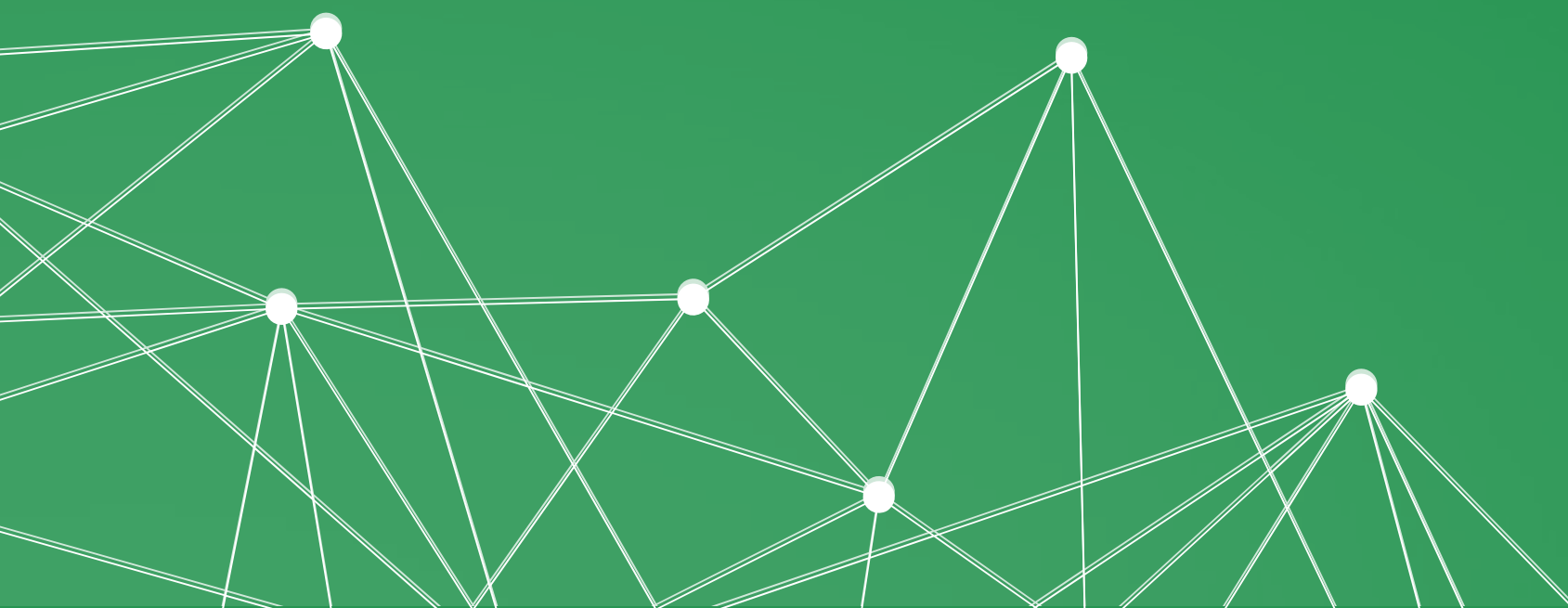
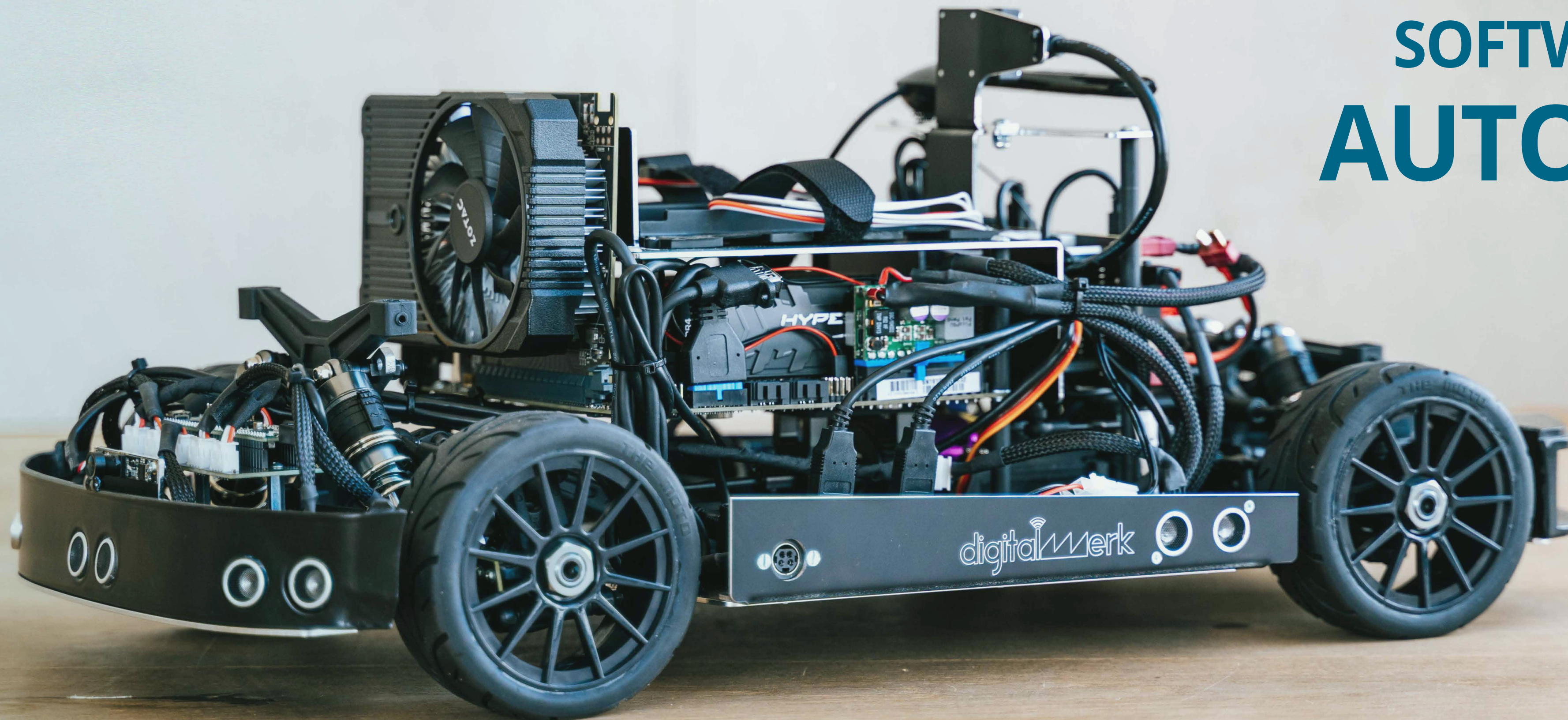


CORPORATE PRESENTATION



HIGHLY SOPHISTICATED
SOFTWARE TOOLS FOR
AUTONOMOUS
SYSTEMS



MEMBER OF ASSOCIATIONS & INITIATOR OF THE ADTF CUSTOMER FORUM (KuFo)

Digitalwerk is member of various associations and initiator and exclusive host of the ADTF Customer Forum (KuFo) to secure future investments from OEMs down to tier x-plus suppliers and all involved in the development process of future autonomous mobility.



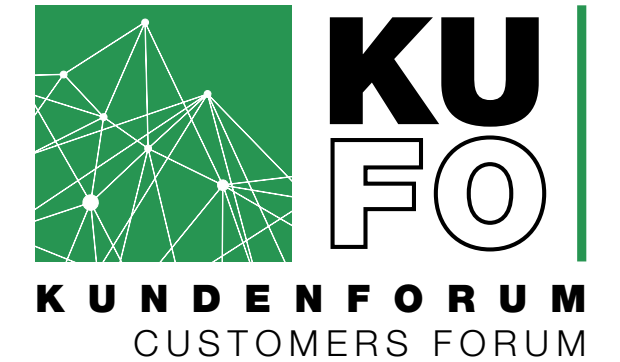
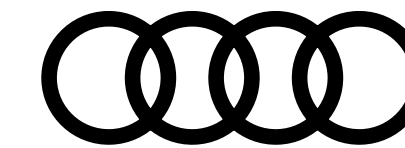

