

busworld[®] DAILYtimes

EUROPE BRUSSELS THURSDAY 12 OCTOBER 2023



European buses having the potential to become safest in the world



Norwegian transport minister Jon-Ivar Nygard

“European buses can potentially become the safest in the world,” stated Jon-Ivar Nygard, Norwegian transport minister, after Norwegian research revealed a lack of European standards. The study followed after a driver was killed after a head-on collision at 34 km/h. It also turned out that many injury accidents go unrecorded because they involve passengers falling in the bus or getting on and off.

The Norwegian Centre for Transport Research presented the study ‘Safety in bus transport in Europe’ for Busworld Foundation. It summarised available safety measures and made several suggestions for a structurally based and efficient safety culture in bus companies.


According to the Norwegian study, there are currently hardly any legally binding measures like those applicable to cars and trucks. As far as crash prevention is concerned, buses are counted among trucks while they are conceived completely differently. “Besides the limited European technical regulations for buses, we do have our own standard in Norway that is prescribed by transport companies in tenders. We also see how transport companies often prescribe their own standards, how bus manufacturers come out with their own initiatives and technology to promote safety, and we also note how other countries prescribe other standard norms. If we can reach a fully-fledged European bus safety standard, European buses can become the safest in the world,” said Norwegian transport minister Jon-Ivar Nygard.



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BUSWORLD DAILY TIMES IS A PUBLICATION OF BUSWORLD EUROPE. IT IS PUBLISHED ON A DAILY BASIS DURING BUSWORLD EUROPE 2023 ORGANISED IN BRUSSEL EXPO FROM 7 TO 12 OCTOBER 2023.

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PRINT

CTP digital printing
Grotenhoutlaan 5
2300 Turnhout
Belgium

PUBLISHER

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Bus front and interior should be safer

"The front panel and front of a bus offer hardly any resistance to protect the bus driver in case of a head-on collision, and that even at low speed," Norwegian transport minister Jon-Ivar Nygård stated. He referred to an accident in 2017 in Nafstad in which two buses collided head-on at just 33-34 km/h; one driver was killed, the other seriously injured. This accident led the Norwegian Centre for Transport Research to launch a comprehensive study of bus accidents, and in a broader sense than the classic collision.

Between 1990 and 2022 in Europe, the risk of bus drivers being seriously injured in bus accidents dropped significantly by 5.1% annually. For passengers, the same period recorded an average decrease of 7.3% per year, but since 2015 the figure has stag-

nated and even increased slightly. The overall decrease was achieved thanks to new technology being introduced, although it is noted that drivers deactivate it repeatedly.

"Quite a few incidents also remain under the radar," says researcher Dr Tor-Olav Nævestad. "These include falls in the bus during (abrupt) braking or acceleration or while getting on and off. Norway's Ruter, for example, recorded 188 injury accidents on buses in 2022, which were not recorded as bus or road accidents. The risk of a (standing) passenger falling in a bus is 0.3-0.5 per million passenger-kilometres, compared with 0.8-1.7 per million passenger-kilometres when getting on and off."

Investigation of 800 incidents involving buses between 2016 and 2020

found that there were 360 injury accidents resulting from collisions. Collisions with pedestrians, cyclists and moped riders caused 57 injury accidents. All other incidents took place on the bus, during getting on and off or as a result of aggression (23).

The report 'Safety in bus transport in Europe' lists some 30 relevant measures that effectively contribute to making bus transport safer.

For example, it advocates an alarm system that warns passengers in case of an emergency stop. It also recommends a more judicious placement of handholds, as not every passenger is tall enough to grasp the 'handrail' on the ceiling. Better insurance of wheelchairs and child buggies is also recommended. ■



Dr Tor-Olav Nævestad: "Falls in the bus during (abrupt) braking or acceleration, or while getting on and off, are not recorded as bus accidents."



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AVM 360

BOOTH 471 / HALL 4

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Castro 4.

Scania guarantees quality bodywork builders

Scania premieres the Scania Castrosua LE 4x2 manufactured by the Spanish coachbuilder of the same name. The project is an example of the new partnership model in which Scania chose to stop building its own vehicles. From now on, the Swedish company focuses on engines and chassis and leaves bodywork manufacturing to carefully selected companies. When they build a vehicle approved by Scania, Scania also takes full responsibility for it. Bodywork builders are evaluated

on criteria relating to the quality of production, their commitment to the environment and to employment and human rights. When Scania approves a vehicle, the bodywork builder can market it on the entire European market through Scania, and customers can rely on Scania's after-sales service and technical support. Such cooperation agreement is in place with Higer and Irizar for coaches and is now being set up for the electric Scania Castrosua. ■

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17 Yutong

World leader of new energy buses

Tremonia MOBILITY

Next stop:
HALL 4
BOOTH 419A

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Minibus made in Dortmund
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Sprinter Transfer & Sprinter Mobility**

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

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HOW TO DOWNLOAD?

