



## FlexConfig RBS

[www.star-cooperation.com](http://www.star-cooperation.com)

### BENEFITS

- Gateway generation for several bus systems, e.g. CAN-HS, CAN-FD, FlexRay, Ethernet, 100BASE-T1, 1000BASE-T1, LIN, SENT
- Signal manipulation: no coding required
- Remaining bus simulation (RBS)
- Easy-to-use GUI: Configuration in two minutes
- Synchronized FlexRay/FlexRay gateway
- Support for several devices: FlexDevice-M, FlexDevice-L, FlexDevice-L<sup>2</sup>, FlexDevice-S

### FLEXCONFIG RBS – OVERVIEW

FlexConfig RBS is a software to generate a hardware assisted RBS and Gateways. Several network description formats are supported. The generated RBS runs independently on a separate hardware.

### FLEXCONFIG RBS

- Supported bus systems: CAN high-speed, CAN low-speed, CAN-FD, FlexRay, Ethernet, 100BASE-T1, 1000BASE-T1, LIN, SENT
- Creation, design and administration of several remaining bus simulations
- Embedded OS variants with multicore and FPU support available
- Support for DoIP and ISO-TP (on request)
- Updating existing projects with new network description files (Database Updater update).
- Backward compatibility guaranteed down to FlexConfig RBS 2.0
- Support of the network description formats FIBEX, AUTOSAR and CANdb
  - FIBEX (.xml): 2.0.0d, 2.01, 3.0.0, 3.1.0, 4.0, 4.1.1, FIBEX+ 1.4
  - AUTOSAR (.arxml): 3.02, 3.1.0, 3.1.4.DAI.2, 3.1.4.DAI.4, 3.2.2, 4.0.3, 4.1.1, 4.2.1, 4.2.2, 4.3.0, 4.3.1
  - CANdb (.dbc)
- Selection of the ECUs which should be simulated or a remaining bus simulation should be created for
- Creation and configuration of a CAN-HS RBS is possible without a network description file
- Handling of ECU families per selecting one ECU which should be simulated or generating dummy ECUs for the required ECU family
- Self synchronization of ECUs/clusters which have no cold start ability

- Support of user defined sync/startup frames
- Configurable cyclic timing for CAN and Ethernet (global and per message)
- Supported byte-orders: Big Endian, Little Endian, Mixed Endianness (within a PDU)
- Supports multiplexed PDUs
- Supports Container-PDUs (only for FlexDevice-S, FlexDevice-L/L<sup>2</sup>)
- Hard real-time support for CRC, alive/message counter and network management
- Supports AUTOSAR Timesync
- Supports SOME/IP
- Supports Secure Onboard Communication (only for FlexDevice-S, FlexDevice-L/L<sup>2</sup>)
- Using OEM specific (user defined) CRC / alive/message counter algorithm templates in OEM projects
- Support of configurable OEM specific project templates with pre-sets for
  - standard signal handling
  - target IP address
  - Frame and PDU init values per bus
- Access RBS run-time parameters via Windows API over Ethernet:
  - Global Parameters (read/write)
  - Signals (read/write)
  - PDUs (read/write)
  - Bus Controller (switch on/off / read state)
  - Simulated ECUs (switch on/off / read state)
- Command line tool to build and download projects
- Device Manager

NETWORK TECHNOLOGY

ENERGY TECHNOLOGY

SENSOR-/ ACTUATOR TECHNOLOGY

# FlexConfig RBS

## TECHNICAL FEATURES

### FlexConfig RBS

- Runs on Windows 7 (32-bit), 7 (64-bit), Windows 10 (64-bit)
- Automatic Update via Internet
- Automatic License update via internet
- Interface to user-defined CRC algorithms, alive/message counter and network management (ANSI-C code)
- E2E Protection for several OEMs
- Logging of bus data
  - Supports the internal SD card slot of a FlexDevice
  - Logging in \*.mdf format
  - Timestamps with a resolution of 1us possible
  - Upload of the \*.mdf file to the host via ftp
- FlexConfig RBS includes FlexConfig Control for live manipulations
- User Function editor
  - Implementation of frame-based and pdu based TX and RX functions per drag and drop and user-defined algorithms
  - Implementation of interrupt-based CycleStartInterrupt functions per drag and drop user-defined algorithms for simulated FlexRay ECUs/clusters
  - User-defined .c/.h files and .a libraries can be included
  - Integration of I/Os per drag and drop
  - Signal and frame-based data handling with deposited functionality
  - RX User Functions: Payload access to last received frame (e.g. for CRC check)
  - Generation of additional TX events for the simulated TX frames (e.g. for transmitting CAN frames which don't have cyclic triggered timings)
  - Read/write access to PDU update bits
  - Enable/Disable simulated ECUs
  - Enable/Disable bus
  - Access to user-defines
  - Support of LIN. No support for LDF, manual coding required
  - Supports export of user functions (as \*.c/\*.h files)
  - Supports search for used elements (such as Bus, ECU, Signal, ...)

