen Fuel Cells as Enabler for Mobility Decarbonization: Symbio's Solution for Buses & Coaches

THE FUTURE OF FUNDING MODELS FOR ZEBS AND ASSOCIATED INFRASTRUCTURES

- **11:30:** Panel – Financing a Full Fleet Transition: Public Funding Options

- **12:20:** 1198 Buses Powered by REFIRE: A Journey by Hydrogen-Electric
- **12:30:** Panel – Building a Strong Business Model for FCBs (Fuel Cell Buses)

DIGITAL MOBILITY SOLUTIONS CONFERENCE (FREE)

LOCATION: MEETING CENTER HALL 11, LEVEL 3, ROOM 1122

- **09:30:** Opening - Welcome and Policy Making on Data Driven Mobility
- **10:00:** Bus & Coach in Next Generation Mobility Concepts
 - Keynote 1 by ITxPT
 - Keynote 2: Insights From the Bus Services Industry on the EU Multimodal Digital Mobility Services Initiative
- Panel Debate

- **11:30:** Digital Operational Excellence via Telematics
 - Keynote
 - Panel Debate
- **14:00:** Smart Energy Management When Deploying Electric Buses
 - Keynote 1 by European Commission
 - Keynote 2 by Hitachi Energy
 - Panel Debate
- **15:45:** Digitally Enhanced Driving
 - Keynote: 'The European and member states' approach on the implementation of autonomous buses and shuttles" by ERTICO – ITS Europe
 - Panel Debate
- **17:00:** Announcement of the Busworld Digital Awards Winners

ADD SESSIONS TO YOUR SCHEDULE VIA THE BUSWORLD APP:



Turkish invasion with newcomers and established names

Coffee and a piece of Turkish fruit candy, you can't avoid it at Busworld. An overwhelming number of manufacturers from Turkey fill the halls of the bus show. Ambitious, entrepreneurial and favourable wage costs are the keys to their success.

It almost looks like an invasion of Turkish bus manufacturers and suppliers at Busworld. Established manufacturers and start-ups present their top products. The Turkish bus sector has become a major global player in just a few decades.

The rapid growth of this industry is rooted in the need for public transport. No big buses but compact vehicles in the 6 to 10-metre category to carry 30 to 40 passengers. Minibuses are in the DNA of Turkish companies. They are affordable for the many small businesses.

Turkey's large production of minibuses made its entry into the foreign market possible as European manufacturers ignored this segment due to too limited production numbers. So Turkish companies filled the gap in the market. And in no time these manufacturers were able to work their way up

to solid competitors with vehicles that matched European standards.

'The focus of the industry on public transport is the basis of the success of Turkish bus manufacturers. Public transport was in high demand during the 1970s. Many entrepreneurs responded immediately to this trend. In addition to bus manufacturers, a multitude of suppliers emerged,' says Emre Hür, manager of bus manufacturer Karsan.

Turkish manufacturers have a significant competitive advantage over Western European manufacturers. 'Lower wages and a 45-hour work week play in our favour. There is also a large supply of labour, unlike the shortage of workers in Western Europe. But also the faster development of our vehicles,' ensures a more favourable position,' says Emre Hür. Karsan also limits diversification by no longer building diesel or CNG-powered vehicles.

In an already crowded Turkish market, there are still newcomers like Habas which is showing off three brand new buses at Busworld. Bus manufacturer Habas is a branch of a 76-year-old



and large holding company that produces industrial gas and medicinal applications. Things are moving fast at Habas. Started in 2021 during the pandemic and already present with three final products to make it happen in Europe. 'The flexibility of production, the modularity of our vehicles and also the proximity to Western Europe are our assets. 'In less than three days, we can deliver

buses to the most remote corners of the European continent,' says Levent Ozbek, sales manager of Habas. However, Turkey's industry faces challenges such as terrifying inflation and an unfavourable exchange rate. 'But our years of experience, our perseverance and cooperation with strong suppliers, help us cope even in these difficult times,' says Sevcan Karaman, sales manager of Anadolu Isuzu. ■

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Busworld goes Digital!

For the first time, Busworld was organizing and will be awarding **Digital Awards** on Wednesday, October 11th on the **Digital Mobility Solutions Conference**. The world of buses and coaches cannot be thought today without all the digital gadgets and solutions that help to be as safe, efficient and sustainable as possible. Every vehicle has up to 10.000 semiconductor chips of different kinds on board, the connectivity with the diverse platforms like ITxPT is ever more sophisticated. For the first time, also a new "V2X" System was entered in the contest, which helps to communicate the vehicle with the surrounding infrastructure and other vehicles. The nominees could enter their digital products, that do not have to be complete vehicles, in four different and fascinating categories:

"Digital On-Board Comfort" comprises everything from new entertainment systems to Human Machine Interface (HMI) Solutions, that make the voyage experience for passengers as well as drivers more enjoyable and comfortable. **"Digital Operational Excellence"** is very important to manage your fleets in a way that

combines efficiency and sustainability with telematics and other systems, that cannot be omitted today by any means. **"Digitally Enhanced Driving"** is of overarching importance today, as there are not enough drivers around anymore. Partly and fully autonomous vehicles are also demonstrated at the Busworld grounds!

But also modern ADAS systems of the SAE Levels 2 to 4 are very helpful to support the driver in tricky situations and when he is not top fit any more. Safety is a unique point in this category. Last but not least, the category **"E-Mobility Management"** has been incorporated in the awards. Modern Emobility is not any more about vehicles alone like in Diesel-Times, but about whole systems to operate and charge a fleet of buses in a way that saves time and money. The more such a system can deliver, the better the chances, to win an award here. All the twelve products on the shortlist offer unique and innovative features and you should come and see, who will be the lucky winners on Wednesday!

Busworld goes Digital! ■



Optibus: Efficient and sustainable public transport

Transparent and clear communication with public transport users or optimizing travel times and timetables. These are some of the numerous challenges in the transport sector where the Optibus software platform can contribute significantly to efficient business management.

Optibus is an established company as it operates in public transport in 35 countries and over 4,000 cities. The company aims to improve service and pursue sustainable policies, using the latest technological tools such as artificial intelligence and optimised algo-

rithms. At Busworld, Optibus will be presenting its driver-depot management developed in collaboration with drivers. Intelligent charging of electric buses is also set for a breakthrough, says the software developer. Optibus is a company backed by Volvo that serves companies with big names like Stagecoach, First Bus, Transdev, Arriva and Meta (Facebook). Last year, it was the first start-up within the public transport sector worth more than \$1 billion. As a supporting network for three billion trips, Optibus can cut annual emissions by 11 million tonnes of CO₂. ■

Autonomous electric mobility - 6,60 m

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hall 5



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BYD introduces a double entry of new eBus innovation

BYD premieres two new pure-electric buses and ground breaking technologies alongside two existing models in Europe: the BYD eBus B19 (18.75m) and the BYD eBus B15 (15m). The 12-metre BYD eBus B12 and the BYD-UNVI DD13 Double-Decker coach both make their European debut at the Expo. The all-new 12-metre BYD eBus is the first bus to utilise BYD's revolutionary Blade Battery Chassis bringing a new level of safety and energy efficiency and exceptional range.

Making its world premiere, the BYD-UNVI DD13 Intercity double-decker coach combines BYD's expertise in battery and chassis technology with UNVI's renowned skills in coach body build and design.

The BYD 12-metre B12 eBus brings a new generation of integrated chassis technology to public transport operators in Europe.

In addition, and making its world premiere at the BYD stand is the 13-metre customisable pure-electric intercity double-decker coach; the BYD-UNVIDD13, an exciting collabo-

ration between BYD and European bodybuilder, UNVI.

With BYD's latest generation of 12-metre electric buses, BYD presents its all-new pure-electric bus chassis which integrates the Lithium Iron Phosphate Blade Battery within the chassis structure. This ground breaking Blade Battery Chassis technology also utilises a new 6-in-1 controller with Silicon Carbide technology, together with two innovative wheel hub hairpin motors. Combined, these bring a multitude of benefits to BYD's 12-metre eBus including enhanced energy efficiency, performance and durability. The Blade Battery, with a maximum capacity of 500 delivers an exceptional range of 600 km in one charge reducing the need for regular charging, making the BYD eBus B12 an excellent choice for busy bus routes.

Always committed to developing strong partnerships, BYD has collaborated with UNVI to produce a new 13-metre double-decker coach for European public transport operators. The alliance brings together BYD's



expertise in world-leading battery and chassis technology and UNVI's exceptional experience in body design and build technology. The pure-electric BYD-UNVI DD13 intercity double-decker, equipped with ADAS for added safety, makes its world premiere.

