LABCAR-OPERATOR 5.4.2 – What's new

LABCAR-OPERATOR 5 at a glance...
✓ Modular and open software for interactive in-lab testing of ECUs by means of the LABCAR testing system.
✓ Individually configurable user interface for experiment design and control
✓ Open interfaces for automated testing
✓ Easily interfaces with standard ECU development tools (MATLAB®/Simulink®, INCA)

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LABCAR-IP (Integration Platform)

In the Integration Platform of LABCAR-OPERATOR you can:

- import behaviour models from different design tools (Matlab/Simulink, ASCET or just C code) into one project
- configure the I/O hardware modules
- connect between these modules
- generate code for the simulation target
- define OS settings for real-time simulation
- configure CAN, LIN and FlexRay bus simulations
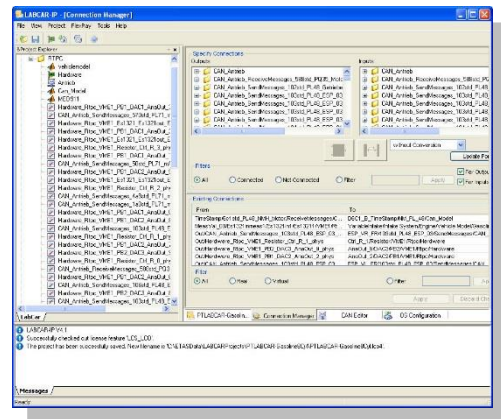
LABCAR-EE (Experiment Environment)

The re-designed Experiment Environment introduced with LABCAR-OPERATOR 4 and INTECRIO 3 is designed for configuring (instrumentation, parameterization etc.) and executing experiments.

The experiment environment offers the following possibilities:

- Clear access to all parameters and measure variables in the "Workspace Elements" window.
- Creation of instrumentations for displaying measure variables and for modifying parameters of the running experiment
- Signal conversion and sensor/actuator modeling
- Tracing signal paths
- Data recording with the Datalogger
- Define stimulation patterns and stimulate inputs with the Signal Generator

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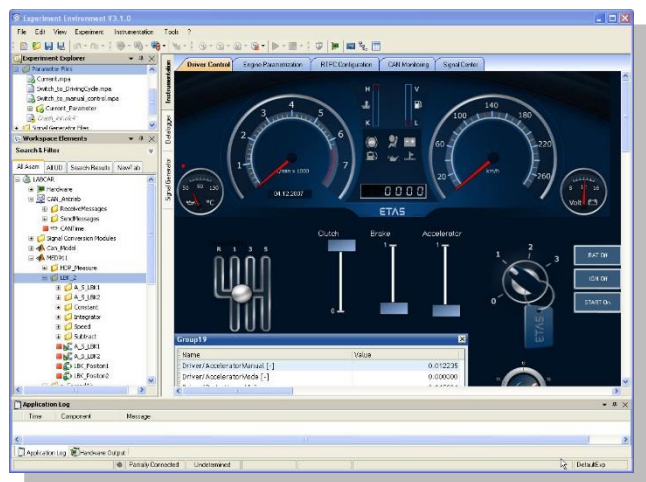
New Features in Versions 5.4.x of LABCAR-IP (Integration Platform)

New in LABCAR-IP 5.4.2
✓ Support of Simulink R2015b and 2016a
✓ Support of Windows 10 (basic support – minor limitations)
✓ Support of EB tresos® Busmirror® 4.10.2
✓ Support only up to ASCET 6.2.1
✓ Support of ARXML 4.2.x in NIC (only basic CAN features)

New in LABCAR-IP 5.4.1
✓ Support of CAN-FD ISO/Non-ISO mode
✓ Support ES5300.1-B, ES5350.1, ES5372.1 and ES5392.1

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New in LABCAR-IP 5.4.0

✓	Support FlexRay™ diagnostic target user modules (TUMs)
✓	Support EB tresos® Busmirror® 4.9.x, 4.10.x
✓	Support MATLAB® Simulink® 2015a
✓	Support ES4452.1, ES4455.2, ES4457.1, ES5321.1, ES5338.1 and ES5385.1
✓	Support Windows 8.1 64-bit
✓	Memory usages increased up to 4GB
✓	Increase of elements within one LABCAR module
✓	Limit of ports within one LABCAR project eliminated

Improvements and Enhancements in LABCAR-IP V5.4.2

- With LABCAR-IP V5.4.2 the support of Simulink® R2015b and 2016a is introduced. As the underlining code generation of Simulink® Models realized by the Simulink® Coder from The MathWorks changed the handling of inlined workspace variables this lead to a different access structure in the Experiment Environment and via automation API (ASAM XiL).
  Formerly the inlined workspace variables where accessible via model structure while now all inlined workspace variables are found in the artificial structure/folder "GlobalParameters".

