MICROSAR LIN

AUTOSAR Basic Software Modules for LIN Communication

LIN (Local Interconnect Network) is a cost-effective serial communication system with low transmission rates for distributed electronic ECUs in the motor vehicle. Vector is an associate member in the LIN consortium. The MICROSAR LIN package therefore supports you in implementation of the LIN standard specified by the consortium.

Properties and Advantages

The Basic Software Modules of MICROSAR LIN are intended for use in series-production. Together with the other products MICROSAR CAL and MICROSAR COM they form a complete LIN stack. Each of these MICROSAR products contains a number of Basic Software Modules that you can integrate in your LIN stack, either partially or fully, depending on specific needs.

All MICROSAR Basic Software Modules conform to AUTOSAR specifications 2.0 and 2.1 (3.0 too in Q2/2008). The LIN-specific modules support:

- LIN 2.0 (LIN2.1 too effective with AUTOSAR specification 3.0)
- Multi-channel LIN configurations

The MICROSAR Basic Software Modules are flexible. In their implementation, special emphasis was placed on efficient memory utilization as well as short run times. Therefore, they form an ideal foundation for your AUTOSAR LIN stack.

As a part of the seamless Vector AUTOSAR solution, you can combine the MICROSAR LIN Basic Software Modules with the rest of the MICROSAR Basic Software during integration. This gives you a reliable foundation for your ECU, so that you can focus on the development of your application.
Vector's simulation and analysis tools for LIN are available for integration and analysis as well as for testing purposes. For physical bus access the XL interface line (universal serial bus interface for the LIN bus) is available.

Application Areas

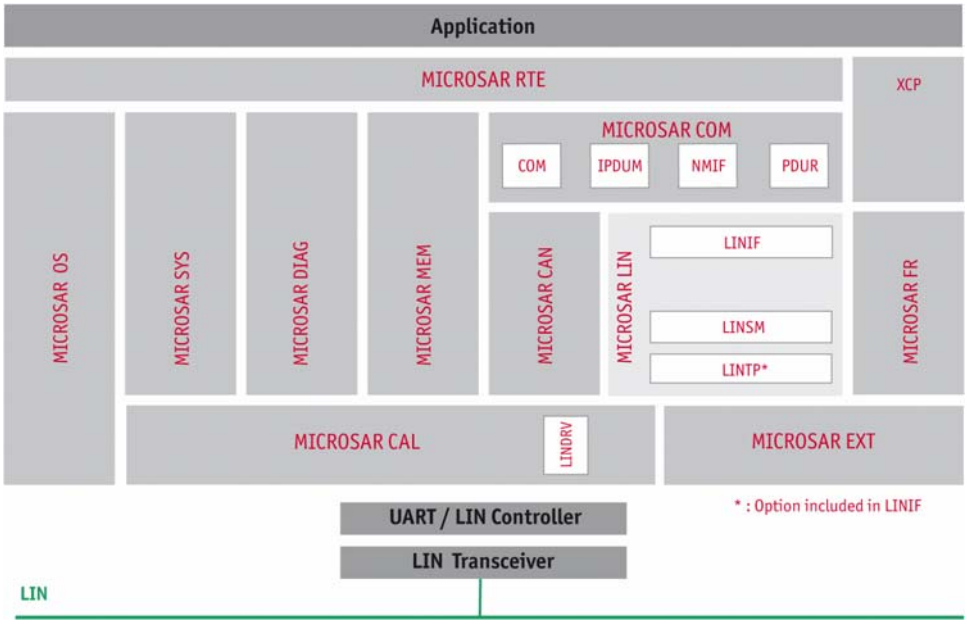
MICROSAR LIN contains all Basic Software Modules that your application needs for fundamental LIN communication.

Note

For complete integration of a LIN stack in your application, you will need other modules from the following MICROSAR packets: MICROSAR DIAG (DCM, DEM), MICROSAR SYS (DET, ECUM, COMM), MICROSAR RTE.

Functions

Compile the source code of the individually configured LIN stack and link it to your application. You can implement time control of the LIN Basic Software Modules by periodic calls of tasks via the application or an operating system such as Vector MICROSAR OS.



