

Dear Customers, Partners and Friends of RA[®],

on the occasion of the Testing Expo in Stuttgart we will be introducing our DiagRA X Measurement option as the first part of our new software product DiagRA X publically for the very first time.

An investment of 3 years of intense development effort went into creating this software. The approach to this development was completely new and different. We started with a number of user studies with our customers and studied the use cases of calibration engineers who gave us their input, which went straight into the development of the new user interface. The goal was also to provide a future-proof architecture by using standards and ensuring a maximum level of compatibility. We are certain you will be wowed by the result.

Please take advantage talking to us personally and seeing a live demo of our new product at booth 1700.

Of course DiagRA X will be the highlight of the show but our other products have received some updates as well. Talk to us about the new features and functions in the products you already know such as DiagRA D and the Silver Scan-Tool. As usual our AETA booth will also include our partners Intrepid Control Systems, CarMedialab und emotive who will have their products on display. Of course we have prepared a few surprises and look forward to your visit and to see you in person. We promise it will be worth your while.

Armin Rupalla
President, RA Consulting GmbH

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News

DiagRA[®] X

The Next Generation of Measurement and Calibration Software
DiagRA[®] X is an entirely newly developed software utilizing cutting edge technologies and an ergonomic User-Interface – Design. The interface was developed in cooperation with Ergosign, experts in usability design and according to the results of interviews and studies performed with different potential user groups. The entire development followed the guideline “For Users by Users”. The result is an exceptionally easy to use, performant, and appealing solution for measurement and calibration jobs for calibration, vehicle and dynamometer engineers and technicians. In addition it can also be used for tasks that require predefined views of reoccurring data such as technical customer support.



Fig.: DiagRA[®] X: Measurement and Calibration Work Sheets

The software architecture of DiagRA[®] X supports current standards and abandons proprietary protocols and data formats to ensure maximum compatibility for each customer’s existing environment.

Features:

- Internal use of the MCD3-MC (3.0 - Multiclient) interface
- Support of MCD2-MC (.a2l) Standards up to Version 1.7
- Support of XCP-Standards up to Version 1.3
- Data export in commonly used file formats (.lab, .dcm, .hex, etc.)
- Fast loading of extensive .a2l-Containern
- Central data storage module with comprehensive search function for all relevant input and output files
- Separate configuration and user combination of work environment (hardware) and experiments (visualization)
- Import and export of different elements (work sheets, experiments, work environment, settings, etc.) enables transfer between team members and departments
- Two color schemes for light and dark surroundings
- Color concept optimized for differentiation between values, color-blindness and color-deficiencies of users
- Definable and savable filters and views
- Modern user interface
 - Predefined and fully customizable worksheets
 - for a comprehensive project overview
 - with fast access to all data and functions

DiagRA[®] X was developed in close collaboration with calibration engineers working for different OEMs. It was designed to support effective processes during ECU calibration.

- High focus on relevant data depending on task and to streamline development processes
- The configuration includes the entire hardware environment (control and measurement devices) in one tool
- The automatic layout feature guarantees that selected data is always displayed in the best possible way without investing additional time for configuration of the layout
- XCP on Ethernet is a high performance data interface between DiagRA[®] X and the corresponding hardware being used
- Ethernet technology handles large data rates of fast measurement hardware for optimal results
- Measurement recordings are saved as MDF4.x files which are compatible with many other tools for further analysis

- Launching the software and configuring an experiment is designed to enable the user to start working as fast as possible without losing valuable time during the system launch
- Transfer of projects to other systems e.g. from a Laptop PC to a dynamometer is easily possible

DiagRA[®] X is designed to allow dynamic use. Even while a measurement is online and running many settings can be changed. This makes changes in layout and the creation of new worksheets possible during an active measurement.

Users looking for an intuitive, high performance measurement system and possibly need to change parameters on an ECU will find the perfect tool in DiagRA[®] X.

The RA[®] ODX Viewer was the first product to make use of the new User eXperience (UX) concept. The most important insights gained were implemented in DiagRA[®] X:

- 1.) Priorization of the most used functions and adaptation to the individual work processes depending on the group of users.
- 2.) Reliable and motivational operation using intuitive controls and providing an appealing user interface. The result is a clear structure and presentation of results, reduced to the essential information.
- 3.) Fast program launch, automatic plausibility checks to avoid common mistakes and a balanced tolerance for errors.

An important attribute of DiagRA[®] X is the compatibility with already existing hardware interfaces of many different manufacturers. With this we are continuing the successful strategy implemented in our other software products DiagRA[®] MCD, Silver Scan-Tool™ und DiagRA[®] LE.

For the product launch in 2017 all existing licenses of DiagRA[®] MC that have an active, fee-based software maintenance contract will automatically receive a free update to DiagRA[®] X MC. For our customers ready to make the decision for DiagRA[®] X MC in 2016 we offer a special introductory discount of 25%.