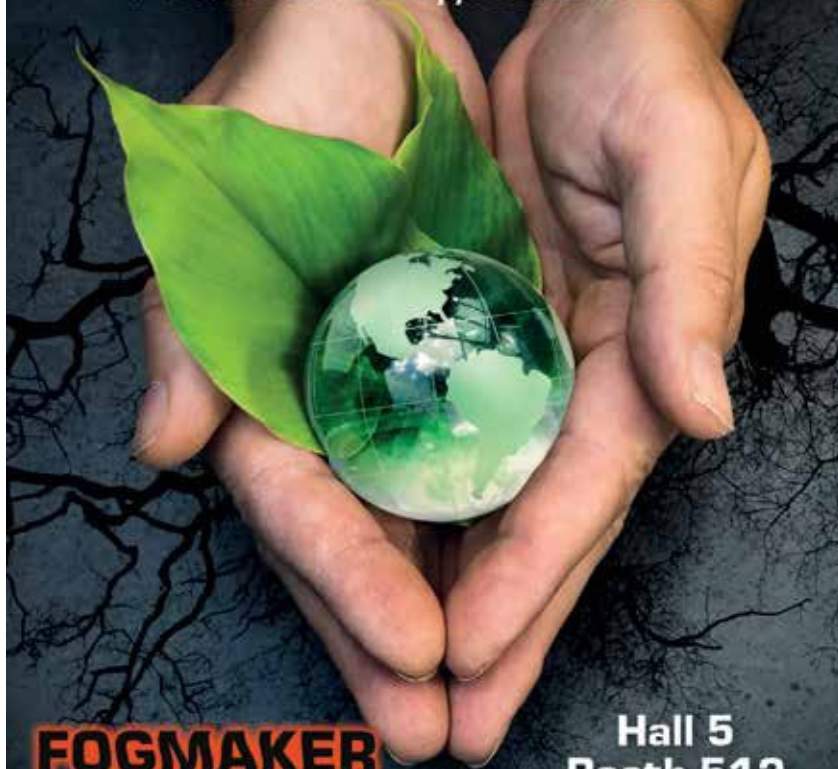
The pure-electric BYD-UNVI DD13 intercity double-decker BYD, the world's leading NEVs manufacturer, has been able to master core technologies of the entire industrial chain,

developing its own powertrain systems, power batteries, drive-motors, and motor controller system.

Founded in 1995 as a rechargeable battery maker, BYD now boasts a diverse business scope covering automobiles, rail transit, new energy, and electronics, with over 30 industrial parks in China, the United States, Canada, Japan, Brazil, Hungary, and India. ■

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FREUDENBERG E-POWER SYSTEMS

FREUDENBERG
INNOVATING TOGETHER

Cameras replacing classic mirrors

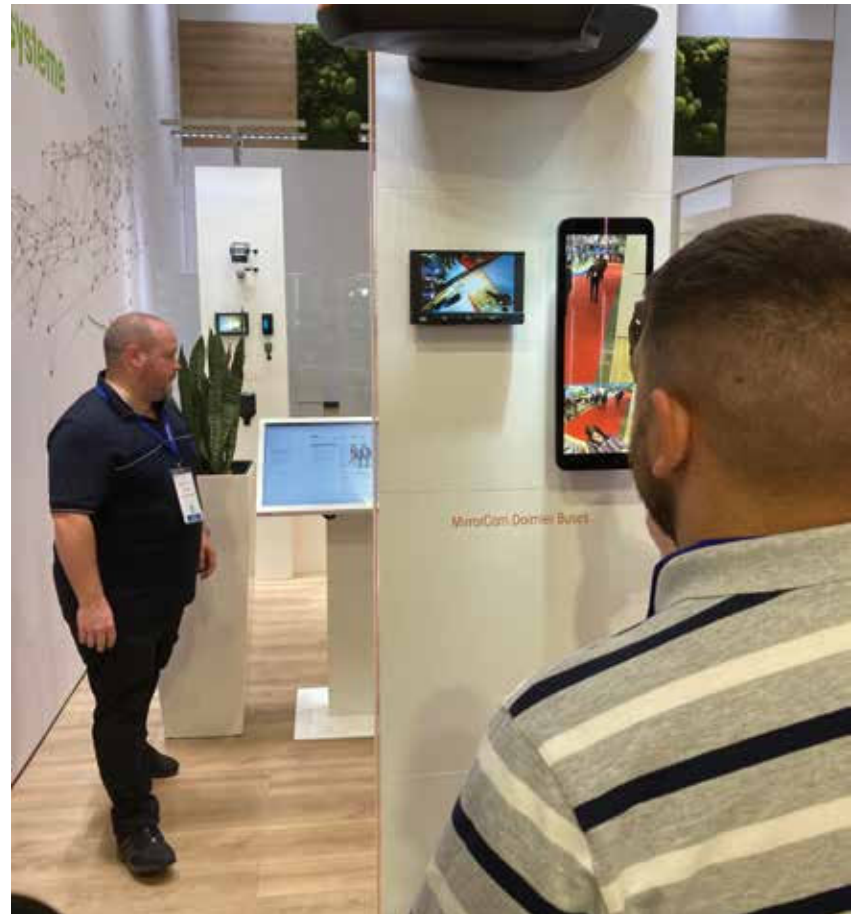
The driver of a city bus or a coach wants a clear picture of what is happening around the vehicle. This way accidents can be prevented. Classic mirrors have their limitations. Cameras and radar offer greater security. Manufacturer Mekra is taking the lead in the field of visual security for long vehicles such as buses and trucks.

A collision in a blind spot is the major concern of drivers. Unfortunately, an arsenal of classic mirrors is still sometimes not enough to avoid such tragic accidents. Camera technology does allow the non-visible area around the vehicle to be captured.

Many vehicles at Busworld, are meanwhile equipped with the latest security equipment. German manufacturer Mekra offers homologated camera systems that replace the old-fashioned wing mirrors. The company boasts decades of experience in developing systems with camera monitors. 'Camera images offer particularly many advantages over mirrors. 'European regulations allow the switch to cameras but only for certified products,' says Sven Felbinger of Mekra.

'Our digital cameras display a wide view of what is moving in front and to the side of the bus. 'In case the visualisation does go wrong for a moment - which is extremely rare - the screen in the cockpit immediately goes black and the driver knows he needs to pay extra attention,' Felbinger explains. Mekra also developed a radar system for monitoring the blind spot on the right flank. If the driver forgets to use the indicator, an integrated gyroscope registers the lateral movement of the bodywork and the driver hears a warning signal in case of approaching danger.

Other benefits of cameras include better visibility in the dark thanks to bright technology and less vibration. The long arms on which the classic mirrors are attached also restrict space when manoeuvring and are vulnerable in a collision. The large exterior mirrors also require extra attention in the car wash to prevent damage. Cameras, on the other hand, promote vehicle aerodynamics. According to several users, camera monitoring can save 3 to 5 per cent fuel. ■



'Can you see me on the camera image?' Many fair visitors test Mekra's camera monitoring.

What does AI suggest about buses?

In the digital world, artificial intelligence is steadily advancing and providing answers faster than you would ever have imagined. Busworld Times Daily asks one or more questions about the bus and coach sector daily on AI platforms such as Bard and ChatGPT. The answers are sometimes spot on, sometimes outdated or hilarious, and sometimes visionary. So, to be clear: this is AI's vision, not Busworld's.

Bus stop becomes living room

Bus stops will be equipped with technology that offers passengers real-time information on arrival times and disrupted schedules. At stops, you have access to free wireless internet, you can charge your smartphone and buy a ticket. Solar panels provide the necessary energy. In addition, the bus stops are equipped with shelters, benches and lighting. They are conceived as living rooms with an artwork on the wall, with plants or trees and maybe even a

small water feature. This way bus stops become attractive stopping points that invite you to take the bus.

Hacking a bus, not done!

Although buses are equipped with quite a bit of software, they are not a typical target of cybercrime. Travellers are very unlikely to use their smartphones to hack the software of buses during their ride. Information technology is sufficiently separated from the passenger compartment and security systems with 'firewalls' and 'authentication protocols' block unauthorised access. Even when passengers communicate via the Wi-Fi network of the bus, they do not gain access to critical software. Travellers should also realise that hacking a bus is illegal and criminal.