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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



AND THE WINNERS ARE...

Out of 35 candidates, four winners were selected by the jury. They received their awards yesterday 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

E-MOBILITY MANAGEMENT

- **Chargepoint**
Battery Health Package
Hall 9 | Booth 937

DIGITALLY ENHANCED DRIVING

- **Karsan**
Autonomous e-ATAK
Hall 5 | Booth 501

DIGITAL ON-BOARD COMFORT

- **MAN Truck & Bus**
New Digital Cockpit and MAN SmartSelect for Model Year 2024
Hall 4 | Booth 401

Busworld Innovations, your opinion counts



VOTING RESULTS...

- **KervoE, Bosch**
524 votes
99,81% YES
- **EcoBusRapidDesign, Ctrine Engineering**
346 votes
99,42% YES
- **Eleather, Generation Phoenix**
44 votes
95,45% YES
- **I6S Hydrogen Efficient, Irizar**
17 votes
88,24% YES
- **JTSolar Glass, Jaakko Tuote Oy**
77 votes
98,70 % YES
- **CO2 Heat Pump, Konvekta**
84 votes
96,43% YES
- **Reflexcontrol, Saint Gobain**
30 votes
100% YES
- **3 in 1 DRL/DI/POS combination light, Superlee Corporation**
23 votes
100% YES
- **Athenia ENVI Heat Pump with R744, Thermo King**
354 votes
99,15% YES
- **Twiliner Coach Seat, Twiliner**
15 votes
100%

BUSWORLD CONFERENCE PROGRAM

Today it's **all about coach** at Busworld Europe's knowledge program. The switch to **zero emission** in bus operations is already at full speed in Europe, without a doubt **coach tourism and long distance services** are going to follow in the years to come. Being well prepared is already half the work people say. So let's take a look at the market development in zero emission coaches today and what to expect. What are the challenges and opportunities lying ahead for coach operators.

In the afternoon **The Future of Coach Tourism** in Europe will conclude this year's Busworld knowledge program. If you are in the coach business, this comprehensive event will bring you up to date on the access to cities, new drive and rest time regulations, and the future of group tourism in Europe. The event will end with a network event between coach operators and tourism stakeholders from Flanders and the French Region Grand Est.

TODAY

(THURSDAY OCTOBER 12TH, 2023)

ZERO EMISSION BUS CONFERENCE (PAID)

LOCATION: MEETING CENTER
HALL 7, AUDITORIUM 500

STATE OF PLAY FOR ZE COACHES AND LONG DISTANCE SERVICES

- **09:30:** Opening Address
- **09:40:** Market Development and Demand for Zero-Emission Coaches – Focus On French Market
- **10:00:** Panel – Zero Emission Coaches: Meeting the Needs of Customers
- **10:50:** Daily Drive – Exploring the Technical Experience and Challenges of Operating a Fuel Cell Bus Fleet

ZE COACHES/LDS CHALLENGES AND OPPORTUNITIES

- **11:30:** Learnings From the Deployment of the Network to Support Deployment of the Zero-Emission Coach Ecosystem in Germany
- **11:50:** Zero Emission Coach Ecosystem - Technological Challenges and Business Adaptations (Infrastructure Focus)
- **12:50:** Closing Speech

THE FUTURE OF COACH TOURISM (FREE)

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

- **14:00:** Welcome & Introduction
- **14:20:** EU Policy on the Access to Cities for Coaches
- **14:40:** The New EU Drive and Rest Time Regulations for Coach Drivers
- **15:00:** The Future of Group Tourism in Europe
- **15:30:** Network Event

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New generation of Van Hool city buses: A Series

Van Hool is once again back in urban transport with its electric A Series. At Busworld you can now see the 12-metre version at the Van Hool stand in hall 5. It will soon be followed by four variants, from 10 to 24 metres long. Here, Van Hool chooses, traditionally, not one driveline, but three zero-emission systems: battery-electric, fuel cell (hydrogen) and trolley, or three times 100 per cent zero emissions.

In other words, Van Hool resolutely opts for environmentally friendly public transport and will only build zero-emission buses. The Van Hool A12 Battery Electric, now on display, is the first vehicle in the completely new series of buses. In urban and regional transport, politics rules and there the adage is electric, even though the call for hydrogen is getting louder and louder. With the new A Series, Van Hool claims to be able to respond to this demand. And the Belgian company has already achieved success. Its order book is now well filled. CEO Filip Van Hool: " Our intention when

designing the new A Series was to create a zero-emission, comfortable, safe, timeless and sustainable series of buses for urban and regional transport in Europe and to meet the high expectations of transport companies, drivers and passengers."

GREENING

Filip van Hool: "Our customers focus on greening their fleets and aim for zero emissions coupled with comfort and safety and a pleasant working environment for the driver along with a good TCO, total cost of ownership." The ergonomic cabin is built according to the requirements of the Verband Deutscher Verkehrsunternehmen (VDV). The new A Series comes standard with an enclosed cabin that has ample storage space. The indoor climate is controlled by a unique system where conditioned air is supplied through a central roof air duct, based on heat pump technology and traction heat recovery. A system said to be more energy-efficient than a conventional heat pump.



