Startup Autobahn's platform produces tangible results driving open innovation for over 30 pilot collaborations and implementations between corporate partners and startups

On July 7, 2022, more than 30 startups will present the project results from their collaboration with corporate partners at Startup Autobahn powered by Plug and Play EXPO2022. These results offer sustainable solutions that drive change in the areas of mobility, production and business innovation.

Stuttgart & Silicon Valley This year, the successful projects between the program startups and corporate partners, including Mercedes-Benz AG, Bosch, Webasto, DXC Technology, Motherson, Schaeffler, and Maxion Wheels, will be showcased to more than 1,000 industry leaders and innovators at EXPO2022 on July 7 in Stuttgart. The projects focus on topics in electromobility, advanced manufacturing, cybersecurity, smart cities, driving simulation, route planning, smart fuel economy, autonomous driving, and production robotics. The transformation in the field of mobility has attracted a lot of attention, especially in corporate management, and its relevance will be emphasized at EXPO2022 with keynotes from Ola Källenius, CEO of Mercedes-Benz AG, Tanja Rückert, CDO at Bosch, Saori Dubourg, Board Member at BASF, Saeed Amidi, CEO and Founder of Plug and Play Tech Center, and many more, highlighting the successes of the projects.

Bosch used &Charge's unique crowdsourcing approach to validate and enrich POI data around EV charging in Europe

The aim of the Bosch and &Charge collaboration was to validate and enrich POI data around EV charging. The EV market is currently ramping up but there is a constraint of inaccurate data that hinders EV adoption. Bosch and &Charge's crowdsourcing technology can resolve this issue for a dedicated data set. The next steps in this project are to integrate the mechanism into the Bosch EV ecosystem.

Mercedes-Benz and 4Silence worked on identifying and measuring noise leakages in driving vehicles

To reduce noises inside a vehicle, it is essential to identify the most dominant transfer path from sound sources outside the cabin to the passenger's ears inside the cabin. While driving, this is difficult to accomplish, due to the large number of reflections in the car. Using 4Silence's new technology, as implemented in the Sonocat measurement device, Mercedes-Benz and 4Silence could quickly localize noise leaks, as the Sonocat is able to differentiate between the source and its reflection. The experimental facilities and experts of Mercedes-Benz enabled 4Silence to increase their experience in the automotive industry.

DXC Technology teams up with asvin and Excelfore to provide a best practice solution for tracking and tracing the automotive software supply ecosystem

The software-defined vehicle will require a full digital lifecycle management, which needs to be cyber secure, trusted and regulatory compliant. asvin and Excelfore, two member companies of

the eSync alliance, and DXC Technology have set up a joint initiative to address the automotive specific challenges on Software Supply Chains Security and Software Update-Management-Systems (SUMS) and provide a best practice solution. In order to increase trust and integrity, this solution is changing the perspective from a “Supply Chain” towards a “Supply Ecosystem”, where software components and suppliers are interconnected and a single small supplier entity from the bottom can have a huge impact towards tier 1 suppliers and OEMs. asvin's novel network ledger approach will enable an instant mapping of software components in use, their integrity and provenance.

From Proof of Concept to Acquisition: How Bosch and atlatec provided scalable, safe 3D maps for autonomous driving

atlatec and Bosch worked on using a 3D mapping pipeline to build massive amounts of high accuracy 3D map data for automated driving. The atlatec approach is very light-weight and uses nothing but two cameras, a GPS, a LiDAR and AI to do so. As a result both partners agreed that this approach is very feasible. Bosch finally fully acquired atlatec with its subsidiaries in Japan and USA.

Motherson engaged Brodmann17 to provide Vision-AI to their camera monitoring system

The aim of the project was to provide automated Vision-AI object detection and classification to the Motherson Camera Monitoring Systems. By selecting Brodmann17, the teams could work collaboratively to take high field of view camera video images and process utilizing compute-light deep learning AI algorithms. Motherson’s Advanced Engineering ADAS team and Brodmann17 R&D team were involved. The prospect is to reduce accidents in the future through the enablement of auto-alerts to vehicle drivers for blind spot detection, safe turn assist, and lane keeping assist.

Bosch accelerates testing of electrical machines with CirQua technology

The design, optimization, and quality control of electrical drives depends on the experimental results of test benches. As a result of the presented proof of concept, the required time for startup operation of electrical motors was reduced significantly in the pilot project collaboration between Bosch and CirQua. CirQua’s technology enables Bosch to have more comprehensive testing results with improved quality and repeatability. Next steps will include collaborating on the development of test bench inverters for different voltage ranges in order to implement the CirQua technology in Bosch's test benches. In addition, a validation of the test results by comparison with simulation data is planned.