Association for Standardization of
Automation and Measuring Systems



TISAX®
certified May/2023

ADTF CUSTOMER FORUM

Initiated and guided
by digitalwerk


C A R I A D
A VOLKSWAGEN GROUP COMPANY



DAIMLER TRUCK

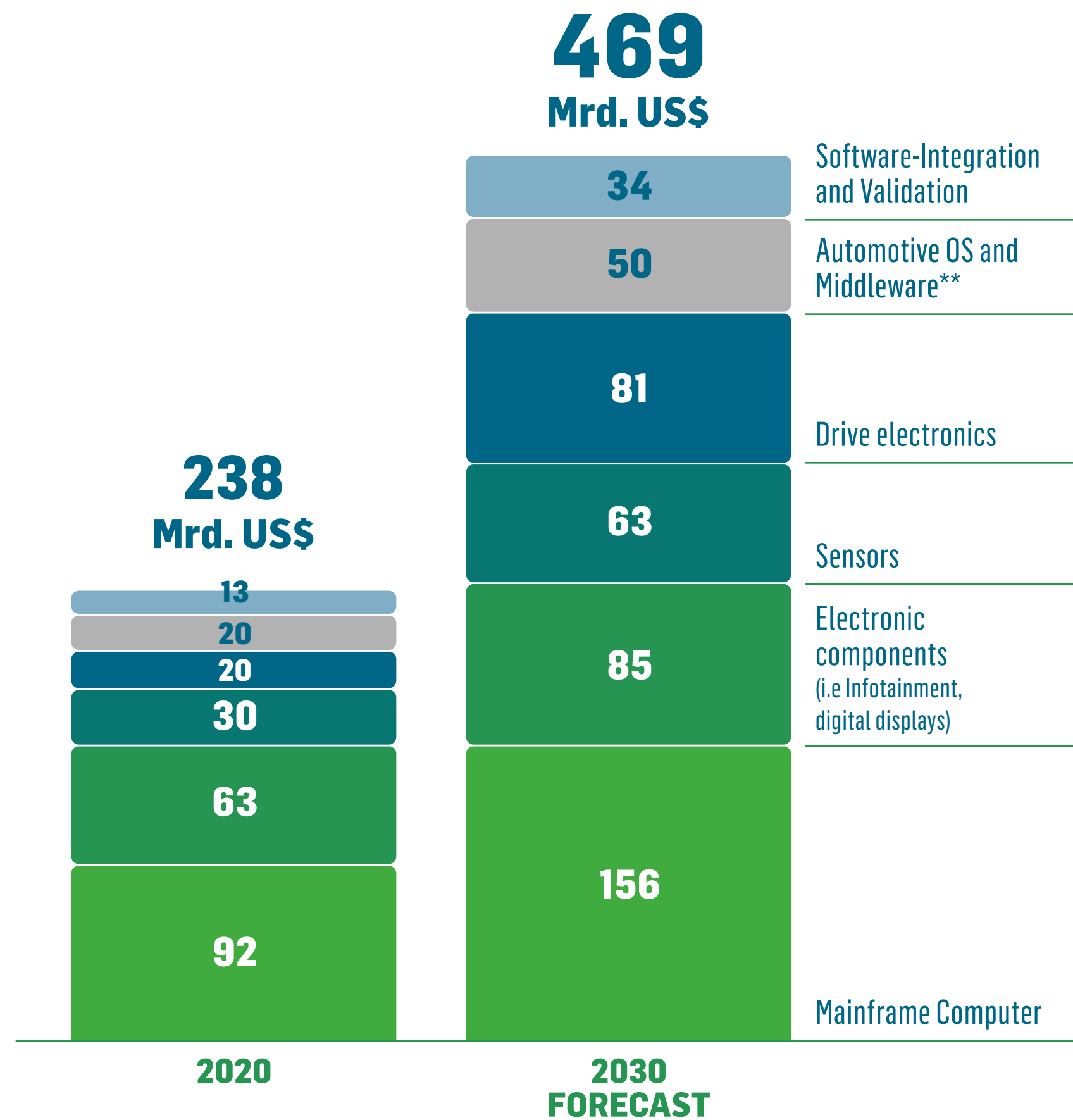



Mercedes-Benz
Trucks you can trust




THE FUTURE OF THE AUTOMOTIVE INDUSTRY*

Market development of future automotive topics
in US-Dollar



* Reference: McKinsey ** Middleware forms - to put it simply - the basis for a car operating system

DRIVER OF THE FUTURE OF MOBILITY ...

“ Without proper software there is no autonomous mobility! Automotive Software Integration and Validation and its middleware is the market with the highest growth rates of the future as it provides the basis for a car operating system.

Due to our many years of expertise as a partner in software development for ADAS systems, for OEMs and Tier 1s like Audi, Mercedes, Bosch, Continental and their engineering subsidiaries we have a very deep understanding of the ADAS system.

As a licensed partner and exclusive host of the ADTF Customer Forum, we offer our expertise to all OEMs, suppliers and development service providers involved in the development of autonomous systems and ADAS Functions

Enrico Engel & Michael Luebbecke Management Digitalwerk GmbH

CHALLENGING THE STATUS QUO

We combine the innovative thinking and flexible work of a young start-up with successful entrepreneurial experience from a Bavarian mid-sized business. This ideal combination enables us to develop future-oriented ADAS tools and frameworks. In our core competencies of high-speed data processing, rapid prototyping, embedded software and vehicle verification, we challenge the status quo every day and take a holistic approach to developing benchmark solutions for tomorrow's automotive market.



„The OEM wants longterm reliability for his strategic investment in its Software architecture! At the same time, the ADAS function developer needs confidence in a referenced, proven solution that allows him to target components in the system in order to test his algorithm exactly where it is relevant. Last but not least the measurement engineer or development partner needs seamless integration into the process landscape. Specific customized software solutions are developed in-house, are tested for their scalability in industrial requirements and, if applicable, get integrated into the ADTF Ecosystem.“

Michael Luebbecke (Management Digitalwerk GmbH)



„With ADTF, Digitalwerk brings together all Standards, applications and open source in a proven form and thus allows all those involved in the development process to concentrate on the real challenges: Creating the functionalities and safety for the autonomous driving experience of tomorrow!

Digitalwerk's Saas models, which include maintenance and upgrades, ensure transparency and security for the OEM and Tier1 without follow-up costs!“

Enrico Engel (Management Digitalwerk GmbH)

IN EVERYTHING WE DO ...

We simplify and improve how autonomous systems are designed, prototyped, simulated and tested. As specialists in high-performance time-synchronous data processing and analysis, we connect diverse data sources and provide high-performance middleware. We have developed and provide the only running and approved software framework for the automotive industry. In future we will expand our services and portfolio in all segments where high-speed data, big data traffic, and time-synchronous analysis are required. Currently, we have identified 3 main business areas where we are active and will expand our service portfolio in the future.

BUSINESS AREA		KEY TOPICS	PORTFOLIO & SERVICES
1. AUTOMOTIVE <ul style="list-style-type: none"> · ADAS · E-Drive · E/E 	2. INDUSTRIAL 3. SOFTWARE COMPLIANCE	Tooling for <ul style="list-style-type: none"> · ADAS Development, Testing & Validation · Tooling for Industrial Applications · Secure FOS Compliance 	<ul style="list-style-type: none"> · Software tools development · Customized Engineering · Providing SaaS Models · offer Extended Services & · Consulting Training / Support

DIGITALWERK – PART OF INSTART GROUP

With its companies, the INSTART group is active in the business fields of Electromobility, Autonomous Driving, Big Data and Digital Shared Services, both nationally and internationally. In each of these areas, the INSTART group offers you many different opportunities to shape your career. A career within the INSTART group is characterised by futuristic work content as well as the employee-oriented corporate philosophies of the individual companies. The INSTART group currently employs 220 people and achieved an annual turnover of approx. 22 Mios €.

Business Areas



ELECTROMOBILITY



BIG DATA



AUTONOMOUS DRIVING



MARKETING & COMMUNICATION



DIGITAL SHARED SERVICES

INSTART-GROUP.COM



Tool development (high speed data processing), rapid prototyping, embedded software, vehicle testing / verification