Sleek aerodynamic design.

LIGHT AND SPACIOUS

The design of the new A-Series is characterised by its aerodynamic shape at the front. The large wind-screen provides ample visibility.

The buses are equipped with LED tail lights and LED headlights with daytime riding lights. A large rear window allows plenty of natural light to enter as do the large side windows, contributing to a bright interior.

Wide doors facilitate passenger entry and exit. To make the A-Series as light as possible, many elements are made of high-strength (duplex) stainless steel and the roof is a lightweight

sandwich construction equipped with a modular fastening system for the various components such as the traction batteries, climate system and corresponding control and steering systems. ■



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Solarbus.pro

Ready-to-use application of solar panels

Solar panels on the roof of a city bus or coach can generate significant savings 'Every litre less diesel fuel benefits operations and the environment,' says Karl Andreassen, CEO and co-founder of Solarbus.pro. The solar panels are easy to install.

Every little bit helps. For instance, solar panels can produce energy that powers various drive generators such as air conditioning, ventilation, a refrigerator and automatically operated doors. All are energy guzzlers that significantly increase fuel bills.

'1 kWh of energy produced is equivalent to 1 litre of diesel and means a CO2 reduction of 2.86 kg. These are figures that matter. Our solar cells can produce up to 1,000 kWh, which is good for 1,000 litres of saved diesel fuel per year,' Karl Andreassen emphasises. 'Sustainability is the watchword of

Solarbus.pro. We use only three per cent of rare materials compared to mainstream solar panel producers.' Solarbus.pro, part of the Green Energy group, has been manufacturing and applying solar panels for 11 years. The company produces in Denmark and has developed a ready-to-use application of solar panels for city buses and coaches.



Installing the flexible solar panels is a simple job, according to the manufacturer. The solar cells rest on a self-adhesive carrier, a high-quality laminate that can withstand freezing cold and high desert temperatures. 'We subjected the solar panels to the most demanding tests such as the torsional forces of a long body. The roof of a bus can move several centimetres along its entire length. However, our panels are sufficiently flexible to absorb this,' says Andreassen.

The company prides itself on the fact that the solar panels remain operative for a virtually unlimited age. 'They are 97.8 per cent recyclable but we also support a NGO in Uganda where the reusable solar panels are placed on the roof of mud houses and provide electricity to the residents with a battery,' says the CEO. The manufacturer does everything, from development and production to



preparing instructions for installing the solar panels. Cleaning the panels turns out to be unnecessary. 'And even under a layer of dust or dense snow, the cells continue to produce energy. The top layer of the solar panels is so smooth that no deposits can stick,' Karl Andreassen concludes.

According to the CEO, the investment in the solar panels pays for itself in two years. Solarbus.pro is present in 27 countries. ■

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Solaris scores with city buses

CEO Javier Iriarte presented a numerical overview of where Solaris stands today. Compared to the first half of 2022, Solaris generated a growth of 45% in the same period of 2023. 77% of vehicles registered in 2023 were non-classically powered buses (electric, hydrogen, trolley or hybrid). This puts Solaris in the number one position for city buses in Europe with a market share of 16.4% new registrations.

In view of the electrification of inter-urban transport, Solaris founded a new division for this purpose. Another new development was a step across the ocean with a test in real operation in Vancouver, Canada, which showed that European technology performs equally well in North America.

A brand new charging station for electric buses was installed at the plant and a special, separate production hall was built for building hydrogen buses under the safest conditions.

Dariusz Michalak who is responsible for products explained why Solaris is exhibiting two new buses at Busworld. Firstly, materials and technology are evolving rapidly, so continuous improvements are imperative. Secondly, feedback from operators who have been driving electric for 10 years is a goldmine of information. But customer requirements also evolve. For instance, more space is often requested for wheelchairs or strollers in the rear of articulated buses, on longer lines people demand more seats, and the success of some lines requires articulated instead of solo buses.

NEW URBINO

Thanks to its high density batteries of up to 800 kWh, the new Solaris Urbino 18 electric now offers a driving range of over 600 km in SORT II, which is more than enough for an entire day's line-out. The elimination of the engine freed up space for six extra seats, and more space on the roof allowed for more battery modules if required.

The total capacity of the articulated bus is 145 passengers. Through standardisation, the production cost of the bus decreases, as does the operational cost at the operator. For charging, both upward and downward pantographs are available to be placed above the steering axle, as well as the connector plug at the front, rear, left or right of the bus.

In order to be greener, Solaris does not source batteries from distant continents, they are made locally so



Solaris Urbino 18 hydrogen.

that dependency is avoided and this supports the local economy.

For batteries, Solaris has set up a separate "Battery Hub" responsible for research, product development, operations and after sales.

