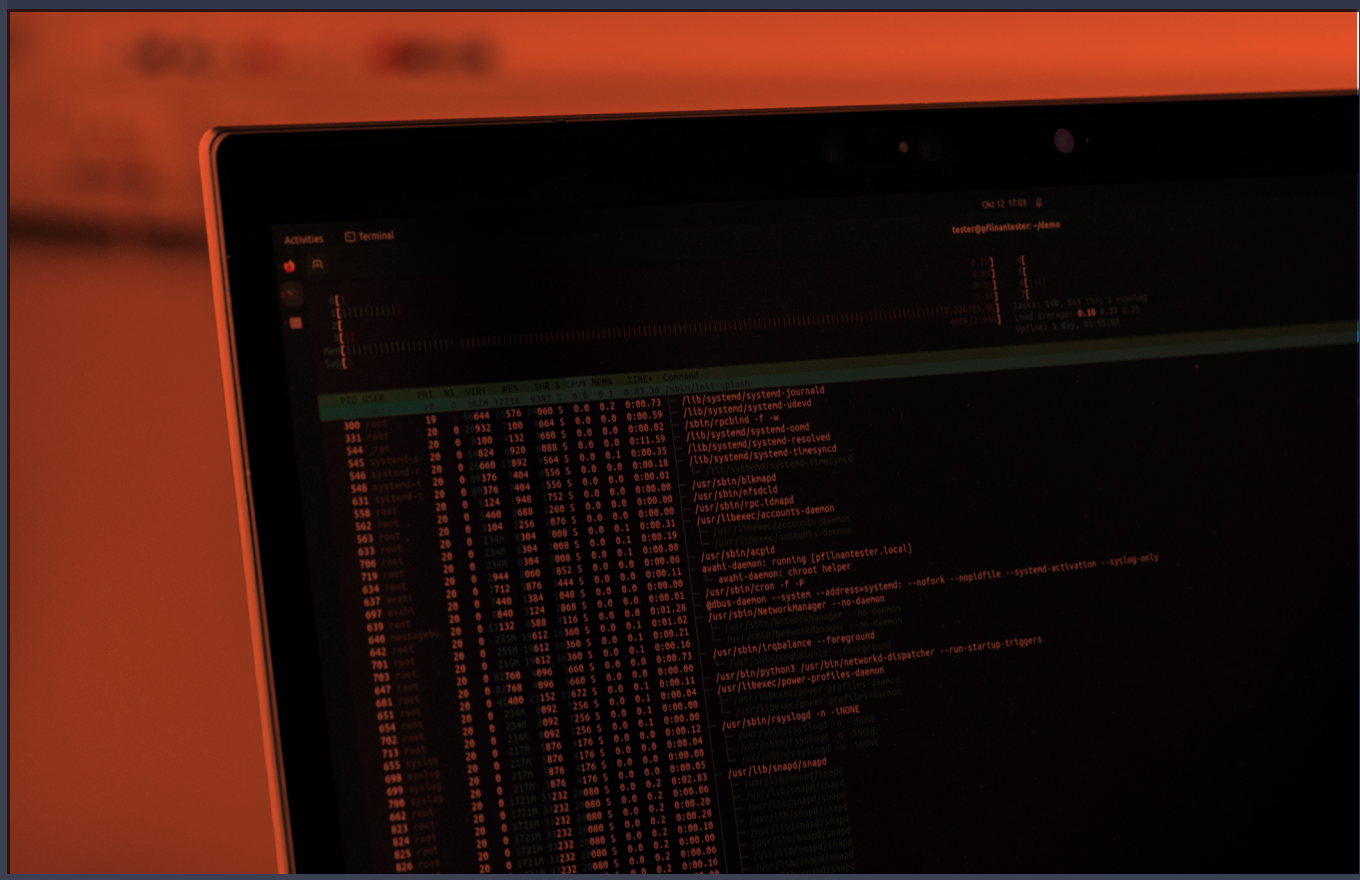
CETITEC

UNIVERSAL GATEWAY (UGW)



INTRODUCTION

ROUTING BETWEEN DIFFERENT AUTOMOTIVE BUS SYSTEMS IN REAL-TIME

The number of electronic devices in vehicles integrated in different bus systems is rising constantly. To assure a flexible and reliable complete system for comfortable driving experience the information must be routed between the respective field buses in real-time. This challenge is easily met by integrating the CETITEC Universal Gateway (UGW) library in your product. UGW is scalable in number and type of connected buses while it is fully configured in a tool driven way without any recompilation of source code.

