DiagRA® S Simulator

RA® Automotive Products

DiagRA® S – Simulator

Control module simulator and playback of bus communication

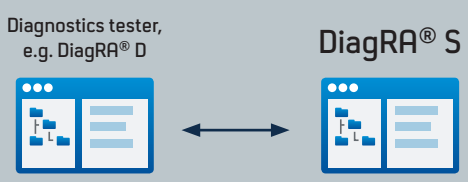
Operating modes:

- Playback of recorded CAN-Bus communication
- Simulation of vehicle networks

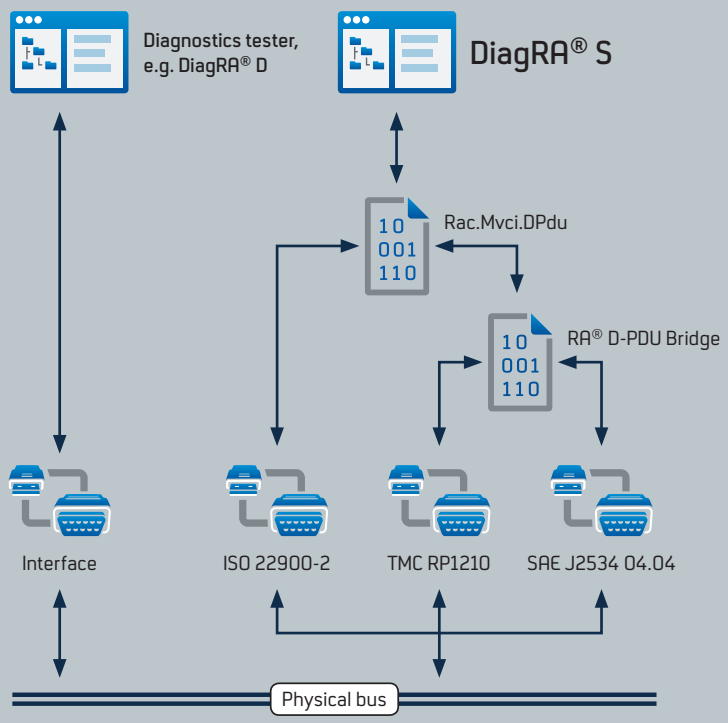
Functions:

- Supports simulation of communication based on the most common standards, including UDS, SAE J1939 and OBD
- Playback of recorded CAN communication
- Simulation of a vehicle network
- Virtual execution of SAE J1699-3 and SAE J1939-84 homologation tests
- SAE J2534, TMC RP1210 and D-PDU-API interface simulation
- Hardware simulation through physical bus communication using SAE J2534, D-PDU and TMC RP1210 devices
- Supports OBDII, EOBD and HD-OBD
- Diagnostics tool verification software

1 Simulation of interface hardware SAE J2534, TMC RP1210 and D-PDU-API



2 Use of RA® D-PDU-Bridge or interface hardware with D-PDU driver for output to CAN-Bus



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RA CONSULTING

Our software products are used by more than 200 leading carmakers and suppliers worldwide.

DiagRA® S Simulator

Supported standards:

ISO 9141 • ISO 11898 • ISO 14229 • ISO 14230 • ISO 15765 • SAE J1939 • SAE J1850 PWM • SAE J1850 VPW

Examples of Applications

Test of diagnostics testers or diagnostics software by simulating vehicle networks

A recorded diagnostics communication with a vehicle network can be loaded into a DiagRA® S project. DiagRA® S then simulates the control units and answers requests from the diagnostics tester. The connection with the tester or with the diagnostics software can be provided via an interface hardware device or a virtual software interface channel.

DiagRA® S facilitates a RA® D-PDU-Bridge. SAE J2534 or TMC RP1210 interfaces that are already installed can then be used via this bridge for connection to a physical CAN bus, to which the tester is also connected via its interface. DiagRA® S will monitor the CAN bus and, whenever a request has been identified, will answer this and send the response to the CAN bus.

The virtual interface can be used as an SAE J2534, TMC RP1210 or D-PDU interface for the diagnostics software which is to be tested, provided this is being run on the same computer as DiagRA® S.

Testing of software configurations

The testing of trigger settings in our software DiagRA® M can be used as an example here. If a trace of a real, exemplary communication, for example with measuring modules from the company CSM exists, it can be imported into DiagRA® S. DiagRA® M can be configurated as if the measuring modules are already connected. This also applies to the setting of the interface used. DiagRA® S will then export the communication to the CAN bus via the D-PDU interface, where it can be imported by the interface used by DiagRA® M. This arrangement allows testing of the configuration in DiagRA® M up to the physical CAN bus. If the CSM modules are available, it is possible to start work immediately without pre-tests.

Assessment of SAE J1699-3 test runs

The SAE J1699-3 test runs are often carried out by authorized third parties. Based on the original logfile content of the J1699-3 test cases tool DiagRA® S can replace the vehicle communication. Since DiagRA® S is available as an SAE J2534 interface in Windows, this can be selected as the interface in the original SAE tool, and the test can be executed as if on a real vehicle.

Subsequent error analysis of end-of-line tests

If a recording of the EOL test is available, a subsequent analysis can be carried out in the event that the EOL test fails. The test object, for example, a vehicle, will no longer be required for this. The analysis can still be carried out with the original EOL equipment. The RA® D-PDU-Bridge and an SAE J2534 or TMC RP1210 interface would also be used here. The EOL equipment can be directly connected to the physical bus that is provided in this way.

Preparation of automated test bench environments

Automation procedures must often be tested in the test bench environment under high time pressure. The DiagRA® S can be used here as well and acts as a substitute for a vehicle that is currently not available. The automation application can be connected to the simulation provided by DiagRA® S either through a simulated interface or, again, can access a physical bus via a bus interface that is connected to the RA® D-PDU-Bridge. This increases the flexibility when DiagRA® S cannot be run on the test bench computer but only on a separate simulation computer.

System Requirements

Windows 7 (32-bit and 64-bit version).
Windows 8 / 8.1

What is the RA® D-PDU-Bridge?

The RA® D-PDU-Bridge is a software adapter, which provides externally a D-PDU interface (ISO 22900-2). This means that an application which supports the D-PDU standard, can also use other interfaces via the D-PDU-Bridge. Interfaces may thus be used which are based on the standards SAE J2534 or TMC RP1210. For example, an interface of this type can also be used in MVCI environments in which interfaces compliant with the standard ISO 22900-2 are mandated. This may mean that a manufacturer of interfaces does not have to provide any D-PDU-API for its hardware, but will need only the D-PDU-Bridge from RA Consulting.
The virtual interface can be used as an SAE J2534 or TMC RP1210 interface for the diagnostics software which is to be tested, provided this is being run on the same computer as DiagRA® S. In this operative mode, no interface hardware of any kind is required.

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