Component- / Systemdevelopment
Energyalgorithmn
Tools / Process-Engineering



End2End Tooling
Dataanalysis
Cloud Computing



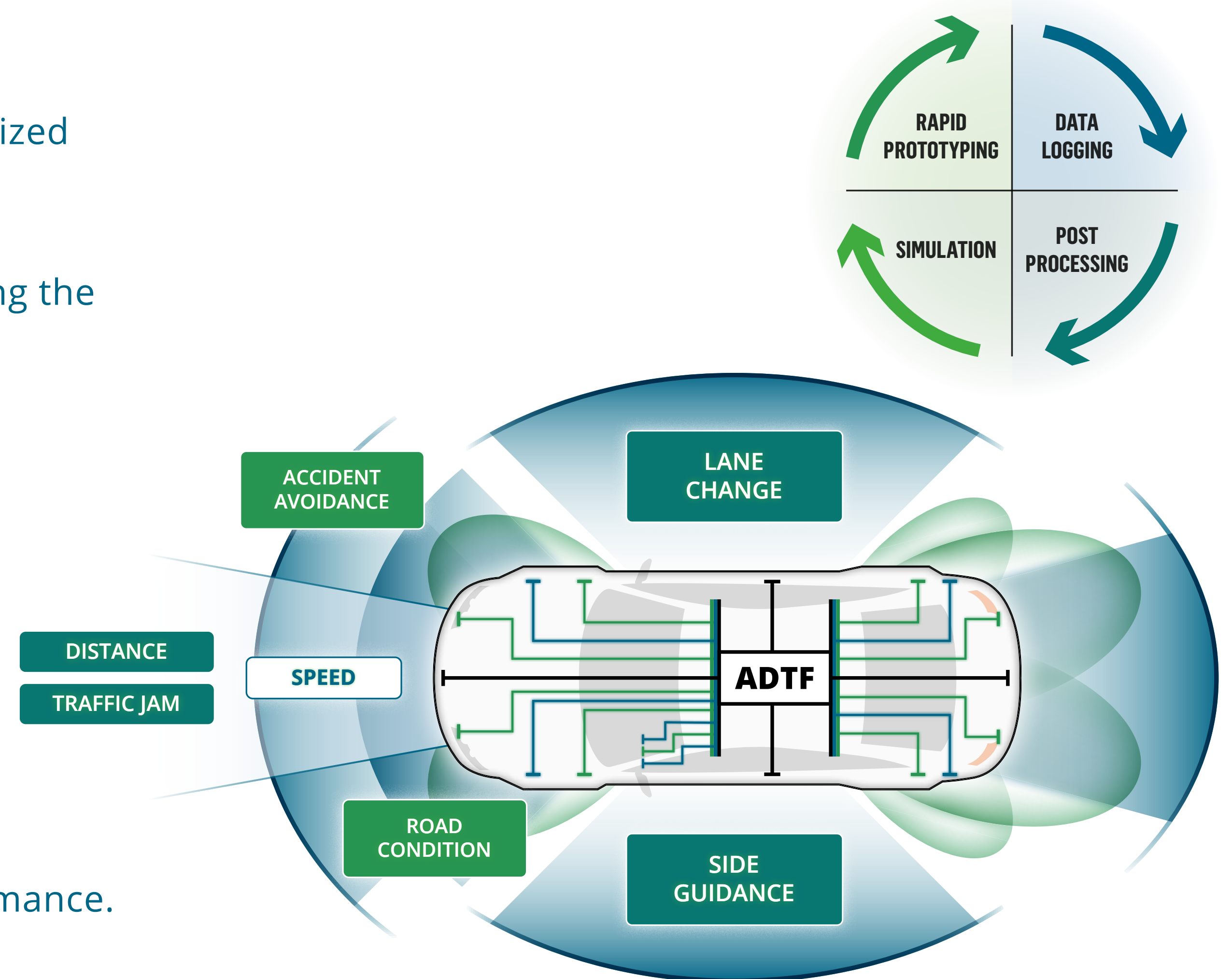
Experiential Marketing
Brand Building



PMO, Finance & Controlling
Recruiting
Operations
Backoffice Management
Human Resources

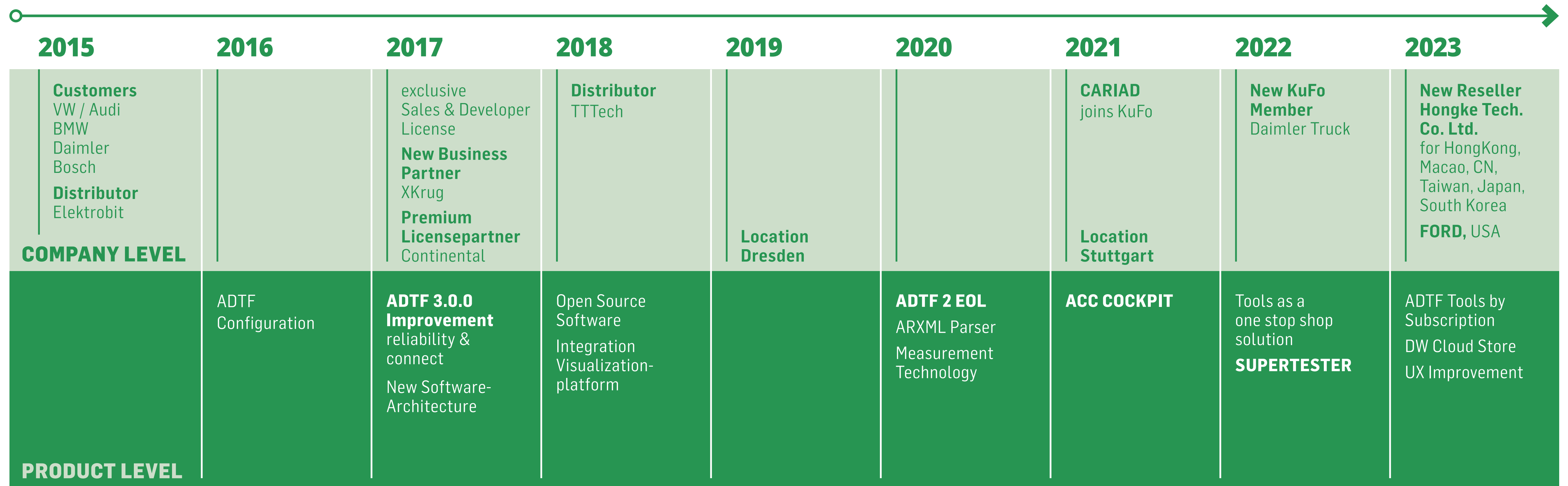
Benefits of ADTF by Digitalwerk

- With ADTF Digitalwerk offers a modular system of standardized apps and tools
- Enables a one-stop shop experience in all application areas (rapid prototyping, simulation, data logging, validation) along the ADAS function development
- TCO is key > long-term reliability for OEMs in strategic investments in Software architecture
- Highly referenced, proven solution that allows to target components in the system in order to test algorithms exactly where they are relevant
- Seamless integration into the process landscape
- Maximum data throughput, high performance in real-time data analysis
- Up to hardware recommendations as all components must communicate, exchange and process data with high performance.

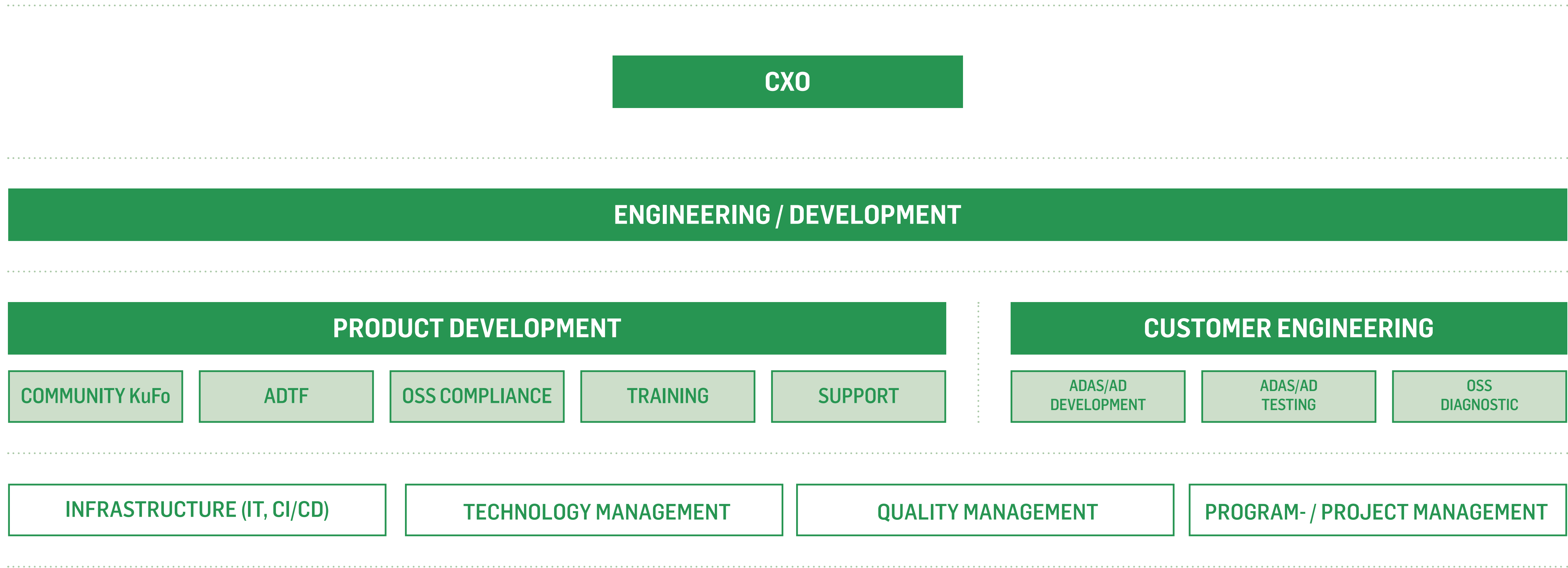


FROM FRAMEWORK TO THE ENGINEERING PLATFORM OF TOMORROW ...

