

busworld[®] DAILYtimes

EUROPE BRUSSELS SUNDAY 8 OCTOBER 2023



Redgy Deschacht, president of Busworld

The outlook is optimistic



Redgy Deschacht, president of Busworld, pointed out in his opening speech that Busworld would have loved to organize the 27th edition of Busworld this year but due to the pandemic, there was no choice but to cancel Busworld Europe 2021. And that's a shame, the president went on to say because it would have been Busworld's 50th anniversary. Indeed, it all started in 1971 in Kortrijk. The first Busworld exhibition was no more than 6 buses in a row, and a huge bar. However, the insight of the need for better communication between the bus manufacturing industry and the operators was genius and resulted in a quick expansion and internationalization of Busworld.

Today, we still notice this need for intensified mutual understanding between all actors in our industry, since the complexity of implementing modern bus and coach services has increased accordingly to the technological requirements and the increased number of stakeholders. Busworld will continue and even elaborate its role in this evolution, by facilitating the networking of the entire and global industry and by organizing knowledge sharing events.

Seen the fast growing ecosystem needed to realize sustainable, safe and passenger centric mobility services, Busworld has no other option than to grow. Since the latest edition of Busworld Europe in 2019, the world has significantly changed.

» continued article see p. 2

An advertisement for the video game 'Bus Simulator 21 Gold Edition'. The background shows a virtual city street at night with a bus labeled 'Gold Island' and a car. On the left, there are game cases for Xbox Series X, PS4, and PS5. A large sign on the right reads 'Bus Simulator 21 GOLD EDITION' and 'NEXT STOP'. At the bottom, text says 'BECOME A VIRTUAL BUS DRIVER!' and 'PLAY THE GAME - HALL 2 | 228'.

Colophon

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» continuation of article p. 1

The Bus market is anticipated to be heavily influenced by two major factors: The Russia-Ukraine war and the post-Covid-19 pandemic. The pandemic has severely delayed the need for renewal of the fleet, mainly in the coach market. It has disrupted supply chains, leading to challenges in production and distribution for manufacturers. The ongoing war has created political and economic instability, resulting in a decline in purchasing power, mainly in Eastern and Central Europe. As a result, the market witnessed sluggish growth due to the combined impact of these factors. As the situation stabilizes, there is an expected rebound in demand for these products.

The transportation sector is a perfect example of an industry grappling

with rapid changes in technology and customer expectations. In particular, these changes are being driven by three major trends: electrification, digitalization, and service-orientation. Based on these 3 trends, the global bus and coach market in 2022 was estimated at about 47 billion US \$. From 2023 to 2030, the Bus market will display a consistent and positive growth direction, indicating a favourable outlook for the industry. Key players in the industry are making substantial investments, which are anticipated to drive innovation and fuel market expansion. These investments primarily focus on the development of new products and the expansion of distribution networks.

In urban transport, governments and public & private transport operators are increasingly adopting electric buses. This driving market growth in

the urban bus segment. We may conclude that in most European countries the period of testing in urban services is coming to an end. Implementation at a larger scale has started. This is in a strong contrast with the long distance coach services and with school bus operations, where implementation of Zero Emission vehicles in Europe has hardly started. The out roll of an efficient network of charging and refuelling infrastructure along European roads, as promised in the Fit for 55 package, will be crucial in the decarbonization of long distance services.

Besides the energy transition, the ongoing digitalization is a focal point in this Busworld edition. Knowing that there is about 10.000 chips in one bus, you can imagine the impact. This figure illustrates the growing importance of digital features in our vehicles. And once again, technology has taken the lead in this evolution, although problems in acquiring microchips have been a major issue for a lot of manufacturers in the past months.

Focusing on the coach market, we see a significant increase in the comfort level and in the availability of different vehicle-sizes. Seen the legislative proposals from the European commission on the prohibition of flights under 300km, the taxation of kerosine and the introduction of VAT on flight tickets, the coach industry is ready to take an important market share in this segment.

In summary, the outlook for the bus and coach market is optimistic. Steady growth expected in the coming years. Increased consumer demand, advancements in technology and investments from key industry players are bound to drive growth and advance innovation. As an indicator of this growing market, we welcome the 531 exhibitors, which is the biggest participation ever in Busworld. ■



Redgy Deschacht and Mieke Glorieux welcomed exhibitors to the opening gala.



