

automotive
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expertise

ANNUAL REPORT 2022

Human Capital in the
automotive sector

*together we create
the future of mobility*



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Preface

The future of the automotive industry has become very dynamic and complex. It is changing at breakneck speed and these changes demand knowledge and talent. ACE Mobility acts as a trendwatcher in these developments, and over the years it has put in place a basic package of activities to improve the connection between higher professional education and actual professional practice. In recent years, ACE has also focused on the transitions taking place in the automotive industry: on new fuels, on the impact of ICT in mobility systems, on autonomous developments and on an attractive labor market. This has resulted in a portfolio of research projects on the themes that challenge the industry: energy transition, autonomous driving, sustainability and safety.

Our top priority is the ongoing developments in connecting the automotive industry to automotive and mobility talent of the HAN and Fontys Universities of Applied Sciences: Human Capital is the most important treasure of the future!

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*together we create
the future of mobility*

TIMELINE HIGHLIGHTS 2022

JANUARY

- Niels Winter joins ACE Mobility (3 January)
- TALCOM workshop
- Sponsoring Student Teams HAN and Fontys (ongoing)
- HAN working visit to ACE Mobility (31 January)
- Ebusco becomes new Associate Partner (31 January)

MARCH

- Kick-off ACE Mobility Professional Program new semester (1 March)
- PRO ACE at Nooteboom Trailers (8 March)
- Meeting Centers of Expertise (Fontys HTSM, KennisDC Logistiek and ACE Mobility) (9 March)
- Stakeholders meeting – Publication SCBA Autonomous road transport 2030 (10 March)

MAY

- Jan van Wijk joins ACE Mobility (1 May)
- ACE Mobility on Trade Mission in the US (3 May)
- ACE Partners meeting – Publication Labor Market Research (12 May)
- ACE Mobility Future Day: The impact of digital mobility (18 May)
- Partner lunch (18 May)
- NARRK SPG becomes new ACE Partner (20 May)



JULY

- ACE Student Award 2022 (5 July)
- Publication DAF vlog (12 July)

AUGUST

- H2M kick-off (12 August)



OCTOBER

- Gert Blom joins ACE Mobility (1 October)
- ACE Mobility visits EARPA Brussel (18-19 October)
- Launch of VR Experience (20 October)
- Publication Inalfa Roof Systems vlog (26 October)
- Battery Technology NL kick-off (31 October)

DECEMBER

- Greening Corridors Event (6 December)
- BRACE becomes new ACE Partner (7 December)
- Announcement Saskia Lavoo to succeed Kees Slingerland (12 December)
- Farewell Kees Slingerland (13 December)
- Charging Energy Hub workshop (5, 6 and 13 December)
- Battery Technology NL workshop (12 December)
- H2M workshop (22 December)
- Lounge of the ACE Mobility Dashboard (22 December)



FEBRUARY

- Spin-off TALCOM Workshop AV Security (3 February)
- Start of Basic Mathematics course (6 February)
- Pilot version ACE Mobility Professional Program completed (23 February)

APRIL

- ACE mobility visit to SZTAKI in Hungary (5 April)
- Participation in Fontys Engineers Meet & Match (19 April)
- Workshops second-year HAN Automotive students (7 April)



JUNE

- ACE Mobility visit ITS European Congress in Toulouse (2 June)
- PRO ACE at Politie Academie (7 June)
- Publication Hyster-Yale vlog (14 June)
- Visit from Ministry of Infrastructure and Water Management (20 June)
- Workshops second-year Fontys Automotive students (14, 15, 16 June)

SEPTEMBER

- Roen Pulles joins ACE Mobility (1 September)
- KIVI 175th anniversary, ACE Mobility session (10 September)
- IMIAT consortium meeting (19 September)
- ACE Mobility presentation at National Conference on Sustainable Mobility (26 September)
- RAI Automotive Industry NL and ACE Mobility partnership meeting (27 September)

NOVEMBER

- PRO ACE at Inalfa Roof Systems (1 November)
- Stakeholders meeting ACE Hydrogen Test Facility (2 November)
- Farewell symposium Frank Rieck (9 November)
- Workshops second-year Fontys Automotive students (2, 3, 4 November)
- ACE becomes a platinum sponsor of the Automotive Week 2023 (22 November)
- Battery Technology NL Workshops (14 November and 28 November)
- Charging Energy Hub kick-off (22 November)



DRIVE Magazine

This year we published the second edition of our DRIVE magazine, which focused on the theme of human capital. It contains some fascinating stories of young talent and the automotive business community.

