MICROSAR DIAG

AUTOSAR Basic Software Modules for Diagnostics

Diagnostics in AUTOSAR is based on the UDS (Unified Diagnostic Services) ISO 14229-1 protocol. UDS has been a standard in the automotive industry for years now and has largely replaced ISO 14230 (KWP2000). MICROSAR DIAG provides a bus-independent implementation of the protocol and fault memory.

Properties and Advantages

MICROSAR DIAG contains the AUTOSAR Basic Software Modules DCM, DEM and FIM. The DET (Development Error Tracer) that is closely tied to diagnostics can be found in the MICROSAR SYS package.

All MICROSAR Basic Software Modules conform to AUTOSAR Release 3.0. When the modules were implemented, special emphasis was placed on efficient memory utilization and on short execution times, so they are an ideal foundation for your AUTOSAR ECUs.
The configuration time of all MICROSAR Basic Software Modules is user selectable, because the Vector BSW modules are pre-compile, link-time and post-build capable (in accordance with AUTOSAR Configuration Conformance Classes CCC1 through CCC3).

You can combine MICROSAR DIAG Basic Software Modules with other modules of the seamless Vector AUTOSAR solution. This provides a reliable foundation for your ECU-specific software so that you can focus on developing your application.

Application Areas

MICROSAR DIAG contains all of the Basic Software Modules needed for diagnostics in your ECUs. Using these BSW modules lets you develop your application independent of the bus system. The modules can be grouped in any desired combination with other MICROSAR Basic Software stacks and the MICROSAR RTE.

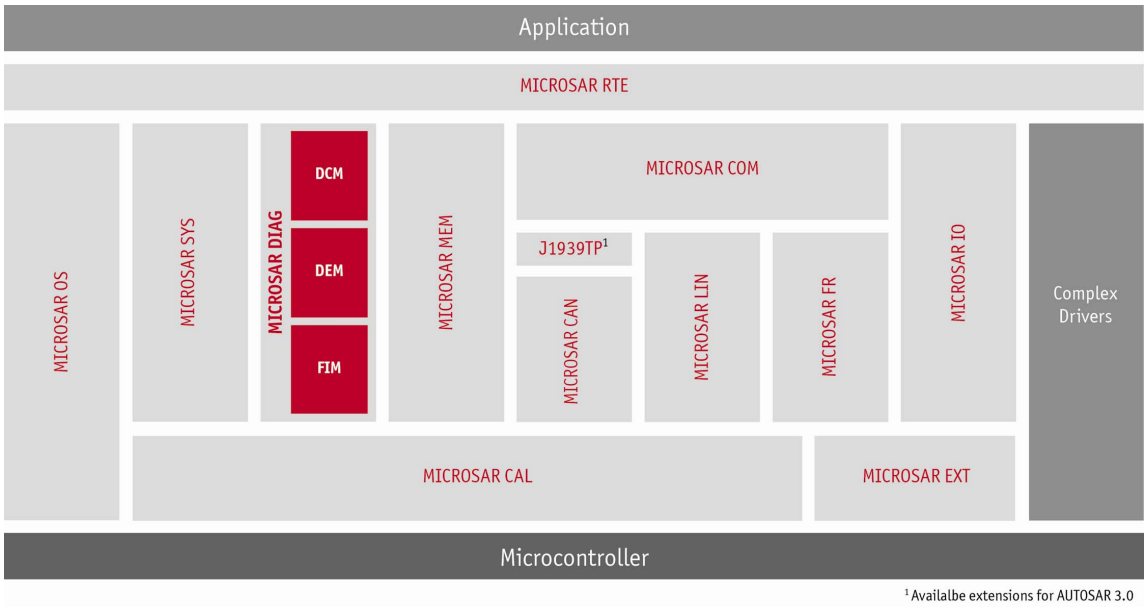
Functions

MICROSAR DIAG

> DCM - The Diagnostic Communication Manager offers an interface at the Diagnostic Services level and implements basic functionality, such as Security Access and Session Control. Since AUTOSAR Release 3.0, an interface has been provided at the DID/RID (Data Identifier / Routine Identifier) level. Besides interfacing to the RTE, this gives you a signal-based interface to the application.

