DSC

14-16 SEPTEMBER 2022

GUIDEBOOK

DSC 2022 EUROPE VR

Driving Simulation & Virtual Reality Conference & Exhibition

Palais de la Musique et des Congrès, Strasbourg | France

Organized by

With the cooperation and support of

Sponsored by

The Driving Simulation Conference gathers driving simulation specialists from the industrial and academic communities as well as commercial simulation providers. This 21st edition follows that of 2021, held in Munich, in a hybrid version with about 300 participants. This year, **the exhibition is coming back towards the more than 40 professional exhibitors** and more than 300 on site participants at DSC Europe 2019 VR, held in Strasbourg, keeping the online participation, introduced in 2020, as a part of a hybrid conference organization.

With about **80 speakers in scientific and industrial product solution sessions, keynotes, tutorials and round tables**, you will get the latest trends in XIL (MIL, SIL, HIL, DIL, VIL, CIL) simulation for ADAS, automotive HMI and driving simulation design, motion sickness and rendering, as well as connected and autonomous vehicle verification and validation.

Themes include state of the art in driving simulation technology, research and developments, extended with progressively merging virtual reality (VR) developments. This year's program will also host a special appearance of simulation tools for autonomous and connected vehicles along with advanced driving assistance system (ADAS) applications. Human factors and motion rendering nevertheless will remain the now traditional axis of the conference.

You are welcome to the DSC 2022 Europe Conference organized by the Driving Simulation Association, in cooperation with Arts et Métiers Institute of Technology and University of Gustave Eiffel, with the support of Renault, held on September 14th in Paris area for the visit of ROADS, Renault Group Simulation Center and on September 15-16 in Strasbourg for the conference and exhibition!

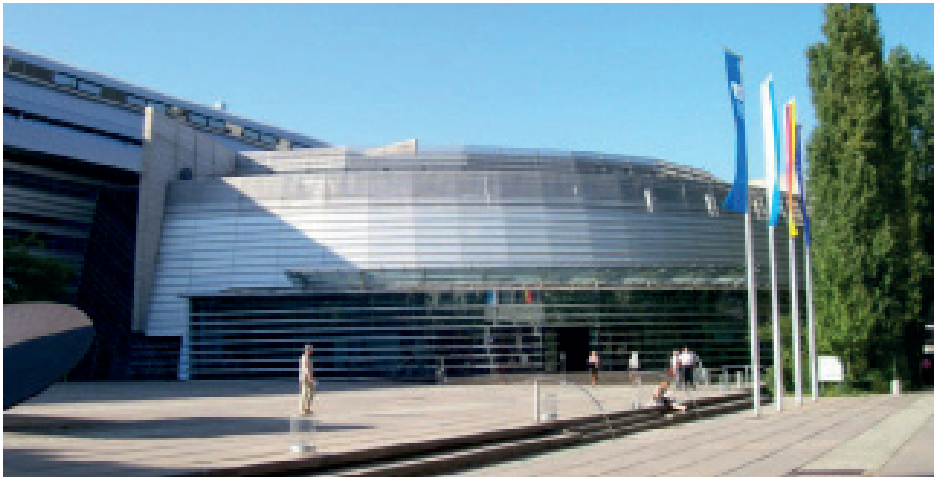
The way for tomorrow's vehicle

Table of content

We are committed to bringing you the best opportunity to meet and network with many **customers, prospects and partners** in the field of driving simulation.

Authors, keynote speakers and delegates are attending this conference with the common aim of hearing about the latest developments in the field and will be keen to learn about your technology and services. This year's conference, thanks to its hybrid version, is expected to attract both onsite and remote attendees, which will ensure that the event has the buzz you need to generate interest in your products.

The DSC Organizing Team wishes to all participants and exhibitors a great time at the Driving Simulation Conference Exhibition 2022!



Palais de la Musique et des Congès
Place de Bordeaux, 67000 Strasbourg – France

WiFi : DSC2022Attendees
Password : @Strasbourg2022

Organizing Committee

Andras Kemeny | *Conference chair*

President, Driving Simulation Association
Associate Professor, Arts et Métiers
Director, Laboratory of Immersive Visualization Renault-Arts et Métiers

Florent Colombet | *Program Co-Chair*

Treasurer of Driving Simulation Association
Research Engineer, Renault

Jean-Rémy Chardonnet | *Program Co-Chair*

Driving Simulation Association
Assistant professor, Arts et Métiers

Klaus Bengler | *Program Co-Chair*

Cirector, Institute of Ergonomics
Technical University of Munich

Lucile Frugier | *Exhibition & Communication Manager*

Driving Simulation Association

Yann Ambrosia | *Conference Assistant*

Driving Simulation Association
Intern, DSA

Alice Villafranca | *Conference Assistant*

Driving Simulation Association
Intern, DSA

The Scientific Committee, chaired by Andras Kemeny, is composed of scientists from leading Research Institutes, as well as engineers from prominent companies and major car manufacturers spread across Europe, the United States, Canada and Japan.

Chairman

Andras Kemeny	Arts et Métiers, DSA (France)

Scientific Committee Members

Mohammad Bahram	BMW Group R&T (Germany)
Gerd Baumann	FKFS (Germany)
Klaus Bengler	Technical University Munich (Germany)
Jost Bernasch	The Virtual Vehicle (Austria)
Mike Blommer	Ford Motor Co., (United States)
Jelte Bos	TNO (The Netherlands)
Heinrich H. Bülthoff	Max Planck Institute (Germany)
Frank Cardullo	State University of NY (United States)
Viola Cavallo	Université Gustave Eiffel (France)
Jean-Rémy Chardonnet	Arts et Métiers (France)
Florent Colombet	Renault (France)
George Drettakis	INRIA (France)
Stéphane Espié	Université Gustave Eiffel (France)
Zhou Fang	Renault (France)
Peter Grant	University of Toronto (Canada)
Joseph K. Kearney	University of Iowa (United States)
Franck Mars	CNRS (France)
Philippe Mathieu	University of Lille (France)
Frédéric Mérienne	Arts et Métiers (France)
James Oliver	Iowa State University (United States)
Jean-Christophe Popieul	Valenciennes University (France)
Paolo Pretto	Virtual Vehicle (Austria)
Richard Romano	University of Leeds (United Kingdom)
Hans-Peter Schöner	Driving Simulation Association (Germany)
Joost Venrooij	BMW Group (Germany)

Technical Committee

The Technical Committee is composed of well-known simulation specialists from prominent companies and major car manufacturers spread across Europe and the United States.

Chairman

Bruno Foyer	IRT SystemX (France)

Technical Committee Members

Omar Amhad	NADS (United States)
Florent Colombet	Renault (France)
Benjamin Engel	ASAM (Germany)
Luz Amanda Garcia Galeano	Marelli Europe S.p.A (Italy)
Andras Kemeny	Arts et Métiers, DSA (France)
Stéphane Masfrand	Stellantis (France)
Martin Peller	BMW (Germany)
Armin Stähle	Daimler (Germany)
Georg Stettinger	Infineon (Germany)

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Keynote Speakers

Keynotes are historically inspiring talks given by eminent scientists in the field of driving simulation, completed now by important industrial executives.