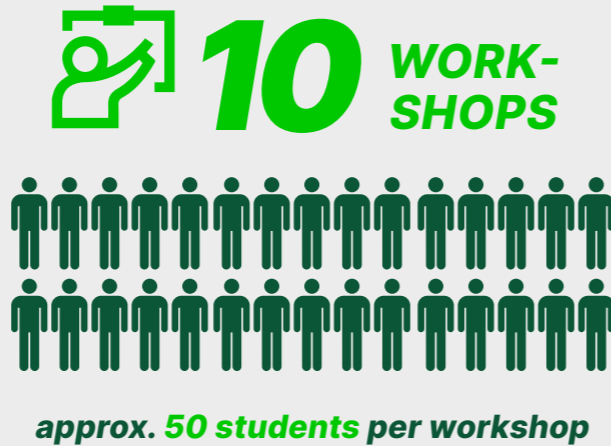
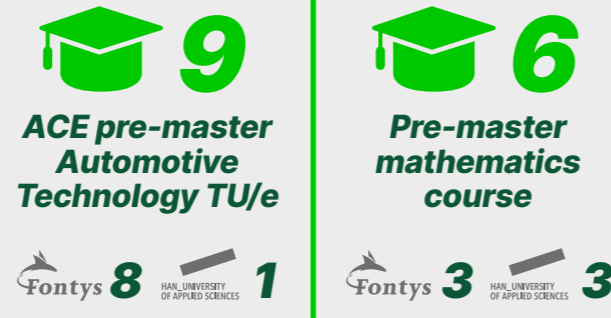


You can find our DRIVE magazine on our website acemobility.nl



Highlights of the year

Delivering high-quality automotive talent is our top priority. In order to do this, it remains important to continue to carry out our regular activities in which we support the Fontys and HAN Universities of Applied Sciences in generating enrolments and, above all, to ensure significant numbers of graduates moving into industrial employment. The pre-master, workshops, vlogs, the ACE Job Portal, sponsoring of student teams, the ACE Mobility Professional Program, the ACE Student Award and the ACE Automotive Career Day all contribute to this goal. Also, we are increasingly taking a leadership role on various topics related to human capital. With TALCOM, we have taken a first step to achieve this.

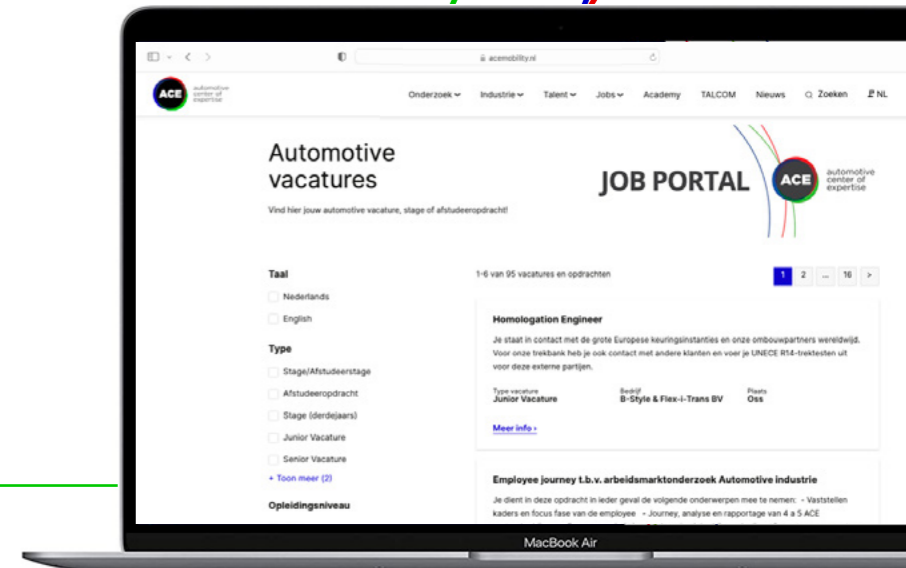
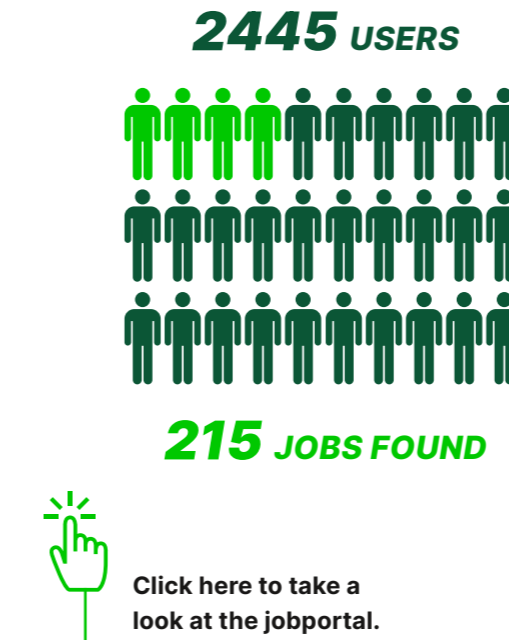