IAV Macara

Dynamic Editing and Comparison of Calibration Parameters

Current development projects challenge calibration engineers with an enormous number of project specific parameters. For up-to-date Diesel engine controllers this may be up to 50,000 different control variables.

IAV Macara, is based on the collective experience of IAV engineers and ensures a structured overview and efficient work processes during calibration.

The tool was designed to handle large amounts of data contained in DCMs, A2L/HEX or A2I/S19 datasets to be compared, edited and copied. The copying process is especially easy – it can be done via drag-and-drop. Color coded tags highlight changes and similarities between datasets. Data can then be exported using the DCM format.

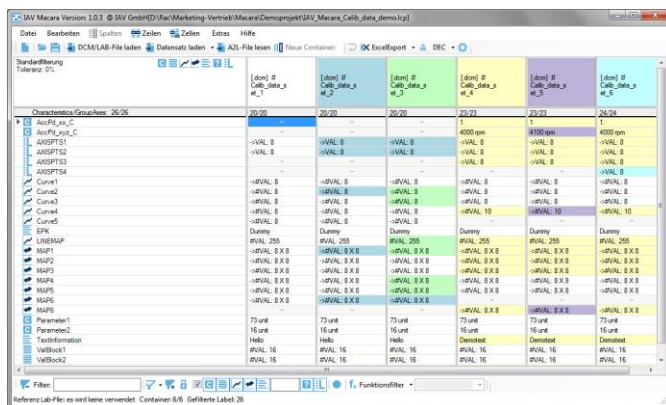


Fig.: Automatic color coding of differences and similarities in multiple DCMs

To generate a useful overview for the calibration engineer and to achieve the maximum level of efficiency during the calibration process different values of the same labels in different datasets are automatically color coded for comparison when loaded. IAV Macara also includes comprehensive filter functions:

- Label names and A2L-functions
- Differences in values between data containers
- Already edited labels
- Label types
- Unions between labels
- Overlap between labels
- Symmetrical differences of labels in two containers

Results of the filters can be saved as label lists (LAB). These can then be reused as standard settings when loading a new project.

Editing values is as easy as entering the required values or by using drag-and-drop functions either from another container to another or from one container to multiple others. To use this function the target containers are defined as targets.

Data from multiple containers can be compared using different means of comparison:

- Direct data comparison for characteristic curves, maps and arrays
- Bit comparison for labels containing whole numbers
- Array comparison
- Graphic curve- and map comparisons
- Cross-comparison of labels of different types
- Comparison of A2L system constants and A2L-functions.

IAV GmbH has put RA Consulting in charge of the license distribution, sales and support. If you would like more information please contact us at jav-macara@rac.de

DiagRA[®] D News

Latest release: 6.22.36.27840 (05-18-2016)

A complete list of added features and bugfixes can be found in the *DiagRA_Erweiterungen.txt (in German)* file after the installation has been completed. It is also available in your install folder in the *Information* subfolder.

General improvements and added features:

- Addition of a generic diagnostic dataset for UDS including support for the ISO-CAN transport protocol with standard and extended addresses
- Inclusion of a complete J1939 dataset
- Communication monitor has been reworked to improve operability
- Operability of „Send Diagnostic Service“ has been improved. Services may now be edited later on. Data can be saved in the clipboard.
- Operability of the drive cycle assistant has been improved. Now supports the mouse wheel.
- New Korean und Chinese language versions
- Adjustments in the A2L parser. There are no more length restrictions for names of RAM cells and labels. Extended recognition of characteristic maps.
- Integration of DoIP has been broadened, improved support of OBD on DoIP and improved routing.

- XML-output of measurements has been equipped with a completely new stylesheet for browser viewing. Accompanying files do not need to be copied anymore.
- PDF-output from XML has been introduced for the first time and fully reworked for the J1699-3 OBD compliance test.
- The ODX-Import has been adjusted according to more OEM authoring guidelines within the limitations of the standard.
- Full redesign of the IUMPR tab, adaptation to new ECUs, selectable sorting.
- Tabs for Statusbits and Statistics have been reworked
- Complete rework of the function „analyse logfile“
- Interface to remote control DiagRA D using OTX
- Official Windows 10 compatible release

FlexRay:

- Sub-bus-systems are now available through FlexRay
- FlexRay OBD Scan-Tool: communication with multiple ECUs has been improved
- Support for FlexRay-Interfaces has been updated

Flash Programming:

- Do not launch flash procedure if all memory blocks are up to date during partial programming.
- Flash programming for more OEMs added

Remote Control:

- Automated reading of the fault code memory through WebServices can be deactivated
- New functions for WebServices (SendOBDDHexServiceT, GetMeasureDataById)
- New functions for ASAP3 (ExtendedParameterForValueAcquisition, ExtendedGetParameter, ExtendedGetOnlineValue)

OBD Scan-Tool:

Adaptation for the Scan-Tool according to SAE J1979

- Adaptation of the J1699 remote control and the logfile formatter to the latest version
- Print function for measurement set up for Scan-Tool Mode \$01 through \$0A on A4, Letter and mobile printer format
- XML-Output now contains MIL-Status and a list of all supported Modes and PIDs.
- Fault code lists updated according to the latest version of SAE J2012
- PID list updated according to the latest version of SAE 1979-DA

Adaptations for the Scan-Tool according to SAE J1939 und ISO 27145

- Optimized initialization process to identify OBD ECUs and supported data
- Save and read ECUs during the measurement cycle
- Diagnostic datasets have been updated according to the latest standard release
- Text output has been improved

Information for Users within the VW-Group

- Dyno-mode has been fully reworked
- List of address words for VW has been corrected and supplemented
- Current fault code files for VW Group
- Diagnostics and flash programming on sub-bus systems on CAN (routing)

DiagRA[®] MC News

Latest release: 3.22.36.27840 (05-18-2016)

The graphical views in DiagRA[®] have seen major improvements.

- Option to display different number formats
- Option Channel Description
- Export function during analysis
- Statistics function is now available online and offline
- Improved zoom function now available
- Dynamic changes in time axis resolution

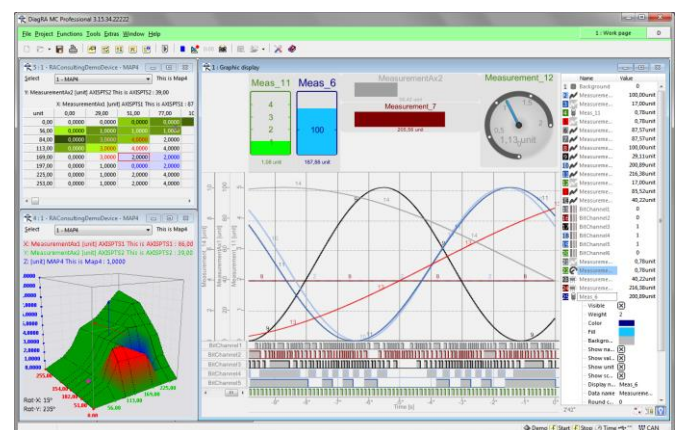


Fig: Screenshot DiagRA[®] MC new graphics

Silver Scan-Tool™ News

Major changes and features concerning the Silver Scan-Tool™ can be found in the **DiagRA[®] D News** section under *OBD Scan-Tool*.

Latest Release: 6.21.36.26940 (03-15-2016)

RA[®] ODX Viewer News

Latest release: 2.1.4.36 (05-20-2016)

General improvements and added features:

- Save filters as favorites
- Show of fields has been implemented. Informationen about fields can be found in the hint of the byte display
- PDU/Message length is displayed as an additional column
- Output folder is opened upon data export if „Show Result“ is selected

Dates

Product Trainings

On our website you can find the currently scheduled dates for training in our HQ in Bruchsal, Germany. You will also find the exact content of the training sessions.

DiagRA[®] D and DiagRA[®] MC

Trainings for *DiagRA[®] D* and *DiagRA[®] MC* are full day trainings starting at 8:30am and ending at 4 pm. Both training may be booked individually. Training language is German.

The next available trainings are:

Tuesday, June 21st, 2016: DiagRA[®] D

Wednesday, June 22nd, 2016: DiagRA[®] MC

Please follow the link below for more details:

[DiagRA MCD Training](#)

ODX for Diagnostic Developers

We have also created a new training on *ODX for Diagnostic Developers*.

This training is designed to convey basic knowledge to interpret ODX description datasets. Another key focus is building knowledge towards PDX data containers, correlations, diagnostic services, diagnostic objects (measurement values, event memory, routines, actuator tests), parameters, and conversions within the ODX file. Training language is German.

Please follow the link below for more detailed information:

[ODX for Diagnostic Developers](#)

ODX Inside und OTX

Please also note the other upcoming trainings

ODX – Inside and

OTX –Exchange format for Test sequences

These trainings are held by our partner emotive GmbH. Please see the following links for more details:

[OTX-Training Inside ODX](#)

All trainings can also be held at your individual location. For quotations or questions regarding this service please contact us at info@rac.de.

Testing Expo Europe 2016

Stuttgart, May 31st – June 2nd

RA[®] will be present on the [Automotive Engineering Tool Alliance](#) booth in cooperation with Intrepid Control Systems, CarMedialab and emotive.

Booth number: **1700**

[Testing Expo Europe](#)

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