Take the coach for a wonderful massage

While it is difficult to determine what the future passenger seat will look



MAN MANAGERS WORKING AS WAITERS

On Sunday evening, several MAN Truck&Bus managers put on their aprons to work as waiters for some time, serving drinks to customers and employees. In the photo we recognise Christian Fischer, head of transformation & e-mobility bus.

like, current trends and technologies do indicate a direction. Ergonomics is becoming increasingly important with increased seating comfort, improved back support and facilities that allow personal adjustment of the seat. An air-conditioned seat with custom temperature setting and massage technique is desirable. The seat is adjusted using a built-in touchscreen or a smartphone app. Naturally, the seat is made in sustainable, ecological and recyclable mate-

rials. Connections are provided so that travellers can enjoy experiences in augmented reality (AR) or virtual reality (VR) applications during guided tours. Sensors in the seat monitor the passenger's well-being. ■



Isuzu strengthens its presence in the bus market

At Busworld, Anadolu Isuzu has unveiled the Novo VOLT, the latest in its range of electric vehicles. The Turkish manufacturer also shows other models, including the Kendo 13 CNG 100% biogas compatible, the Isuzu Grand Toro and the all-electric NovoCiti Volt and CitiVolt models.

At Busworld, Anadolu Isuzu has unveiled the Novo VOLT, the latest in its range of electric vehicles. The Turkish manufacturer also shows other models, including the Kendo 13 CNG 100% biogas compatible, the Isuzu Grand Toro and the all-electric NovoCiti Volt and CitiVolt models.

Anadolu Isuzu started in the automotive sector in 1965 with the production of trucks and motorbikes. Today, the company is part of the Anadolu Group, which combines Isuzu Motors and Itochu Corporation. Anadolu continues to strengthen its presence in the bus market by offering several vehicles to Busworld. Between 2015 and 2022, the company developed its bus business and supplied more than 1,200 buses and midi-buses in

France. By mid-2023, their market share had risen to 9%, placing them among the top three major players.

What can you expect to see at Busworld?

→The Novo-Volt Anadolu. The Novo-Volt Anadolu is the brand's first electric bus that can be used both as a bus and as a coach and succeeds the Novo model launched in 2008.

This bus is 7.30 m long and can comfortably transport 29 passengers. The 165 kW battery pack provides a range of 225 km and is positioned in the chassis in such a way that the vehicle is well balanced. The electric motor generates 320 kW.

→The NovoCiti-Volt is a 12-metre-long midi-bus designed for public transport.

It is equipped with 260 kWh batteries and can cover a distance of about 400 km. The vehicle features low entry with wide access doors. The driving position is very ergonomic and can be adjusted to the personal needs of the driver.



Isuzu CitiVolt 12, a world premiere.

→The Isuzu Kendo CNG is a coach that meets strict European emission standards and safety regulations. The vehicle is equipped with an engine suitable for biogas and CNG.

→The Isuzu Grand Toro is a midi-bus that can be used as a tourist service vehicle, airport shuttle or for

regional transport. It is powered by a 206 hp E6 engine and comes with 37 seats and a large luggage space.

For the distribution of Anadolu Isuzu products in Belgium, the manufacturer relies on Technical Point-Automet, a company based in Diest and Kortrijk. ■



20 years of wellness on wheels.

THE NEOPLAN TOURLINER CELEBRATES ITS 20TH ANNIVERSARY.

For 20 years now, our NEOPLAN Tourliner has been fascinating drivers and passengers with its exclusive design, first-class comfort and innovative technology. Over the decades, this timeless elegant coach has remained committed to keeping the bar high in the world of travel. Now, having arrived at its prime, the Tourliner is once more ready to ignite your drivers' passion for the road.