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TRANE
TECHNOLOGIES

Energy storage, above or below?

Will we be driving on electricity, hydrogen or still with the familiar diesel engines in the coming decades? The manufacturers have not yet decided, which makes planning for the near future extremely difficult. For now, manufacturers are still factoring in multiple options because a uniform propulsion system is not imminent.

When assembling a purely electric city bus or coach, the battery is logically located under the floorboard. The huge weight of the batteries under the bodywork ensures a low centre of gravity and excellent handling. But the volume of the batteries can be detrimental to a low boarding height for passengers. Especially in city buses, low boarding is a necessity. In coaches with a traditionally higher floor, the batteries can at most claim part of the luggage space.

Several manufacturers install the batteries on the roof of the bus. This allows for easy replacement of the battery packs but the superstructure of the bodywork has to torque a large mass and thus requires a more robust construction. Moreover, the extra weight on the roof is detrimental to the vehicle's cornering behaviour.

Ahead of a potentially definitive transition to 100 % electric driving, most manufacturers are opting for roof-top batteries or hydrogen tanks. That choice makes the production process less complex while different drive systems are still in use. ■



Summary

1 The outlook is optimistic

Speech by Redgy Deschacht, president Busworld

4 Winners Busworld Awards

9 Floorplan Busworld Europe

13 New driver spot for Tourliner

Neoplan modernises driver spots

14 Busworlds for Peter van Lil

Van Hool sales director retires

15 The hunt for weight

Where to put the batteries?

17 Opening gala

Busworld opens in style

FOGMAKER
INTERNATIONAL AB

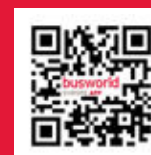
Protect Lives and Equipment

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Hall 5
Booth 512

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DOWNLOAD THE BUSWORLD APP AND OPTIMIZE YOUR VISIT!

The Busworld App replaces the paper catalogue. It has a floorplan, an exhibitor list, a product list, a seminar list and you can even see other visitors and contact them.

HOW TO DOWNLOAD?

Step 1: Activate your profile if you did not do this yet. An e-mail was sent to you from busworldapp@busworld.org on 1 September or later (when you ordered your ticket). You need to open this e-mail and activate your profile by choosing a password.

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.

busworld®

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 8 | Booth 808B
- **Twiliner**
Twiliner coach seat
Hall 2 | Booth 227

BUSWORLD CONFERENCE PROGRAM



EUROPEAN ZERO EMISSION BUS CONFERENCE

@ Busworld Europe Brussels

Tomorrow the Busworld knowledge program kicks off at 14:30 with the **European Zero Emission Bus Conference**. With 2,567 e-bus registrations and 96 fuel cell bus registrations during the first half of 2023, the European continent is accelerating the adoption of zero emission buses. On this first day of

the European Zero Emission Bus Conference you will deep dive into the current status of the European market, the performance of the vehicles and the charging infrastructure together with expert stakeholders from various parts in the value chain. ■

TOMORROW (MONDAY OCTOBER 9TH, 2023)

ZERO EMISSION BUS CONFERENCE (PAID)

LOCATION: MEETING CENTER HALL 7, AUDITORIUM 500

TOWARDS NET ZERO:

WELCOME AND INTRODUCTION

- **14:30:** Welcome to the 5th EU ZEB Edition
- **14:40:** Transitioning to Zero Emission: Brussels ZEB Plan
- **14:50:** Overview of the Status of ZEB Deployment in Europe
- **15:00:** Panel – Overcoming Barriers to ZEB Deployment

STATE OF PLAY AND PERFORMANCE OF ZEBs (1/2)

- **16:30:** How Will the EU Keep Its Position as Leader in ZEB Deployment?
- **16:40:** State of Play of Performance of BEBs (Battery Electric Vehicles) And Charging Infrastructure
- **16:55:** State of Play of Performance of FCBs (Fuel Cell Buses) and HRS' (Hydrogen Refueling Stations)
- **17:10:** Panel – Performance of Zero Emission Buses

GET YOUR
LAST MINUTE ENTRY
TICKET NOW:



GAMA shows the EVO L4

GAMA is the name as result from the merger between Gaussin and Macnica Mobility. This entity is created as a joint venture which has taken over Navya's assets. Gaussin is a French company in clean and smart freight transport, and Macnica Inc. is a Japanese manufacturer in semiconductors, electronic devices, networks and cyber security products.