Enrolment:	2019	2020	2021	2022
HAN	227	231	214	232
Fontys	139	137	177	203
Fontys AM	57	59	70	29
Total	366	368	391	435

ACE Job Portal

Since 2020, the ACE Job Portal has been part of our basic activities. On this online platform we publish junior vacancies, internships and graduation assignments offered by our leading ACE Partners. In 2022, ACE worked hard to improve the findability of the ACE Job Portal through Search Engine Optimization. This has resulted in more visitors and actual applications than in previous years.

In 2023, we will expand our scope by using Search Engine Optimization and Search Engine Advertising to attract young professionals from other technical backgrounds.





ACE Student Award 2022

Every year, we organize the ACE Student Award. At this event the best students, who graduated at an ACE Partner company, are nominated for the ACE Student Award. During the event the students present their graduation assignment to an expert jury. On July 5, Robin Huijerjans, Automotive student of the Fontys University of Applied Sciences, won the ACE Student Award 2022. He did his graduation assignment at VIRO Echt, where he researched the suitability of ammonia as a fuel for long-haul trucks.

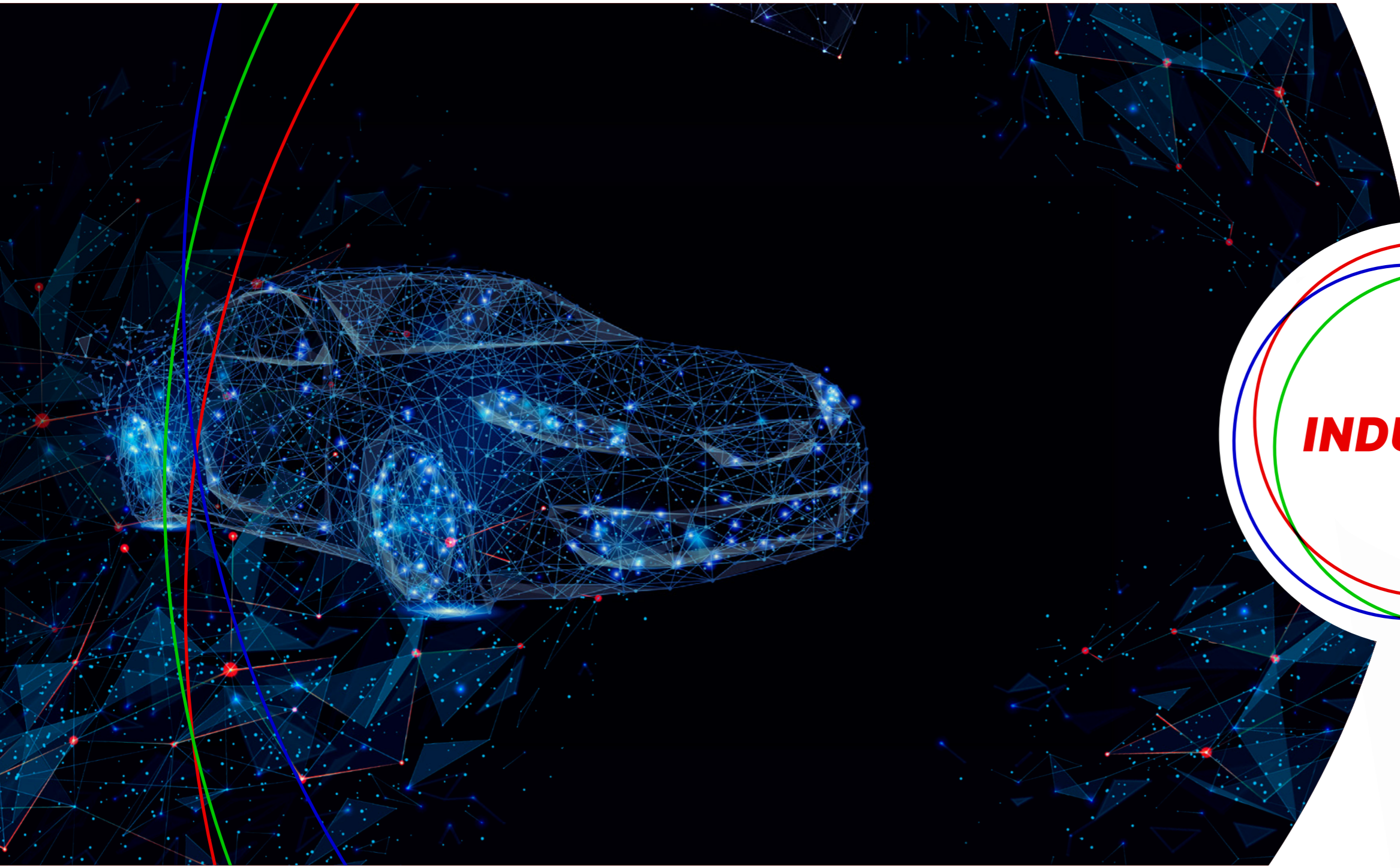


 [Check the ACE Student Award 2022 playlist](#)

VR Experience

In 2022, ACE Mobility took the initiative to create a VR Experience to demonstrate the many developments in the automotive and mobility world. It is a wonderful game, both for automotive students and for the general public. The VR Experience, which was launched at the Automotive Career Day in October 2022, helps to create awareness of the new technologies in the automotive and mobility sector. In 2023, the VR Experience will be demonstrated at the open days of the Fontys and HAN Universities of Applied Sciences and at the Summa Automotive College in Helmond.





INDUSTRY

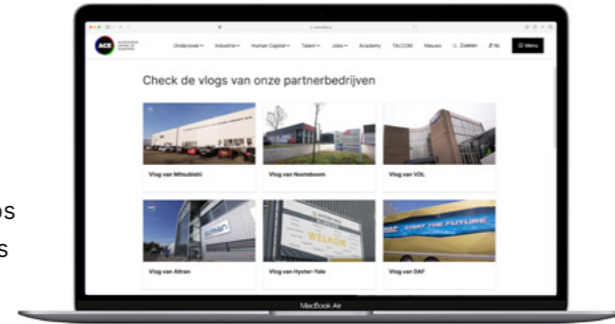


INDUSTRY

Online workshops for automotive students

After organizing workshops online for the past two years, we were able to offer physical workshops again this year to second-year Automotive students of the HAN and Fontys Universities of Applied Sciences. This year we arranged workshops at VB-Airsuspension, Nootboom Trailers, Mitsubishi Turbocharger and Engine Europe, Capgemini Engineering, VIRO, VDL, DAF and RDW.