Olivier Colmard | *VP, Integrated CAE & PLM, Renault*

"Digital transformation roadmap for automotive design and validation"

Dr. Siddartha Khastgir | *Head of Verification & Validation, Intelligent Vehicles, WMG, University of Warwick*

"Mapping scenarios in Operational Design Domain for AD/ADAS virtual testing"

Pr. Siraj Ahmed Shaikh | *Director of Centre for Future Transport & Cities (CFTC), Coventry University*

"Economic and Consumer Chain Analysis of Secure Hardware Adoption"

Olivier Sappin | *CEO CATIA, Dassault Systemes*

"From System Engineering to AD-ADAS Massive simulation"

Sharon Rosenberg | *Solution Architect & Chief Methodologist, Foretellix, Foretellix*

"The Most Effective Ways to Maximize the Value of Simulation"

Emmanuel Chevrier | *CEO, AVSimulation*

"Industry trends and AD/ADAS simulation with AVSimulation"

Colin de Vrieze | *Head of Application Engineering – Europe, Applied Intuition*

"Software solutions and services to power autonomy"

Mark Collins | *Business Development, Simulation & Training - Unreal Engine*

"New simulation developments with Unreal Engine 5 and the Epic ecosystem"


We develop technology
that understands,
predicts and supports
human behavior in
complex environments.
smart eye

Wednesday, September 14th 2022

On September 14, in the framework of DSC Europe 2022 VR, a visit of the Renault Group digital vehicle simulation center is offered for the conference attendees.

Slot 1 : 9:45 am to 11:15 am

Slot 2 : 11:30 am to 1:00 pm

Slot 3 : 2:00 pm to 3:30 pm

Slot 4 : 3:45 pm to 5:15 pm

Getting there

Technocentre Renault
1 Av. du Golf, 78280 Guyancourt

Please note that there is no shuttle planned by DSC Organization between Paris and Strasbourg.

Visit of Renault Simulation Center

Demonstrations featuring the high-performance large scale dynamic ROADS simulator for ADAS/AD DIL simulation, the spherical HELIOS headlight simulator and the center's XR Innovation Lab with its immersive simulation systems, in Guyancourt.

Thursday, September 15th 2022

8 am — REGISTRATION

9 am — CONFERENCE OPENING - *Cassin Auditorium*

Pr. Andras Kemeny | Conference Chair
(President, Driving Simulation Association, Director, LiV Renault-Arts et Métiers)

9:15 am — KEYNOTE - *Cassin Auditorium*

"Digital transformation roadmap for automotive design and validation"
Olivier Colmard | *VP, Integrated CAE & PLM, Renault*

9:45 am

	SCIENTIFIC PAPER SESSION **Connected and autonomous vehicles** *Cassin Auditorium*	PRODUCT SOLUTION SESSION **ADAS / AD I** *Londres Room*
9:45 am	**Data-Driven Prediction of Other Road Users' Intention for Better Scene Understanding in Traffic Agents** *T. ROCK (BMW Group, Technical University of Berlin); S. MARKER, T. BLEHER, M. BAHRAM*	RoadRunner: Scenario Design for Driving Simulation *M. VALENTE (MathWorks), L.MILIA*
10:10 am	Co-simulation of automated docking at bus stops *A. SJORS DAHLMAN, (Swedish National Road and Transport Research Institute); M. WEIDEL, C. BERLIN, A. ANUND*	ADAVEC – Design and teach the user experience for semi-autonomous driving *A. BOUALI, (Université Nice Cote d'Azur); E. BUCCI, H. FIOTTI, P. MARCINIAK, P. SIGRIST*
10:35 am	Requirements for 3D Environments as the Context for Mixed Reality Automotive Design Experiences (short) *D. SALPISTI, (BMW Group, Technical University of Munich), M. DE CLERK, S. HINZ, F. HENKIES, G. KLINKER*	Hybrid Digital Twin Interface (HDTI) – Connecting the virtual and the real world (short) *B. EGGL, (b-plus technologies), J. FÜHRMANN*

EXHIBITION

EXHIBITION

10:55 am — BREAK and POSTER SESSION

	SCIENTIFIC PAPER SESSION **Motion sickness, cybersickness** *Londres Room*	INDUSTRIAL KEYNOTES SESSION *Cassin Auditorium*
11:25 am	The influence of simulator and driving scenario on simulator sickness (short) *C. HIMMELS, (BMW Group, Technische Hochschule Ingolstadt), J. VENROOIJ, M. GMUENDER, A. RIENER*	*"The Most Effective Ways to Maximize the Value of Simulation"* **Sharon Rosenberg , Solution Architect & Chief Methodologist, Foretellix**
11:45 am	What we don't (yet) know about self-driving carsickness (short) *J. BOS, (TNO, Vrije Universiteit Amsterdam); C. DIELS, J. SOUMAN*	*"Industry trends and AD/ADAS simulation with AVSimulation"* **Emmanuel Chevrier, CEO, AVSimulation**
12:05 am	Using anticipatory vibrotactile cues to mitigate motion sickness (short) *A. J. C. REUTEN, (TNO, Vrije Universiteit Amsterdam), E. A. SCHMIDT, J. RAUSCH, J. E. BOS, J. B. J. SMEETS, M. H. MARTENS*	*"Software solutions and services to power autonomy"* **Colin de Vrieze (Head of Application Engineering – Europe, Applied Intuition)**

12:25 am — LUNCH and POSTER SESSION

	SCIENTIFIC PAPER SESSION **Training and validation** *Londres Room*	PRODUCT SOLUTION SESSION **ADAS / AD II** *Cassin Auditorium*
2:00 pm	Operational Design Domain Coverage for the Safety Validation of Automated Driving Systems *P. WEISSENSTEINER (Virtual Vehicle Research GmbH), S. GENSER, G. STETTINGER, J. RUMETSHOFER, D. WATZENIG*	Central Access Point for the Simulation and Validation of ADAS/AD Functions *D. DÖRR (dSPACE GmbH), M. PEPERHOWE*

EXHIBITION

EXHIBITION

2:25 pm

Addressing SOTIF requirement for AD/ADAS through long-drive simulations

J. MARTIN (AVSimulation), A. GRANDJEAN, S. PRABAKARAN, B. DIBAJ, B. SOUALMI

From logical scenario description format to simulated scenario

H. MOHELLEBI (Renault), M. PAJON, A. KEMENY, E. ARNOUX, L. GUYONVARCH, E. BOUILLOT, F. MOIROT, E. REVERT

2:50 pm

Translating Automated Vehicle Test Scenario Specifications Between Scenario Languages: Learnings and Challenges

A. A. BRUTO DA COSTA (University of Warwick), P. IRVINE, X. ZHANG, S. KHASTGIR, P. JENNINGS

3D Scene Map Generation from Navigation Data (short)

M. NIERENZ (TrianGraphics)

3:15 pm

Statistical Assessment of Driving Behavior On Simulators During Naturalistic Driving

R. SEKAR (The Ohio State University), O. JACOME, J. CHRSTOS, S. STOCKAR

Safety analysis of inconsistencies using a formal verification tool for DSML

J. ABOU FAYSAL (Renault Software Factory, Université Côte d'Azur), N. ZALMAI, A. BARISIC, F. MALLET

3:35 pm **BREAK and POSTER SESSION**

4:05 pm

SCIENTIFIC PAPER SESSION
Perception and Human Factors
Londres Room

4:05 pm - **Verification of Stereoscopic Projection Systems for Quantitative Distance and Speed Perception Tasks**

H-P. SCHOENER (Driving Simulation Association, "Insight from Outside"-Consulting), H.SCHMIEDER, J-R. CHARDONNET, F. COLOMBET, A. KEMENY

INDUSTRIAL PITCHES SESSION
Cassin Auditorium

- 4:05 pm - **Dennis Marcus (Sales Manager, Automotive & Motorsport, Cruden, The Netherlands)**
  "The impact of system integration on driving simulator immersion"
- 4:10 pm - **Rik de Swart (Sales Manager, Motion Simulation Technology, Van Halteren Technologies, The Netherlands)**
  "ROADS: The most high-performance Driving Simulator Motion System in the world"

EXHIBITION

EXHIBITION

4:30 pm - Contribution of stereoscopy and motion parallax for speed perception in driving simulator experiments

T. DROUET (Renault), F. COLOMBET, A. KEMENY

4:55 pm - Comparisons between upright and reclined seating positions in autonomous vehicles