This joint venture, GAMA, based in France, is 51% owned by Gaussin and

49% by Macnica. Its activity is dedicated to autonomous, zero-emission mobility for the transport of people and goods. It aims to capitalize on the pioneering technology of Navya and to combine it with the know-how and commercial strength of Gaussin and Macnica. GAMA will be present at stand 807B, hall 8, and will present its EVO L4 shuttle as part of the EFIBA project (Emergence Filière Bus Autonomes), supported by France Relance. ■



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Sprinter Transfer & Sprinter Mobility**

* SORT 2 under optimal conditions | ** Trademarks of Mercedes-Benz AG

Güeryüz presents EV Panora and EV Ecoline in flexible configurations

Turkish company Güeryüz Bus, presented electric open-top bus, EV Panora, and low-floor urban vehicle, EV Ecoline. The 11-metre EV Panora features four batteries and can travel 250 km on a single charge. It can carry a total of 81 passengers. The 12 metre Ecoline can offer a range of up to 380 km when fully charged.

Since Both buses are powered by new generation e-engines directly integrated with the ZF Ax Trax AVE rear axle, develops peak power of 250kW at 2,200 Nm. Battery configurations are flexible in keeping with customer specifications. The efficient liquid cooling system optimises the service life of batteries. Güeryüz has designed a battery management system compatible with Combo-2/CCS2 battery systems to allow for full charging within four hours. Significantly lower noise generated by electrical engines integrated directly into hubs of the rear axle helps to reduce noise levels.

The large size of the battery and engine compartment ensures reduced service time and effortless component replacement. Electronic Braking Systems, Acceleration Slip Regulation, Bus Stop Brake, Electronic Levelling Control, Regenerative Braking System, Hill Start Aid, Lining Wear Control, Advanced Driver Assistance Systems and Acoustic Vehicle Alerting System are standard features in both buses.

The EV Ecoline has a significant passenger capacity, vast seating space, a high-capacity air conditioner, and heaters. There are also specified areas for disabled people and a wheelchair area.

The window level has been carefully designed to have a wide field of view. It is easy to get on the low-floor bus with a maximum of 340 mm in height. With the kneeling system (270 mm), passengers of all ages can safely get in and out.

Manual ramps help disabled people to access efficiently.

An LCD display and camera can monitor the vehicle's reverse drive, passenger compartment, mid-door passenger entry, as well as the right-hand side

A customized instrument cluster integrated into the dashboard is designed as an intelligent digital multiplex solution, giving the driver important information during the journey, including rpm, battery voltage, battery recharging warnings, etc. This instrument cluster also allows for direct diagnostic of malfunctions at crucial aggregates, ensuring the vehicle's easy serviceability.

Güeryüz, which currently produces 600 buses a year has been in operation for over 55 years from its base in Bursa. The buses are mainly being exported to Europe. But in 2021, the company received a mandate for the North American market. It developed the 28 ft 100% electric and the 32 ft diesel buses for Vicinity Motor Corp. The collaboration resulted in deliveries from 2023.

Aftersales service has not been neglected. Güeryüz Bus Europa GmbH in Wuppertal, Germany, helps provide fast spare parts supply all over Europe. ■



The 11-metre EV Panora open bus.

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Thermobus: infrared heating for e-buses

Italian supplier Thermobus is launching an infra-red low energy automotive heating system. They say it is "the solution for the biggest challenge of electric vehicles and particularly suitable for city buses". Because climatization is one of the key points affecting electrical vehicle performances. Thermobus states the infra-red heating system has a high efficiency, extreme modularity, easy installing and low maintenance.

Since Autonomy range is still the headache for all manufacturers but climatization uses a lot of energy: on a hot summers day the air conditioning system consumes at least 10% of the kWh charge in the accumulators, while in wintertime this rate could easily rise to 30% or more. Heating is three times more energy demanding than cooling, is the experience of Thermobus.