During the workshops students will work on a specific issue in a team and will present their solution at the end of the workshop. This is how we aim to ensure that students get a feel for working in the automotive industry and learn to apply their knowledge by working on a practical topic in a team.



Vlogs of young engineers

One of our key activities is to show the various disciplines within the automotive sector to the future employees. We do this by shooting vlogs at our ACE Partners, in which HAN and Fontys graduates take the viewers through their daily work at the company in an exclusive behind the scenes look. Not only does this give viewers a better idea of all the possibilities in the automotive sector, it also allows the company to show itself off to a large target group. In recent years, we have recorded vlogs at VDL, Nootboom Trailers, Mitsubishi Turbocharger and Engine Europe and Altran. This year, we are proud to have added DAF Trucks, Hyster-Yale and Inalfa Roof Systems to that list.



Check the ACE Student vlogs on our website

ACE Automotive Career Day

The ACE Automotive Career Day is one of our key annual activities in which we, in collaboration with the Fontys and HAN Universities of Applied Sciences, offer students the opportunity to find more information on the automotive industry and at the same time give the automotive industry an opportunity to present itself and show specific internships, graduation assignments and job opportunities. The ACE Automotive Career Day is also the place where both students and the automotive industry can extend their networks.

Last year, we were again able to organize a physical ACE Automotive Career Day. With more than 30 automotive companies presented at the company market in the automotive building at the HAN University of Applied Sciences in Arnhem, students had the ultimate opportunity to network and actively search for an internship or graduation assignment and, of course, for a job after graduation. Various vehicles with the latest gadgets were demonstrated outside the HAN building. During the company presentations, speed dates and meet-the-professional sessions, students were given the opportunity to learn more about the companies. The day ended with a meet & greet with Tom Coronel, who regaled the students on entrepreneurship and the fast-paced world of motorsport.