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OVERVIEW OF THE EXHIBITORS

3A COMPOSITES MOBILITY AG	774	CAFÉ CHAUFFEURS	218	GDA TEKSTIL	1182A
3RTABLET	674	CALB GROUP CO., LTD.	7110	GDP KORAL S.R.O.	766
5M S.R.O.	909B	CAMIRA	947A	GENERAL CAB	422
A.T. INDUSTRIES	643	CAPTRON ELECTRONIC GMBH	743	GENERATION PHOENIX	829B
A&K FAHRZEUGTEILE HEIDENAU GMBH	811	CAR-BUS.NET	805B	GERFLOR	834
AB THOREB	437	CARA - EUROPEAN CLUSTER FOR MOBILITY SOLUTIONS	1137A	GEYUSHI AUTOMOTIVE INDUSTRY GAI	801A
ABB E-MOBILITY	784	CARPENTER	1137A	GI PLAST	984
ABB TRACTION	745	CARROSS'CENTER - BELGIAN BUS SALES	680	GK DRIVE SYSTEMS	918
ABC INFORMATIQUE	647	CARSPEED	1183	GLASS4WHEELS	927A
ACDEOS BV	858	CBM	754	GLAZING BUS & TRUCKS	824
ACE INGENIERIE - MEKABOY	1140A	CEGELEC MOBILITY	1137A	GOLDEN DRAGON	P1
ACTIA	409	CEMKA	405	GRAMMER AG	960
ACTICONCEPT	816A	CENTO GROUP	805C	GRANTEX	717
ADIBUS	840	CHANGZHOU HAOCHEN IMP. & EXP. CO., LTD	434	GRAYSON THERMAL SYSTEMS	638
AESYS SPA	605C	CHANGZHOU SUNLIGHT ELECTRICAL APPLIANCE CO., LTD	7106	GRL SEATS	712
AIR PRODUCTS NV	1165A	CHARGEPOINT	937	GUANGZHOU RONGSHENG TECHNOLOGY CO., LTD.	1154
ALCOLOCK	1176	CHENGDU WHASIN ANCHENG TECHNOLOGY CO. LTD.	1163A	GUCHEN	1133
ALLISON TRANSMISSION	618	CHRIST WASH SYSTEMS	942	HÜLERYÜZ	604B
ALMIGHTY AUTO ANCILLARY PVT. LTD.	1103C	CLARIOS GERMANY GMBH & CO. KG	779	GUMMI-WELZ GMBH & CO. KG	755
ALTAS AUTO	P4	CMS AUTO	946	HABAS A.S.	1102A
ALTRO	421	COGGIOLA MININI GROUP	1137B	HANOVER DISPLAYS	441
AMADIO SPA	986	COJALI - OEM SOLUTIONS	614A	HELIOX	681
AMF-BRUNS	613	COMOTECH INDUSTRIES	420	HELLA GMBH & CO. KGAA OF GROUP FORVIA	634
AMPHERR AG	778	CONSAT TELEMATICS	796	HEMA	1172
ANADOLU ISUZU	403	CONTINENTAL AG	930	HEMSCHIEDT FAHRWERKTECHNIK GMBH & CO. KG	755
ANEST IWATA EUROPE	1186	CREATIVE SYNERGIES GROUP GMBH	1136A	HENAN KINGCLIMA INDUSTRY CO.,LTD.	962
ANGELET TECHNOLOGY (JIANGSU)	933	CTRINE ENGINEERING PRIVATE LIMITED	1182B	HESS	950
ANLAS KALIP	926	CUMMINS	775	HEXAGON AGILITY & HEXAGON PURUS	411
AOTOP	817	DAF COMPONENTS	619	HEYMANN	827
ARCOL	527	DAFO VEHICLE FIRE PROTECTION	934	HICI	734
ARKPRES	637	DAHUA EUROPE B.V.	817B	HIDRAL GOBEL	928
ARTHUR	809	DAIICHI ELECTRONIC	1131	HIGER BUS	P2
ASHTREE VISION & SAFETY LTD	912A	DAIMLER BUSES	503	HISPAOLD	506
ASTRAGON ENTERTAINMENT GMBH	228	DANCER BUS	605B	HITACHI ENERGY LTD.	1190B
ATECH NV	907	DANFOSS GMBH	829A	HOLLAND OTO B.V.	633
ATG AUTOTECHNIK	755	DANYANG RONGWEN VEHICLE ACCESSORY CO., LTD	7104A	HOWEN TECHNOLOGIES CO., LTD	868
ATLAS BUS / EUROLINERS	987	DANYANG DONGGANG LAMPS LANTERNS CO., LTD.	985A	HUBER+SUHNER	1151
ATS	423	DENSO EUROPE BV	792	HÜBNER GROUP	755
AUDIOBUS SL	831	DHOLLANDIA NV	453	HÜBNER TRANSPORTATION GMBH	755
AUSON AB - NOXUDOL - MERCASOL RUSTPROTECTION & SOUND DAMPING	412	DIGITAX AUTOMOTIVE ELECTRONICS	1115	HUNAN WEILI AUTO PARTS APPLIANCE CO.,LTD	749
AUTO COOL INDUSTRIES	765	DIRILIS AUTOMOTIVE TEXTILE	1190A	HÜRSANPER OTOMOTIV	1145
AUTO-MOTION SHADE	985B	DOGA	532	IAV GMBH	964
AUTOCAR EXPO	1164A	DORAGLASS - DORA OTOMOTIV CAM SAN. VE TIC. A.Ş.	711	ICARVISIONS (SHENZHEN) TECHNOLOGY CO.,LTD.	912B
AUTOCLIMA SPA	927B	DRABPOL	413	ICON.LU	840
AUTOEQUIPS TECH CO., LTD	1138B	DUTCH ELECTRO TRANSPORT LIGHTING	650	IKARUS GROUP	903
AUTOLIFT SRL	754B	E-POWER & INPHASE	1139D	ILESBUS	707
AUTOMECANICA	604A	E-T-A ELEKTROTECHNISCHE APPARATE GMBH	773	IMAGRY	1164D
AUTOMET	945	EBERSPÄCHER SÜTRAK GMBH & CO KG	629	IMPACT CLEAN POWER TECHNOLOGY	785
AUTOMOBILITY-X APS	957	EBM-PAPST MULFINGEN GMBH & CO. KG	521	INDCAR	402A
AUTOTERM	1139B	EBUSCO	603	INGERSOLL RAND TRANSPORT SOLUTIONS	1164B
AVEURO	806	ECUTRONIC GMBH	755	INKA YAPI BAGLANTI ELEMANLARI SANAYI VE TICARET	1163B
AYATS	804	EJOIN	814C	INOVA OTOMOTIV	714
AYGERSAN	641	EKOENERGETYKA-POLSKA S.A.	843	INTAP AT SP. Z O.O. SP.K.	921
AZIMUT ELECTRONICS	433	ELINTA MOTORS	P4	INTEGRO	525
B.C.E.	514	ELLAMP SYSTEMS	808B	INTERGLASS	447
BAE SYSTEMS	630	EMİR VIP GRUP	1105B	IRIZAR	602
BAHATTIN DOGAN AUTO LOCK SYSTEMS	923A	ENGIN OTO	909A	ISRINGHAUSEN / AUNDE	799
BALLARD POWER SYSTEMS EUROPE	790	ENRX	687	IVECO BUS	402B
BARAN A.S.	780	EPENGLE	518	JAAKKO-TUOTE	861
BE-GE SEATING DIVISION	451	EPSOTECH	1137A	JBM AUTO LTD.	1102B
BEDIA MOTORENTECHNIK GMBH & CO. KG	7103A	EQUIPMAKE	610	JEMA ENERGY	653B
BEIJING SINOVATION ELECTRIC VEHICLE TECHNOLOGY CO., LTD	961	ERA ELEKTRONIK	534	JING-JIN ELECTRIC	849
BEULAS	1108	ERDAL LABEL	880A	JIUDING NEW MATERIAL CO.,LTD.	850B
BIKELINER	823	ERDUMAN OTOMOTIV	1107	JOKON	635
BITIMEC SRL	935	ERENER DESIGN	704	JOST WERKE	1141A
BITZER	528	ERMISBUS - MERCEDES BENZ SPECIAL TRUCKS BUS PARTNER	1106	JVS ARTICULATION SYSTEM	789
BLABLAÇAR BUS	814B	ERP BILGISAYAR YAZILIM	1112	K-BUS GMBH	469
BLUEBUS	833B	ESREFKAROSER	948	KALIBRE BORU	1187
BMC AUTOMOTIVE	703	ETKA-D	439	KARADAG GRUP OTOMOBIL MOTORLU ARAÇLAR SAN. VE TIC. LTD. STI.	1110A
BMZ POLAND	452	EUROCOLVEN SAU	947	KARSAN	501
BÖDE - DIE TÜR	759B	EUROLINE	956	KEMPOWER	833A
BODE SUD S.P.A.	513	EVERISE INDUSTRIES (S.Z.) LTD	1161A	KEYES ENGINEERING	754C
BORGWARNER	523	EVERSUM MOBILITY SOLUTIONS GMBH	1103B	KIEPE ELECTRIC GMBH	1169
BRASLUX	615A	EVM LTD	805A	KING LONG	P3
BRIGADE ELECTRONICS BV	750	EVONITY BV	1111	KNEITZ / HOLMBERGS / SCHÖPF	446
BRIST AXLE SYSTEMS SRL	763	FAINSA	767	KNORR-BREMSE	1161
BSG AUTO GLASS CO.,LTD	1134B	FARHYM AUTOMOTIVE	522	KNS OTOMOTIV	807A
BSPL 1 SP. Z O.O.	651B	FARPLAS	830	KOMTELSYS REUM GMBH	880B
BUR-CAN OTOMOTIV NAK.İNŞ.İTH.İHR.SAN.TİC	1105A	FÉDÉRATION NATIONALE DES TRANSPORTS DE VOYAGEURS	852	KÖNIG KFT.	738
BURGAFLAX	769	FERQUI - NEGOBUS	1109	KONVEKTA AG	508
BURSA TRIM OTOMOTIV	735	FIAA - INTERNATIONAL FAIR OF BUS & COACH	1164E	KORMAS ELECTRIC MOTOR	419C
BUS FACTORY	801B	FILTRATION CONTROL	1179	KOTA FABRICS	408
BUS LED DISPLAY-ZHONGZHIGU	748	FINN LAMAX SAFETY GLASS OY	825	KREATE PLUS	7100
BUSSIPRO	826	FLEXIN GROUP SRL	1167B	KREISEL ELECTRIC	854
BUSTRONIC	919	FLOKSER TEKSTIL	415	KUANTUM GLASS	531
BUSWORLD	1105	FOGMAKER	512	LAM S.P.A.	890
BUSWORLD APP HELPDESK	1105	FORSEE POWER	790	LANG	651A
BUSWORLD SOUTHEAST ASIA - GEM INDONESIA	1105C	FORTAL	526	LANGZAUNER GMBH	611
BUSWORLD TÜRKİYE	1189A	FPT INDUSTRIAL S.P.A.	424	LANTAL TEXTILES	675
BUVETEX INTERNATIONAL	620B	FRANZ HARBECK GMBH	1128	LANTECH COMMUNICATIONS GLOBAL, INC.	850
BYD	705	FRANZ KIEL	758	LAZZERINI	639
C.E. NIEHOFF & CO. LTD.	612	FREEWAY®	1136B	LEMANIA ENERGY	1189F
C.F. MAIER EUROPLAST	1138C	FRENZEL COMPETENCE GMBH	7103B	LESSWIRE GMBH	808B
CAETANOBUS	810	FREUDENBERG E-POWER SYSTEMS	715	LEX & HESSE GMBH	950
		GAMA	807B		



CATERING POINTS

- 1** 4 Eat Fastfood
Belgian Fries & burgers
- 2** Nina
Assortment of italian pasta & pinsa
- 3** Poule et Poulette
Chicken nuggets, chicken wings and fries, soupe tom ka kai & wrap with chicken
- 4** Pico Bello
Assortment of pasta & panini
- 5** Thai Café
Thai Specialities
- 6** Be Shop 5
Mini market with sandwiches, hot dishes, soft drinks, snacks and hot beverages
- 7** Brasserie 58
Table service 'Brasserie'
- 8** Eaters
Asian streetfood with pokéballs & banh mi
- 9** Mr. Boudin
Belgian upgrade hot-dog
- 10** Belgian Beer Bar
Belgian beers, salads, sandwiches, croques & sweets
- 11** O'6 Gin bar by Open Up Farm Distillery
Gin bar & meet stew based on gin
- 12** Dim's
Dim sums & bao
- 13** Fritkot De Corte
Belgian fries & fricandel and poulycroc
- 14** Mamy
Croque Monsieur, pancakes & cookies
- 15** Joris
Assortment of belgian artisan sweets
- 16** Hot-Dog
Hot-dog
- 17** Cocotte en scène
Fresh juices, smoothies & healthy bagels
- 18** Le Pain Quotidien
Bio sandwiches, salads, soups & sweets
- 19** Ellis Gourmet Burger
Famous burgers & fries
- 21** Be Shop 9
Mini market with sandwiches, hot dishes, soft drinks, snacks and hot beverages
- 22** Chess Catering
Self-service with pasta, salads, vol-au-vent, 1/2 chicken