The system is based on Infra-Red (IR) heating principle. While a traditional heating system is warming air, IR is warming directly with more comfort for passengers and drivers. No fans



are needed, as well as any other moving component, therefore the system does not require maintenance.

The absence of air movement also makes the environment cleaner and dust free. Beside the passenger com-

fort, the most relevant benefit of IR is the energy consumption: instead of 600/700 W/km of a traditional heating system, IR requires around 200/300 W/km. The IR-panels are light and can be mounted in the ceiling, in the floor or even in the side walls. The IR solution is designed to replace the conventional water/glycol heating system, with significant weight savings, or can be integrated with the traditional heating system for extreme rigid winter conditions. For the driver there is an IR-carpet or on the upper or side panel.

The system is available also as an integration of Ellamp luggage racks and ceiling coverings.

You can see and touch the infrared panels at Busworld in Brussels where they will be exhibited in cooperation with Ellamp and where Thermobus will also present the new air conditioning solutions for electric busses and minibuses. The infrared heating system made its debut with Rampini, Italian manufacturer of BEV and FCEV buses. Thermobus is in hall 8, stand 8088. ■

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RAMPINI HYDRON: World Premiere at Busworld Europe

Boutique Italian bus builder RAMPINI spa in Passignano sul Trasimeno which has participated in Busworld Europe for the first time has displayed its full portfolio of compact zero emission buses. The highlight is the new Hydrogen Range Extender Midibus HYDRON, that goes into production in 2024. Also, the electric version of the full low floor integral eight-meter Midibus ELTRON is featured with a new design. The six-metre low-floor fully electric SIXTRON completed the line-up.

Sometimes it appears in the bus and coach industry, that there is the salient question of "Battery versus Hydrogen" as a means of energy-storage and provision. But in fact, it is not the question to say A or B, but sometimes both! RAMPINI is therefore the first manufacturer to offer a compact Midibus with a well-sized battery and a hydrogen range extender to combine the best of both worlds. Basically, every hydrogen bus is an electric bus – the defining question is just, how big are battery and fuel cell and their relevance for the Traction System. This is also the reason, why the models ELTRON and

HYDRON are not completely different models, but rather "two sides of the green Zero Emission Coin", with most parts and concepts shared among each other: body concept, Stile Energetico-Design, Driveline, Interior design etc. The advantage for the customer: no complex spare parts handling, when both models should be in the fleet. Out of conceptual reasons, the HYDRON is offered only in a two-door-version unlike the ELTRON, which is also available with three doors.

The concept is easy: the somewhat smaller sized battery pack (175 kWh net instead of 270 kWh) is supported by a compact 30 kW fuel cell by the Canadian manufacturer Loop Energy. Due to the innovative eFlow™ architecture of the company, the fuel cells offer a 16 percent lower consumption of precious hydrogen while at the same time boasting up to 90 percent higher peak power and ten times better current density uniformity with the same stack size. The superfluous heat of the fuel cell as well as the traction is harvested efficiently and supports the heating for the drivers or even the passengers' area.

The fuel cell is managed by the



RAMPINI own "Hy4Drive" electronic drive management system. Basically, the vehicle functions like a Battery Electric Vehicle (BEV) with a 170 kWh LFP-battery (the mostly identical designed ELTRON offers a 210 resp. 281 kWh battery), but it is coupled with a 30-kW fuel cell. In order to accomplish the most flexible and most efficient way to integrate the fuel cell into the Drive System, the "Hy4Drive-System" offers four different modes of usage of the fuel cell and thus of the whole Drive System. The modes can be individually chosen by the driver in the vehicle System or the systems chooses them automati-

cally in case of a malfunction or of low battery energy.

The fuel cell has a very conservatively estimated, 10.000 hours lifespan. The HYDRON is able to extend its range to more than 400 kilometers in E-SORT 1 and almost over 500 kilometers in E-SORT 2 without heating or A/C. With Hydrogen alone the range can reach also 250 kilometers.