R. T. REINHARD (ITWM, University of Kaiserslautern), S. EMMERICH, B. BLUMHOFER, M. KLEER

- 4:15 pm - Marko Boving (Founder Director, Antwerps Blauw)
  "Premium Motion Comfort for passengers in autonomous vehicles"
- 4:20 pm - Siddartha Kastgir (Head of Verification & Validation, Intelligent Vehicles, WMG, University of Warwick, Safety Pool Scenario Database)
  "Safety PoolTM Scenario Database: Enabling an ODD-based testing framework for Automated Driving Systems"
- 4:25 pm - Oussama BenMoussa (Dassault Systems)
  "Continuous Development, Integration, Validation & Delivery for Automated Driving"
- 4:30 pm - Sylvain Chazot (Manager Director, IPG Automotive)
  "Combining the best of the real and virtual world for the future of vehicle development"
- 4:35 pm - (Smart Eye)
  "TBD"
- 4:40 pm - Dai Araki (Fellow, Smart Manufacturing Solutions Dept., ICT Solutions Division, Toshiba Digital Solutions Corporation, Japan)
  "Distributed Co-simulation Platform, VenetDCP"
- 4:45 pm - Mark Lelkes (Head of Automotive Operations, Bay Zoltan, Hungary)
  "Virtual validation use of in case ADAS function development of using specific tools as dynamic Driver in the loop simulator"
- 4:50 pm - Alexander F. Walser (Managing Director, asc(s e.V. – ENVITED resarch cluster, Germany)
  "ENVITED research cluster: Collaborative Environment for data-driven virtual verification and validation of AD and ADAS"
- 4:55 pm - Alexis Vartanian (CTO, TechViz)
  "Use cases of Virtual Reality merging 3D models with driving simulation for faster and more efficient developments"
- 5 pm - Gavin Farmer (Commercial Manager, Dynisma
  "Redefining motion simulation – how Dynisma embraces bandwidth to close the gap between drivers and vehicle models"

EXHIBITION

Thursday, September 15th 2022

	PRODUCT SOLUTION SESSION **RADAR** *Londres Room*	PRODUCT SOLUTION SESSION **NVH** *Cassin Auditorium*
5:15 pm	SCANeR Studio physical radar sensor *F. FAUCHER (OKTAL-SE, IRT SystemX)*	Utilizing a Compact NVH Simulator for a Complete Sound and Vibration Experience *D. BOGEMA (VI-grade), M. ALLMAN-WARD, G. ADRIANO*
5:40 pm	Automotive Radar Antenna Configurations and their Impact on Machine Learning Approaches: A Case Study *L. LANG (Institut für Fahrzeugtechnik Stuttgart), K. SAAD, D; SALLES, H-R. REUSS*	Dynisma DMG-X Motion Generator for Vehicle Ride, NVH and Handling Simulation *A. WARNE (Dynisma Ltd), N. GARRETT, G. FARMER*

EXHIBITION

6:05 pm

COCKTAIL DINNER PARTY

Restaurant L'Ancienne Douane
6, rue de la Douane, 67000 Strasbourg

Friday, September 16th 2022

8 am — REGISTRATION

9 am — KEYNOTE - *Cassin Auditorium*

"Mapping scenarios in Operational Design Domain for AD/ADAS virtual testing"
Dr. Siddartha Khastgir | *Head of Verification & Validation, Intelligent Vehicles, WMG, University of Warwick*

9:30 am

SCIENTIFIC PAPER SESSION **Motion** *Cassin Auditorium*	ROUND TABLE SESSION *Londres Room*
9:30 am - Motion Cueing Quality Comparison of Driving Simulators using Oracle Motion Cueing *M. KOLFF (BMW Group, Delft University of Technology), J. VENROOIJ, M. SCHWIENBACHER, D. M. POOL, M. MULDER*	9:30 am - ODD-driven virtual verification and validation of AD and ADAS – an OEM and suppliers perspective *Chairman: Georg Stettinger (Infineon Technologies, Germany)* *Speakers: Simon Schmidt (Volkswagen, Germany) Carlo van Driesten (BMW, Germany) Sergey Abrashov (Continental, France) Szabolcs Janky (aiMotive, Hungary) Keilatt Andriantavison (Valeo, France)*
9:55 am - FFT based optimal MCA for AD/ADAS driving tests *Z. FANG, (Renault), D. WAUTIER, A. KEMENY*	

10:45 am — BREAK and POSTER SESSION

11:15 am

SCIENTIFIC PAPER SESSION **Simulator design** *Cassin Auditorium*	ROUND TABLE SESSION *Londres Room*
11:15 am - Steering feedback improvement by system identification in driving simulator *R. TORM OBRADORS (Toyota Motor Europe), X. CARRERA AKUTAIN*	11:15 am - ODD-driven AD and ADAS verification and certification – a standardization bodies perspective

EXHIBITION

11:40 am

11:40 am - Ecological Interface Design for assisting car turn-based alignment manoeuvres in augmented virtuality

E. DUBUISSON (Aix-Marseille Université, CNRS, ISM), A. MORICE

12:05 am - A VRU-simulator for the evaluation of pedestrian- and cyclist-vehicle interaction – Design criteria and implementation (short)

M. FISCHER (DLR), G. TEMME, K. GRÖNE, D. MARTINEZ GARCIA, G. GROLMS, J. REHM

Chairman:
Emmanuel Arnoux (Renault, France)

Speakers:
Siddartha Khastgir (University of Warwick, UK)
Aurelien Garcia (UTAC, France)
Biagio Ciuffo (European Commission JRC)
Vincent Honnet (IRT SystemX, France)
Benjamin Engel (ASAM, Germany)

12:30 pm

LUNCH and POSTER SESSION

2 pm

KEYNOTE SESSION - *Londres room*

"Economic and Consumer Chain Analysis of Secure Hardware Adoption"
Pr. Siraj Ahmed Shaikh | *Director of Centre for the Future Transport & Cities (CFTC), Coventry University*

KEYNOTE SESSION - *Cassin Auditorium*

"New simulation developments with Unreal Engine 5 and the Epic ecosystem"
Mark Collins | *Business Development, Simulation & Training, Unreal Engines*

2:30 pm

TUTORIAL SESSION

Cassin Auditorium

Dassault Systemes – Capgemini

Capgemini and Dassault Systèmes are combining their assets to propose a high value solution, reducing cost related to System Engineering, massive simulation and V&V activities for automated driving.

PRODUCT SOLUTION SESSION
Cybersecurity
Londres Room

2:30 pm - IDS (Intrusion Detection System) for embedded systems

F. LE FOLL (IOT.BZH)

2:50 pm - COLABE4Automotive: Confidential data Outsourcing enabLed by Attribute-Based Encryption for Secure Automotive Manufacturings

