The K-DCP Framework is an execution environment for diagnostic content created with the Diagnostic Authoring Tool. It is based on Diagnostic Standards like D-PDU API, MVCI MCD-3D Runtime System, ODX data and OTX sequences.

It provides generic user interfaces for diagnostic functions such as:

- Vehicle topology and ECU information / logistics data
- Reading fault memory with environment data and guided troubleshooting
- Measurement values including graphical representation and enhanced data logging
- Configuration and Flashing of ECUs

The functionality of the software can be extended for customer specific use-cases by the usage of OTX sequences including own UIs and based on a flexible navigation menu approach. The Diagnostic Framework can be run on standalone machines as well as hosted on cloud servers for remote diagnostics.

Being generic and data-driven, it helps OEMs and Tier-1 to reduce development and maintenance cost of diagnostic tester application (e.g. After-sales service tool) significantly. At the same time, it also helps dealers and independent service stations to reduce cost by providing flexible license options like feature driven or software-as-a-service approaches.

Product Development V-Cycle

K-DCP Framework is a generic tester to address use-cases in engineering, manufacturing (EoL) and aftersales service
Use Cases

- Engineering, Manufacturing or Aftersales / Dealership Service Tool
- Remote diagnostics and analytics
- Guided diagnostics for fault troubleshooting
- ECU Test automation and reporting
- End-of-Line flashing and testing

Key Features

- Execution on standalone as well as cloud infrastructure
- Built upon ASAM / ISO standards
  - D-PDU API (ISO 22900-2)
  - MCD-3D (ISO 22900-3)
  - ODX (V 2.0.1 or V 2.2.0)
  - OTX standards (ISO 13209)
- Bus topology viewer, Fault (DTC) Reader, Measurement of PIDs and Flashing
- Navigation flow component to support the add-on of customer specific use-cases
- Use-case extensions using OTX sequences (e.g. Guided Diagnostics)
- Integrated license and online update management
- Diagnostic data analysis and reporting

Standalone as well as Cloud Execution

- Built using single sourcing technology which allows application to run on standalone machines (PC based) as well as cloud servers. Cloud solution accessible by Tablets and Smartphones (Multi OS)
- Support for remote diagnostics to help experts from engineering departments
- Flexible to be installed on Linux based Telematics Hardware

Bus Topology View

- Show connected ECUs and their Master & Slave hierarchy
- Visualize ECU status information (i.e. connectivity problem, active DCTs)
Fault (DTC) View

- Reads fault codes and associated properties (e.g. Status, Occurrence Counter)
- Reads freeze frames data associated with each fault code (environment data, snapshot info)
- Entry point for Guided Fault Finding sequence execution, based on given fault codes and additional symptoms.

Measurement View

- Read measurement values (DIDs, PIDs) defined in ODX data
- Real time data monitoring using 2D and 3D graphs
- Sophisticated Watchlist functionality to select measurement values and configure visualization components
- Datalogger capabilities based on Watchlists including different logging formats and replay functionality
Flashing View
- Flashing of various protocols (i.e. UDS / KWP on CAN, K-LINE, Ethernet (DoIP), …)
- Creates flash project easily using templates
- ODX-F container based flash programming

Navigation
- Navigation framework which allows customization of screen navigation sequences
- Included Filter mechanisms for different user rights or vehicle specific conditions

Use-case Extensions using OTX
- Built-in OTX runtime to support integration of OTX sequences designed by Diagnostics Authoring.
- Custom Screens are integrated into Navigation and License concepts

License and Online Update Management
- Integrated license management system including 2 layer approach (Admin and License Managers)
- License types
  - Node locked
  - Dongle licenses
  - Floating licenses
- License procurement options : Feature and User Role based
- Centralized update management
  - Connected clients receive updates automatically after verification of license and feature rights.
  - Download is managed by central server infrastructure

Diagnostic data analytics and reporting
- CAN trace analysis and root cause reporting
- Graphical reporting of fault attributes and measurement values
- File based report manager including cloud based analytics database
- Pattern recognition of diagnostic data for further failure analysis