- With LABCAR-IP V5.4.2 a basic support of Windows 10 is introduce. LCO-IP works fine while sporadic problems with RTIO-Editors are encountered. In such cases the user has simply to reopen the RTIO again.

- The new FlexRay™ diagnostic target user modules (TUMs) introduced as Addons from Elektrobit with EB tresos® Busmirror® V4.10.2 will be available for LABCAR users as well. Therefore a new column within the LABCAR FlexRay™ editor (LCO-NIF) will be introduced. All elements which support these new TUMs will be enabled for selection within the new introduced column.

- With LABCAR-IP V5.4.2 a support of ASCET has been limited to 6.2.1 for use as plant modelling system. LABCAR-IP V5.4.2 support of ASCET

  - V6.0.1 HF3 + HF8 + HF10

  - V6.1.3HF5

  - V6.2.0HF1

  - V6.2.1HF3

  This also means that usage of ASCET is no more possible with Windows 10, as only ASCET 6.3.0 and newer support Windows 10.

- Support of ARXML 4.2.x in NIC additionally to the already supported ARXML version 4.1.x and 3.2.x with the same feature set (only basic CAN features, no enhanced AUTOSAR communication features!).

- **NOTE:** Please create a backup copy of your LCO project before starting the migration assistant to migrate your LCO project to V5.4.2 – this is important as the migration from V5.4.1 to V5.4.2 is an in place copy which overwrites the initially selected project with the new version of the project.

## Improvements and Enhancements in LABCAR-IP V5.4.1

- With LABCAR-IP V5.4.1 the load and build time of projects is considerably improved. Amongst others this is achieved by implementing a lazy load mechanism for connections. This means that the connections in the Connection Manager are not updated before the Connection Manager is opened.

- After general CAN-FD support was added with LABCAR-OPERATOR V5.3.1 the officially released CAN-FD ISO mode is now also supported. Within the buses properties it can be configured which of the 2 specifications shall be used.
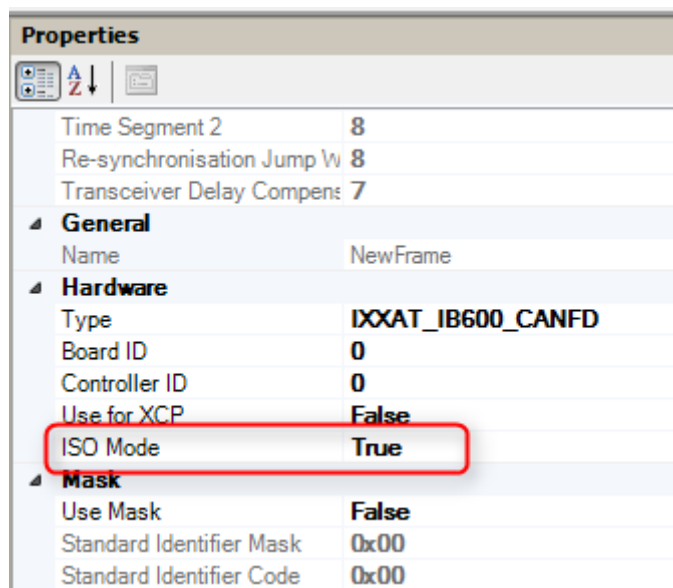

- LABCAR-OPERATOR now also supports the new cards ES5372.1 - Carrier Board for ES4455 Load boards and ES5392.1 - High Current Switch Board (6-CH).