The second innovation is the hydrogen bus in both 12-metre and 18-metre articulated versions. There are currently about 350 H² buses run-

ning in Europe. One in three of them carry the Solaris logo. The 18-metre articulated on the Busworld stand has a 100 kW fuel cell and eight hydrogen tanks for a total of 50 kg of hydrogen. Batteries support the departure and are powered in part by recuperating energy when braking.

Again, the bus can travel over 600 km on a single refuelling, which is more than enough for a full day's operation.

Apart from the 140 already delivered models, another 450 to be delivered hydrogen buses are in the order book for the next two years.

To conclude, the CEO again underlined Solaris' sustainability: 100% power from renewable sources for production, 58% carbon footprint reduction, 23% savings on other energy consumption and 69% of used supplies are sourced locally. ■

Cojali presents components and technological solutions

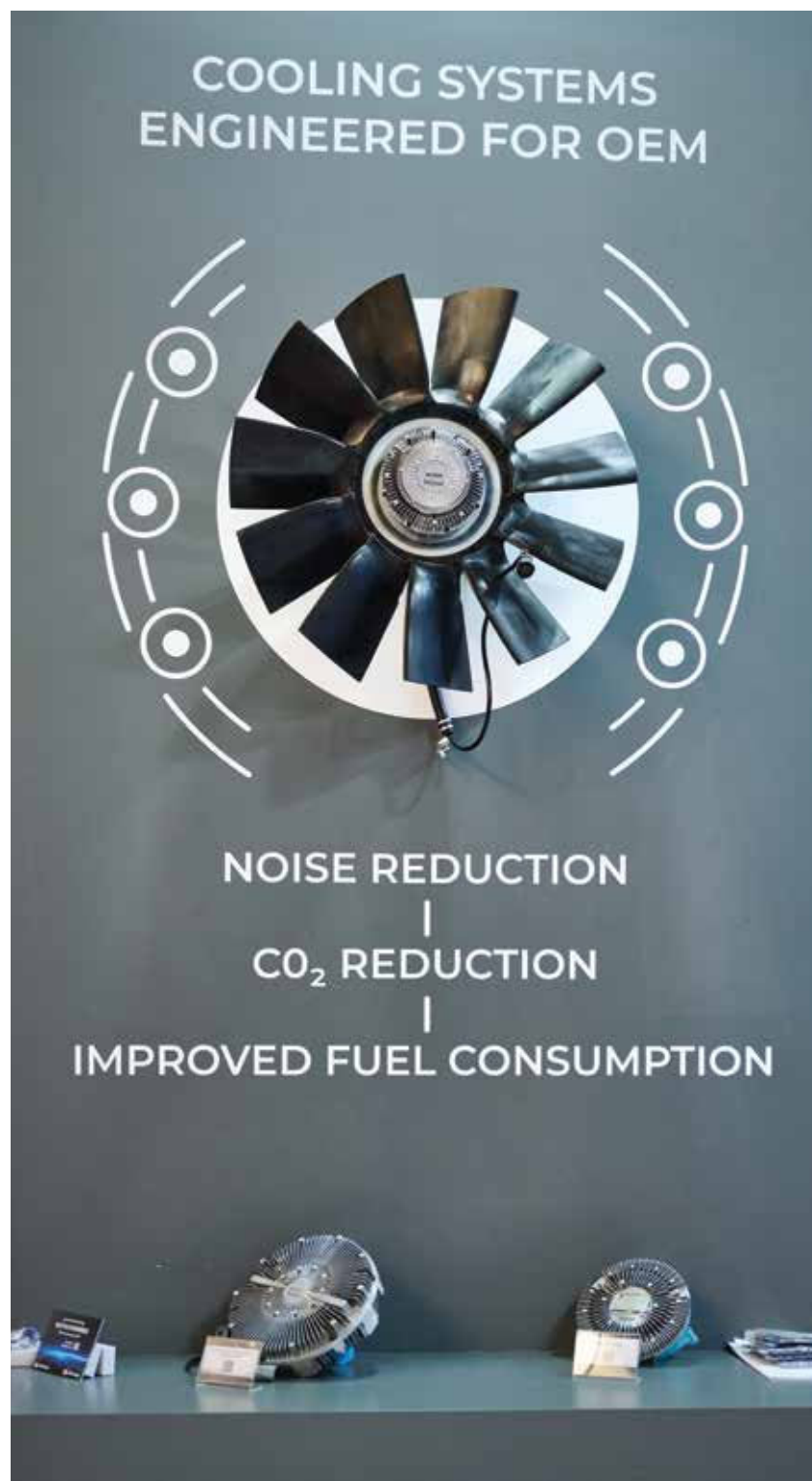
Cojali S.L., a Spanish multinational manufacturer of components and electronics, will bring its solutions for connectivity, electric vehicles, predictive maintenance and remote diagnostics to Busworld, which this edition will pay special attention to zero-emission long-distance buses.