PARTICIPATING COMPANIES 32

**Interview with Bart Smulders, Managing Director
at B-Style Mobility Solutions**

***“Professional skills are important,
but personal qualities and a
broad perspective are just as
important.”***

B-Style is an innovative SME company that focuses on developing healthcare transport solutions. It supplies construction kits to various national and international partners that contain all the components needed to convert vans and buses for wheelchair access. Over the past couple of years, the company has shifted its focus from assembling and installing the conversion kits towards development, sales and service.

Although B-Style has had some setbacks due to the pandemic, it knows its market position is strong, and what the future will bring: “As a company we knew we could not change the situation, so we chose to focus on activities within our power, such as internal communication, quality, process coordination

and, of course, providing as much support as possible to our partners.” It is still a worldwide problem that companies are in the dark about delivery times of certain vehicles. According to Bart it can even take a year to a year and a half before the market has fully recovered. “At times like that you find that this presents challenges to your staff and the staff you will need in the future. Professional skills are important, but personal qualities and a broad perspective are just as important.”

B-Style is known in the region as an attractive employer and staff turnover is very low. “We are a small team and that gives you opportunities to develop to the fullest in your job. For us as an employer it is not important how you work, just show initiative and get results. Not only in your job, but also personally,” Bart adds.

Despite the global challenges, the future is bright for B-style because of new developments that are taking place within the automotive industry: “Electric or hydrogen-powered vehicles naturally play a major role in the developments in our industry, now and in the future. For us, it is important to provide the right

solutions for this. In addition, the laws and regulations are becoming stricter everywhere, so it is up to us to respond with industry-leading solutions, which will ultimately also result in overall market growth.”

B-Style has been an ACE partner for over 5 years. “Empowering the connection between education and the automotive industry is a vision we fully support. In addition, we believe it is important as an SME to be in close contact with all the major players in the market. In the last few years of our partnership with ACE, we have taken a bit more of a back seat. But now that the market seems to recover, we are certainly going to change that!”



Interview with Anita van den Bedum,
Recruitment Specialist at Arval.

“Doing better together every day and helping each other out serves as the basis of our culture at Arval.”

After starting out as a leasing company, Arval has evolved over time. In the past year, the acquisition of Terberg Leasing greatly expanded the company's operations and services. It was evidence of Arval's ambition to become market leader in sustainable mobility. Also, with this expansion, the company now offers its customers the opportunity to lease any form of mobility, making it an all-round mobility provider. Access to all kinds of different vehicles and means of transport including train, taxi, car and scooters is part of the strategy to become the all-round service provider in sustainable mobility. This strategy proves once again that the automotive sector is transforming

into a sector in which themes as services, sustainability and mobility will be vital.

For Anita, Arval is a true family business where team spirit and transparency are of great importance. “Arval is a flat organization and when you enter the building, you find it is an open structure with lots of glass. It was designed that way in order to create and monitor that openness. Doing better together every day and helping each other out, is one of the most important aspects of our culture.” Arval cares about the people who work there. Now that the transformation is in full swing, they also see that it creates many opportunities for the employees. “So continuous growth is what we, as HRM, focus on and actively encourage in the organization. This is a big part of the challenge of keeping employees on board and ensuring they enjoy coming to work.”

With the application workshops for second-year students from the HAN and Fontys Universities of Applied Sciences and its participation in the annual ACE Automotive Career Day, Arval has been a

dedicated partner since 2016. “I have always watched from the sidelines with my colleague who was ACE's contact person. In 2020, I took over my colleague's position as the first point of contact for ACE, but the collaboration became less intensive, due to the pandemic. Now that that is more or less behind us, we are actively going to strive to strengthen our partnership with ACE!”

ACE is delighted to have Arval as a partner, in order to inform and learn students of about the transforming industry and to prepare them, at an early stage, for a successful career in the mobility sector of the future.





HUMAN CAPITAL

National Growth Fund Initiatives

ACE had led the development of several Human Capital work packages within National Growth fund initiatives. The Human Capital challenges are seen by the partners involved as one of the biggest bottlenecks in the implementation and further upscaling of these programs.

We strive for sufficiently qualified employees who continue to learn, grow and move with the progress of technological innovation throughout their lives. The goal is a 'future-friendly' labor market, in which employers are willing and able to keep up with the needs and developments of the labor market.

With our approach, we not only achieve a fulfillment for a specific technology area, but we use the approach in several growth fund proposals creating a deepening Automotive/mobility Human Capital Action agenda. This allows us to add sector-specific emphases and create the ecosystems in which we contribute to the societal challenges of today and tomorrow. In addition, ACE is an intermediary for other educational institutions to participate in these initiatives, for example in the battery initiative in which 10 different Universities of Applied Science are connected.