A. BKAKRIA (IRT SystemX), N. HEULOT, R. YAICH

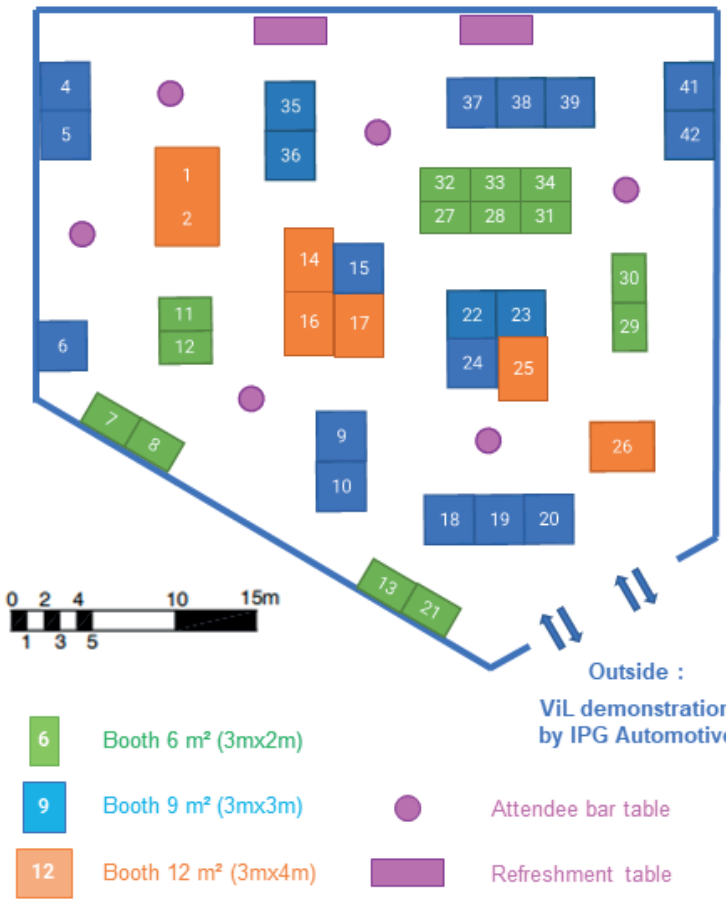
EXHIBITION

EXHIBITION

3:10 pm	TUTORIAL SESSION *Cassin Auditorium*	PRODUCT SOLUTION SESSION **Wheel DS** *Cassin Auditorium*
	Dassault Systemes – Capgemini *suite*	3:10 pm - *Impact of the visualization system choice on Wheeled Mobile Driving Simulator concepts* *S. PLAETTNER (Technische Universität Dresden), M. LUTWITZI, K. REHBERG, X. CHEN, T. TÜSCHEN, T. ALBRECHT, G. PROKOP, H. WINNER, J. OLIVER*
3:30 am	INDUSTRIAL KEYNOTE - *Cassin Auditorium*	
	"From System Engineering to AD-ADAS Massive simulation" Olivier Sappin | *CEO, Catia, Dassault Systèmes*	
4 pm	CLOSING - *Cassin Auditorium*	
	DSC 2022 Europe VR Organization Committee	
4:30 pm	END	

EXHIBITION

DSC 2022 Europe VR
Exhibition Floorplan



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With the support of SIA Société des Ingénieurs de l'Automobile

List of exhibitors

21	3D Mapping Solutions GmbH
14	AB Dynamics
11	aiMotive
39	Ansys
6	Applied Intuition
15	Arts et Metiers Institute of Technology
13	ASAM e.V.
33	asc(s e.V. - ENVITED research cluster
39	aSR advanced Simulation Reality GmbH
28	AVES Reality
23	AVL
24 25	AVSimulation
29	b-plus automotive GmbH
17	Capgemini
18	Cruden bv
17	DASSAULT SYSTEMES
27	DeepScenario
16	domeprojection.com
36	dSPACE
42	Dynisma
31	Epicnpoc
19	Foretellix
38	ICT AG
8	IPG Automotive
7	IRT SystemX
37	MathWorks
22	MOOG
14	rFpro
4	Safety Pool Scenario Database
30	Scale1-Portal
9	Sensodrive GmbH
10	Simumak
35	Smart Eye
41	Smart Vehicle Cote d'Azur
26	ST Engineering Antycip
32	Sym2B
5	TechViz
12	Thierry Clémot
34	Toshiba Digital Solutions Corporation
20	TrianGraphics
25	UTAC
1 & 2	Vi-grade
26	VIOSO

Renault Group

Arts et Métiers Sciences et Technologies

Université Gustave Eiffel

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*Simumak at DSC 2022. Booth #**10***

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Applied Intuition is the foremost enabler of autonomous vehicle (AV) development. The company's suite of simulation, validation, and drive log management software makes it faster, safer, and easier to bring autonomy to market. AV programs across industries and 17 of the top 20 global OEMs rely on Applied's solutions to develop, test, and deploy autonomous systems at scale.

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Dassault Systèmes solutions transform the way products are designed, simulated, produced, marketed and supported, leveraging the virtual world to improve the real world.

We will present how Systems Engineering is the future of AD-ADAS and 3DExperience platform the enabler.

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Unreal Engine, created by Epic Games, is the world's most open and advanced real-time 3D creation tool. Continuously evolving to serve not only its original purpose as a state-of-the-art game engine, today it gives creators across industries the freedom and control to deliver cutting-edge content, interactive experiences, and immersive virtual worlds.

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- Access, visualize, and label data
- Simulate driving scenarios
- Design planning and control algorithms
- Design perception algorithms
- Deploy algorithms using code generation
- Integrate and test

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ASAM e.V. (Association for Standardization of Automation and Measuring Systems) actively promotes standardization within the Automotive Industry. Together with its more than 360 member organizations worldwide, the association develops standards that define protocols, interfaces and data models for tools used for the development and testing of electronic control units (ECUs) and for the validation of the entire vehicle. ASAM standards are applied internationally with the purpose to enable easy integration of tools into existing value chains and to enable a seamless data exchange.

In 2018, the ASAM portfolio was extended by the standards ASAM OpenCRG®, ASAM OpenDRIVE® and ASAM OpenSCENARIO®, constituting the new standardization domain "Simulation". These so-called "OpenX" standards describe static road networks and dynamic driving scenarios. They are used for driving and traffic simulation and serve to validate highly automated driving systems. Meanwhile, ASAM OSI®, a generic interface that enables simple linking of the many driving simulation frameworks, and ASAM OpenLABEL, the first standard for annotating multi-sensor data and scenarios, complement the Simulation portfolio. Further ideas like ASAM ODD and ASAM OpenXOntology are currently under consideration to be standardized within ASAM.

ASAM has established a very active membership in the area of highly automated driving: Technical experts from ASAM member companies worldwide are working together on the (further) development of the standards mentioned above. This collaboration enables the high quality level and industry-wide acceptance of ASAM standards. ASAM, on the other hand, ensures their independent, long-term development and maintenance in a professional setting.

www.asam.net

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Established in 1997, OPAL-RT TECHNOLOGIES develops, and markets high performance real-time simulators used by universities, research centers and large corporations working in the automotive, aerospace, power electronics and power grid industries. Over the years, OPAL-RT has taken its place as world leaders in real-time simulation of electromagnetic systems by providing powerful simulation systems that allow users to develop or test their products or designs in a safe environment. OPAL-RT has offices in France, Germany, India, China and the United-States. OPAL-RT Intelligent Transport System, the new division of OPAL-RT dedicated to simulation and testing of intelligent transportation systems, will be happy to present at the DSC Expo its new AD Solutions.

www.opal-rt.com

With the cooperation and support of:

The LiV laboratory (Laboratory for Immersive Visualization) is a joint laboratory between Renault and Arts et Métiers Institute of Technology. It was founded in 2011 and gathers teams from the Immersive Simulation Center from Renault and Institut Image from Arts et Métiers, in the fields of Virtual Reality, Augmented Reality and Driving Simulation.

www.institutimage.ensam.eu

Since 1927, the "Société des Ingénieurs de l'Automobile" (Automotive Engineers Society) brings together all the specialists and enthusiasts of the automotive industry and its technologies. It has more than 1,800 individual or group and relies on a database of more than 18,000 car experts and our aim is to promote the development and knowledge sharing of engineers, managers and technicians in the automotive field.

SIA is built on its diverse communities of experts covering all areas of new technologies in product engineering as well as quality, purchasing and production from the automotive and reflects on the vast stakes of the second automotive revolution, with the 21st century in the spotlight: autonomous vehicle, hyper connected vehicle, revolution towards affordable zero emission and electrification, Big Data and cybersecurity or the emergence of artificial intelligence.