Digitalwerk started in 2015 as a subsidiary of BFFT (Machinery Corp, approx. 850 employees, takeover by Aton Group in 2013). Digitalwerk soon became the leader within ADAS Software development and exclusive license partner for AUDI. Today, ADTF is the only approved and highly referenced Software framework to develop & test ADAS functions up to autonomous systems.

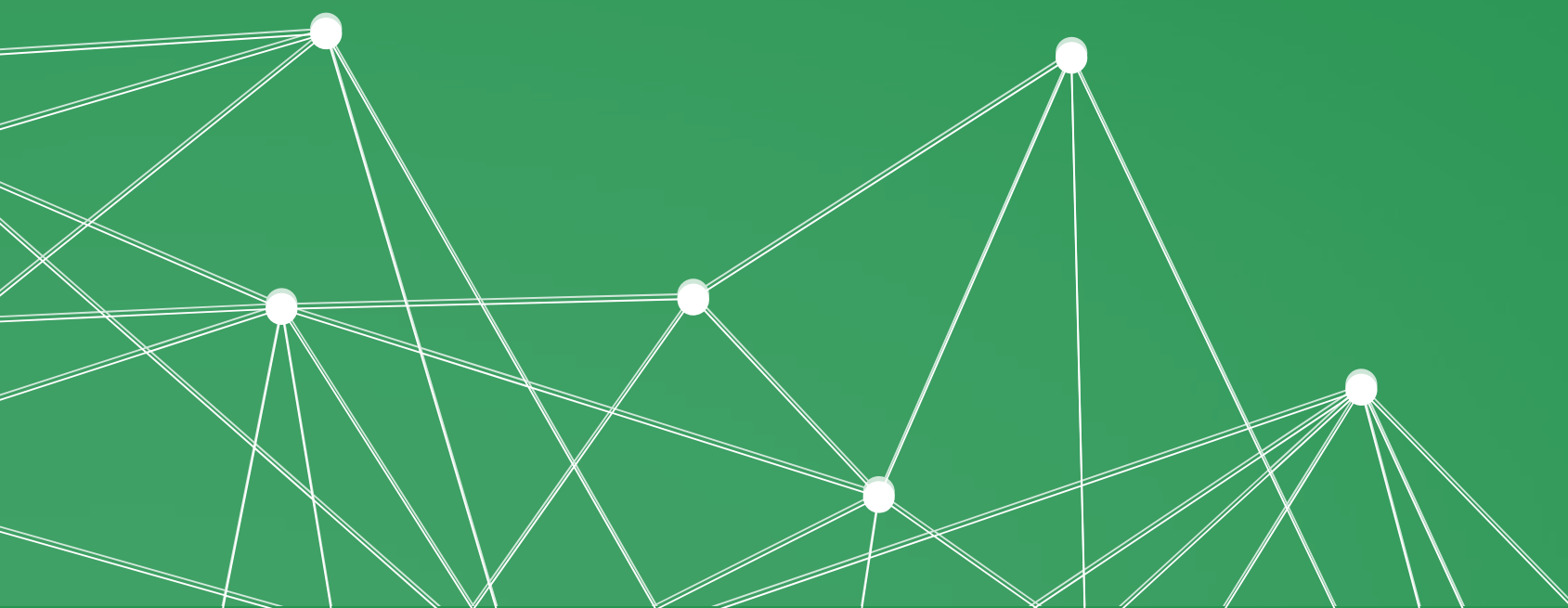


DIGITALWERK ORGANISATION

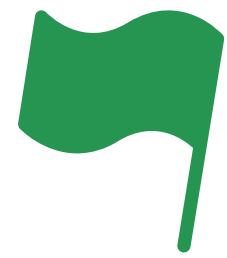


ABOUT ADTF

**AUTOMOTIVE DATA &
TIME TRIGGERED FRAMEWORK**



ADTF-FACTS



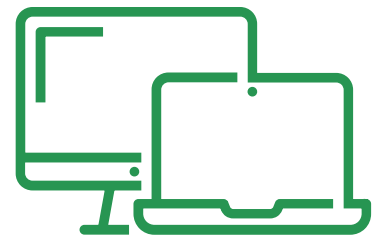
START

- 2009



LICENCES

- 8.000



PLATFORMS

- Linux
- Windows
- x64, ARM64



CUSTOMER

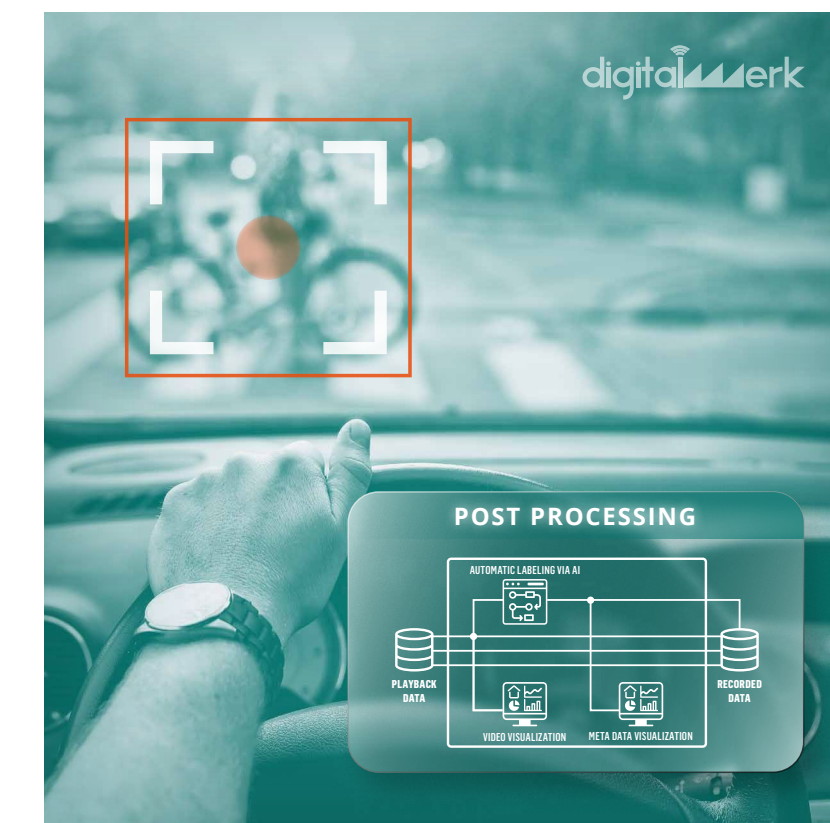
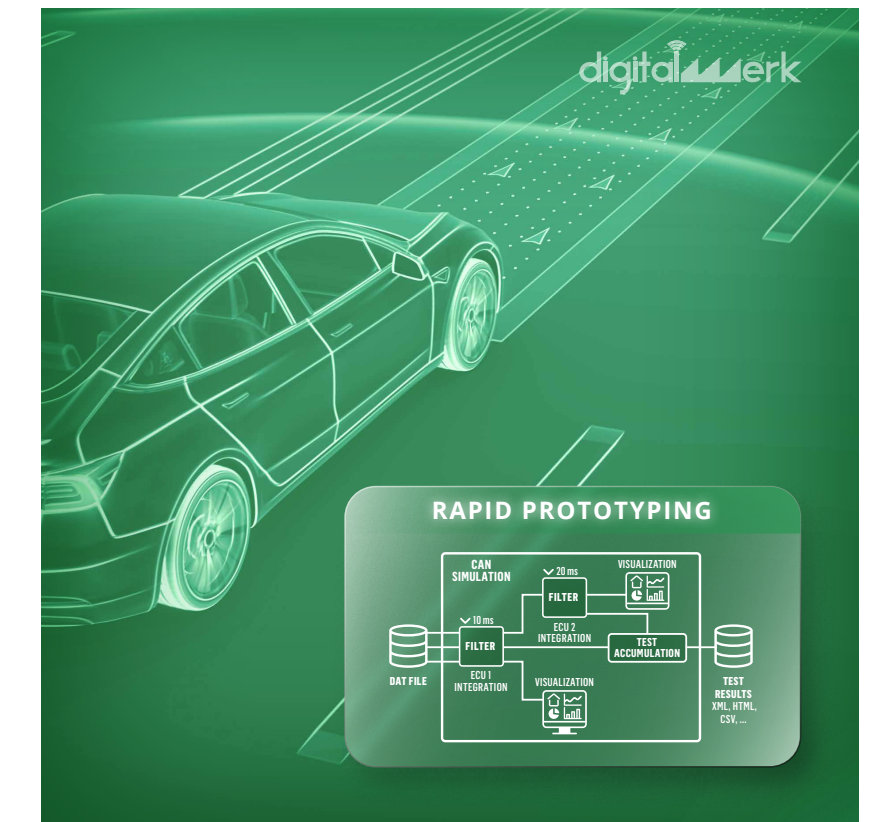
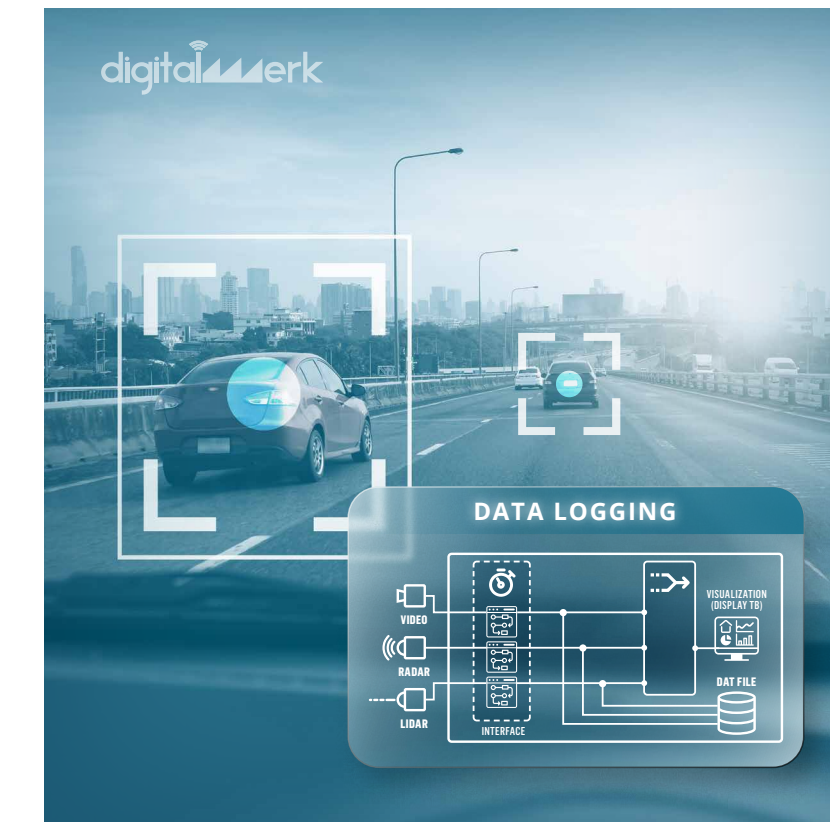
- VW Group
- Mercedes Benz
- Daimler Truck
- Bosch
- Continental
- Ford