Opening hours catering

07-11 OCT
10:00 until 19:00

12 OCT
10:00 until 18:00

- 23** Les délices d'Eric
Assortments of hot coffee, pancakes, waffles, sweets, sandwiches, ...
- 24** Kaffee velo
Barista, waffle & croque monsieurs
- 25** La belle liegeoise
Waffles, sweets

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OVERVIEW OF THE EXHIBITORS

LEYLAND HOSE & SILICONE SERVICES LTD	923B	REVAR AUTOMOTIVE	505	TELMA	648
LINDE	435	ROBERT BOSCH GMBH	510	TEMSA	400
LOOP ENERGY	682	RÖCHLING INDUSTRIAL SE & CO. KG	693	TEQ SA	941
LUMINATOR TECHNOLOGY GROUP	438	ROŠERO	202	TEZPAR BUS SPARE PARTS LTD.	652A
LUMIPLAN	428	ROSHO AUTOMOTIVE SOLUTIONS GMBH	1138A	THE GAME EXPERIENCE	1189D
M.S.R. OTOMOTIV	713	ROTA / NSK OTOMOTIV	614B	THE PICTURE EXPERIENCE	1189B
MAFELEC	530	ROTAREX FIRETEC	1185	THERMO KING	426
MAFLOW BRS S.R.L.	940	RPS S.R.L.	906	THERMOBUS S.R.L.	808B
MAGNA POWERTRAIN ENGINEERING CENTER STEYR	814A	RUD SAVOIE CHAINES	856	TM TEKNIK OTOMOTIV EKIPMANLARI LTD. STI	519
MAGNETIC NORTH	683	RUPF INDUSTRIES	1146	TONGDA	920
MAKERSAN	731A	RUSPA	467	TOTT UP	1114
MAN TRUCK & BUS	401	SAFE - T-PUNCH™	851	TRAMMUSEUM BRUSSELS	803
MARCOPOLO S.A.	702	SAFETY TECH, A GAUZY COMPANY	636	TREMONIA MOBILITY	419A
MASATS	507	SAFRA	955	TRIBUS GROUP	944
MATTEI GROUP	535	SAINT GOBAIN	760B	TRONTEQ	853
MAYSER GMBH & CO. KG	742	SAINT JEAN INDUSTRIES	1137A	TRUST FOR ENGINEERING INDUSTRIES	1189
MCF SAFETY BELTS SRL	739	SAND PROFILE	788	TSL-ESCHA	530
MCV	601	SANEL AUTO ELECTRONIC	442	TWILINER AG	227
MCY TECHNOLOGY LIMITED	733	SANZ CLIMA	516	UEG TEKSTIL	445
MEKRA LANG	533	SAR TEKNIK OTO YAN SANAYI	798	UGURLU GLASS	768
MELLOR	505A	SBRS - A MEMBER OF THE SHELL GROUP	605D	UNICLA INTERNATIONAL LIMITED	769
MERCUS	708	SCALABROS	911	UNIVERSALS	701B
METATRONIX	410	SCANIA	404	UNVI	470
MEYIS AUTOMOTIVE	828	SCHNIEBLE SEATING SYSTEMS	509	UPIC SA	7104B
MINGSHANG TECHNOLOGY CO., LTD.	1139C	SCHUNK TRANSIT SYSTEMS	686	UYGUNER	429
MITS AUTOMOTIVE	649	SEFAC	913	V. S.E. VEHICLE SYSTEMS ENGINEERING B.V.	755
MMI SP. Z O.O.	759A	SEGE SEAT	444	VA-Q-TEC AG	1167A
MOBILE CONTROL SYSTEMS	623	SEREM OTOMOTIV	925	VAGBUS ROMANIA	954
MOLPIR	688,691	SETCOM	746	VALEO THERMAL COMMERCIAL VEHICLES	609
MOVON	690	SEVIM AUTO GLASS CO.LTD.	529	VAN DAMME	892
MRS ELECTRONIC	1188	SFB OTOMOTIV	979	VAN HOOL	504
NAILI CO., LTD	1166	SGUINZI PIETRO	947B	VANSTAR	736
NANJING AE SYSTEM TECHNOLOGY	1161C	SHANGHAI HIGHLY NEW ENERGY TECHNOLOGY CO., LTD.	1103D	VDL BUS & COACH	605
NAVAHO TECHNOLOGIES	689	SHEKONIC COMPOSITES	1148	VEHICLE SECURITY SYSTEMS EUROPE LTD.	812
NET FLOOR COVERINGS	1191	SHENZHEN INDUSTRIAL MAN PRODUCT RP& M CO.,LTD	1163C	VEHTEC	839
NINGBO MEIXING AUTOSHADOW CO., LTD	963	SHENZHEN SINEXCEL ELECTRIC CO.,LTD.	891	VELDO	7102
NINKASI	776B	SHENZHEN VIEWTECH ELECTRONIC TECHNOLOGY CO., LTD.	1180	VENTURA SYSTEMS	628
NISO TECH AB	924	SHIP-CAR SRL	929	VIDURGLASS	654
NPT SRL	7105	SIEMENS AG	760A	VIGNAL SESALY	616
NSS NEW SIGN SOLUTIONS	818	SINALSUL	622	VISCOUNT VEHICLE & SPORTING GOODS (KUNSHAN) CO., LTD	1170
OCTILLION POWER SYSTEMS, INC	1164C	SINO-SYNERGY HYDROGEN ENERGY TECHNOLOGY (JIAXING) CO., LTD	702	VKM PLASTIK	732
OE INDUSTRY	981	SISTEM ALUMINUM	842	VOGELSITZE	517
OES-LINE (OMNIBUS ELEKTRONIKS & SERVICE GMBH)	838B	ŠKODA GROUP	802	VOITH	520
OFFICINE MARIO DORIN SPA	536	SKYAUTONET	1184C	WAVECOM	1181
OFOLUX	838A	SMART EYE AB	1149B	WEBASTO	7113
OLIMPIA AUTO GLASS	653A	SOLARBUS.PRO - PART OF GREEN ENERGY / MIPV.PRO	425	WENZHOU NO. 2 AUTOMOBILE ACCESSORIES FACTORY	1129
OMR OMNIBUSHANDEL MARIO RÖTTGEN GMBH	761	SOLARIS BUS & COACH SP. Z O.O.	502	WIDENSENSE	1184A
ONWAY AG	418	SONGZ	741	WIEJELO EQUIPMENT	978
OPTIBUS	816B	SONO MOTORS GMBH	1163D	WIGAM SPA	914
ORIONDERI LTD	621	SPAL AUTOMOTIVE	511	WOLF OIL CORPORATION	801A
ORTAKCI GLASS	642	STALATUBE	837	WOLFTANK GROUP	841
ORTEM ELEKTRONIK A.Ş.	710	STARGLASS	822	WORTHINGTON INDUSTRIES	1141B
OTM PLASTIK	835	STER GROUP	1143	WUXI HONGYU AUTO-PARTS MANUFACTURING CO., LTD.	808B
OTO NUMUNE OTOMOTIV	910	STILLA PASSENGER SEAT	819	XIAMEN HARINE TECHNOLOGY CORPORATION LIMITED	1153A
OTOKAR	505B	STONERIDGE ORLACO	644	XIAMEN LENZ COMMUNICATION CO., LTD.	829D
OTOTRIM OTOMOTIV	454	STONKAM CO., LTD	632	YEŞİLOVA HOLDING	1147
OTTOMOTIVE	710	STRABAG INFRASTRUCTURE & SAFETY SOLUTIONS GMBH	737	YILKAR KLIMA	615B
OZGUR KABLO A.S	684	STREAMAX EUROPE	471	YUANHUA AUTO PARTS	1149A
OZLIDER A.S.	7101	STYL'MONDE	1137A	YUTONG	901
OZTEKNIK	731C	STYLEBUS & GURSOZLER AUTOMOTIVE	943	ZENITH GRAPHICS	417
PACIFIC TUR	800	SUAT OTOCAM	731B	ZENOBE	908
PAILTON ENGINEERING LTD	936	SUPERLEE CORPORATION	958	ZEROVA EUROPE BV	692
PALAZ SAFETY BELTS	1150	SUSTAINABLE BUS / VADO E TORNO EDIZIONI	1105F	ZF FRIEDRICHSHAFEN AG	537
PALMIYE DESIGN	1140C	SYMBIO	965	ZHEJIANG KELI VEHICLE CONTROL SYSTEM CO.,LTD	1153B
PAS	808B	SYSTEMY AUTOBUSOWE GROUP	754C	ZHEJIANG CHUANGLI AUTOMOTIVE AIR CONDITIONER CO.,LTD	1184B
PASSENGER LIFT SOLUTIONS	858	TAIPALE AUTOMOTIVE LTD	813	ZHEJIANG GROUPSTAR AUTOMOTIVE LAMP CO., LTD.	1134A
PAYEPLAST	922	TAM EUROPE	701A	ZHEJIANG LEILI AUTO PARTS CO., LTD	7104C
PEI MOBILITY BRAND OF P.E.I. SRL	676	TAMWARE	829C	ZHEJIANG LINRUI AUTO ELECTRIC CO., LTD	1130
PEI TEL COMMUNICATIONS	747	TARKETT	7107	ZHEJIANG PANGOOD POWER TECHNOLOGY CO., LTD.	1105E
PERINFO	436	TEKAYDINLAR MINIBUS DESIGN	951	ZHENGZHOU JINGYIDA AUTO PARTS CO., LTD	905
PHATHA	1164	TEKNIK MAKINA & TEKNIK GLASS	793	ZHENGZHOU KELIN MOTOR VEHICLE AIR CONDITIONING CO., LTD.	770
PHOENIX CONTACT E-MOBILITY GMBH	718	TEKNOWARE	832	ZHONGTONG BUS HOLDING CO., LTD.	1103A
PI LABS GMBH	1132B	TELD	1163		
PILKINGTON AUTOMOTIVE FINLAND	836				
PILOT SEATING	450				
PINET INDUSTRIE	1177				
PLASTEN OTOMOTIV	1178				
PLASTIC OMNIUM	952				
PLASTOFORM D.O.O.	1140B				
POLARIS ELEKTRONIK	671				
POLITECNICA 80	1139A				
POLITECNICA SEAT TECHNOLOGY	524				
PRETTL ELECTRONICS HUNGARY KFT.	808B				
PRIMA INDUSTRIES	515				
PROTECFIRE / A-EX	1161D				
PURPLAST OTOMOTIV	670				
PVI	949				
PYSAE	1189E				
QUANXING MACHINING GROUP CO., LTD.	1161B				
RAAL	782				
RAIFOGULLARI	776A				
RAMPINI CARLO SPA	606A				
RAUWERS	716				
REFIRE EUROPE	1163E				
REFU DRIVE GMBH	808B				