Mercedes-Benz works with Deepfine on digitizing offline-based services

The joint pilot project with Mercedes-Benz Korea’s IT and related departments intends to find ways to digitize offline-based services to potential customers and vehicle owners of Mercedes-Benz in order to provide higher convenience. The pilot project, which utilizes Deepfine’s XR and deep learning technology, is a prototype of a platform that allows customers to receive sophisticated vehicle information and services such as digital, user-customized manuals or the visit of an XR

showroom anytime, anywhere regardless of time and space. This versatile digital solution could be implemented in older and new Mercedes-Benz models.

Advanced security for AI and analytics: Bosch works with Edgeless Systems on a scalable confidential AI pipeline

Access to raw data sets is ideal for the development of analytics based on Artificial Intelligence (AI). However, security threats, strict privacy regulations, and potential loss of Intellectual Property (IP) ownership when collaborating with partners can turn data into a toxic asset. Bosch has teamed up with German startup Edgeless Systems to develop a scalable confidential AI pipeline for lowering the risks related to data or IP leakage. The team has prototyped their system for the development of advanced driver-assistance systems (ADAS) and are testing to ensure that the system holds up against the performance and scalability needs of a production environment.

Hyperganic and Schaeffler partnered to accelerate innovation through Algorithmic Engineering

The automotive and industrial supplier Schaeffler partnered with Hyperganic to implement Algorithmic Engineering (AE) in its Advanced Manufacturing Technologies Unit. The goal of the collaboration is to accelerate engineering through rapid iteration and seek design answers beyond the limitations of standard CAD. As a next step, Schaeffler and Hyperganic will integrate automated simulation loops for faster pre-production validation.

Bosch and Hypermile develop retrofit AI cruise control to reduce truck fuel consumption

In an attempt to reduce fuel consumption and carbon emissions of commercial vehicles, Bosch teamed up with Hypermile to develop a fuel-efficient retrofit AI cruise control. Bosch and Hypermile collaborated to integrate their respective products: Bosch's Retrofit Efficiency Module (remodul) and Hypermile Co-Pilot. The pilot demonstrated a combined solution performed better than either one individually in terms of fuel economy and engagement rate. The two companies have a memorandum of understanding to bring a joint solution to market.

identifai and DXC Technology accelerate digital transformation and transparency of energy usage in the manufacturing sector

The metals and manufacturing industries have limitless and untapped potential. The digitalisation can unlock huge opportunities. identifai and DXC Technology saw the opportunity to reduce energy and emissions as well as improve operational efficiency at a German metal manufacturer. With soaring energy costs and a complicated data landscape, this customer sought to gain insight into their energy consumption, from energy sensor data, work orders and the electricity consumption report, to identify opportunities for improvement, and optimize their processes. As a first result, the built Energy Intelligence Platform and Backend completely automates energy reporting, estimates & forecasts energy needs, and provides insight into energy/emissions per part to help the manufacturer reduce 5% of energy costs.

Makersite is offering a software solution that allows its customers to solve

complex challenges in their products and supply chains
Schaeffler will operate on a climate-neutral basis along the entire value added chain from the year 2040 and is therefore increasingly relying on a partnership network of suppliers who are committed to the sustainability targets set by the company along the entire value added chain. By teaming up with German based start-up Makersite, Schaeffler can run ad-hoc automated analysis of environmental impacts from the entire supply chains in scope. Together, the team were able to compare different product supply chains from a sustainability perspective and crucially ensure that the supply chain changes reduce Scope 3 emissions

DXC Technology and Makersite help manufacturers transform their business towards a green economy
Global manufacturers face challenges today that they are not yet equipped to solve. Decarbonizing supply chains, accelerating product innovation or building resilient supply chains to stay competitive are among those. DXC Technology's experience of integrating, building and maintaining enterprise software combined with Makersite's digital twin solution for product and supply chains, is today allowing manufacturing enterprises to transform their business model towards a green economy and stay ahead of the competition.

Mercedes-Benz and Monolith leverage AI to accelerate product development Automotive product development lifecycle times are getting shorter, whilst complexity is getting higher. Mercedes-Benz has partnered with Monolith to use AI in product development, to allow their engineers to predict and evaluate the performance of multiple designs in a matter of minutes. Along with this, the teams are investigating the use of AI models on 3D geometry to further their efforts in generative design.

Mercedes-Benz and Seven Bel work on evaluating sound imaging technology
In order to verify the acoustic tightness of a car cabin fast and reliably, Mercedes-Benz has teamed up with Austrian high-tech startup Seven Bel to evaluate sound imaging technology. The team is working on determining its potential use in both product development and quality control. The next step will be to deploy the measurement system in verification testing of prototypes.

Mercedes-Benz and Spinque enable a digital twin of the vehicle production process
Analysis of the vehicle production process requires information from multiple sources combined. Mercedes-Benz integrated various data silos, such as production planning, observation data and reporting data, using knowledge graph technology. Spinque's software allowed to rapidly design solutions on top of this knowledge graph to support day-to-day tasks.