KEY FEATURES

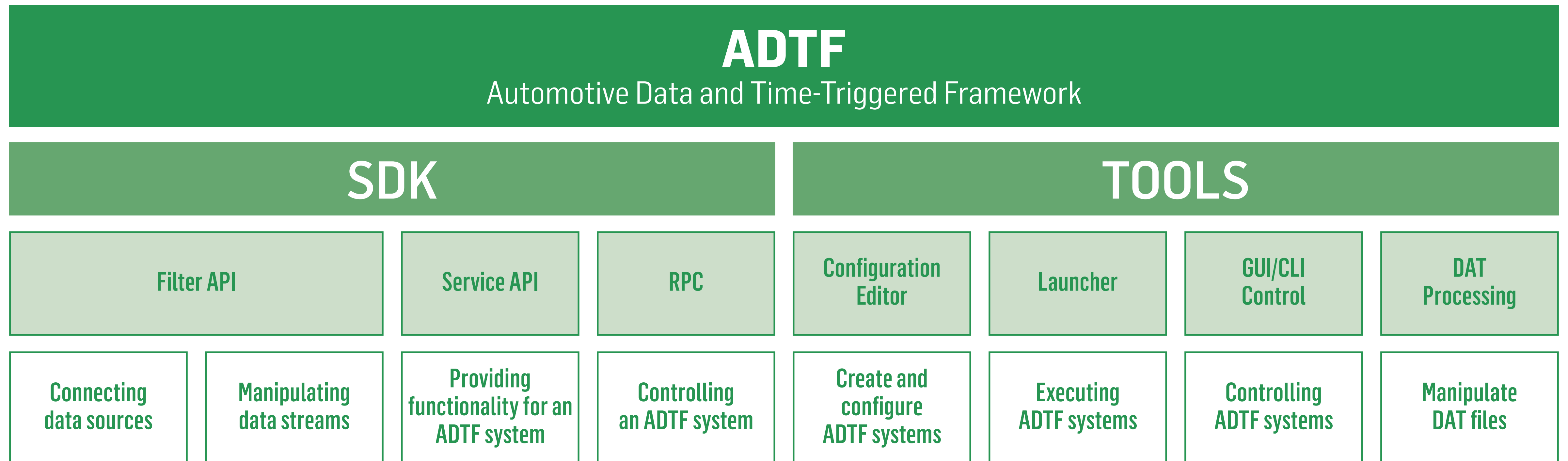
- Time-synchronous recording of multiple data sources
- High performance data processing (12 GB/sec)
- Generic Interfaces & OSS Integration

KEY APPLICATIONS



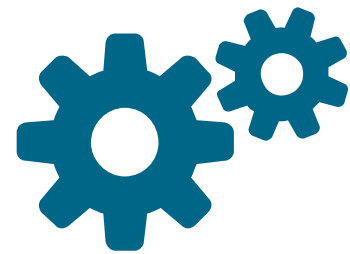
ADTF STRUCTURE

Besides the Developer Kit, Digitalwerk provides a large number of plug-ins and filters „ready to use“ for specific requirements in the DW Cloud Store. These components can be integrated into ADTF configurations via plug & play. Our DW LicenseHub takes care of activating the components. Through the direct connection with the ADTF toolset, the extensions are provided conveniently and on-demand and can also be connected to other software products through the generic interfaces.



SIMPLIFYING SET UP, ADMINISTRATION AND CONFIGURATION OF MEASUREMENT PROJECTS

ADTF provides several toolboxes and offers high degree of reusing and portability. We simplify your measurement project and enable a one- stop shop experience in all application areas.



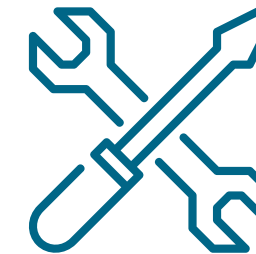
DEVICE TOOLBOX

- FlexRay
- CAN
- SOME/IP
- Vector Support



DISPLAY TOOLBOX

- 2D / 3D Display
- Signal View
- SDK for visualization



CALIBRATION TOOLBOX

- XCP
- A2L
- Measuring/Parameterizing



ARXML TOOLBOX

- FlexRay
- CAN + CAN-FD
- SOME/IP
- AutosarPDU
("Automotive Ethernet")

ADTF PROVIDES A LOT OF FEATURES



Time-synchronous recording of multiple data sources



Offline operation: Replay of recorded data

- Time-synchronous
- Over-real time



Calibration of sensor data during runtime (XCP)



Online calibration in the vehicle



Visualization of recorded data (Display Toolbox)

- 2D/3D Display
- Signal View



Connection of various data sources

- Sensors
- Devices
- Vehicle bus (CAN, FlexRay, SOME/IP ...)



Extensibility of ADTF components (framework concept)

- Binary compatibility within a major version
- E.g. implementing a custom player or recorder



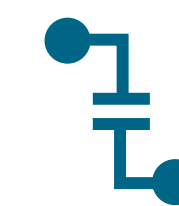
ADTF-to-X:
Distributed system
Communication with other participants like MatLAB, VTD, CarMaker, TPT, ...