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MCV capitalises on Volvo alliance

The Volvo BZL with a 9.7 m MCV body full electric single deck city bus boasts of cutting-edge body work from MCV with 37 different configurations ranging from 9 meters to 13 meters in length. This comprehensive range includes a body built into a low entry or a low floor option in some of the lengths for both left hand driving and right-hand driving.

Key highlights of the platform:

1. Low Entry and Low Floor: The Volvo BZL platform could be body built into both low entry and low floor options, accommodating passengers with varying mobility needs. Low floor buses from 11.3m provide easy access for passengers with reduced mobility, while low entry models offer a balance between accessibility and seating capacity.

2. Seamless Integration: Despite the wide array of configurations, the Volvo BZL platform maintains consistency in design, technology, and sustainability across all different body variations.

3. Safety: All body variants built on the Volvo BZL platform, regardless of length are equipped with enhanced safety features, including driver run-away prevention, CMS, intelligent speed assist, corner lights and crash frame structure to protect drivers in addition to smooth interior design aimed at minimizing passenger risks in the event of an accident.

4. Pedestrian safety: The MCV body features for the Volvo BZL offers an enhanced geometry with curved corners that not only enhances driver visibility but also reduces pedestrian head impact in case of any collision.

5. Accessibility and Comfort: Features such as electric powered ramps, large

wheelchair areas, high-back comfort seats and spacious interiors ensure that all passengers can board and travel comfortably.

The stand display includes the C127EV, which is a full MCV product dedicated to the German market. MCV's technical expertise has empowered it to develop an all-electrical-low-floor integral bus.

The cooled, high-performance lithium-ion batteries with efficient NMC chemistry (nickel manganese cobalt oxide) are modular in design and crash-safely housed on the roof (optionally four to six battery packs, 308 kWh to max. 462 kWh). Active battery balancing ensures optimal efficiency and operational readiness of the batteries. The flexible option of attaching the CCS-2 charging socket to the front right or rear right side wall as well as the use of charging rails on the roof (also vehicle mounted pantograph if desired) enable a comfortable and efficient charging process that is digitally monitored at all times.

The robust and lightweight construction of the MCV 127 EV made of solid stainless steel ensures pleasant, safe and, above all, low-noise driving behaviour and all this with emission-free operation. Even in the cold season, the MCV C127 EV meets this requirement thanks to a purely electric heater in combination with a CO2 heat pump with complex thermal management and purely electric additional heating.

The bus is powered by a central synchronous motor mounted on the vehicle, which acts directly on a conventional portal axle from ZF and mobilizes a maximum of 250 kW and 3,000 Newton meters of maximum torque (17,190 Nm directly at the wheel).



With state-of-the-art facilities located in Egypt, MCV has the capability to deliver 5,000 buses per year. It supports global customers with a wide

range of products: - Double Decker, city buses and School buses - Tourism and Intercity coaches - Airport buses - BRT projects. ■

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What does AI suggest about buses?

Chatting to each other from the ideal seat

To transport diverse and diverse groups as well as passengers with different comfort requirements, passenger seats need to be designed in a much more flexible and modular way. This allows for different seat types, smoothly changing the seat configuration and creating zones where small groups or family members really sit with each other. 360° rotatable seats are designated to increase social contact during the trip. Consideration should be given to seats or available spaces for wheelchair users to make travel more inclusive. The seat covers are sleek, aesthetically pleasing and contribute to the overall visual look of the interior. Innovations in seat design, configuration and storage room for hand luggage are necessary to carry the maximum number of passengers without sacrificing space and comfort. Seats equipped with

AI applications enhance the personalised travel experience.

Small groups experience more than a large group

Group tours with coaches remain attractive to prospective travellers provided their organisers are responsive to changing needs and preferences of tourists. Travellers are more concerned than before about the environmental impact of their travel and often consider coaches as unsustainable. New applications with virtual reality tours can offer travellers a more personal, immersive experience and take them to the site prior to a visit. They also expect more authentic, complete experiential trips even though these are not always available for classic group tours. Therefore, travelling in smaller groups will be more common, even within a larger travel company. This allows simultaneous journeys for foodies, historians,

culture freaks and families with young children.

Driver, 2 beers and 2 spaghetti 's please

As future coaches are equipped with self-driving technology, drivers no longer need to pay attention to traffic or navigation. They focus on other tasks such as serving passengers. Coaches have a wide range of drinks and dishes that drivers can serve to their passengers. The driver can also spend more time answering questions and advising travellers about their travel plans. Either way, the coach driver of the future needs to be much more customer-centric than it is today. Self-driving coaches also provide travellers with more opportunities to hop off somewhere along the way for a visit and rejoin the coach afterwards to continue their journey. Thanks to the latest technologies and features of coaches, they will significantly improve the travel experience for drivers and passengers.

Charging and refuelling stations hold the key

For how long diesel will continue to be the most common fuel for coaches

depends on technological innovations, environmental regulations and market trends. As an increasing number of countries and regions impose stricter emission standards, people are being pushed towards more clean energy sources. From that perspective, there is increased interest in alternative propulsions with CNG, LNG, hydrogen and batteries. As battery technology evolves and charging infrastructure becomes more widely available, electric buses are gaining ground. The total cost of ownership is a determining and critical factor in selecting a technology. The availability of charging and refuelling stations for alternative propulsion systems is a key element in the energy transition. Ultimately, the transition from diesel buses and coaches is determined by a combination of environmental factors, technological evolutions, economic aspects and public policy. ■



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Tremonia Mobility reaches 310 km with new City 45 ELECTRIC

Tremonia Mobility, formerly known as Mercedes-Benz Minibuses, has in collaboration with Elinta Motors from Lithuania, successfully developed and launched this year its first 100% electric city minibus, based on the established and well-known City 45 diesel model. With the newly gained independence Tremonia Mobility says it has made significant progress in the field of sustainable transportation and showcases this in hall 4, booth 425.

With the takeover in 2022 of Daimler's minibus division Tremonia decided to intensify its research and development activities for electric minibuses and looked for technical solution from third parties.

In Elinta Motors it found a dedicated partner and the collaboration resulted in the development of electric vehicles, "that set new standards in performance and eco-friendliness", as Tremonia describes it. Their new product based on the City 45 is test-

ed by TÜV focusing on "Standardized On-Road Test" (SORT). Tremonia reports that the City 45 ELECTRIC demonstrated an "impressive range of up to 310 km (SORT 2 cycle, mixed operating)".