Cojali will be present at the stand 614A located in hall 6 where the main functionalities of Jaltest Telematics will be introduced with the predictive maintenance and the advanced remote diagnostics as highlights.

Cojali states that these functionalities are also applicable to electric fleets and will maximise the availability of vehicles up to 42% by monitoring in real time the KPIs, such as the vehicle range, load cycles, duty cycles, battery lifetime, temperature or voltages, among others.

Cojali wants to be "a meeting point to discuss the challenges that the bus industry has to face in order to apply new maintenance approaches both for electric and internal combustion vehicles, as well as to discuss how to benefit from all the data available and delivered by the bus thanks to the AI." The aim for the company is to identify potential problems before these occur, as well as to estimate the next maintenance window according to the remaining useful life of components.

Also Cojali will demonstrate the cooling system range that it offers, as well as the customised advanced diagnostics solutions for OEM service networks for commercial vehicles. Cojali S.L. has three subsidiaries: Cojali France, Cojali Italy and Cojali USA, and four sales offices in Germany, Turkey, Mexico and India. ■



Kempower with range for electric fleets

Kempower will display its state-of-the-art EV fast charging solutions at Busworld in hall 8.

Kempower offers a complete DC fast charging solution that makes it easy for operators to scale up the charging infrastructure as their electric fleet expands. Thanks to the company's dynamic power distribution capabilities, charging capacity can be dynamically distributed to the vehicles most in need of charging, such as electric buses, which maximises the kilowatts available at depots and charging points.

Kempower's product range also includes Kempower ChargeEye for

Depot, a cloud-based load management software that helps operators manage safe and secure depots and minimises total ownership costs.

The platform allows for real-time monitoring and control of charging and enables dynamic load sharing, which reduces the time of inactivity and prevents overloading of the charging system.

Furthermore, Kempower will showcase the Kempower Satellite charging system, Kempower Liquid Cooled Satellite, Kempower Pantograph Down and Kempower Movable Charger, and other systems. ■

What does AI suggest about buses?

A safe and respectful culture helps solve driver shortage

Bus operators can help solve the driver shortage and ensure everyone has access to safe and reliable transport. Bus drivers are generally underpaid, given the long hours and demanding nature of the job. Increasing salaries and benefits would make the job more attractive to potential and current drivers.

Bus operators can make the job more accessible by offering flexible training programmes and reducing the time needed to get a licence. They can improve working conditions by giving drivers more breaks, better scheduling and safer vehicles. Because bus drivers often feel isolated and undervalued, bus opera-

tors can create a more supportive work environment with recognition for their hard work and opportunities for professional development. Think, for instance, of discounts or sign-up and referral bonuses to attract new drivers and encourage current drivers to recruit their friends and family. For drivers with an ancillary occupation or family commitments, flexible work schedules are attractive. A culture of safety and respect can help attract and retain drivers by making them feel valued. ■

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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	HISPACOLD	506
ASTRAGON ENTERTAINMENT GMBH	228	DANCER BUS	605B	HITACHI ENERGY LTD.	1190B
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ATS	423	DENSO EUROPE BV	792	HÜBNER GROUP	755
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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 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
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		

busworld

EUROPE BRUSSELS
7-12 OCT 2023

MAIN ENTRANCE
EXIT NORTH



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Streamax

Bus Simulator 21

Organisers office

FOGMAKER INTERNATIONAL AB

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



MAIN ENTRANCE
EXIT SOUTH

PT

M METRO



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

busworld®

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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ABB presenting its new fleet charger

ABB's E-mobility presents the new HVC360 fleet charger at Busworld. This fleet charging solution provides fleet operators with the power to charge anywhere.

The new HVC360 offers the best power density in its class and remarkable power relative to the ground area occupied, delivering ultimate flexibility for any site layout or usage situation. It produces up to 360 kW of power and allows the connection of up to four charging stations. With a distance of up to 100 metres between the power cabinet and each charging point, the power cabinet can be placed in a safe, collision-free location, even on the roof of the depot. By simultaneously supporting all charging interfaces and allowing a mix and match from CCS to pantograph, all user requirements and configurations are met. Up to four charging points can be connected to a single power supply box. It supports all charging interfaces, from CCS to pantograph, even simultaneously, and allows mixing and matching to better fit and optimise new or existing set-up constraints.

The compact design allows for installation back-to-back, side-by-side or along a wall. The HVC360 offers the optimal solution for bus depot charging.



BEST POWER DENSITY IN ITS CLASS

The new HVC360 power cabinet delivers remarkable power for its footprint at 400 kW/m². By reducing hardware costs and the use of valuable floor space by more than 50% compared to the previous generation, installation and AC wiring costs are significantly reduced.

Every bus in a vehicle fleet returns to the depot for a few hours, and this is the perfect time to charge the vehicle with a lower payload.

COMPATIBILITY

HVC360 charging solutions fully comply with international standards, have all required certifications and benefit from tested interoperability with a wide range of OEM vehicles. Different brands can even be charged simultaneously via the same power cabinet. All charging interfaces are supported.