The process we went through with our partners includes workshops, written inquiries and many individual contacts. It has led to a thorough and result-oriented Human Capital work package, with an adaptive approach, substantiated from the analysis and with the support of the partners. Its strength lies in the structural, programmatic approach with the ecosystem approach in combination with a concrete intervention package that can be rolled out right from the start.

In this third round we covered the Human Capital work packages for the Materials Independence & Circular Battery Technology – NL, the Charging Energy Hubs and H2M (hydrogen) proposals. For the fourth round we have already started on the Human Capital part for the CCAM (Connected Cooperative Automated Mobility) Smart-delta last and first mile transportation initiative.

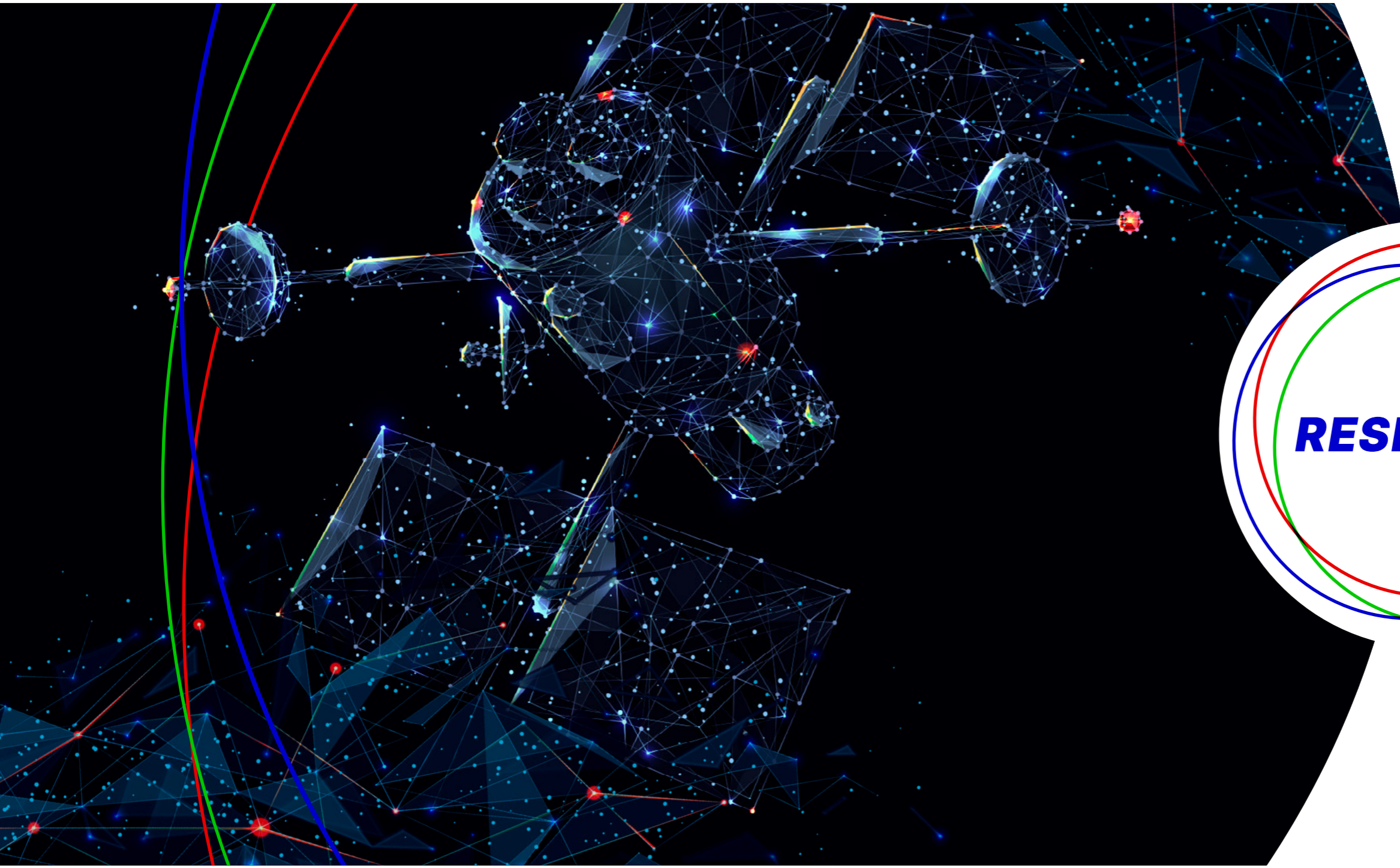
The Automotive Learning Community (TALCOM)

In tandem with Fontys University of Applied Sciences, ACE took the lead in creating an automotive learning community - an ecosystem to actively contribute to the knowledge of automotive and mobility professionals. In the TALCOM Community we have

connected automotive education and the mobility industry. In doing so, a learning community has been created where knowledge sharing and automotive innovation are key. The aim is to realize a lifelong development environment for present and future workers in the automotive industry. The project phase ended at the end of 2022.