SIA is renowned in the world of automotive engineering for its conferences, workshops and congresses of international level through more than thirty annual scientific meetings.

SIA participates actively in the French automotive industry in connection with the main professional organizations and on an international level as a member of the FISITA.

www.sia.fr

Technical University of Munich

The Technical University of Munich (TUM) is one of Europe's top universities. It is committed to excellence in research and teaching, interdisciplinary education and the active promotion of promising young scientists. The university also forges strong links with companies and scientific institutions across the world. TUM was one of the first universities in Germany to be named a University of Excellence. Moreover, TUM regularly ranks among the best European universities in international rankings.

Ever since its founding in 1868, the TUM has been at the forefront of innovation. Scientists today have the same goal as their 19th century counterparts: finding solutions to the major challenges facing society as we move forward. The university was founded to provide the state of Bavaria with a center of learning dedicated to the natural sciences. It has played a vital role in Europe's technological advancement and has the prestige of having produced 17 Nobel Prize winners. It consists of 15 academic departments and has currently 45,356 students and 612 professors.

www.tum.de

Université Gustave Eiffel

The Gustave EIFFEL University was born out of the merger of Université Paris-Est Marne-la-Vallée and IFSTTAR, the Institute for European Research on Cities and Regions, Transport and Civil Engineering. It includes a school of architecture, EAV&T, and three engineering schools, EIVP, ENSG Géomatique and ESIEE Paris. By creating for the first time in France a three-way partnership between a university, research organisations and schools of architecture and engineering , it will have the specific purpose of fostering national and international partnerships to meet the major societal challenges generated by the profound changes in urban areas, which are already home to 55% of mankind.

www.univ-gustave-eiffel.fr

3D MAPPING SOLUTIONS

Booth n°31

Located in Holzkirchen, Germany and Pittsburgh, USA, 3D Mapping Solutions is one of the leading experts in the fields of high-accuracy kinematic surveying of public roads, proving grounds, race tracks and rough road test tracks of any kind. They create high-precision reference maps as a basis for userspecific developments, for advanced ADAS or driving development, test and validation applications for autonomous driving. Another important field of activity is the development of digital surface models as a basis for a wide range of applications in the areas of tire development, noise analysis, vehicle dynamics and driving comfort simulation.

www.3d-mapping.de

AB DYNAMICS™

Booth n°14

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and better for the environment. As part of the AB Dynamics Group of companies, together with DRI, rFpro and VadoTech we offer an integrated portfolio of solutions that enable customers to develop and test in virtual environments, validate results on the track and then evaluate vehicles on public roads.

www.abdynamics.com

aiMotive™

Booth n°11

aiMotive is one of the world's largest independent automotive technology powerhouses working on level-agnostic automated driving solutions. The company delivers an integrated portfolio of software, tools and hardware products complemented by proprietary data management tools, enabling customers to rapidly develop and deploy production automated driving features that combine in-house expertise with aiMotive modular capabilities while achieving substantial reductions in development costs and timescales. The company's product portfolio has been validated in mass production programs. Its lightweight execution stack and sensor-agnostic, reusable data pipeline accelerate customers' time to market.

www.aimotive.com

Ansys

Booth n°39

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.
Take a leap of certainty … with Ansys.

www.appliedintuition.com

Applied Intuition

Booth n°6

Applied Intuition is the foremost enabler of autonomous vehicle (AV) development. The company's suite of simulation, validation, and drive log management software makes it faster, safer, and easier to bring autonomy to market. AV programs across industries and 17 of the top 20 global OEMs rely on Applied's solutions to develop, test, and deploy autonomous systems at scale.

www.appliedintuition.com

Arts et Métiers Sciences et Technologies

Booth n°15

Arts et Métiers Institute of Technology is a French « Grande Ecole d'Ingénieur » founded in 1780 specializing in mechanical, industrial and energy engineering. The Laboratory of Engineering in Cyberphysical Systems (LISPEN) has an education and research team specialized in XR for 25 years with extensive work on individualized interaction in immersive environments, cybersickness reduction and perception issues. The team has large immersive facilities including a 5-sided CAVE, head-mounted displays, multi-sensory interaction devices, physiological and behavioral measurement devices. LISPEN has also an activity in driving simulation, with facilities including dynamic and static simulators, coupled with immersive technologies, and addressing scientific issues related to HMI, simulator sickness, perception and motion cueing.

www.institutimage.ensam.eu

Booth n°13

ASAM e.V. (Association for Standardization of Automation and Measuring Systems) actively promotes standardization within the Automotive Industry. Together with its more than 360 member organizations worldwide, the association develops standards that define protocols, interfaces and data models for tools used for the development and testing of electronic control units (ECUs) and for the validation of the entire vehicle. ASAM standards are applied internationally with the purpose to enable easy integration of tools into existing value chains and to enable a seamless data exchange.

In 2018, the ASAM portfolio was extended by the standards ASAM OpenCRG®, ASAM OpenDRIVE® and ASAM OpenSCENARIO®, constituting the new standardization domain "Simulation". These so-called "OpenX" standards describe static road networks and dynamic driving scenarios. They are used for driving and traffic simulation and serve to validate highly automated driving systems. Meanwhile, ASAM OSI®, a generic interface that enables simple linking of the many driving simulation frameworks, and ASAM OpenLABEL, the first standard for annotating multi-sensor data and scenarios, complement the Simulation portfolio. Further ideas like ASAM ODD and ASAM OpenXOntology are currently under consideration to be standardized within ASAM.

ASAM has established a very active membership in the area of highly automated driving: Technical experts from ASAM member companies worldwide are working together on the (further) development of the standards mentioned above. This collaboration enables the high quality level and industry-wide acceptance of ASAM standards. ASAM, on the other hand, ensures their independent, long-term development and maintenance in a professional setting.

www.asam.net

Automotive Solution Center for Simulation

Booth n°33

The asc(s – Automotive Solution Center for Simulation e. V. – is a non-profit association promoting the research and implementation of innovative simulation methods in the vehicle development process. Since 2008, we have been networking leading players from industry and science. To this end, we bundle the interests and needs of our members in the pre-competitive field. Our current group of about 50 members includes automotive manufacturers and suppliers, software and hardware vendors, engineering service providers, universities and research facilities. Our members are on a par with each other, irrespective of borders, and use their expertise to actively shape the topics of the asc(s as an open association. Translating the vision of autonomous driving into reality requires a fundamental digital transformation. In this, computer simulation is going to be a game changer as a strategic element of both product development and the product life cycle.

The ENVITED research cluster pools leading experts from research, virtual development, validation and release of automated vehicles to stay one step ahead. The ENVITED research cluster is a long-term and memberdriven initiative with the goal of adding strategic value to simulation through new methods, collaborative processes and cross-domain knowledge transferin ist four field of action: INNOVATION HUB: New research and standardisation approaches are to be evaluated in working groups and advanced to concrete collaborative research projects, which are financed by the public sector or by cluster contributions. DATA POOL: The ENVITED Data Market and the Open Source Model & Simulation Library (OpenMSL) aims to make shared and highy quality simulation data from different sources available to cluster members. ECOSYSTEM: In order to unlock the full potential of simulations, credible simulation methods and processes must be developed that enable virtual acceptance of highly automated vehicle functions. The Ecosystem is intended to research and advance methodologies for machine-supported continuous proof of the validation of automated driving functions across different company boundaries. CAREER CHANNEL The increasing digitisation in the development process and the use of the latest simulation technologies require new, well thought out training and further education concepts. Based on the expert knowledge of the cluster members, the ENVITED academy is to provide training concepts and measures on current and future developments. With our online certificate course „Simulation of Automated Vehicles“ you can expand your knowledge and benefit from interdisciplinary and up-to-date knowledge convened by our 20+ top-class lecturers from business and science.