PART LIST

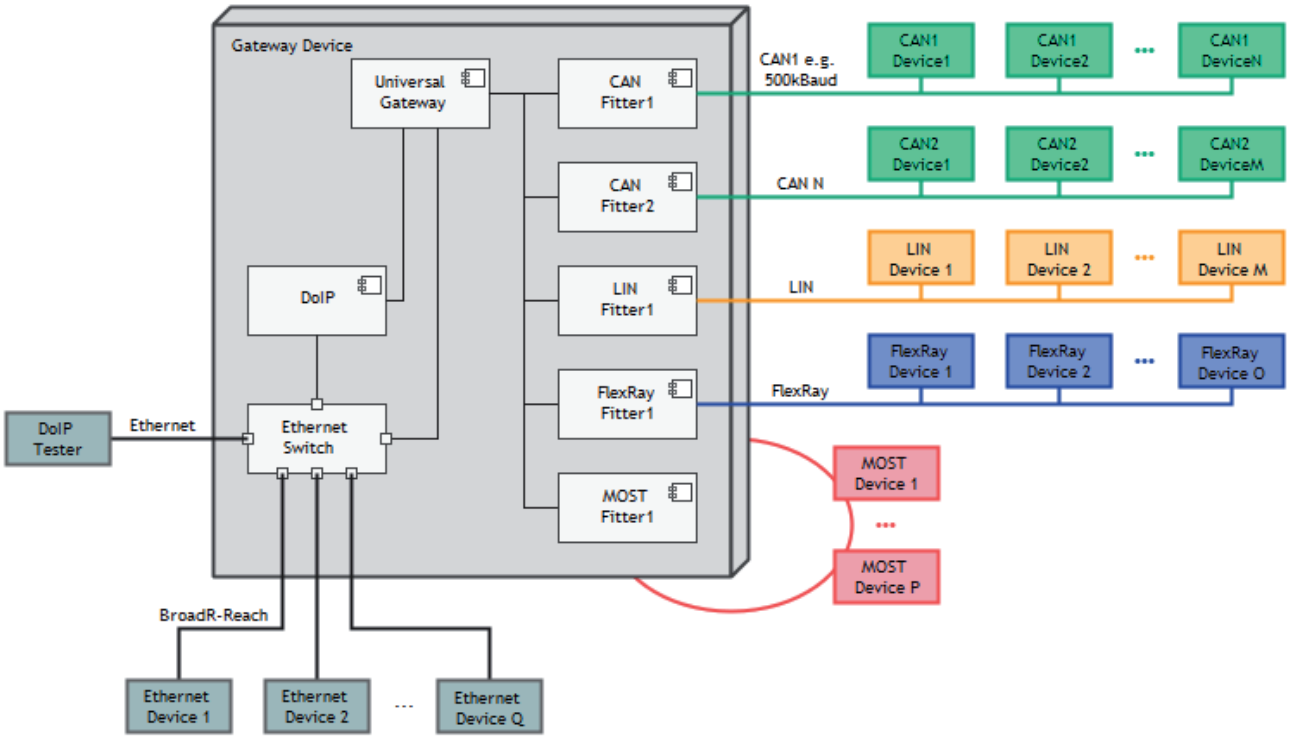
- Universal Gateway software component
- Composer (additional license required)
- User manual
- Reference manual

UGW SYSTEM REQUIREMENTS

Operating Systems:

- OSEK
- AUTOSAR OS
- QNX
- Windows CE6.0 and 7.0
- MS-Auto
- Linux
- µItron
- CMX