Upward pantographs, downward pantographs and CCS cables or combinations of these can be connected to the power cabinet. The power supply can be distributed to the four charging points, or to three or two, or



concentrated to one with maximum power, according to the needs of the vehicles at that one moment. Power can also be evenly distributed to four sockets, which allows pre-conditioning of all vehicles simultaneously.

The charging cabinet is connected 24/7/365, remotely monitoring and

diagnosing, receiving updates over the airwaves to support each new bus added to the fleet. ABB guarantees an uptime of 97% for this new generation of chargers.

EASY MAINTENANCE

The air filters are externally replaceable, four LEDs indicate the status

per power outlet. The robust design of the powder-coated stainless steel housing requires hardly any maintenance and withstands all weather conditions.

Thanks to the improved air inlet and outlet, chargers can be installed side by side, back to back or in a row. ■

Wim Chatrou counts officially registered buses and coaches

"I don't look into the future. It is impossible to keep track of that and it would take too much time. For the half-yearly report on sales of buses and coaches as well as specific drivelines, I look at all vehicles actually registered," states Wim Chatrou of CME Solutions. "A lot of figures are being spread around and a lot of new vehicles are being introduced but the real sales figures sometimes reveal a different story."

After his career at DAF, Bova and VDL, Wim Chatrou founded CME Solutions in 2009, which focuses on collecting and listing sales figures of buses and coaches. "Knowledge is power but it is not easy to collect all the information.

To do so, I rely on the official figures of newly registered vehicles. In the initial phase, I limited myself to Western Europe and Poland, but for the past three years I have been collecting all information from the European

Union, Great Britain, Iceland, Norway and Switzerland. At least I need to know who the manufacturer is, which models were registered, to which weight category they belong and what propulsion system they have. I also make a subdivision according to coach, city bus, midibus and inter-city bus or multipurpose bus" Wim Chatrou indicates.

COVID

"There is an increasing need for additional information as well, and I also factor that into historical analyses. For example, you can see how the covid pandemic had a huge impact on coach sales. Some are now talking about catching up but that will only become apparent when I have the officially recorded registrations."

"When I look back at the figures for the first half of 2023, 6797 city buses were sold in Europe. The share of diesel buses fell to 26.4% while elec-



Wim Chatrou: "For the figures, I rely on the number of officially registered vehicles in each European country."

tric increased to 36%. Hybrid buses account for 21.2%, CNG buses score 14.7% and hydrogen fuel cell buses remain limited to 1.4%."

"In general, I see how the bus and

coach market is under pressure and more players are entering the market. It also shows the global interest in the European market," Wim Chatrou concludes. ■

HANSEA continues greening with MAN LION'S CITY 10 E

By the end of the year, MAN Truck&Bus will have delivered more than 100 electric buses to Belgian Hansea in ten years. Altogether, spread over the decade, we are talking about more than 400 buses and coaches.

Hansea is the largest independent private bus company operating in Flanders. Spread across Belgium, they own more than 800 vehicles in 20 locations. The transport group is the largest subcontractor of De Lijn in Flanders and the second largest subcontractor of TEC in Wallonia.

Ten years ago, Hansea started greening its bus fleet and entered into a partnership with MAN Truck&Bus for this purpose. At the moment, Hansea already operates 90 electric MAN Lion's City E line buses. By the end of 2023, more than 100 electric vehicles will be in service. The latest contract also includes the delivery of several MAN Lion's City 10 E. This compact 10.5-metre line bus is used for 'on demand' bus services. With this shorter variant added, the three MAN Lion's City E variants are represented in Hansea's vehicle fleet. ■



Hansea.

Yutong, world leader of new energy buses

At Busworld Europe, Yutong will display four models, namely the U11DD double-decker, the large-capacity articulated U18, the E7S mini-electric bus and the luxurious 15-metre-long T15E coach. The exhibition's theme, 'Think Eco, Move Green', is closely aligned with Yutong's portfolio and the company's green ambitions.

Yutong consistently adheres to the philosophy of greening and has been actively involved in the development of new energy buses for years. Meanwhile, the company has fully mastered a number of core technologies of electric buses and can provide suitable mobility solutions for zero-emission transport. Sales broke a world record with more than 12,400 units last year.

A TRUE ELECTRIC COACH

The luxurious, all-electric T15E 15-metre touring coach stands out for its efficient permanent magnet synchronous motor and the latest battery management system (BMS), which offers a long range, ample space and safe operation. This vehicle boasts an impressive driving range of 550 km, making it ideal for long-distance routes.

Yutong's T15E model received the Desing Award and the Ecology Award at the show. It's not that common for a vehicle to win two awards. Di confirms the company's expertise in innovation and electric mobility.