Around 200 electric buses have left the factory halls in Passignano and have been delivered to six European countries - Germany, France, Austria, Spain and Greece in addition to Italy. ■

City Bus - 12 m

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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
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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
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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	HISPAULD	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
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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 SINOVIATION 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
BURGAFLX	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		

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EUROPE BRUSSELS
7-12 OCT 2023

MAIN ENTRANCE
EXIT NORTH



- Catering
- Reception
- Vestiaire
- Toilet
- Accessible to people with disabilities
- Hotspot
- Defibrillator
- Meeting point



MAIN ENTRANCE
EXIT SOUTH



Organisers office





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	SCHNIELE 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	STILLIA 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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Two world premieres and a 10-metre bus MAN innovates with unique ergonomic cockpit

In anticipation of new European regulations on 'cybersecurity' and 'software update management' for vehicles, MAN Truck&Bus has adapted the dashboards for buses and coaches. From 2024, these vehicles will get the ergonomic dashboard you also find in MAN TGX trucks.

The eye-catcher in the Neoplan Tourliner and the Man Lion's Coach 2024 is definitely the cockpit with the updated dashboard. Its origins go back to the MAN TGX truck launched a few years ago. Prior to the design of the 2024 product line, bus drivers were asked which dashboard they preferred: the 'classic' dashboard with the touch screen as it has been present in buses for years or a brand new dashboard like the one already present in TGX trucks.

WRIST REST AND 'TOUCH PAD'

Since the 'touch screen' did not always function with alertness or it was a bit more difficult to operate while performing manoeuvres or driving on bumpy roads or in chaotic traffic jams, drivers preferred the new truck dashboard which features a wrist rest for the right wrist and a closely positioned MAN Smart Select button with a double rotating ring. The smoothly operable system allows the driver to keep his eyes on the road much better and still navigate the menu smoothly.

In addition, the driver can assign a number of functions to various numeric hotkeys that take him straight to the right menu. It is worth mentioning that the assignment of these hotkeys can be fully personalised by each driver, even if two drivers are driving on the same route.

For now, the MAN SmartSelect system is the only one of its kind to be integrated in commercial vehicles. Optionally, the new dashboard can be equipped with an electronic hand-brake. Thanks to underlying software and electronics, the introduction of the new dashboard goes hand in hand with the standard installation of numerous safety systems. For example, the driver's seat comes with haptic feedback, where the seat cushion vibrates left or right when the driver strays from his trajectory. Another feature is the multifunction steering wheel in which, underneath, a turn-and-click lever was provided for simplified operation of the gears. The new MMC Advanced multimedia system is displayed on a separate 7-inch monitor that can be operated via new push buttons, the multifunc-

tion steering wheel, voice recognition or the new MAN SmartSelect system.

COMFORTABLE IN SMALL TOWNS

With the MAN Lion's City 10 E, a new length variant is added to the e-bus line-up. Boasting a turning radius of 17.2, this 10.5-metre compact city bus lends itself perfectly to driving in historic centres and smaller towns or 'on demand' scheduled services in the region without sacrificing comfort and performance. During a test drive in South Tyrol, 531km were driven with an average consumption of 0.77 kWh per kilometre, recovering more than 50% of the energy.

The MAN Lion's City 12 E LE is based on the already existing 12-metre variant. With up to 41 seats, a separate

space for wheelchairs and strollers and low entry, this bus is suitable for longer suburban lines. Since the seats in the rear are all facing the direction of travel, passengers on longer routes also enjoy comfortable seating.

The second world premiere is the three-axle MAN Lion's Intercity LE 14, which completes the successful range of low-entry buses. With its length of 14.43 metres, the Lion's Intercity LE 14 is one of the shortest three-axle vehicles. Nevertheless, it has space for up to 127 passengers, of which a maximum of 63 can be seated. Thanks to its steered tag axle, this Intercity bus has a compact turning circle of 23.8 metres. Optionally, the bus is available with a third door at the rear; this variant will be on display at Busworld. ■



The new driver's cockpit in the new Neoplan Tourliner.

Hall 4, stand 402b

Drive the road of change

17 Busworlds for Peter Van Lil

Passionately involved in building what is probably the best coach in the world

With 35 years at Van Hool and 17 Busworlds, this is Peter Van Lil's last edition for now before he retires at the end of this year. The personal contacts remain, as does his passion for the sector and commitment to help build what is probably the best coach in the world.