www.asc-s.de | www.envited.market

aSR
advanced simulated reality

Booth n°39

aSR advanced Simulated Reality offers an innovative software platform for virtual vehicle development, enabling the management of simulation data, the setup of the virtual prototype and the control of virtual test drives. The goal is to shorten the development process and reduce the number of real-world tests. The aSR Simulation Framework consists of three modules: The aSR data management allows the storage and management of models and data from the different development domains. This includes a user right management, product lifecycle management and simulation load cases. In addition, aSR data management gives developers access to interfaces to existing tools. The data and models from our aSR Data Management are loaded into the aSR Co-Simulation, which brings the different domains together into a consistent virtual prototype. The aSR Experience, our intuitive user interface, makes it easy to set up and operate the virtual test drive. The human factor is playing an increasingly important role, e.g. in the development of automated driving functions. To integrate the human factor into virtual driving tests, we have also developed a hardware product. The aSR Driving Simulator is a compact simulator which enables the simulation to be experienced directly at the engineer's workstation.

www.asr-simulator.com

Booth n°28

AVES Reality creates a virtual copy of the earth, to empower synthetic training data generation and simulation-based testing in ADAS and AD. We deliver any place on earth as an interactive, virtual 3D environment model to automotive customers. We solve current limitations in quality, scalability, delivery time, and flexibility of existing 3D models. With our procedural world generation based on satellite images and other real life geodata, we are a key enabler for large scale ADAS and AD simulations and ground truth data generation. We support ASAM OpenDRIVE and have tool-agnostic export interfaces.

www.avesreality.com

Booth n°23

AVL is the world's largest independent company for the development, simulation and testing of powertrain systems, their integration into the vehicle as well as new fields like ADAS/AD and Data Intelligence.

www.avl.com

Booths n°24 & n°25

For over 30 years, AVSimulation has designed, sold and maintained a wide range of automotive simulation software, simulators and services. Our simulators cover the 30 k€ – 30 M€ range and by the end of 2021 we will have completed the 3 largest simulators in the world. Our simulation software ensures the digital continuity of the industrial process by being present at each stage of the V cycle. DIL, VIL, HIL, SIL, MIL, NCAP & Regulation… Linux, Windows, Azure, AWS, Alibaba… On desktop, in a simulator, in the cloud or in a PC farm...

www.avsimulation.com

Booth n°29

b-plus automotive GmbH specializes in the areas of embedded software, connected car and applied machine learning. In this context, it develops software for embedded control units (ECU) and advanced driver assistance systems (ADAS) for automated, autonomous and connected driving from the sensor to the cloud. Based on platform-independent standard components, it offers holistic engineering services ranging from development, integration, testing and validation (HIL/SIL) to cloud services. With individually adapted solutions, it supports its OEM and Tier1 customers to get their products into series production faster and more safely.

www.b-plus-automotive.com

Booth n°17

About Capgemini Engineering

World leader in engineering and R&D services, Capgemini Engineering combines its broad industry knowledge and cutting-edge technologies in digital and software to support the convergence of the physical and digital worlds. Coupled with the capabilities of the rest of the Group, it helps clients to accelerate their journey towards Intelligent Industry. Capgemini Engineering has more than 55,000 engineer and scientist team members in over 30 countries across sectors including Aeronautics, Space, Defense, Naval, Automotive, Rail, Infrastructure & Transportation, Energy, Utilities & Chemicals, Life Sciences, Communications, Semiconductor & Electronics, Industrial & Consumer, Software & Internet.

Capgemini Engineering is an integral part of the Capgemini Group, a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided every day by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of over 340,000 team members in more than 50 countries. With its strong 55-year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2021 global revenues of €18 billion.

www.capgemini.com

Booth n°18

Cruden is the world's leading designer, manufacturer and integrator of professional open architecture driving simulators for the automotive, motorsport, marine and motorcycle industries. We supply flexible, durable, high performing real-time simulators and their modular components: hardware, software, vehicle models, content and visual systems. Our driver-in-the-loop (DIL) simulators and Panthera Software Suite are designed to slot into customers' existing tool chains so their engineers can be up and running quickly with a future-proof system that does not tie them to any one supplier. Having recognized the potential of engineering simulators to save time and money through DIL testing since the 1990s, we have installed over 100 driving simulators globally and gained a firm reputation as a trustworthy simulator expert. ADAS/AD testing A Cruden simulator easily slots into a typical automotive test environment – for the development and validation of ADAS/AD controllers by hardware-in-the-loop (HIL) integration, for example. Integration is made possible by Panthera's ePhyse tool, conversion tools and integration work undertaken by Cruden with the suppliers of third-party packages commonly used by automotive OEMs and Tier 1s. We eliminate the need for complicated configuration work by our customers. Our simulators are created by people who understand the importance of human factor research, for the development of autonomous cars that customers can trust. We've helped many automotive teams design driver-in-the-loop experiments to validate human-machine handover control scenarios. Our technologies prioritise driver and passenger immersion, ensuring relevant and valuable feedback on autonomous controllers.

www.cruden.com

Booth n°217

The purpose of Dassault Systèmes is to provide business and people with 3DEXPERIENCE universes to imagine sustainable innovations capable of harmonizing product, nature and life.

Achieving a more sustainable future is only possible by leveraging the virtual world. At Dassault Systèmes we believe that virtual worlds extend and improve the real world.

Dassault Systèmes solutions transform the way products are designed, simulated, produced, marketed and supported, leveraging the virtual world to improve the real world.

We will present how Systems Engineering is the future of AD-ADAS and 3DExperience platform the enabler.

www.3ds.com

DeepScenario

Booth n°27

DeepScenario is an AI start-up based in Munich with the vision to bring automated systems safe to the road. The fast-growing start-up provides highly accurate real-world traffic data to accelerate the development of automated systems. DeepScenario's product helps automotive industry customers to train, test, and validate their self-driving algorithms in challenging scenarios.

www.deepscenario.com

domeprojection.com®

Booth n°16

domeprojection.com® GmbH develops high-end automatic projection alignment and calibration technologies for visual display systems. Our software ProjectionTools enables you to align an unlimited number of projectors for any arbitrary screen or surface. ProjectionTools-generated calibration data result in a perfectly warped and blended projection combined with meticulously precise correction of color, black level and many more parameters. The continuous development and integration of almost all eligible 3rd party AV hard- and software guarantees that domeprojection.com® ProjectionTools are the most flexible industry-leading auto-alignment solution offering maximum quality for your display system.

www.domeprojection.com

dSPACE

Booth n°36

dSPACE develops and distributes integrated hardware and software tools for developing and testing electronic control units. As a one-stop supplier, dSPACE is a sought-after partner and solution provider in many development areas of the automotive industry, from electromobility to vehicle networking to autonomous driving. The company's customer base therefore includes virtually all major vehicle manufacturers and suppliers. dSPACE systems are also used in the aerospace and other industries. With more than 2000 employees worldwide, dSPACE is headquartered in Paderborn, Germany; has three project centers in Germany; and serves customers through regional dSPACE companies in the USA, the UK, France, Japan, China, Korea and Croatia. dSPACE is a key player for ADAS and Autonomous Driving development and test. Many dSPACE systems are being used in those domains by Automotive EOMs and TIER1s throughout the world.