A BEAUTIFUL ARTICULATED PUBLIC TRANSPORT BUS

The electric articulated bus U18 can accommodate up to 120 passengers. With a battery capacity of up to 563 kWh, the U18 provides a driving range



The cockpit Yutong T15E, almost a Tesla.

of more than 500 km under SORT 2. A robust monitoring platform continuously collects data on vehicle operation and road conditions and issues preventive warnings.

The thermal system that keeps the battery fluid at the right temperature and the 24-hour battery monitoring system are standard to ensure maximum safety.

THE LAST MILE

The E7SeV mini-electric bus is designed to meet the emerging demand for last-mile travel in larger European cities. Aimed at public

transport routes, this model can carry up to 30 passengers with a turning radius of less than 8.5 metres, keeping it flexible and convenient under different road conditions in the city.

A DOUBLE-DECKER CITY BUS

The U11DD, the classic double-decker bus for the UK and other countries where a height > 4 m is allowed has a capacity of up to 70 seats.

It is an ideal sustainable vehicle for public transport use with an efficient energy consumption of only 0.7 kWh/km.

THE YEA-PLATFORM

The bus manufacturer also grasped the opportunity to introduce YEA, Yutong's latest technological platform designed to provide robust and scalable solutions for electric vehicles.

Within Yutong's dedicated component section, a variety of purely electric components, including batteries, motors and smart cockpits, will be on display to highlight the company's extensive capabilities in the entire industrial chain of new energy buses. ■

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Dancerbus with full composite city bus

Newcomer Dancerbus from Lithuania is ready for the market. With full composite city bodies, full electric city buses and a few surprising innovations.

Started from scratch nine years ago, Dancerbus now presents two 12-metre-long vehicles: a version with a driving range of 100 km and a long range with a 530km radius of action.

The short range can charge its battery in 8 minutes via a pantograph. Dancerbus went straight for the latest technology and constructed a bus from composite, both its chassis and body.

With a total mass of 8.6 tonnes, the Dancerbus is considered one of the lightweights.

The underside of the vehicle has more favourable drive-up and drive-down angles to handle steep slopes.

'We are extremely suitable in medium-sized cities with narrow streets,' says spokesman Kristof Ledihov.

A new feature is the large screen in the back of the bus.

It provides an up-to-date picture of the traffic in front of the bus. 'This allows the driver of the following vehicle to see what is happening in front,' says Ledihov.

A curved panoramic windscreen gives the driver an excellent view of the road.

This year, Dancerbus will build 10 more long-range copies, with 50 vehicles planned by 2024. ■



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

Informing future technicians about new technologies

Some 30 students from the MFR Mouilleron technical school in the French Vendée region visited various bus manufacturers and supply companies over two days. "It is important for our students to be well informed about new technologies and technical evolutions in the market," the accompanying subject teachers stated bluntly.

MFR Mouilleron St. Germain is part of the network of Maisons Familiales Rurales which has 430 sites, including some 70 in the Loire region. Since 1959, MFR has focused on trainings centred around the maintenance of heavy vehicles and equipment such as agricultural and construction vehicles as well as maintenance and repairs on buses and coaches. During the training, theoretical classes in the boarding school are alternated with practical training periods in companies, preparing the young people for the job market.

Complementary to the educational package, a two-day visit to Busworld Europe was organised. It was originally planned earlier but could only be

realised now, partly due to the covid pandemic. Under the guidance of subject teachers Xavier Etienne and Steve Brisseau, 35 students toured Busworld for two days and visited various stands of bus manufacturers and supply companies.

"For us, it is not so much about the commercial aspects as it is about the technology and the evolution taking place in it. The students receive specific technical training to work on agricultural vehicles, heavy vehicles, buses and coaches," says Xavier Etienne. "During their training, a lot of attention is still paid to mechanics and how combustion engines work but we cannot overlook the transition to zero-emission vehicles. Just look at what is happening with new drivelines and the development of battery-electric vehicles or vehicles that will run on hydrogen and fuel cell technology."

"After all, it is important that the future technicians we train are aware of the new technologies, that they can discover them and ask questions about them," Steve Brisseau adds. During their visit to the VDL stand, students and subject teachers were



Students at MFR Mouilleron St. Germain from the French Vendée listen attentively to the presentation of VDL's Citea Next Gen.



Xavier Etienne (in the middle) and Steve Brisseau (on the right) with one of the students who is passionate about the new technology used in bus propulsion.

informed in detail about both the new drives and the use of composite materials and the weight savings obtained in the production of the VDL Citea Next Gen. Students fired off

quite a few questions, including about how all this technology is integrated into the vehicles and how to access it when you need to carry out repairs to, for example, battery packs. ■

Hall 4, stand 402b



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Busworld





ZF at Busworld 2023: Sustainable and Safe Transportation

ZF is "gearing" up and presents its latest advancements in bus and coach technologies at Busworld 2023 in Brussels, including the world premiere of ZF's next-generation low-floor electric mobility solution for city buses. ZF's latest eMobility technologies will be on show, demonstrating how its most recent advancements will help provide emission-free public transportation. Taking center stage at ZF's booth will be the electric central drive CeTrax 2 dual.