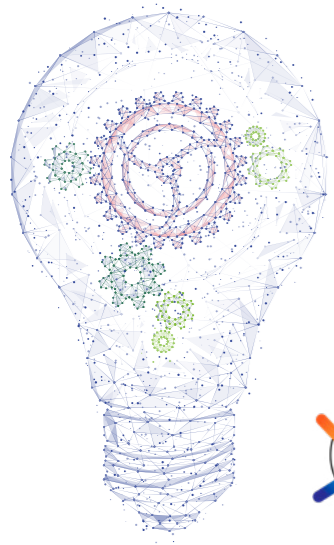
A digital platform, based on mutual and automotive challenges, is being developed in which colleagues from industry and knowledge partners can connect and where an ACE Academy with workshops, courses, masterclasses and other learning materials will be offered to students and employees in our automotive world. The future development of the Automotive Learning Community is broad and diverse, and already involved in several new projects and project applications, also through the existing working groups that continued to work on their initial TALCOM goals. The learning community proved to be, and remains, a valuable addition to our Mobility ecosystem.





RESEARCH





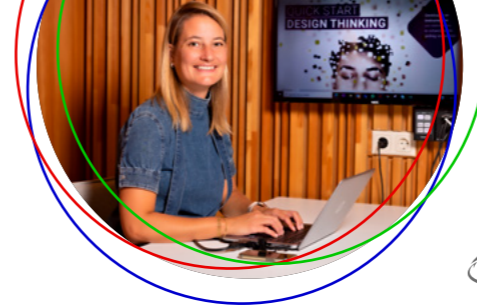
IMIAT

The IMIAT program stands for Innovation Mobility Implementation Automated Transport. It aims to realize the implementation of Connected & Automated Transport (CAT) on the road. We work in partnerships with governments, industry and knowledge institutes. In 2022, a comprehensive social cost-benefit analysis was conducted. A clear picture of the financial benefits of the developments was quantified. Stakeholders from governments were interviewed to get more insight into the expectations, challenges and visions of those stakeholders. Together with the industrial partners further developments and the cooperation with ACE were investigated.

In 2023, we will focus on the foreseen effects on the needed expertise and the curriculum of the education institutes on the road towards connected automated transport.

ACE Hydrogen Test Facility

In close collaboration with the HAN University of Applied Sciences, ACE involved various companies from the automotive sector to investigate the need, challenges and possibilities for an ACE Hydrogen Test Facility. Its purpose is to test vehicles and machines for EMC (Electromagnetic Compatibility) and climatic conditions. The focus is on the development of an open source facility where innovation is facilitated and in which education and business come together and learn from each other. The specific technological requirements and the legal form were the main subjects in 2022. In 2023, funding and realizing the Hydrogen Test Facility will be targeted.



Labor market study

In the context of finding the right talent with the right skills in the changing world of the automotive sector, ACE commissioned a study for its partner companies on the current situation of the companies' recruitment and selection practices.

The Fontys Lectorate Dynamic Talent Interventions conducted the research, gaining more insight into the number of vacancies for engineers in the automotive industry and, in particular, the nature of the profiles sought, but also into the way in which companies in the automotive industry recruit new engineers and the bottlenecks they encounter in doing so. Based on the research results, the Fontys Lectorate Dynamic Talent Interventions has identified five recommendations that can provide companies with roadmaps to further professionalize their recruitment and selection practices.

In 2023, ACE will be offering training courses for the partner companies to help them to implement these recommendations.