Improvements and Enhancements in LABCAR-IP V5.4.0

- The new FlexRay™ diagnostic target user modules (TUMs) introduced as Addons from Elektrobit with EB tresos® Busmirror® V4.10.1 will be available for LABCAR users as well. Therefore a new column within the LABCAR FlexRay™ editor (LCO-NIF) will be introduced. All elements which support these new TUMs will be enabled for selection within the new introduced column.
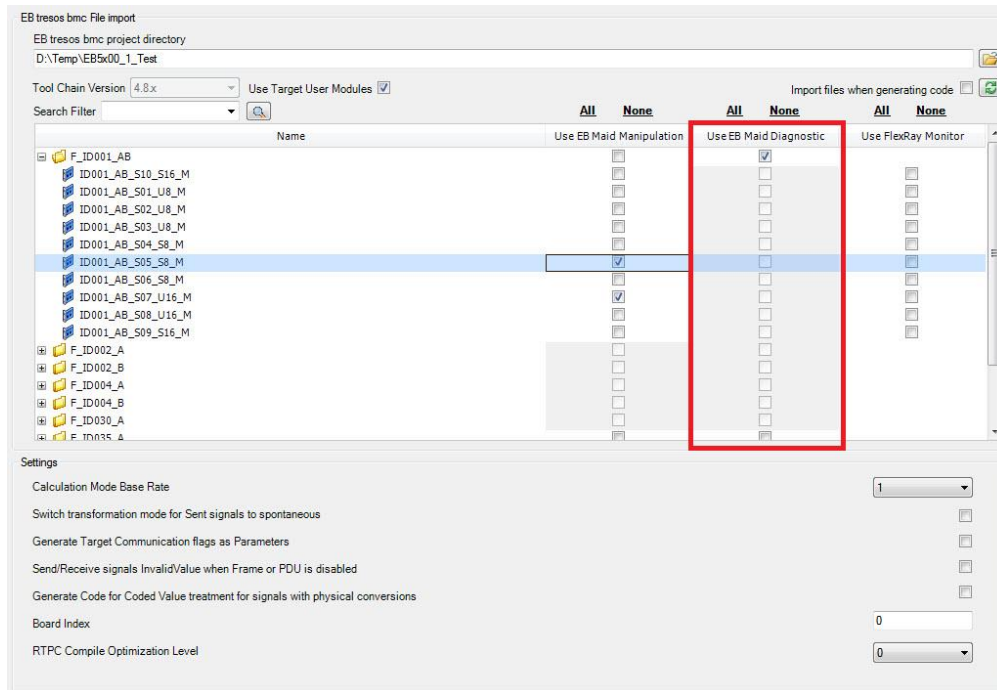
- With LABCAR-IP V5.4.0 the maximum possible used memory (RAM) will be increased up to 4GB.
  In case of instabilities a fall-back LABCAR-IP will be available where the maximum memory consumption is limited to 1.5GB. Switching between this 2 versions is handled via the "LABCAR-OPERATOR Version Selector".
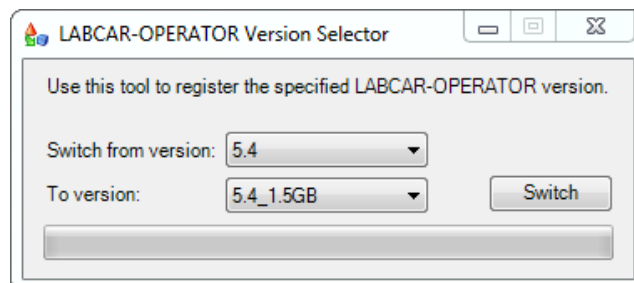

- Within LABCAR modules a maximum number of measurements and parameters in total exist. Until LABCAR-OPERATOR V5.3.1

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the limit was set to 32768 elements. This limit will be increased now up to 1073741824 elements.

- Within a LABCAR project a maximum number of ports (in/out) in total existed. Until LABCAR-OPERATOR V5.3.1 the limit was set to 29108 ports within the whole project. This limit is eliminated now.