### FlexConfig Control

- Fast and efficient Signal/PDU/Frame/ECU manipulation with the provided GUI
- Configuration via drag and drop mechanism
- Various methods to manipulate data
  - Loss, Factor, Freeze, Fix Value, Offset, Drift, Ramp
- The duration and the delay of a manipulation can be adjusted
  - Events, Milliseconds, Cycles (FlexRay only)
- Various trigger options
  - Trigger operators are '==', '!=', '>', '<', '>=', '<=' and 'Edge'
  - Link up to four triggers
- Enable manipulations via Hotkey
- With the help of a sequence editor various manipulation groups can be stored
- Manipulations can be controlled via a Windows API and Ethernet
- Manipulable elements are ECU, Frames, PDUs, Switches (of multiplexed PDUs), Signals, Global variables
- Save manipulations at the target platform

### FlexConfig Gateway

- Automated generation of transparent FlexRay/FlexRay and CAN/CAN gateways
- Creation, design and administration of CAN-HS, CAN-FD, FlexRay, OABR and Ethernet gateways
- Partly automated routing of complete buses

- Automatic and manual scaling of signals (only for signal routings)
- Exporting of the configured routings and of the available source and target elements as CSV file or Excel file
- Printing the configured routings and of the available source and target elements
- Searching and filtering in source, target and routing lists
- Highlight matching for source and target elements for routings
- Mark/highlight elements and element groups in different colors
- Cluster synchronization for FlexRay/FlexRay gateways
  - In-Cycle synchronization
  - Cycle + In-Cycle synchronization
- Gateway mappings can be created for Frames, PDUs and signals
- Transparent gateway configuration supports excluding of ECUs

## SERVICES:

- Configuration design and test
- User code implementation
- Customer specific extensions
- Training courses

## SCOPE OF DELIVERY:

- FlexConfig RBS
- Documentation

## ORDER INFORMATION FLEXCONFIG RBS

### Configuration Software

Product	Description	Order number
FlexConfig RBS	Software license for the usage of FlexConfig RBS for all supported bussystems. Requires „FlexConfig RBS runtime“ on each device.	3-V0160B01
FlexConfig RBS Starter	Software license for the usage of FlexConfig RBS only for the bussystems CAN-FD/-HS and LIN. Requires „FlexConfig RBS runtime“ on each device.	3-V0161J01

## ORDER INFORMATION HARDWARE RUNTIMES

### Hardware / Runtime software

Product	Description	Order number
FlexConfig RBS Gateway	Extension for creating Gateway configurations with FlexConfig RBS. Requires "FlexConfig Gateway runtime" on each device.	3-V0160N01
FlexConfig RBS OEM Package	Extension for OEM specific configurations. Available for several OEMs.	on request
FlexConfig RBS Update	Onetime update to the latest FlexConfig RBS Release.	3-V0160U01
FlexConfig RBS Maintenance	Includes all updates of FlexConfig RBS for one year.	3-V0160M01
FlexConfig Compact Course	1-day basic training	on request
FlexConfig RBS runtime	Runtime license for RBS execution. Required once per device.	3-00700J01
FlexConfig Gateway runtime	Runtime license for gateway execution. Required once per device. (Requires "FlexConfig RBS runtime")	3-00701E01
FlexConfig Control runtime	Runtime license for signal manipulation. Required once per device. (Requires "FlexConfig RBS runtime")	3-00701G01
FlexConfig Analyzing runtime	Runtime license for analyzing bus data. Required once per device.	3-00701J01
FlexConfig Logging runtime	Runtime license for recording bus data. Required once per device.	3-00701O01