Maxion and SwipeGuide work together on Pilot study of digital work instructions in MSC CRZ shop floor
Maxion Advanced Technologies (MAT), together with SwipeGuide, and Maxion Structural Components' Cruzeiro team, successfully piloted a digital work instructions solution. In Maxion, creating and distributing paper-based work instructions is ineffective, manual and time-consuming. The disruptive cloud-based platform from SwipeGuide, enables the operators to create, share, manage and use the work instructions digitally. The 75 days pilot study

benchmarked the benefits of using such a digital work instruction platform and helped identify our critical needs.

Schaeffler and truckoo joined efforts to work on a one-stop shop solution for truck trade and repair

In an attempt to simplify the buying and selling process, Schaeffler and truckoo teamed up to establish a one-stop-shop solution for used commercial vehicles. First, both concentrated on making truckoo's global platform solution more accessible for Schaeffler's network, using a common approach on the Schaeffler's repair information platform REPXPERT. An interlinked solution of the Automotive Aftermarket division of the industrial and automotive supplier Schaeffler and truckoo is then aimed to lift the convenience of trading commercial vehicles to the next level and pave the way for digitalization in truck repair shops.

Mercedes-Benz and Ventus: Influence of wind on the energy consumption of electric vehicles

Mercedes-Benz teamed up with the German startup Ventus to back up the long-distance drive of the Mercedes-Benz VISION EQXX with wind forecasts. The Ventus wind analyses provided important insights in the preparation of the VISION EQXX's record-breaking voyage and its daily forecast served as a decision-making aid for determining the day of a successful road trip from Sindelfingen, Germany to Nice, France. In the future, the "Wind on Roads" forecasts could provide more accurate wind data for the route ahead, and thus make intelligent navigation even more powerful.

Webasto teamed up with wheel.me to work on frame and rack automations for production lines

The aim of wheel.me's solution is to simplify the movement of assets for both logistics and manufacturing firms. The company has partnered with Webasto to optimize production processes at one of the automotive supplier's plants, making them more efficient and cost-saving

Startup Autobahn powered by Plug and Play will present the Global Innovation Award and Voices of Open Innovation Award at EXPO2022

At EXPO2022, Startup Autobahn powered by Plug and Play will also present the Plug and Play Global Innovation Award and the Voices of Open Innovation Award. The Plug and Play Global Innovation Award honors the work of the network's partners and startups who successfully come together and apply their knowledge, passion, and innovations, to solve challenges facing the industry today. The Voices of Open Innovation Award honors the collaborative efforts and successes of those partners that have enabled open innovation on the Startup Autobahn platform as an early partner. The award is given to a partner that has played an invaluable part in making open innovation come to life on this platform.

About STARTUP AUTOBAHN powered by Plug and Play

STARTUP AUTOBAHN powered by Plug and Play is an open innovation platform that provides an interface between innovative tech companies and industry-leading

corporations. The basis of the program is the partnership that develops between startups and the corporate business units. The two entities hold an equal footing from the get-go: together they evaluate the potential for a joint venture, move forward to pilot the technology, and work to achieve the ultimate goal – a successful production-ready implementation. Designed with the intention to exceed startup acceleration, STARTUP AUTOBAHN powered by Plug and Play moderates a community for collaboration with a focus on implementable results. Over the years, the platform has successfully cultivated over 380 projects with more than 289 startups since its founding in 2016.

About EXPO2022

EXPO2022 is an invite-only conference showcasing technologies of the future and exposing the power of open innovation between leading corporations and innovative startups. STARTUP AUTOBAHN powered by Plug and Play welcomes over 1,000 entrepreneurs, investors, experts and decision makers in the field of Mobility, Production, Enterprise, Sustainability and beyond to Stuttgart to exchange opinions and experiences on relevant future topics and to experience what can result from successful open collaboration. Guided by the motto “Driving Open Innovation on the Autobahn”, the platform crafted an agenda with thought-provoking panel discussions, inspiring keynote speakers, breakout sessions and of course the events highlight – the exclusive showcase of the successful pilots between the program startups and the business units of the corporate partners.

Founding Partners Mercedes-Benz AG, Plug and Play Tech Center, University of Stuttgart, ARENA2036 **Anchor Partners** ZF, DXC Technology, Porsche AG, BASF, Webasto, Motherson, Deutsche Post DHL Group, Bosch, Schaeffler, STMicroelectronics, Bridgestone Mobility Solutions **Ecosystem Partners** Murata, AGC, Hyundai, The Linde Group, BP, Forvia, Eberspächer, ADAC, Sekisui, Plastic Omnium, Maxion Wheels, Novelis, ITT, Grupo Antolin, Huf Group, CEAT Ltd, GF Casting Solutions

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For further information on the pilot projects, partners and startups, visit us at EXPO2022. Please reach out for your individual ticket.

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