- Windows 8.1 specifics

  Since windows 8.1 comes with the so called "Tiles" instead of the standard start menu the look will also change for Windows 7.
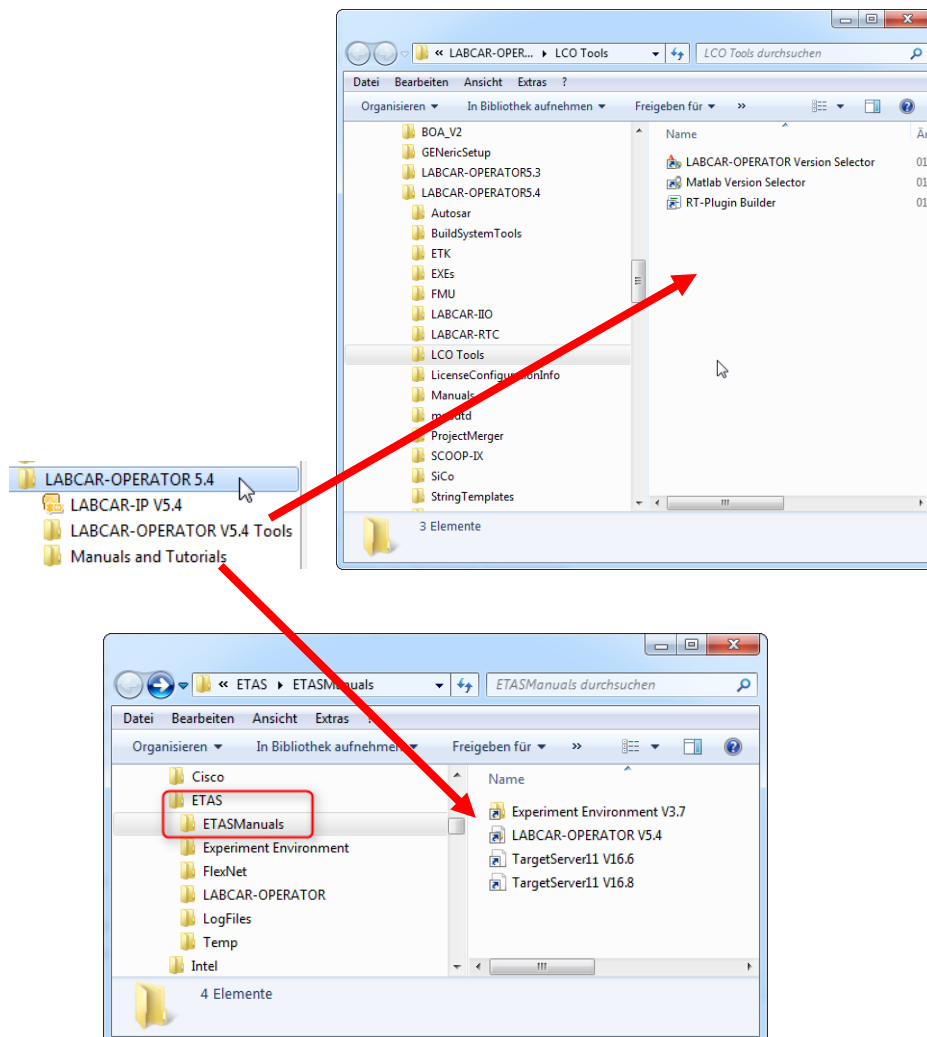
Notes: This restructuring of the start menu was also done for the Common Experiment Environment. The Uninstall link can be accessed via "Control Panel" => "Programs and Features".

Bug fixes in LABCAR-IP V5.4.2

EHI #	Title
467802	LCO5.3.1: Migration error with CAN project
538521	EE V3.7.0: Address map fails for 0, Change xxx_ConstantValue impossible after play Script
540532	LCO 5.3.1/6: Wrong HWC settings not detected leading to strange errors during init phase
540648	LCO5.3.1 EE3.5.1 Signalgenerator: long waiting times during adding segments in signal editor
540982	LCO 5.3.1 und LCO 5.4.1: How does LCO detect "correct CAN-FD frames"?
541015	LCO 5.3.1 und LCO 5.4.1: Wrong Signal length 64bit in CAN-FD Frame ISOx_Airbag_01_Req_FD instead of 512bit as described in DBC
541627	UUT selection incorrect for BWM_solitaere.arxml file
542260	LCO 5.4.1 - Rebuild required although project was not changed
542677	[Documentation Call] LCO 5.4.1: Zahlendreher in LABCAR-OPERATOR_V5.4.1_Whats_new -> LCO V3.5.1 statt LCO V5.3.1
542688	LCO 5.4.1: Non CAN-FD Frames (both Standard and Extended) are wrongly detected as CAN-FD Frames by LABCAR-NIC
543388	Transfer of scaling data out of arxml File not correct