Visit our booth and discover our comprehensive tool suite for the design, development and test of ECUs for Autonomous Driving. See how our models and our Cloud based virtual test technology are used to drive through huge numbers of scenarios. Discover comprehensive cutting edge sensor models for Camera, Radar, Lidar. Use the latest technologies to generate raw sensor data out of a real time simulations. Take that simulated raw data to bypass real sensor input on the ECU, and get your sensor ECU to react in real time to the simulated sensor input. Also more to see on: Cloud based simulation, Scenario based testing, Scenario Generation, Data Logging, etc.

www.dspace.com

DYNISMA®
MOTION SIMULATION REDEFINED

Booth n°42

Dynisma Motion Generators (DMG) are the most dynamic, realistic and scalable simulators in the world

DMG-360® combines class leading latency and bandwidth with unlimited yaw excursion, large horizontal excursion, and high acceleration to deliver unrivalled vehicle dynamics simulation capabilities in the most immersive experience possible for a driver.

www.dynisma.com

epoc

Booth n°31

As the world becomes more digital, new products and services need to be easy and attractive for humans – putting the user at the center of innovation. Experts in the design and engineering of the user experience, we enable your teams to create smart products – better and faster. Our software-centric approach and proven methodologies develop meaningful experiences, accelerate your innovation and provide a rapid path to development.

www.epicnpoc.com

Booth n°19

Foretellix provides product development teams with revolutionary product development testing, verification, and validation platform, enabling the mass deployment of automated driving systems. The Foretellix platform orchestrates, manages, and analyses the massive number of tests required to ensure safety, reduce development costs, and shorten the time-to-market of ADS deployment.

www.foretellix.com

Booth n°38

ICT AG is a system integrator with more than 30 years experience. With AV technologies, we create tailor-made solutions for trade fairs, events, TV shows, showrooms and brand spaces. In short: we build the best possible stage for major brands. For the perfect staging, we also equip simulators, film and TV studios with visual surfaces like LED. Our long term expertise includes LED walls, tracking, audio, IT hardware, signal management, mechanics, software, augmented and mixed realities. By combining all disciplines with our teams, we develop the perfect solutions. Individually and always state-of-the-art.

www.domeprojection.com

Booth n°8

As a global leader in virtual test driving technology, IPG Automotive develops innovative simulation solutions for vehicle development. Designed for seamless use, the software and hardware products can be applied throughout the entire development process, from proof-of-concept to validation and release. The company's virtual prototyping technology facilitates the automotive systems engineering approach, allowing users to develop, test and validate new systems in a virtual full vehicle. IPG Automotive is an expert in the field of virtual development methods for the application areas of Autonomous Vehicles, ADAS, Powertrain and Vehicle Dynamics, committed to providing support to master the growing complexity in these domains. Together with its international customers and partners, the company is pioneering simulation technology that is increasing the efficiency of development processes. By taking real test driving into the virtual world as a complement to on-road testing, IPG Automotive contributes significantly to technical progress and shares in shaping the mobility of tomorrow with regard to comfort, safety, economic efficiency and environmental friendliness. In addition to the company headquarters in Karlsruhe, Germany, IPG Automotive provides innovative development services to its customers and partners at the national offices in Braunschweig, Frankfurt, Stuttgart and Munich as well as in China, France, Japan, Korea, Sweden, the UK and the USA.

www.ipg-automotive.com

Booth n°37

MathWorks is the leading developer of mathematical computing software. Engineers and scientists worldwide rely on our MATLAB® and Simulink® product families to accelerate the pace of discovery, innovation, and development in automotive, aerospace, electronics, financial services, biotech-pharmaceutical, and other industries. MATLAB and Simulink are also fundamental teaching and research tools in the world's universities and learning institutions. Founded in 1984, MathWorks employs more than 5000 people in 16 countries, with headquarters in Natick, Massachusetts, USA. MATLAB®, Simulink®, and RoadRunner advance the design of automated driving perception, planning, and control systems by enabling engineers to gain insight into real-world behavior, reduce vehicle testing, and verify the functionality of embedded software. With MATLAB, Simulink, and RoadRunner, you can:

- Access, visualize, and label data
- Simulate driving scenarios
- Design planning and control algorithms
- Design perception algorithms
- Deploy algorithms using code generation
- Integrate and test

www.mathworks.com

Booth n°22

Moog develops and manufactures the world's most advanced motion control solutions with a combined electric motion mechanism, control loading system, complete software package and dedicated operator workstation. Our customers range from first-tier suppliers, research institutes, and motorsport teams up to OEMs. Moog engineers have a profound understanding of vehicle simulator applications that enable automotive OEMs to test current and future vehicle designs, assess vehicle dynamics, investigate the behavior of drivers, evaluate ADAS/AD, driver research and vehicle dynamics, NVH testing, and dynamic functional testing on fuel tanks and more. At Moog, our global network of service providers offers commercial support to customers in 26 countries across six continents.

www.3ds.com

nervtech™

the human factor in
artificial intelligence

Nervtech is a high-tech R&D company specializing in vehicle simulator technologies in the fields of biometric and cognitive driver evaluation, deep machine learning, and data integration. Nervtech is an advanced tool for driver training in a variety of traffic and road scenarios. It is also a tool for automatic evaluation of drivers' performance and collection of physiological and biometrical big data through a set of external medical grade sensoring equipment, synchronized with the simulation software. We provide the service of driver evaluation, where in 30-60 min long tests, we evaluate driver skills by monitoring response times, speed and lane deviation, compliance with traffic regulations and perform various driver psychophysiological traits such as heart, brain, skin and pupillometry activity, which can be used to understand driver actions and behavior. In cooperation with industry experts such as driving instructors, professional fleet operators, insurance agents, and medical and public bodies, we have built a unique driver evaluation system by which reporting is completely automated. To make this a memorable, like-no-other driving experience, each driver receives a report, his driving results and a certificate.

www.nervtech.com

rFpro

Booth n°14

rFpro is a simulation environment for the automotive and motorsport industries. It is used for the development and testing of autonomous vehicles, ADAS, vehicle dynamics and human factor studies - essentially anything that involves driving a vehicle. rFpro's automotive customers are the world's largest car manufacturers, tier one suppliers and sensor developers. We enable them to simulate, test and validate new sensors, control systems and vehicle hardware systems. The top 10 OEMs that were early adopters of rFpro technology have already launched road cars which started their development, not on a test track, but in a virtual environment using rFpro. In motorsport we are the market leader of professional driver-in-the-loop simulator software - our customers are champions of every leading motorsport category. We maintain the largest library of digital road models (digital twins) including public roads, proving grounds, test tracks and race circuits for F1, NASCAR, WEC, IMSA, Indy, Formula E, Super-GT and Australian V8 Supercars.

Our mission is to provide and continuously advance an engineering-grade vehicle simulation environment, enabling our customers to develop components and systems safely and efficiently.

www.safetypool.ai

Safety Pool™
deepen & WMG

Booth n°36

Safety Pool™'s mission is to unite stakeholders from industry, academia, and policymaking all around the world under a common ecosystem that bolsters transparent, certifiable safety for Automated Driving Systems. Built to enable an Operational Design Domain (ODD) and behaviour tagging and filtering, that align with ASAM Open Label, BSI and ISO standards. Safety Pool™ Scenario Database is the world's largest public database of scenarios for CAV testing. With over 250,000 scenarios, generated from novel scenario generation methods. APIs and toolchains enable scenario execution across environments, and the credit system promotes active scenario contributions by users.

www.safetypool.ai

SCALE-1 PORTAL

Booth n°30

SCALE-1 PORTAL brings immersive technologies and applications to the global market. Discover highly immersive rooms, mobile virtual reality projector, and a range of business applications & services of virtual, augmented and mixed reality, for the consumer and the Professional.

www.indus.scale1portal.com

sensodrive

Booth n°9

Sensodrive Simulators. Perfect Simulations – Perfect Results. Sensdrive is a spin-off from the German Aerospace Center (DLR). The company was founded in 2003 by researchers from the DLR. Sensodrive is specialized in torque technology as well as in high-performance simulators. Sensodrive develops and produces tens of thousands of torque sensors and torque-controlled actuators every year for renowned companies worldwide. It was first company to launch specialized torque sensors for robotic drives. In addition to its leading role in drive technology, Sensodrive is known for its state-of-the-art force feedback products. The sophisticated simulators stand out due to sensitive force feedback and impressive realism. From the steering wheel to the pedals, to rotary and push buttons, or an entire simulator cockpit – the Sensodrive simulators enable high-end simulations in research and development. You´re not just anybody. And our products aren´t just any products. Welcome to Sensodrive.