Automation via scripting languages




Support for synchronization of different clocks to one reference clock

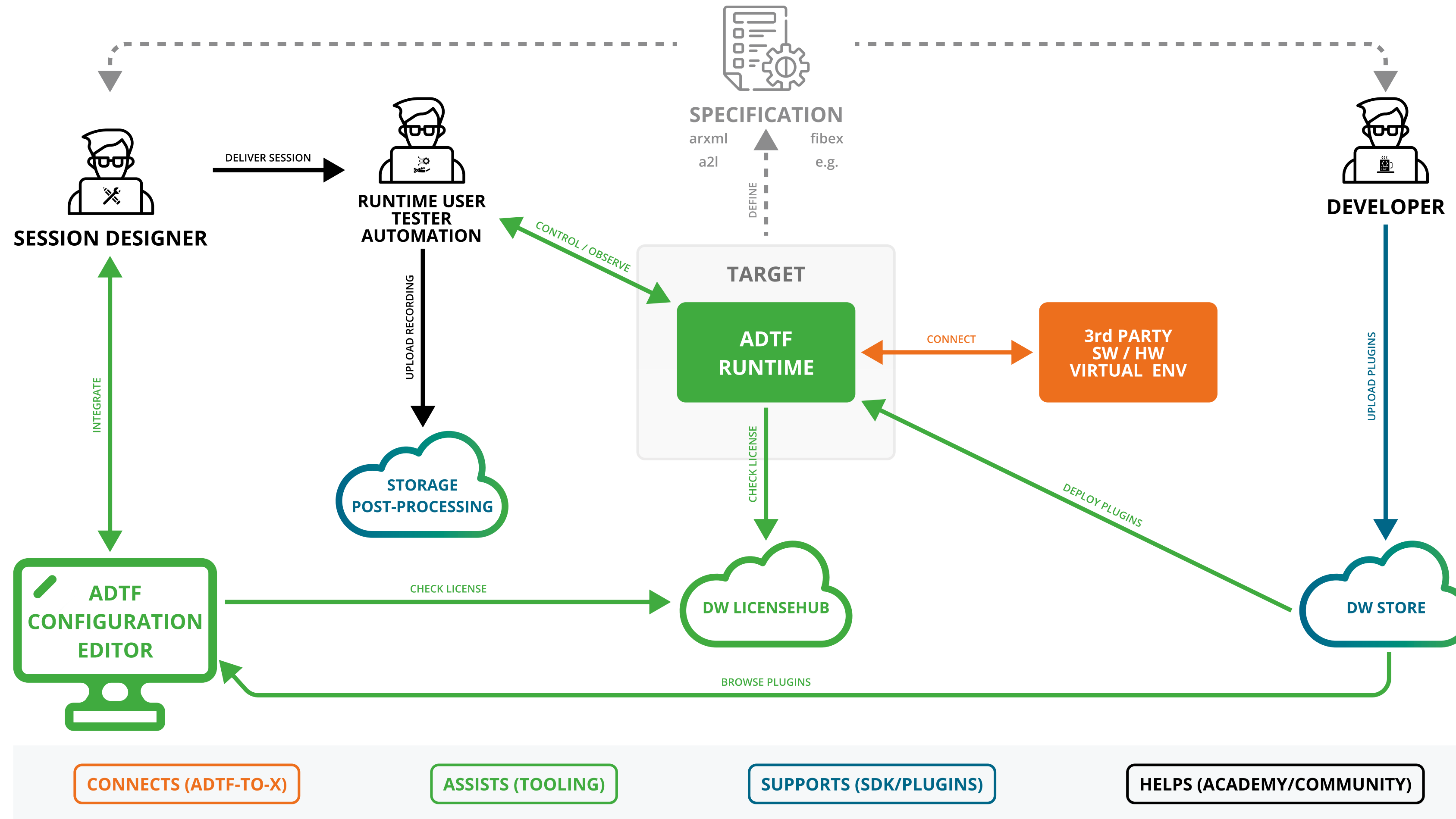


Separation of communication and processing layer
Exchanging the streaming graph enables switching between online and offline operation

Available ADTF – Tools ready to use for Data Logging, Post Processing, Simulation and Rapid Prototyping.
DW Cloud Store & managed through flexible DW LicenseHub and SaaS Model.

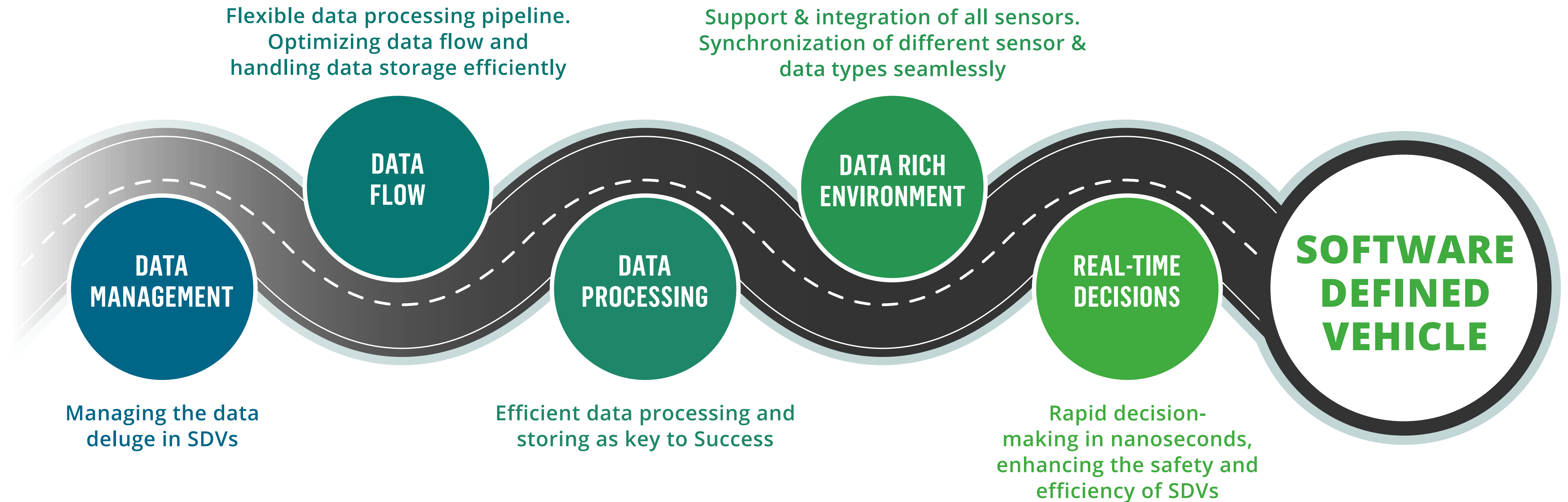
BASIC-RANGE	DATA LOGGING	POST PROCESSING	SIMULATION	RAPID PROTOTYPING
<ul style="list-style-type: none"> · ADTF · Calibration Toolbox · Device Toolbox · Display Toolbox · DAT GUI Tools · File Library 	<ul style="list-style-type: none"> · Hardware Devices Can/ CanFD/FlexRay (Peak, Socket, StarCorp, NI PXie) · Qt5 Audio Device · nvidia Camera Device · ETAS Ralo Support · ETAS RALO HMI Control · ETAS RALO GCF Receiver · ADTF File Plugin Processor · ADTF ARXML Toolbox · ADTF TECMP Toolbox · ADTF ASAM CMP Toolbox · ADTF OpenCV Plugins · ADTF GStreamer Plugins · ADTF MJpeg Compressor/Http Receiver · ADTF Foxglove Websocket · ADTF b-plus Toolbox · ADTF GigE Vision Grabber 	<ul style="list-style-type: none"> · GStreamer Video Exporter · PARQUET Exporter · PCAP I/O · MDF Exporter · BREC Reader · ADTF OpenCV Plugins · ADTF GStreamer Plugins · ADTF Foxglove Websocket 	<ul style="list-style-type: none"> · ADTF ARXML Toolbox · BREC Reader · ADTF ROS2 Bridge · ADTF DLT Toolbox · ADTF X2E Toolbox · ADTF OpenCV Plugins · ADTF GStreamer Plugins · Supertester · ADTF Foxglove Websocket 	<ul style="list-style-type: none"> · ADTF File Plugin Processor · ADTF DLT Toolbox · ADTF TECMP Toolbox · ADTF ASAM CMP Toolbox · ADTF X2E Toolbox
KuFo				

THE ADTF ECOSYSTEM

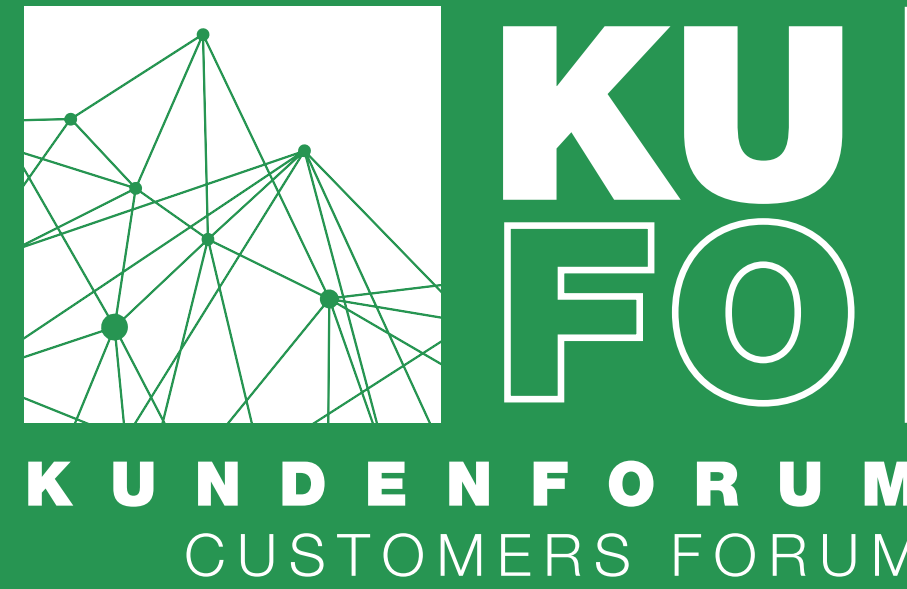


ADTF ENABLES THE SOFTWARE DEFINED VEHICLE (SDV)