You can find the full labour market survey report here

RESEARCH



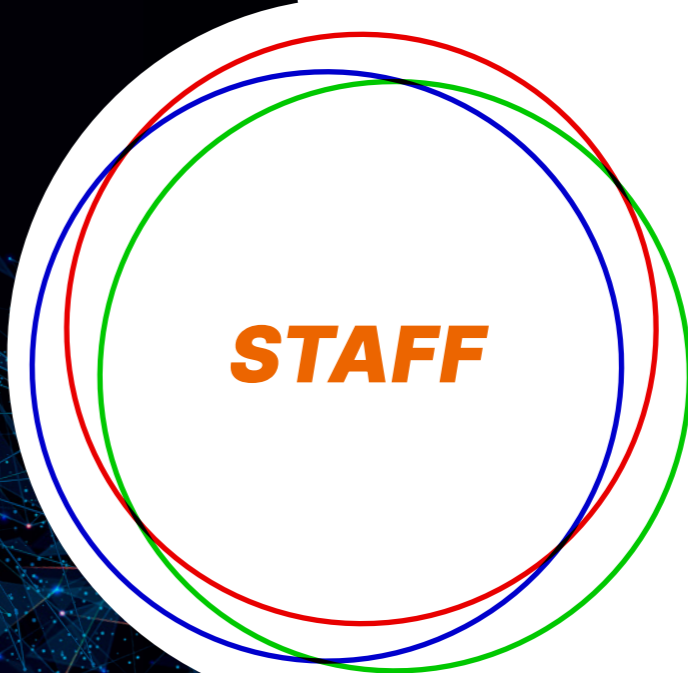
You can find the complete dashboard online on acemobility.nl

ACE Mobility dashboard

The automotive sector is flourishing like never before. This is what the brand new dashboard developed by ACE Mobility clearly shows. There is a lot of information and data available about the industry, but there is not one overview of the complete Dutch automotive industry. This Automotive Dashboard lists current facts and figures on five themes and gives you a complete overview of the Dutch automotive industry. The aim is to update the dashboard annually.

THANKS TO ALL OUR DEAR PARTNERS

In 2022 Ebusco, ARRK SPG Tooling and BRACE Automotive Development joined the ACE Mobility partner network.



STAFF



The ACE Team



Kees Slingerland
Director
(until January 2023)



Saskia Lavoo
Program Manager



Frank Rieck
Head of R&D
(until November 2022)



Jan van Wijk
Head of R&D



Gert Blom
Business Development
Manager



Stefan Kraaijvanger
Business Developer



Niels Winter
Business Developer



Corine Legdeur
Communications Advisor



Gentiana Tijssen
Communications
Officer



Roen Pulles
Project Management
Officer



Thomas van Berkel
Human Capital
Project Manager



Jeroen van der Werf
IMIAT Project Manager



Ingrid van Lierop
Office Manager



Joop Verhagen
ACE Hydrogen Test
Facility Project Manager

ACE Board

Henk Bos
Ella Hueting
Albi van Buel
Gerrit Aversch

Chairman
Fontys University of Applied Sciences
RAI Automotive Industry NL
HAN University of Applied Sciences

ACE Supervisory Board

Rob Verhofstad
Joep Houterman
Hans Corstjens
Henri Koolen
Marinka Nooteboom

HAN University of Applied Sciences, chairman
Fontys University of Applied Sciences

VDL
Koninklijke Nooteboom Group

Graduates and interns at ACE Mobility

Luc Sanders

Student at Fontys University of Applied Sciences,
Research Report: Analysis of the future professional
driver for logistics service providers from 2030

Tjerk Steuten

Student at Fontys University of Applied Sciences,
Research Report: Employee journey

Luc Vereijken

Student at Fontys University of Applied Sciences

Marissa Rutgers

Student at Fontys University of Applied Sciences,
Advisory Report: BDR Project, Bachelor thesis at ACE Mobility & RAI AI NL

Stijn Huijjer

Student at HAN University of Applied Sciences

Cas Beckers

Student at Fontys University of Applied Sciences,
Research Report: Investigate the circumstances in which a band starts to sign off

Ambitions

With the arrival of a new manager in 2023, ACE is entering a new era. The strategy will be updated and ambitions will be raised. The transition in the automotive industry keeps speeding up and digitization, autonomous driving and electrification places huge demands on both industry and education. It is precisely this transition that requires employees with the right skills and education. ACE will therefore increasingly focus on human capital and lifelong learning activities. For example, we are firmly committed to further developing the Automotive Learning Communities that focus on the themes of Charging Infrastructure, Hydrogen in Mobility and Battery Technology.

With the granting of the SPRONG FAST subsidy, the time has come to collaborate even more closely with the research departments at the Universities of Applied Sciences. Practice-oriented research deserves a strong research group and structural collaboration. Together with HAN and Fontys, ACE wants to make an even greater impact in the field of research.

Finally, together with the ACE team, the Universities of Applied Sciences and our partners, we will be looking to extend our focus in the direction of Mobility next year so as to connect our network as best we can to the challenges that will inevitably present themselves! ACE is proud to continue to help keep our sector strong and agile.





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