Diagnostic Practice

Overview
Who we are

As experts in vehicle diagnostics, KPIT has been a competent development partner for vehicle manufacturers and their suppliers for almost 20 years. With a sustained focus on the latest international automotive standards, KPIT has been an active and contributing member of ASAM standardization committees since 2004.

Our Vision

We endeavor to be the most innovative and globally trusted brand for provision of standards driven end-to-end diagnostic and mobility solutions & services.

Our Footprint

Headquartered in Munich, Germany, the KPIT diagnostic business unit employs 400+ dedicated diagnostics engineering professionals and subject matter experts across the globe. We provide a broad spectrum of diagnostics tools, solutions and services to OEMs across industries.

A user-centric design approach underpins solutions and tool development at KPIT. The resultant tool-chains, focus on efficiency and usability, and are enriching the experiences of engineering users and service technicians across the globe.

Our Focus

In close co-operation with our customers, partners and universities, we invest in the development of the latest technologies, such as

- End-to-end diagnostic data creation & validation tools
- Service platform on Cloud & Mobile, including Network-based diagnostics (Assisted Fault Finding)
- Embedded & Remote diagnostics utilizing Diagnostics over Ethernet (DoIP)
- ECU updates over-the-air (OTA)
- Big Data analysis and predictive maintenance
Core Offerings

We follow a platform-based approach (KPI Ts Diagnostic and Connectivity Platform), to offer standard products for almost all possible application scenarios relating to on-board, off-board and connected diagnostics in engineering, production, and service.

Based on this platform, we are creating the best-fitting solutions for our customers and integrating with their existing processes and IT landscape.

**K-DCP ENGINEERING TOOLCHAIN**

The K-DCP Engineering toolchain is an integrated toolset which caters to all diagnostic engineering use-cases and processes across the OE vehicle development flow. The toolchain has been designed to embrace and leverage the benefits of data re-usability, transparency, and uniformity.

It enables the OEM system, component, and function engineers to seamlessly execute activities ranging from

- Diagnostic requirements development
- ECU diagnostic data authoring
- Developing test sequences for ECU validation
- Executing ECU sequence and conformance tests

The Engineering platform’s integrated environment provides complete transparency based on dashboards visualizing the ECU lifecycle and diagnostic maturity at corresponding quality gates.

Through complete integration with the OE IT systems, the platform allows the users to move away from a file-based data management approach, whilst accessing a centralized data store.

The journey utilizing the K-DCP Engineering toolchain ends with a successful and validated delivery to all downstream customers.

The K-DCP Engineering platform enables > 30% reduction in authoring efforts, with improved and consistent data quality.
K-DCP AFTERSALES SUITE

KPIT has leveraged its extensive and rich expertise in aftersales solutions, specifically for OEM dealerships, to develop its next-generation Aftersales suite. This suite enables dealerships to perform a host of activities ranging from basic functionalities like fault reading, to advanced utilities like intelligent guided diagnostics and root cause repair.

The K-DCP Aftersales suite is designed to run on multiple platforms like desktop, mobile, cloud and in-vehicle, whilst catering to both local and remote application use-cases.

The built-in assisted troubleshooting functionality enables service engineers to already test functionality during remote diagnosis and to make conclusions from the fault pattern or possible symptoms. The solution tracks the most critical aftersales metrics i.e. Fix-first-visit (FFV) and repair turnaround time. Enablement of visualization techniques (AR & VR) furthermore enhances the platform’s capability of assisted troubleshooting.

A machine-learning based root cause analysis system leverages a learning loop to process and analyze large amounts of vehicle health and status data, identify clusters of failures, and provide optimized fault-identification steps and predictive alerts.

All KPIT platforms support authorization and authentication using KPIT’s License system (LIMAS), including capabilities for application and data updates.

The K-DCP Aftersales suite drives 30% faster diagnostics, whilst improving service technician productivity by up to 40%

K-DCP CONNECTED DIAGNOSTICS SOLUTION

The KPIT ‘Connected Diagnostics’ solution utilizes its proven diagnostics products and services to deliver a standards-based, scalable and an end-to-end solution.
The K-DCP connected diagnostics solution allows for the execution of some key use-cases which have the potential to accelerate vehicle issue resolution, improve vehicle uptime and enhance the overall customer experience.

A few of them are outlined below:
- Over the air updates
- Vehicle state monitoring
- Vehicle state recovery

A fully featured standards based diagnostic stack sits at the core of KPIT’s connected diagnostics solution. The stack is designed to operate in resource constrained environments such as a telematics control unit (TCU).

KPIT’s connected diagnostics solution is being readied for next generation service-oriented diagnostics for Adaptive Autosar/ high-performance controller (HPC) based connected vehicles.

The K-DCP Connected Diagnostics solution is in productive use and is adding 10M+ vehicles every year

**K-DCP BUSINESS INTEGRATION**

KPIT provides custom integration components and consultancy in order to enable integration of K-DCP offerings with their enterprise environment. This system level integration supports customers digitization needs and ensures utility of existing data assets & cross functional synergies.

The platform follows enterprise integration methodologies, with industry specifications like REST HAL, OPEN API, etc; to expose diagnostic data services within the diagnostic data development process.

It publishes diagnostic data to ECUs and tools in the field taking its hardware and software dependencies into account. The Diagnostic data store records all session data and is used as a base for analytics. The KPIT analytics platform uses this data for dashboarding and business impact measurements. On the same lines, vehicle data is used for machine learning to offer predictive maintenance and warranty reduction. The platform mimics a standard software development process of Develop -> Compile -> Verify -> Reiterate for diagnostics. This ensures that ‘stored data’ is reliable and ‘deployable’.

K-DCP Business Integration enables better reliability, higher reusability and lower development cost of diagnostics data
K-DCP ASSOCIATED SERVICES

KPIT provides diagnostic consultancy and data authoring services to pulse-check your diagnostic development and delivery strategies, ensure that they are future-ready and to deliver content as efficiently and effectively as possible.

Process consultancy- Provide expertise that can benchmark current-state processes and practices whilst understanding what future-state will look like and providing recommendations on how to evolve.

Data authoring- Provide access to just-in-time expert resources that can augment your existing team and deliver exceptional value both on-site and off-shore as required.

KPIT’s Process Consultancy Approach

Data migration approach to convert existing data
Changes to existing vehicle connections (e.g. VCI)

K-DCP Associated services provide access to expert resources that augment & accelerate your program development efforts

KPIT is a global technology company with software solutions that will help mobility leapfrog towards autonomous, clean, smart and connected future. With 6000+ Automobelievers across the globe, specializing in embedded software, AI & Digital solutions, KPIT enables customers accelerate implementation of next generation mobility technologies. With development centers in Europe, USA, Japan, China, Thailand and India – KPIT works with leaders in mobility and is present where the ecosystem is transforming.

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