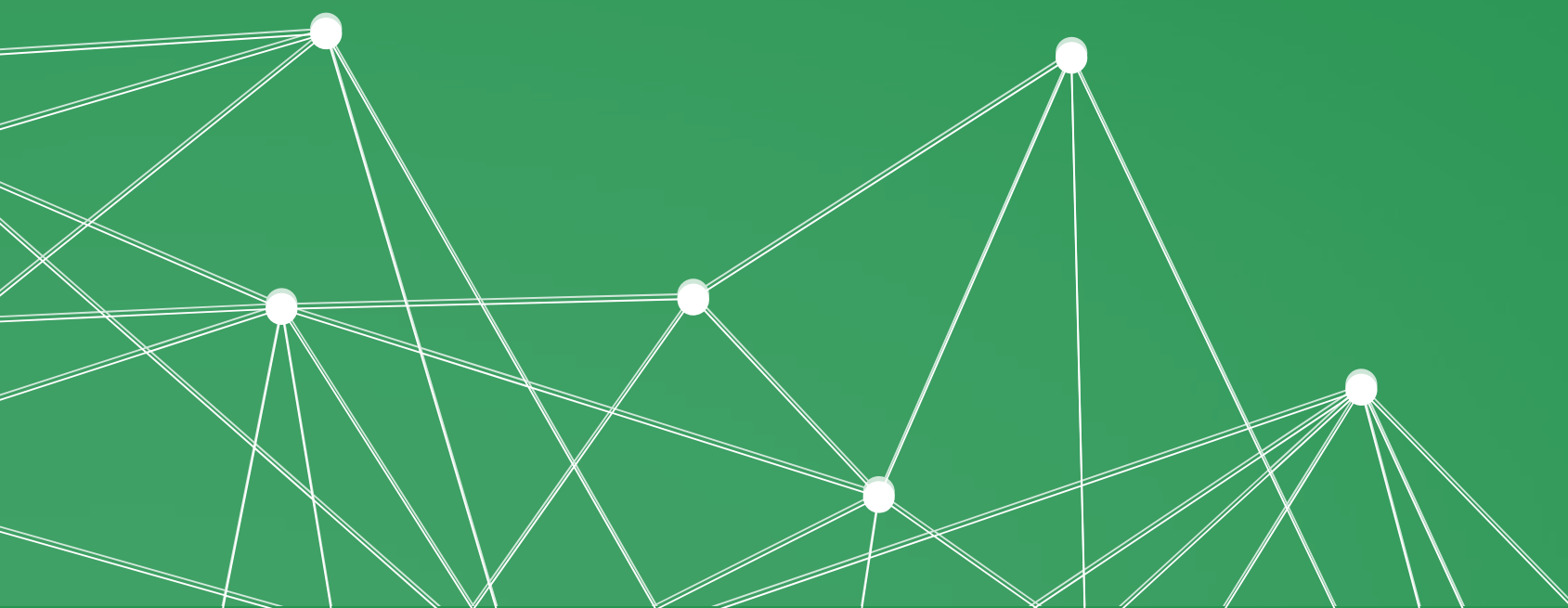
Challenge to manage the data deluge in SDVs

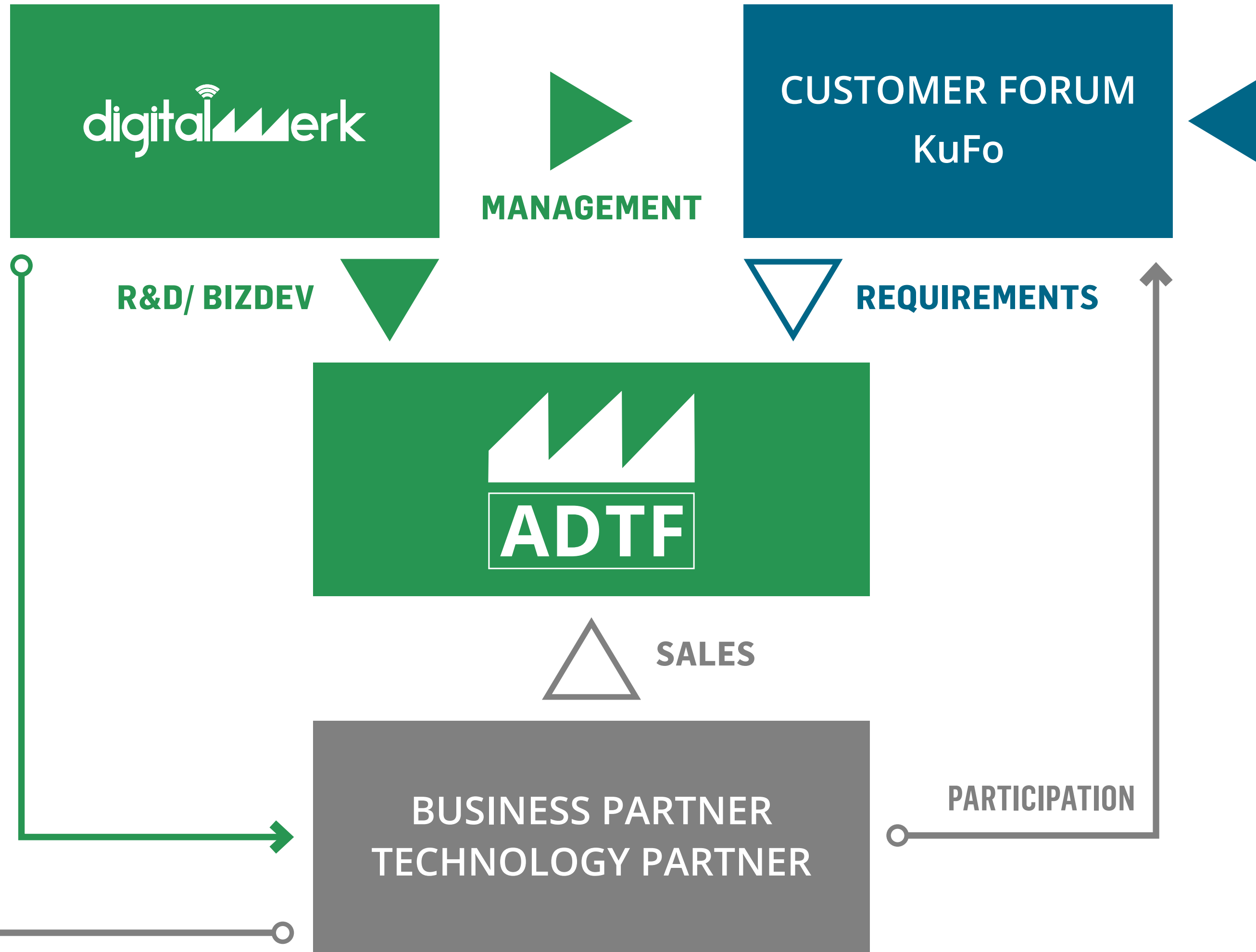
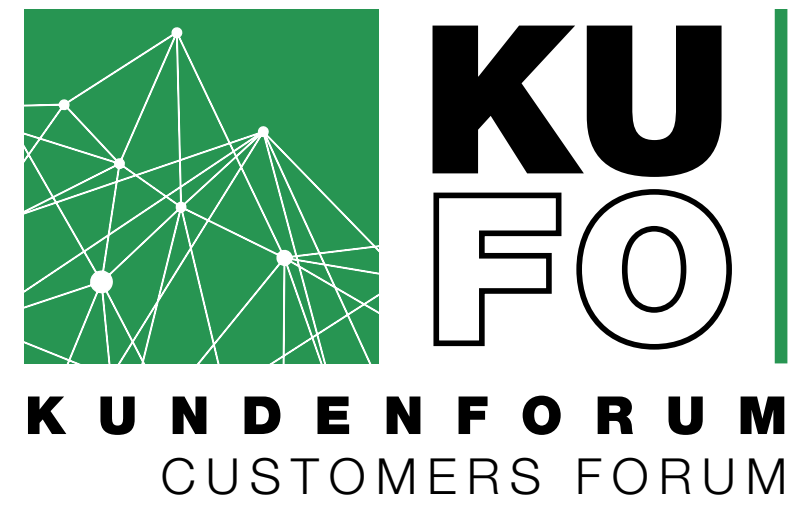