Universal Gateway: Context Diagram



Context diagram of a multi bus automotive gateway

NEXT STEPS

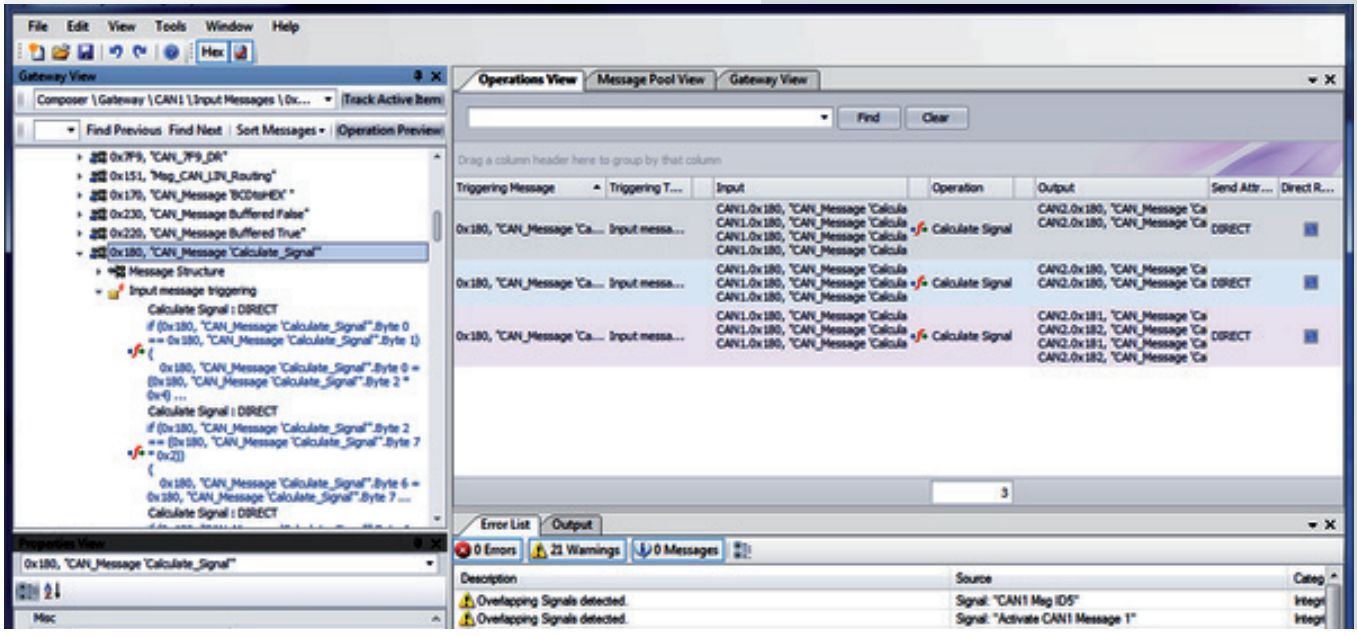
Request for Quotation: sales@cetitec.com
Further Information: +49 (7231) 95688-62

CETITEC UNIVERSAL GATEWAY

- The CETITEC Universal Gateway (UGW) routes information between automotive devices connected to different field buses in real-time, converts different signals and units and handles buses with different speeds
- UGW realizes an abstraction of the different physical layers as well as an abstraction of different protocols
- Due to the flexible software design all automotive buses like CAN, MOST, LIN and FlexRay can be added easily. Also an internal application bus has been integrated to allow 3rd party application to send and receive messages on the buses via UGW (a native connection to the very field bus driver is also possible)
- For applications like flashing or diagnostics a high bandwidth access to the UGW and the connected automotive buses can be realized by an application connected to Ethernet
- UGW includes a bus independent gateway core to perform the message and signal conversions. The set of available routing and conversion rules can be adjusted according to the OEM specific project requirements
- The CETITEC-Composer tool enables creating and processing a gateway table to export the gateway configuration as binary data file and as C-header-file containing the configuration as C-structure. Furthermore many OEM specific gateway table formats, from formatted text files to several flavors of Excel tables up to XML based formats like FIBEX are supported as input.

COMPOSER

The CETITEC Composer is a tool for configuring the gateway table, i.e. the routing configuration of the Universal Gateway. It provides a powerful User Interface to configure input and output messages with its signals and combine them with the powerful conversion rules provided by the UGW. To avoid manual manipulation of the routing configuration it provides also import functionality for many gateway table formats like OEM specific text or Excel files.



UGW PRODUCT HIGHLIGHTS

- Routing rules defined in a gateway table that is interpreted at runtime from the UGW can be changed (end-of-line, in the field) without recompiling the UGW firmware
- Realization of complex signal conversions (e.g. conversions of physical units between different bus systems) by implementing customized functions or by a calculator-like µKernel which can even store signals (of different input telegrams) and make several calculations in one conversion
- Full support of the notification for MOST related Function Blocks and Shadows
- Configuration of the routing in the Composer on signal or telegram level. The main configuration work is to assign the transferred messages to the connected buses and to define the signal mapping between these messages
- Optimization and checking of the routing configuration of the UGW regarding plausibility, performance and table size by the Composer
- Gateway output messages can be defined in various ways to fit best the requirements of the target bus e.g. by different cycle times of messages, by changing the transmission type from cyclic to send-on-change or vice versa or also by defining prohibit times for output messages.

FEATURES

- Support of all actual automotive bus systems:
  - **CAN**
  - **MOST25, MOST50 and MOST150**
  - **FlexRay**
  - **LIN**
  - **High bandwidth access via Ethernet for diagnostics and end-of-line flashing**
- **Modification of the gateway table without the need of any recompilation of product source code**
- **High performance conversation**
- **Conversion of signals and telegrams**
- **Support of complex conversations by µKernel**
- **Flexible adaptation to changed bus topologies**
- **Easy integration into ECU application software**
- **Generation of routing rules by Composer (gateway table configuration tool chain)**
- **Composer imports the gateway configurations from common industry standard formats (FIBEX, etc.)**
- **Routing rule set (GW-table) is changeable during build time of your product software, end-of-line or in the field by just exchanging the GW-table**