> DEM - The Diagnostic Event Manager provides a uniform interface for the fault memory. Since how faults are stored in memory is typically defined in OEM specifications, Vector offers special adaptations for different manufacturers.

> FIM – The Function Inhibition Manager lets you deactivate certain functions in your application (SWC). This deactivation can be made dependent on an error entry in the DEM. You can also combine multiple faults by logical operators and query the resulting status from your application to derive actions to take.



[1] Availalbe extensions for AUTOSAR 3.0

MICROSAR DIAG modules

V2.1 2009-03

Training courses

We offer various training courses and workshops for AUTOSAR in our classrooms or at your business site.
For further information on individual training events and dates on the Internet go to: www.vector-academy.com.

Contact and Availability

Our Basic Software Modules for automotive ECUs are available for a wide variety of currently used microcontrollers. You can obtain additional information at www.microsar.com or by inquiry
E-mail: embedded@vector-informatik.com
Telephone: +49 711 80670 400.

Configuration

Configuration of the MICROSAR DIAG modules is easy, convenient and consistent when it is done with the GENy configuration tool (included in the DaVinci Configurator Pro delivery) and the "ECU Configuration Description". AUTOSAR Release 3.0 supports an extended API (service ports), which makes it possible to perform diagnostics over the RTE. Besides the ECU Configuration Description, the ODX (Open Diagnostic Exchange) and CDD (CANdela Diagnostic Description) formats are also supported for the configuration process. This makes MICROSAR DIAG an optimal fit for the Vector tool chain. When combined with the tools CANdelaStudio, CANdito and DiVa, this yields a comprehensive solution extending from the input of diagnostic data to its validation.

Built-in consistency checks detect errors in the configuration of modules right in the configuration phase. This enables identification of invalid configurations in early phases, which may be corrected automatically. This gives you a quick way to create a runnable system.

Scope of Delivery

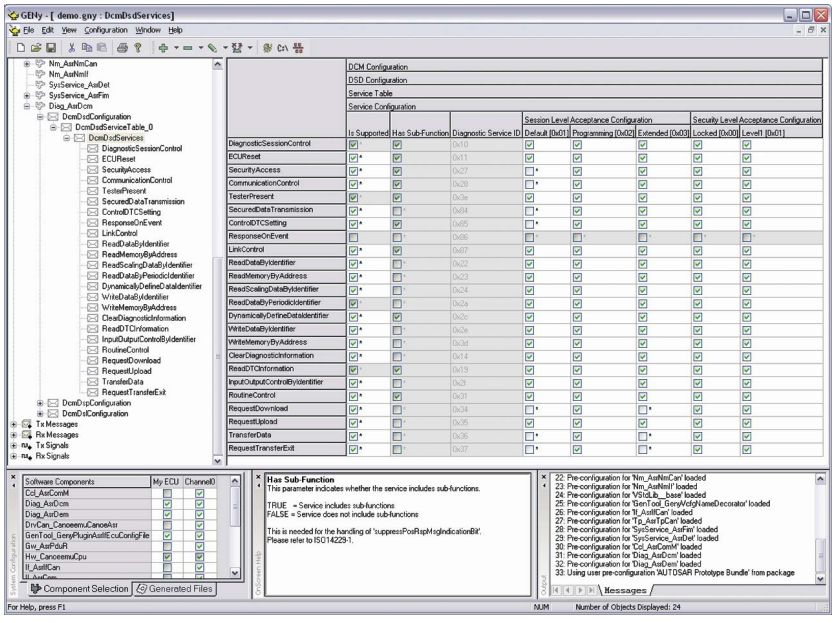
- DaVinci Configurator Base as a Generic ECU Configuration Editor (GCE) as well as a command line-based generator
- Libraries, C header files, optionally with source code
- BSW Module Description, makefiles and sample programs
- Documentation/operating instructions/Readme file

License

Vector offers flexible licensing customized to your individual requirements.

Optional Services

- Consultation in system design
- Integrating the Basic Software into existing ECUs
- Extending standard modules according to your needs
- Developing customer-specific AUTOSAR Software Components (SWC)
- Hotline, special workshops and training courses on the topic of embedded software and AUTOSAR



Configuring MICROSAR DIAG with GENy