HIGHLY SOPHISTICATED **SOFTWARE TOOLS**
FOR **AUTONOMOUS SYSTEMS**

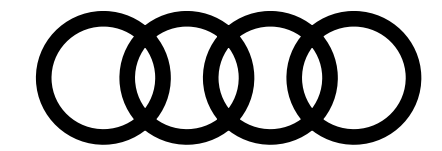


ADTF CUSTOMER FORUM



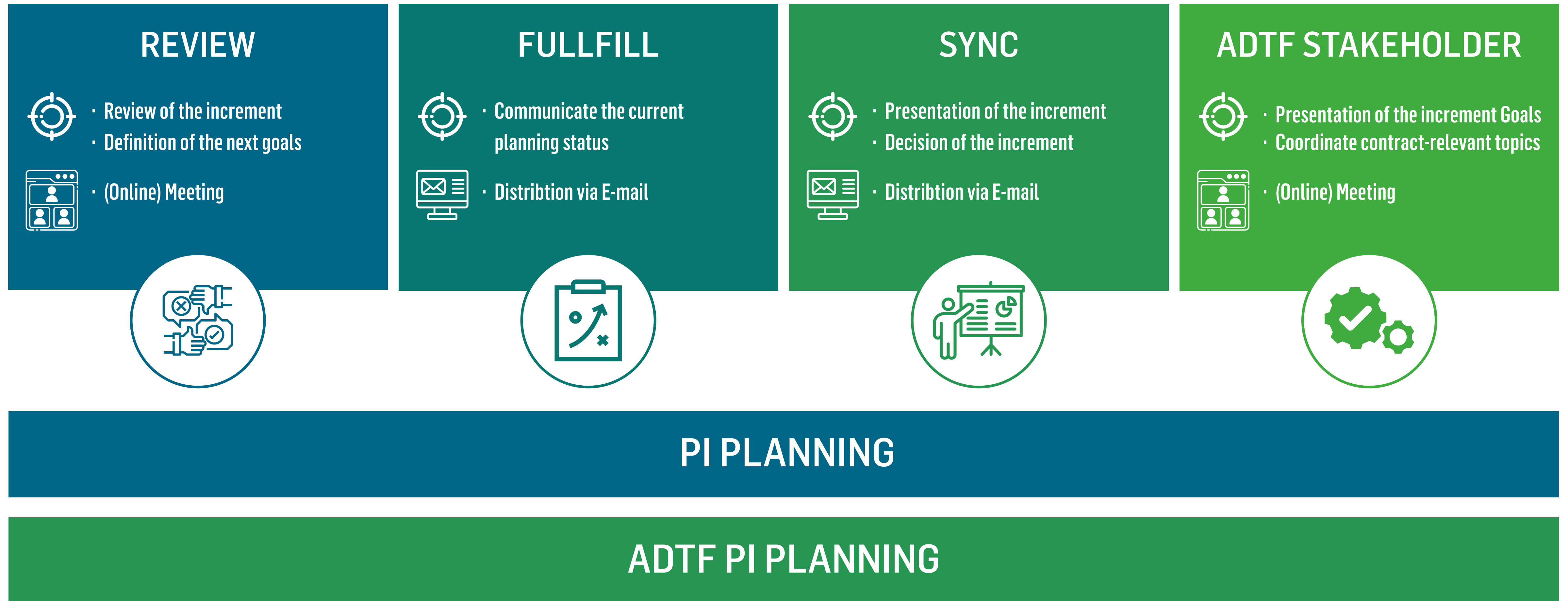


MEMBERS



DAIMLER TRUCK

ADTF PRODUCT DEVELOPMENT IS SYNCHRONIZED

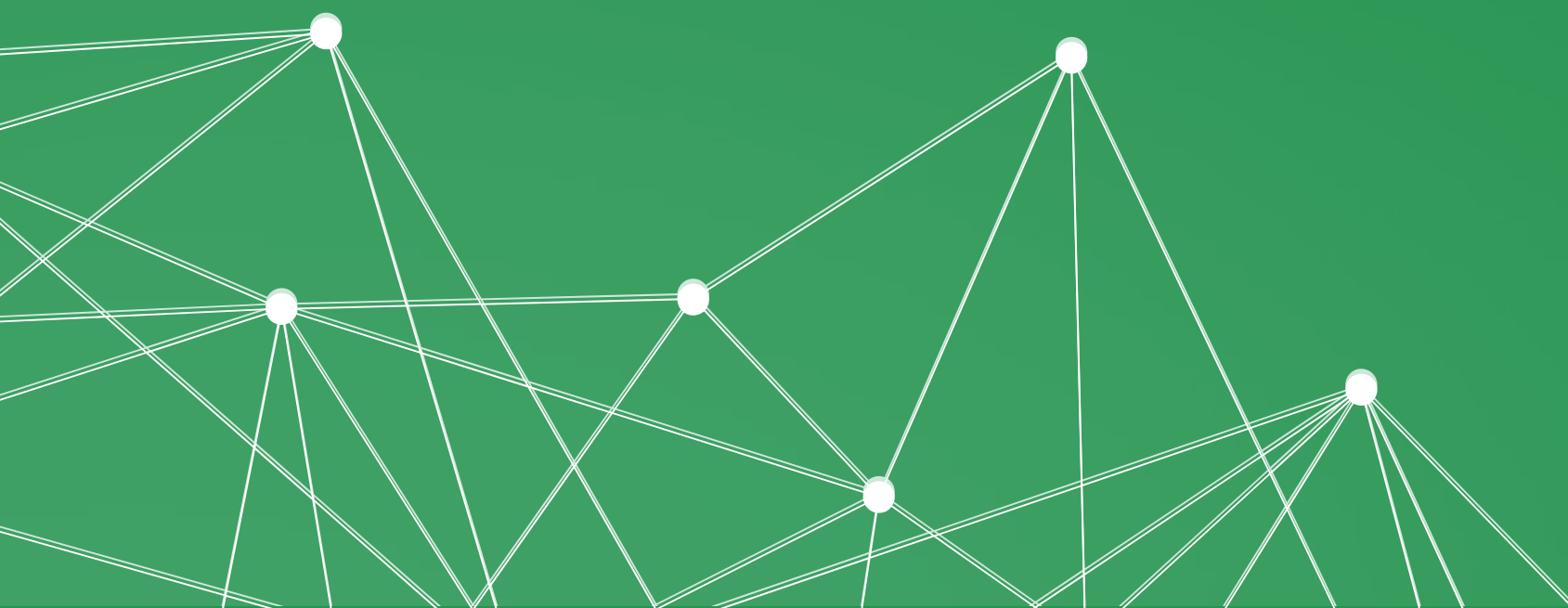


HIGHLY SOPHISTICATED **SOFTWARE TOOLS**
FOR **AUTONOMOUS SYSTEMS**



DW ACADEMY

CENTER OF EXCELLENCE



24/7 TRAINING & SUPPORT

Since the foundation of Digitalwerk we support OEMs & Tier 1s in their ADAS development projects and to validate, test, simulate and prototype this systems. We're the approved & referenced experts when it comes to implement such use cases and to design complex configurations to secure the efficient high speed processing of large amount of data.

By establishing our DW ACADEMY we share this knowledge and capabilities with our customers & business partners to accelerate decision-making processes and equip them with the skills to implement customised solutions quickly and effectively with ADTF and our ready-to-use tools available in our DW Cloud Store and managed via our flexible DW LicenseHub portal.

ADTF BASIC TRAINING

No previous knowledge mandatory!

Key results of this training:

- ✓ ADTF Structure & set up, including it's ready to use components & tools and how they work together.
- ✓ How to implement your own ADTF projects.
- ✓ Basic knowledge for which application areas ADTF is appropriate.
- ✓ Ready-to-use toolboxes provided by Digitalwerk.

ADTF RUNTIME TRAINING

Graphical user interfaces and visualization are indispensable nowadays. In ADTF, the QT framework has become the state of the art framework.

Key results of this training:

- ✓ You will get to know QT.
- ✓ We show you which ADTF components use QT and how to create your own widgets programmatically or in QML.
- ✓ How ADTF interacts with the QT framework.
- ✓ Advantages of QML and why a programmatic solution is better suited to process and visualize large amounts of data.

ADTF DEVELOPER TRAINING

Knowledge of ADTF and software development with C++ necessary!

Key results of this training:

- ✓ Solid knowledge about the ADTF framework and the toolboxes provided by Digitalwerk.
- ✓ Specifically, you will learn how to organize and program your algorithms in your own ADTF filters and how to communicate with the outside world quickly and efficiently.
- ✓ You will be able to independently set up ADTF projects and control ADTF environments as well as develop your own ADTF components.

24/7 AVAILABLE

- Courses for self-study (24/7 available on our training platform)
- Comprehensive guides with examples & API documentation (ADTF Wiki <https://support.digitalwerk.net>)

LIVE / HYBRID

- Guided & interactive training via our training platform

TRAINING IN PERSON

- Classroom training for up to 10 participants at our HQ and/or at your site
- 1:1 where appropriate & requested

CONTACT:

training@digitalwerk.net

CUSTOMER SERVICE

You (or your corporation) are the owner of an ADTF licence and completed all training modules, don't find a solution in our ADTF Wiki <https://support.digitalwerk.net>. Please get in touch with our Customer service directly at support@digitalwerk.net



THANK YOU