After having worked in the insurance sector and wood processing for eight years, Peter Van Lil started at Van Hool 35 years ago. "I am from Lieren, I have always known the factory and also knew the Van Hool family. Starting there was not unusual for me. Once you're in the business, it's hard to get out. It is a fascinating sector with so many facets: the products, the travel experience, the customers, ... It is a very attractive, very varied sector in which personal relationships dominate.

Chemistry with your customers is so much more important than just selling online. You have to understand what your customer is doing. Never

be euphoric or depressed and always keep your two feet on the ground. In the bus business, there are many waves. It is only by never giving up and standing up again and again that you can maintain continuity and stay in this business for so long.

His first Busworlds (Car&Bus Salon at the time) in Kortrijk, Peter Van Lil remembers as a period with much less competitiveness. "In Belgium there was Van Hool, Jonckheere, Mercedes and a little bit of LAG. Nobody talked about MAN or Volvo. Things changed in the late 90s with the arrival of the first Turkish manufacturers with cheaper prices. Big players then moved abroad. Van Hool only started in Macedonia in 2013, where we evolved from 4 to 8 production lines and build about a thousand vehicles a year."

You make friends with many and that's how you do business. This aspect was well preserved with the move to Brussels. And even now things are

looking good for 2023. What strikes me is that there are so few coaches. I already had that impression in 2019. Coaches are our core business while now the main focus is online buses and going green."

In retrospect, Peter Van Lil argues that the sector has evolved positively and professionalism has intensified. "A bus used to be a vehicle with an engine, now there is much more experience and luxury involved. By offering more quality than the plane,

we can outperform them on distances of up to 1,000 km. I believe in a new future for the coach, which is more environmentally friendly, quieter and offers a VIP level.

However, I do believe that for international transport we will continue to use diesel for another 10 years or so. Slowly we are moving towards the hydrogen coach. There is still a lot of potential. I stay convinced of one thing, which is that Van Hool probably builds the most beautiful buses and the best coaches in the world." ■



Peter Van Lil is confident about the future of coaches.

ABB

The 360-degree charging solution to electrify your bus fleet

ABB E-mobility knows the importance of flexibility to bus operators, especially as they attempt to navigate rapidly evolving fleet and infrastructure requirements. That's why our new HVC360 power cabinet offers not just best-in-class power density, but smart energy management too. Intuitive and robust, it ensures a seamless end-user experience and integrates hassle-free into existing infrastructure.

Compatible with both CCS and pantographs, HVC360's cutting-edge design allows the installation of dispensers up to 150m from the power cabinet itself and supports up to four outlets at once. The solution is configurable, scalable and upgradeable, perfectly meeting the individual challenges of fleet and depot electrification.

But ABB E-mobility's 360-degree solution is about more than just hardware. Backed up by a 97% up-time commitment with industry-leading service as well as smart software solutions, the HVC360 covers every element of the transition to electric mobility.

Simple integration with existing business tools, automated charge planning, and real-time monitoring all help to ensure a smooth transition to e-bus operation, while technology including real-time emissions reduction reporting and proactive service monitoring promotes sustainability and reliability.

Visit us on the ABB E-mobility stand in Hall 7, Booth 784 to learn more.



HALL 7 | BOOTH 784

The battle against weight

New city buses and touring coaches are going on a diet. Wherever possible, kilos are shed because saving weight translates into less consumption and a longer driving range. Each manufacturer is doing this in its own way.

With the substantial growth in the number of electric buses, the hunt for excess kilos is on. Because weight and driving range of electric vehicles are inseparable. A lighter bodywork quickly results in significant weight savings. Manufacturer Ebusco is playing a pioneering role in this discipline. Its electric 12-metre bus became 4 tonnes lighter and now weighs just under 10 tonnes. The Dutch manufacturer achieved this record saving by using a superstructure made of

fibre-reinforced plastic. The first thirty vehicles have been delivered. Another 600 are booked on the order book this year.

Manufacturer VDL also goes for composite materials. 'We are constantly looking for better solutions. We use composite material for the covering of the side walls. This not only saves weight but also offers better acoustic comfort. Our efforts result in a weight reduction of up to 15 per cent,' says Alex de Jong, business manager of VDL.