www.sensodrive.de

simumak
simulation as a service

Booth n°10

At SIMUMAK they are dedicated to transform training processes through virtual reality technologies. Simumak began its operations more that 18 years ago. It designs and manufactures 100% its products with extensive experience developing simulation solutions for the Automotive, Construction, Mining and Logistics trade sectors. SIMUMAK has manufactured more than 5.000 simulators, which are deployed at more than 19 countries, contributing to a better training for more than 20.000.000 people.

www.simumak.com

smart eye

Booth n°35

Smart Eye is the global leader in Human Insight AI, technology that understands, supports and predicts human behavior in complex environments. Bridging the gap between humans and machines for a safe and sustainable future. Smart Eye was founded in 1999, is publicly traded and headquartered in Sweden with offices in the US, UK, Germany, Denmark, Egypt, Japan, Singapore and China. Through our Research Instruments, Smart Eye offers the world's most advanced eye tracking systems for analyzing human behavior. Offering unparalleled performance in complex environments, our carefully crafted instruments enable unparalleled insights into human behavior and human-machine interaction in automotive, aviation, assistive technology, media & marketing, behavioral science and many more fields. Today, our technology is used by NASA, Airbus, Boeing, Toyota, Daimler, Audi, GM, Harvard University and hundreds of research organizations and universities around the world.

www.smarteye.se

SMART VEHICLE
CÔTE D'AZUR

Booth n°35

The Smart Vehicle Cote d'Azur ecosystem aims at enabling the successful execution of sustainable mobility projects, to create a market oriented scientific environment benefiting all industrial actors, and to build an experiment park for smart vehicles.

www.investincotedazur.com

ST Engineering

Booth n°26

ST Engineering Antycip is a European company founded in 1996.
A multi award-winning team of passionate experts. Pioneer and leader in Simulation, Display & Virtual Reality Solutions, COTS technology, Analysis and Modelling working with outstanding partners.
We deliver bespoke projects using the most advanced technologies. Enabling our customers across the globe, in defence, academia, commerce and industry to be better prepared today, ready for the challenges of tomorrow!

www.steantycip.com

Booth n°32

Simulators for bus, truck, and special machine driver training – Customized & Turnkey

www.sym2b.com

Booth n°7

SystemX is a Research and Technology Organisation (RTO - Institut de Recherche Technologique - IRT), dedicated to the digital engineering of systems, and expert in the analysis, modelling, simulation and decision support for complex systems. SystemX coordinates partnership-based research projects, bringing together academics and industrials in a multidisciplinary and cross-cutting perspective. Together, they strive to lift key scientific and technological barriers to the benefit of 4 priority fields of application: Mobility and Autonomous Transport, Industry of the Future, Defence and Security, Environment and Sustainable Development. Within the framework of use-case oriented projects, SystemX researcher engineers answer the great challenges of our time, both for society and technology, thus contributing to accelerate the digital transformation of industries, services and territories.

www.irt-systemx.fr

Booth n°5

TechViz is a software editor specializing in advanced visualization for design and engineering. Its unique technology makes ti possible to visualize in AR / VR 3D models directly from more than 200 CAD / CAE applications, without any data conversion. TechViz serves many customers in the automotive industry, enabling complex use cases that merge driving simulation with CAD models to test the operability and ergonomics of future vehicles. Its solutions embark innovative features such as finger-tracking and virtual touchscreens.

www.techviz.net

THIERRY CLÉMOT

Booth n°12

Thierry CLEMOT's company creates 3D environments for cars simulators. Real environments are created from high accuracy 3d Laser scan. Available quickly, our 200 km urban model "CITY" allows us to create every exercices needed in fictive environments. Today, our models are used by cars manufactures in the US, Asia or Europe, what about you? Don't hesitate to consult the database catalog on thierryclemot.com

www.thierryclemot.com

TOSHIBA
Toshiba Digital Solutions Corporation

Booth n°34

Toshiba Digital Solutions Corporation delivers system integration and digital service solutions that support companies in accelerating their digital transformation.
In DSC 2022, we are presenting our Distributed Co-simulation Platform, VenetDCP.
VenetDsCP connects numerous models, various development tools, and different companies in cyberspace to provide an environment that enables joint verification.

www.globaltoshiba.com

TRIANGRAPHICS
Intelligent Terrain Solutions

Booth n°20

With our powerful proprietary software tools and our long experience in 3D terrain development, we are pushing the boundaries of the simulation and automotive market when it comes to detail, quality, size, efficiency and realism of digital environments. Use our flagship product Trian3DBuilder to create photorealistic 3D terrains by automatically processing real-world data or using procedural approaches.

www.triangraphics.de

UTAC

Booth n°25

As UTAC, we are a market-leading group in vehicle testing, type approval and emerging technologies for autonomous, connected and electric vehicles. We provide services and systems to customers in the automotive, transport, tyre, petrochemical and defence industries. We deliver regulation and homologation support, specialist vehicle conversions and test systems as well as training, consulting, audit and certification, technical inspection, standardisation and events.

Formed in 2021 after UTAC CERAM and Millbrook merged their operations, we now operate 8 test centres across France, the UK, the USA and Northern Finland, with a 9th due to open in Morocco in late 2021. We have subsidiaries in Russia, China, Japan and Germany and employ 1280 people globally.

www.utac.com

Booths n°1 & n°2

VI-grade is a leading provider of real-time simulation and professional driving simulator solutions that accelerate product development across the transportation industry. The company's driving simulators range from static deskside solutions to full-scale driver-in-the-loop dynamic simulators, allowing OEMs, suppliers, research centers, motorsport teams and universities to reduce physical prototypes and accelerate innovation. With a worldwide network of trusted partners, VI-grade delivers turnkey simulator solutions including proprietary software, hardware, services, and an open framework for customization. With over 30 years' experience in simulation, VI-grade is headquartered in Darmstadt, Germany with technology centers in Italy, UK, Japan, China, and the USA. VI-grade is part of HBK's Virtual Test Division, which focuses on providing real-time software, simulator, and hardware-in-the-loop solutions to virtually test products throughout the development cycle, helping companies accelerate innovation and reduce time-to-market, and improve their competitive advantage. With 250 highly skilled employees, HBK's Virtual Test Division has offices in Germany, Italy, France, UK, China, Japan, and the USA as well as a broad network of worldwide channel partners. Since September 2018, VI-grade has been part of Spectris plc. The firm conducts business in four major segments – materials analysis, testing & measurement, in-line instrumentation and industrial controls – and serves a broad range of industries ranging from automotive and aerospace to electronics, energy, mining and pharmaceuticals.

www.vi-grade.com

VIOSO®

Booth n°26

Founded in 2007, VIOSO is a leading provider of blending, warping and video mapping software solutions for system integrators and event professionals. VIOSO's patented Core technology offers reliable and user friendly auto-alignment for applications where multiple projectors are required. With over 500 successful projects to date, VIOSO serves a number of specialised industries including AV integration, simulation, visitor attractions and dome projection. The company prides itself in offering the best solutions for complex visual projects.

www.vioso.com

Driving Simulation Association

The *Driving Simulation Association* aims to:

- **promote and encourage driving simulation in all its aspects:** research, studies, developments, applications and products;
- **facilitate communication between people** involved or interested in driving simulation;
- **contribute to the organization of scientific conferences in the area of driving simulation,** Driving Simulation Conference (DSC) Europe, DSA seminars
- **organize special interest groups** (SIG) Driving Simulation Experience (SIGDSEP)
- **inform** about recent events new and trends

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