ZF's next generation fully integrated, modular electric central drive CeTrax 2 dual for buses and coaches offers a continuous power of 380 kW, features an integrated three-speed transmission making tackling steeper slopes easier and higher cruising speeds more efficient. Also it has on display the 6-speed automatic transmission system EcoLife CoachLine, suitable for engine torques up to 2,800 Nm. The transmission serves high-powered, demanding coach applications,

such as winding, challenging routes as well as stop-go urban situations. Real-time, AI-based automated decision-making and service optimization is offered by the new SCALAR fleet orchestration solution for Public Transport Operators and applies to on-demand people mobility service management and Bus Connect digital fleet management solution will be presented. ZF Bus Connect is ZF's digital fleet management solution for city buses and coaches with electric, hybrid or combustion engines.

According to ZF its new "City Bus CMS", Collision Mitigation System, is the industry's first OE-independent system that helps mitigate, or even avoid, an impending collision while supporting unsecured bus passengers at the same time. The OnHand Electro-Pneumatic Handbrake improves vehicle safety and driver comfort and serves as building-block technology for autonomous driving. Visit ZF in Hall 5 at Booth 537. ■



ZF EcoLife CoachLine en Cetrax 2 Dual central drive.

Freudenberg presents battery pack and fuel cell prototypes

Freudenberg E-power Systems presents prototypes of an integrated modular battery pack and fuel cell for intensive use in buses and coaches, and others.

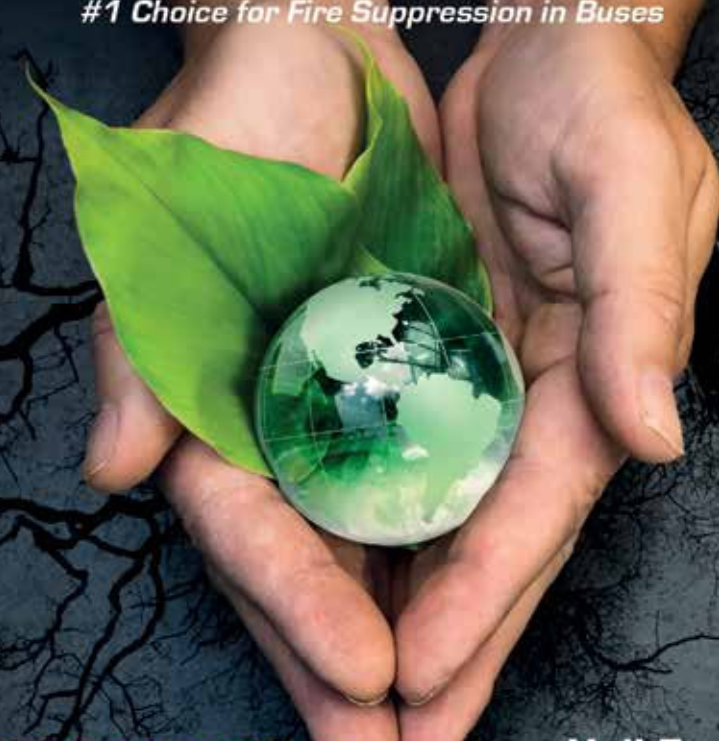
The battery pack was developed in cooperation with US heavy vehicle engine manufacturers. This battery pack is entirely made 'in house' by Freudenberg, which collaborates for this purpose with other partners from the group specialising in ventilation

and airtight packaging. The production of this battery pack will begin in the summer of 2024 in the US. Meanwhile, everything is being set up so that the battery packs can also be manufactured in Europe from the end of 2024.

A second prototype on the Freudenberg stand is a fuel cell with a lifetime of up to 35,000 hours, which will be expanded in a heavy-duty vehicle in 2024. A start date for its production has not yet been set. ■



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Deal Comp compiles data

Need one device that processes all the information a bus operator needs? Then Deal Comp is the place to be. The Finnish company, founded in 1992, specialises in developing innovative data processing of vehicles and mobile applications.

At Busworld, the Finnish entrepreneur shows its DR-series routers intended for high performance applications with 5G speed in the transport sector'. All different information flows such as ticketing, tachograph data, route changes, eco-drive, alcoloc, technical info of the vehicle and so on are stored and processed in our device. Even in covered areas or underground, vehicles are located without any problems,' says Jukka Alhonen, sales manager.

'In fact, this device is the heart of the bus. The router/processor is so powerful that it can handle even the evolutions of the upcoming decade.

Moreover, the device is extremely compact and hardly takes up any space,' stresses Jukka Alhonen.

Deal Comp has its device manufactured in France and works closely with public transport such as bus transport and train traffic in the wider Helsinki region. Sixty per cent of public transport is located in Finland's capital region. ■



Jukka Alhonen, sales manager.



Thank you.

See you at Busworld in 2025!