The test was done with a vehicle equipped with a 115 kWh battery, a 150 kW (1,250 Nm) engine and under optimal conditions.

The manufacturer emphasizes that this achievement solidifies its "commitment to deliver electric minibuses that offer remarkable range without compromising on quality or passenger experience". Jürgen Knothe, CTO of Tremonia Mobility: "These outstanding figures validate the dedication and expertise of our team, as well as the successful collaboration with Elinta Motors.

Our first-generation City 45 ELECTRIC has now proven to be a game-changer, and we still continue optimizing and innovating to deliver a perfect electrified minibus to our customers."



Tremonia buses are built in Dortmund.

FIRST ORDERS

Tremonia received already its first orders for the new City 45 ELECTRIC. Two major transport companies, one in Luxembourg, Voyages Emile Weber and the MVVG (Mecklenburg-Vorpommern) Germany, have placed orders for the new innovative electric City 45 ELECTRIC. MVVG, which operates around 190 buses every day, has shown its commitment to a more environmentally-friendly future by placing an order for three City 45 ELECTRIC minibuses. Family-owned

business since 1875, Voyages Emile Weber from Luxembourg, placed its first orders for the City 45 ELECTRIC minibuses. After having thoroughly tested the prototype vehicle this spring. The vehicles will be delivered by the end of 3rd quarter 2023. The City 45 ELECTRIC combines style and functionality, and is equipped with advanced safety features and innovative technologies. For 2024, Tremonia Mobility has already announced an expansion of the electric product range to include the larger minibus model, City 75 ELECTRIC. ■



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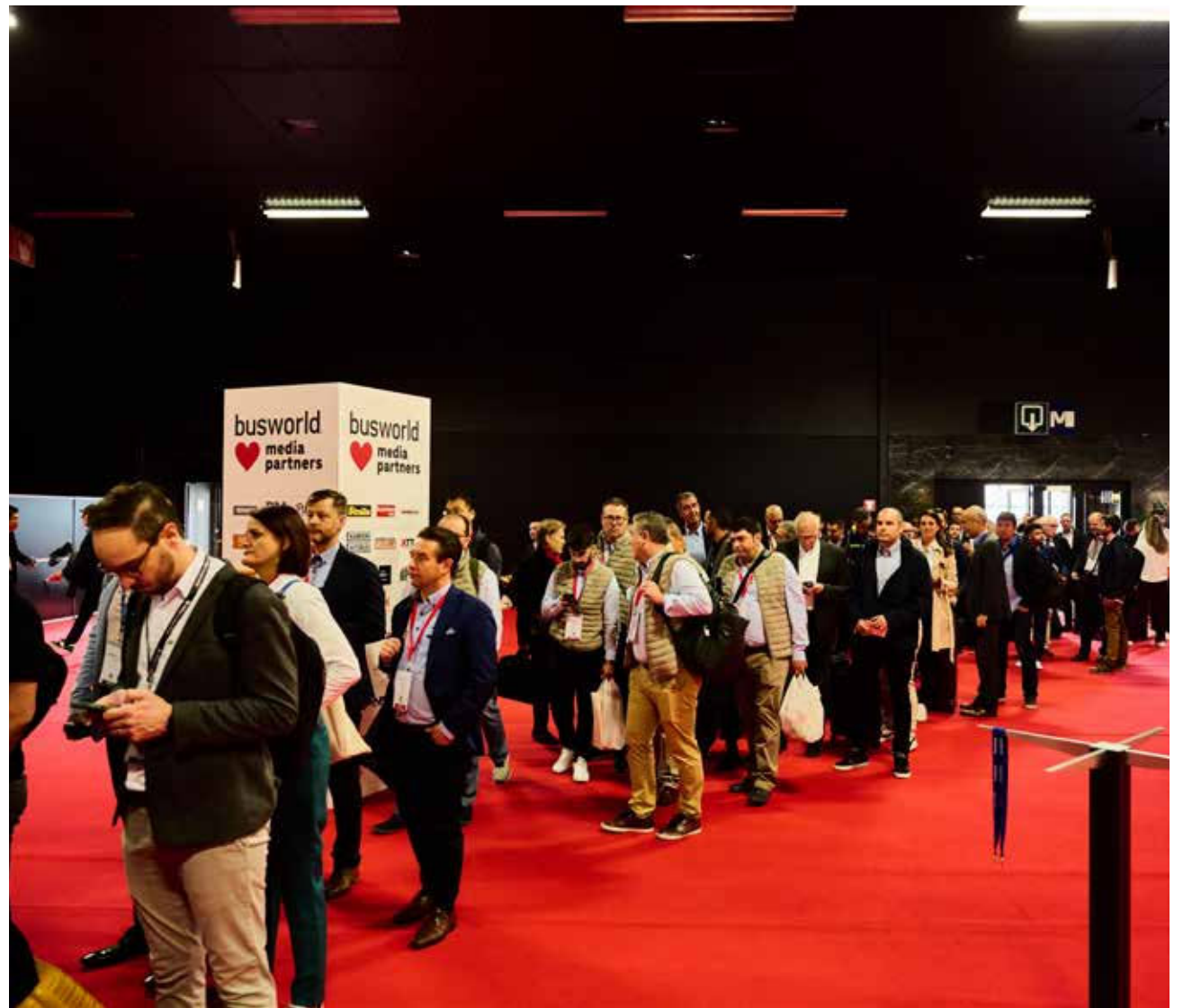


SCAN ME!



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Fogmaker no longer uses PFAS in its extinguishing agents

Firefighting specialist Fogmaker is the first to introduce a liquid extinguishing agent Eco 1 that does not contain any harmful PFAS chemicals. Extinguishing a burning electric vehicle remains a worrying job.

A city bus or coach catching fire: it is the major concern of producers and operators. That is why a lot of manufacturers are turning to fire protection systems from Swedish company Fogmaker. Extinguishing a fire is done by spreading a high-pressure water spray. One litre of extinguishing fluid is converted into 1,700 litres of steam. This way, damage can be limited.

Fogmaker's technology has already sufficiently proven its benefits in combustion engine vehicles. All components of the bus that could potentially overheat and possibly catch fire are immediately extinguished. European regulations require the installation of an extinguishing system in all new vehicles from 22 travellers.

A major challenge for Fogmaker is

fighting a fire in an electric bus. There is still no international standard for fire safety in zero-emission vehicle 'It is trial and error because the market is new to everyone. 'Currently, it remains a big question mark as to how a fire can be extinguished in an electric vehicle,' says Johan Stark, manager at Fogmaker.

'Our current installations are capable of fighting a fire when it occurs at the engine or drive unit but an internal fire in a battery cannot be extinguished for now. At the moment, we do have the ability to cool down the burning battery to save time so that passengers can quickly get out and get to safety. Extinguishing an electric vehicle requires an awful lot of water. 'For a high-volume vehicle like a bus, that means a huge challenge,' Johan Stark stresses.

How a burning battery can be controlled, it's as clear as mud. 'There are no statistics on battery incidents because the sector is relatively new.

And adequate regulation is non-existent. Moreover, battery developers and manufacturers are not divulging any details on this matter. There is an air of mystery in the industry. 'Because the very first company to invent a solution to quickly extinguish a burning battery will immediately be at the top worldwide,' the Fogmaker manager says.

Some solace for firefighters is the fact that 50 to 60 per cent of fires originate from mechanical components

of a bus. Burning batteries are still an exception but the share of electric buses in the overall transport market is therefore limited.

Fogmaker does take another step in making its fire installations ecological. From now on, harmful PFAS chemicals are eliminated from the liquid extinguishing agent The Eco-1 will be implemented in extinguishing systems from next year. An international standard for banning PFAS is not likely to be imposed until 2027. ■



Johan Stark, manager at Fogmaker.

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Streamax unveils safety advanced solutions

The Shenzhen-based technology company, Streamax has been active internationally since 2002 in the development and manufacturing of hardware and software systems offering AI-powered onboard active safety, driver assistance, and video telematics solutions. Currently, their onboard technologies are widely used in over 3.5 million commercial vehicles in over 100 countries worldwide.

“With the new Intelligent Bus Central Unit solution (IBCU), we differentiate ourselves from other solutions with its ‘open system’ architecture,” says Balazs Berki, business development director. “IBCU solution effectively addresses driver safety systems, public transit security, passenger information services, and dispatching and operation systems, offering a comprehensive public transport solution on a single platform. This unified hardware platform has the capacity to run multiple operating systems (Linux or Android) and software applications concurrently, allowing for the seamless addition of features through over-the-air software updates, with-

out the need for additional terminal devices.”