The MICROSAR LIN Stack is Part of the MICROSAR Basic Software

Training Events

As part of our training program, we offer various courses and workshops on the topic of AUTOSAR and FlexRay conducted in our classrooms or at your company site.
For more information and the dates of our training events please visit: www.vector-academy.com

Contact and Availability

Our LIN Basic Software Modules for automotive ECUs are available for a wide variety of commonly used microcontrollers. For additional information visit our homepage at www.microsar.com or contact us directly:
Tel.: +49 711 80670-400.

The following properties of the MICROSAR Basic Software Modules help to minimize the effort required to create the application:

- Pre-compile/Link-time/Post-build support
- Development error detection (reporting to DET)
- Production error detection (reporting to DEM)

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- LINIF - The LIN Interface has a number of hardware-independent access functions that convert PDUs of higher communication levels into LIN frames. Furthermore, it implements the LIN specification for Network Management and initializes the LIN driver.
- LINTP - The LIN Transport Protocol executes segmenting and de-segmenting of larger data packets (handling of *MasterRequest* and *SlaveResponse* messages). It is integrated in the LINIF per AUTOSAR and is available as an option.
- LINSM (effective with AUTOSAR 3.0) - The LIN State Manager switches the schedule tables and provides the LIN interface with regard to Sleep and Wakeup.

Other relevant MICROSAR Products with separate Datasheets:

- MICROSAR CAL (LINDRV) – The controller-specific LIN Driver forms a hardware-independent interface that is used to initialize the hardware, send/receive messages and handle sleep / wakeup events.
- MICROSAR COM (COM, PDUR) – This package supports signal-based communication between different ECUs.

Configuration

You can easily configure the software modules according to the requirements of your ECU -, using GENy of the MICROSAR Configuration Suite and a network description file in LDF format. This might be created with DaVinci Network Designer LIN. In addition, GENy supports the AUTOSAR ECU Configuration Description Format for LIN.

Product Components

The following items are supplied with MICROSAR LIN:

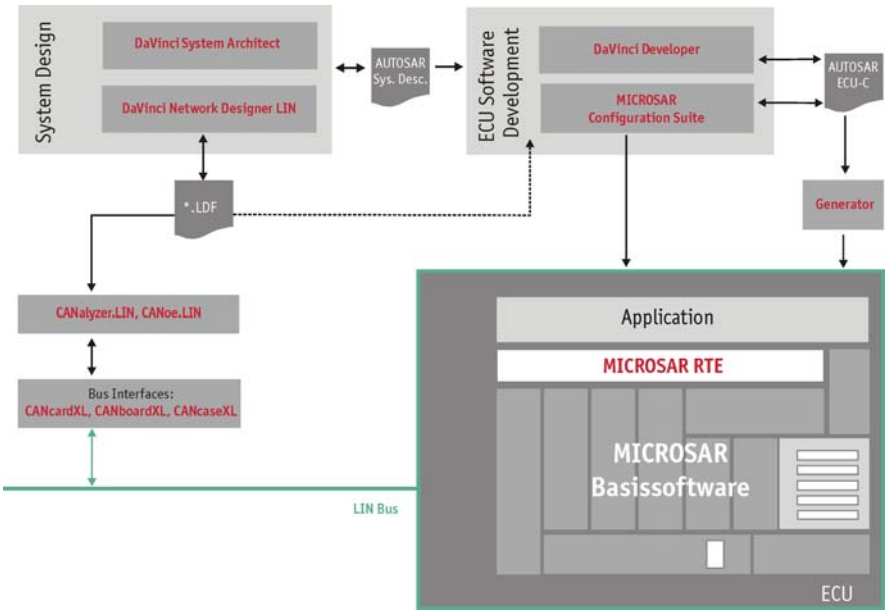
- Command line based Generator (from MICORSAR CS)
- Depending on the license: Source or object files and C header files
- Documentation/Operating instructions/Read me
- Sample programs

License and Maintenance

The MICROSAR licensing and maintenance model applies.

Additional Services

- Consultation on system design
- Integration of the Basic Software in existing ECUs
- Extension of the standard modules per customer wishes
- Hotline, special workshops and training courses



Vector offers you a comprehensive Lineup of Products and Services for your LIN Projects