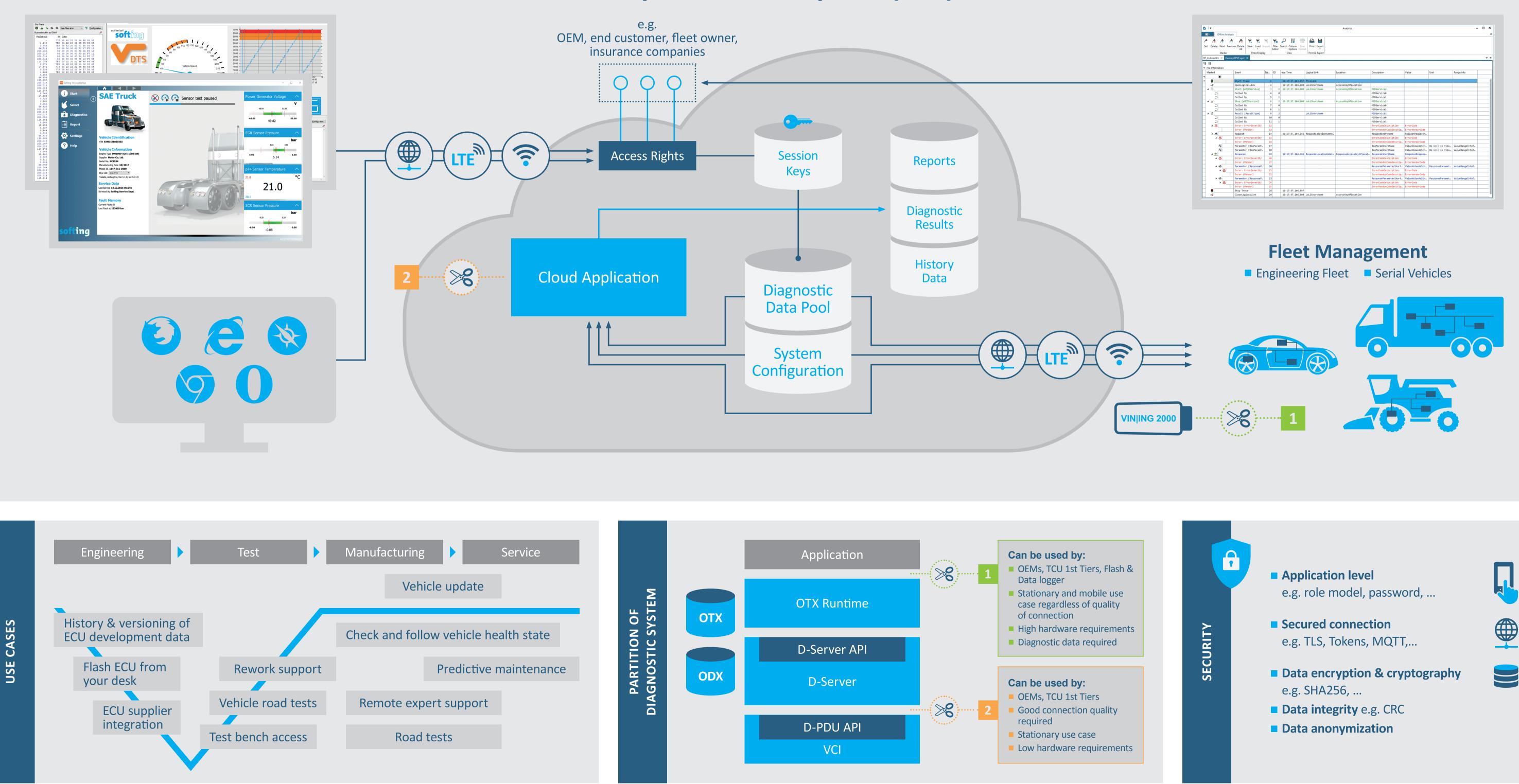# Diagnostics 4.0 – by Softing Automotive

Remote Diagnostics becomes Diagnostics 4.0 - Softing definition
Conducting diagnostics on ECU(s) in remote systems providing Internet access by telematics services; using state-of-the-art, cloud-based technologies and security mechanisms enables a holistic approach in terms of data capturing and analysis, also with respect to data processes.

Remote Diagnostics
Sending and receiving comprehensive ECU data between the application and the vehicle via a long distance 1:1 connection.

Cloud Diagnostics
Gathering and transmitting ECU data worldwide via an autonomously run cloud application using preconfigured campaigns from and to a defined fleet of vehicles.

Test & Verification

Multipoint to Multipoint (m:n)

e.g.
OEM, end customer, fleet owner, insurance companies

- Access Rights
- Session Keys
- Reports
- Diagnostic Results
- History Data
- Cloud Application
- Diagnostic Data Pool
- System Configuration
- VIN|ING 2000

2

1

Analysis & Evaluation

Fleet Management
- Engineering Fleet
- Serial Vehicles

USE CASES

Engineering ▶ Test ▶ Manufacturing ▶ Service

- History & versioning of ECU development data
- Flash ECU from your desk
- ECU supplier integration
- Rework support
- Vehicle road tests
- Test bench access
- Vehicle update
- Check and follow vehicle health state
- Predictive maintenance
- Remote expert support
- Road tests

PARTITION OF DIAGNOSTIC SYSTEM

OTX
ODX

- Application
- OTX Runtime
- D-Server API
- D-Server
- D-PDU API
- VCI

1 Can be used by:
- OEMs, TCU 1st Tiers, Flash & Data logger
- Stationary and mobile use case regardless of quality of connection
- High hardware requirements
- Diagnostic data required

2 Can be used by:
- OEMs, TCU 1st Tiers
- Good connection quality required
- Stationary use case
- Low hardware requirements

SECURITY

- **Application level**
  e.g. role model, password, ...
- **Secured connection**
  e.g. TLS, Tokens, MQTT,...
- **Data encryption & cryptography**
  e.g. SHA256, ...
- **Data integrity** e.g. CRC
- **Data anonymization**