“Information technology and intelligent systems are rapidly gaining importance in buses and coaches. The implementation of it in solutions from different manufacturers poses many challenges in terms of maintenance, interconnectivity and usability. For example, disparate systems such as CCTV equipment, AI-enabled devices for driver and vehicle safety management, dispatching and control systems and passenger information service systems typically operate isolated.”

Streamax introduces the intelligent Blind Spot Information System (BSIS) & Moving Off Information System (MOIS) and Driver Drowsiness and Attention Warning (DDAW) solutions. The AI-powered detection capabilities align seamlessly with the strict safety provisions set out in the UN R151 and UN R159 regulations. The Driver Drowsiness and Attention Warning (DDAW) system, equipped with a professionally integrated AI Driver Monitoring System, warns

of drowsiness, all kinds of things that could distract the driver. It also reminds the driver of unsafe driving habits. In response to these challenges, Streamax is therefore proud

to introduce the next-generation Intelligent Bus Central Unit solution, in addition to the above mentioned two systems. ■



Balazs Berki, business development director, with his Chinese colleagues.



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Entire Meeuwissen family present at Busworld

Am Buses 25

The entire Meeuwissen family (father Toine, sons Thomas and Christophe and daughter An-Sophie) is present at Busworld. The male half at Otokar's stand, the female half at VDL's stand. Simultaneously, the family celebrates anno 2023 the 25th anniversary of its company AM Buses, which began as a trade in second-hand buses and coaches and now also imports Otokar for the Benelux countries.

A year and a half ago, Toine's sons, Thomas and Christophe, took over AM Buses. They now face the task of making the transition to electric transport.

So, it all started 25 years ago with a reckless move by Toine. He had been in the bus business for years for the former Bova and decided to start 'for my own'. His initial capital amounted to 10 million Belgian francs, comparable to about 250,000 euros now. A capital he invested entirely in the purchase of eventually more than a hundred buses that had been used by the former English Rhine Army; old and worn, but he was able to get them at a favourable price.

His wife, Hilde, was not happy about his move and soon saw how the newly started family business was going in the wrong direction. "All my money had been spent on it. But after three weeks, I had already sold 55 of them and earned my first money. Within the year, the start-up costs incurred were recovered and we made a nice profit," Toine says. Today, he keeps contact with the customers of 'his generation' and Thomas and Christophe with the younger generation. And that's going well, Thomas and Christophe agree while smiling.

"Oh well, I belong to a dying breed and notice that the younger generation communicates with each other in a different way, as an older person you shouldn't want to be involved in that" Toine says. His sons have clear roles. Thomas is mainly focused on after-sales activities and he is the contact person for sales activities in the Netherlands, while Christophe focuses mainly on sales of new and used buses and coaches in Belgium, Luxembourg and France.

AN-SOPHIE

And then daughter An-Sophie is also active in the 'busworld', albeit with



On the occasion of the 25th anniversary, Thomas and Christophe surprised their parents with a fine work of art.

well-known Dutch manufacturer VDL. The 'buses' are in the family genes. Toine: "I am the happiest person in the world. This year I will turn 72, but I am still at work every morning at quarter to eight. Every morning there is someone who comes over for coffee, just to 'socialise'. You work all day with your family, my wife is often there too, it's a biotope in which I am super happy."

ELECTRICAL CHALLENGES

AM Buses is a small family business and with Otokar it has found a strong partner. AM Buses has weathered the

past covid years reasonably well. In 2022, 210 vehicles were delivered, including more than 50 new buses. In the process, AM Buses has built up a solid service network with several service points in recent years. These companies also have online connections to the Otokar parts service. "In case we do not have the required part in stock, we will source it there in a 24-hour service or have it sent directly to the customer." More than 600 Otokars are driving around on Belgian, Dutch and Luxembourg roads. Pater familias Toine Meeuwissen doesn't seem to be unhappy about it.

"These were strange and difficult years, but we coped quite well under

the new leadership of Christophe and Thomas.

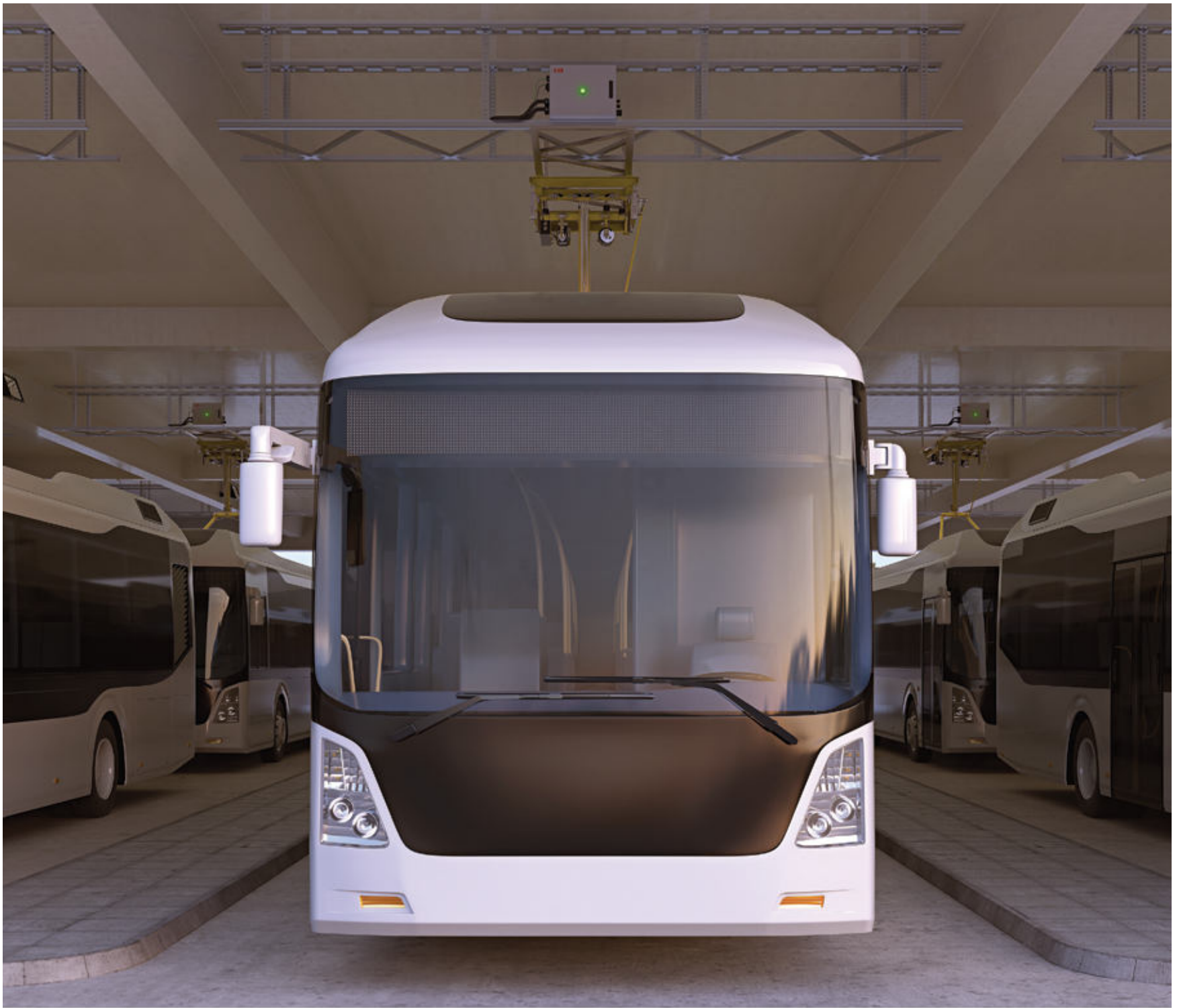
It has taught us that a small and healthy company certainly has its place in this market if it is approached flexibly and with an open mind" Toine says. Now hopes are pinned on the electric variants, and Otokar now also has a fuel cell bus, on display at Otokar in hall 5, stand 505b. Thomas: "At Busworld Europe this year, a new range of electric school buses will be presented, which will then also become available shortly afterwards. We can then supply all models electric, we can then supply all models electrically, including midi buses from 7.70 metres to the 13-metre models." ■



From left to right: Christophe, Ann-Sophie, Thomas and Toine.

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