Bus builder Van Hool considers the total mass saving as a total concept. 'CO2 emissions are becoming the benchmark for the construction of new vehicles. In addition to lighter

materials, bodywork aerodynamics and reducing friction losses are also factors that need to be tackled for more economical and environmentally friendly transport,' says Filip Nolf, product manager at Van Hool.

The Flemish manufacturer uses composite material with a honeycomb structure for the roof. 'In addition, we were able to achieve savings of no less than 900 kilograms with a lightweight chassis on our 2-axle vehicles. The same practice is now happening for our 3-axle vehicles. This operation is still in the research phase.' The propulsion of the new vehicles has also been slimmed down. For instance, the combustion engine no longer resides in the chassis but is suspended from the tail of the bus.

'With this construction, we were able to reduce weight, the propulsion is silent and vibrations are neutralised,' Filip Nolf stresses.

Automecanica Mobility, a Romanian newcomer to the market, shows off a prototype electric bus. Its first zero emission vehicle runs without composite materials.

'Nothing is stronger than steel,' says a confident Diana Radjib, the company's project manager. 'It is not the vehicle but its use that determines how economical a bus can be. Calculating battery capacity, a smaller battery, more charging points and addressing energy guzzlers like air conditioning: these aspects are at least as important for achieving more efficient transport.' ■



Manufacturer Ebusco is playing a leading role in this matter.



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Busworld | Grand inauguration 2023



VDL Futura to be launched over a year

Dutch bus and coach manufacturer VDL Bus & Coach had invited the international trade press for a sneak preview of VDL's new Futura, shortly before Busworld. The project is still under development and goes by the name "Vision Futura". It will be the third generation of the Futura coach. VDL Bus & Coach plans to unveil this latest Futura over about one year. Interesting is that the new platform will be developed with several propulsion systems in mind, electric, fuel cell, hydrogen combustion engine and diesel.

Since Unfortunately the press was not allowed to take any pictures. However VDL presents at Busworld its "Vision" behind the development of this third generation Futura. Also the mock-ups that were shown to the press are on the VDL-stand at Busworld. The main novelties of the "Vision Futura" are to be found in the front and rear of the coach. The front is characterized by the curved convex windscreen for improved aerodynamics. The rear has a sharp edge design also to benefit the aerodynamics with rearlights that are the same as the Citea: synergy.

The head lights are especially developed for this new Futura. But overall the coach is very recognizable with a clear VDL identity. VDL Bus & Coach organized this sneak preview in order to lift a tip of the curtain – with Busworld in mind – because next year the new EU directive GSR (General Safety Regulation) will come into effect. The new requirements have led VDL to create a completely new

platform for the Futura, suitable for different drive lines as VDL is in cooperation with DAF Trucks also developing hydrogen powered trucks.

But at first the Futura will be launched with a diesel powertrain followed later by alternative drivelines depending demand. This Vision Futura is said to be 400 kilograms lighter than is predecessor, and thus prepared for the

instalment with heavy batteries while maintaining full passenger capacity. The driver gets a new cockpit with a completely new instrument panel, new GSR-compliant driver assistance systems and a new collision protection in the front. The current generation of VDL Futura was presented in 2010. VDL has sold over 4,900 copies of the Futura. ■



50 new Citea for Kiel

KVG Kieler Verkehrsgesellschaft, the public transport operator in the German city Kiel, and Dutch bus manufacturer VDL Bus & Coach have reached an agreement for the delivery of 50 units of the new generation Citea with an option for 10 additional buses. With this order, KVG will exceed 100 units of the VDL Bus & Coach brand in its fleet.

The latest order consists of 30 electric articulated new generation Citea LF-181 buses and 20 electric new generation Citea LF-122 buses. The vehicles will be equipped with battery packs with a capacity of 522 kWh for the LF-181 and 429 kWh for the LF-122. The buses will be equipped with a pantograph for fast charging.

Furthermore, the new generation Citea for KVG feature a mirror replacement system with cameras instead of mirrors. From July next year until 2025, 50 new electric buses will be delivered to Kiel. The city of Kiel is a 100 percent shareholder in KVG, Kieler Verkehrsgesellschaft mbH. ■



The new generation Citea.

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