Bug fixes in LABCAR-IP V5.4.1

EHI #	Title
514920	LCO5.3.1: Error when saving wrong Calibration/Parameters is not displayed
520020	LCO5.3.1HF4: Migration from LCO 5.1.2 with API error: Failed to finish migration of 'Update LIN Connections"
522154	LCO 5.3.1 NIF: Single Shot Flexray Nachricht senden
522708	LCO5.4.0: error during build becasue of slprj directory is not a directory
527979	LCO 5.4.0/1: CAN Messages with Frame Send Type "cyclicAndSpontanX" cannot be deactivated when containing signals with Send Mode „On Change" if connected to a permanently changing model value
528269	Cycle Time Inport not working correctly - resolution is 1 second
532304	LCO5.2.1: Enumerations data types not supported in Simulink models

Bug fixes in LABCAR-IP V5.4.0

EHI #	Title
434152	LCO 5.2.1: Save in CAN Module does not update definitions for mc_module files
439446	LCO 5.3.0: Failure to launch LCO V5.3.0 if you were not the orignal installer
449178	LCO 5.3.0: Error while opening Matlab (R2013a- 64b)

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EHI #	Title
462531	LCO 5.3.1: API Import of vemox model fails
465995	LCO 5.3.1: freezes during simulink model import
467476	LCO 5.3.0: Documentation FMU definition co-simulation and model exchange is wrong
468841	LCO 5.3.1: No error message shown when user creates two LIN Frames with the same Name or ID (leads to trouble in scheduling)
468843	LCO 5.3.0/1: Error Messages using A2L in LABCAR-FIL - ETAS_ODX_HANDLING is not a valid key in the current block of type "if_data"
469336	LCO 5.3.1: Update Bit is not correctly imported from arxml-File (AR 3.2.2) LABCAR-IP -> frame is missing
470772	LCO 5.3.1: Bypass with ES910 not working for a FiL Simulation with MED17.1.8 - 'ES910 (ETKC 0x0) Error: RTIO driver locked'
471276	LCO 5.2.1: Simulink error during compiling the project: extract bits block
475247	LCO 5.3.1/2: RTIO editor open fails
476929	LCO 5.3.1/2: EE Registry key missing
477666	LCO 5.3.1: Documentation about new GUI of NIF
479528	LCO 5.3.1: IP CAN Module Out of Memory Exception during code generation
481200	LCO 5.3.1: API Call ConnectionManager.Load(..) is not throwing an exception anymore in case of missing connections
481209	LCO 5.3.1: Using EB tresos Busmirror 4.10.x in LABCAR-NIF
490351	LCO 5.3.1/3: Build Error with external MATLAB Simulink model due to missing file - Error using load. Unable to read file 'LCO_WorkSpaceVariables.mat'. No such file or directory
501192	LCO 5.4.0 Beta (Build 2618): FlexFPGA project no more usable after migration due to SIGSEGV error after Init Task has been completed

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New Features in Versions 3.7.x of LABCAR-EE (Experiment Environment)

New Features in LABCAR-EE 3.7.
✓ Support INCA 7.2.2

New Features in LABCAR-EE 3.7.1
✓ Support INCA V7.2.1
✓ ASAM XiL API V2.0.1 – Support of Signal Generator creation
✓ ASAM XiL API V2.0.1 – Support of sti 2.0 file format including DATA, RANDOM and LOOP segments (functional range comparable to CEE API)
✓ ASAM XiL API V2.0.1 – Support of sti 2.0 file format including DATA, RANDOM and LOOP segments (functional range comparable to CEE API)

New Features in LABCAR-EE 3.7.0
✓ Multiple Monitor support of Layers
✓ ASAM XiL API V2.0.1 – MA (Model Access) port
✓ Repetitions of Data Logger runs
✓ Support Windows 8.1 64-bit

## Improvements and Enhancements in LABCAR-EE V3.7.2

- INCA V7.2.2 can now be used. However be aware that INCA V7.2.0 and V7.2.1 are explicitly not supported.

Improvements and Enhancements in LABCAR-EE V3.7.1

- INCA V7.2.1 can now be used. However be aware that INCA V7.2.0 is explicitly not supported

- ASAM XiL API V2.0.1 – Support of Signal Generator creation

- ASAM XiL API V2.0.1 – Support of sti 2.0 file format including DATA, RANDOM and LOOP segments (functional range comparable to CEE API)

Improvements and Enhancements in LABCAR-EE V3.7.0

- Multiple Monitor support of Layers
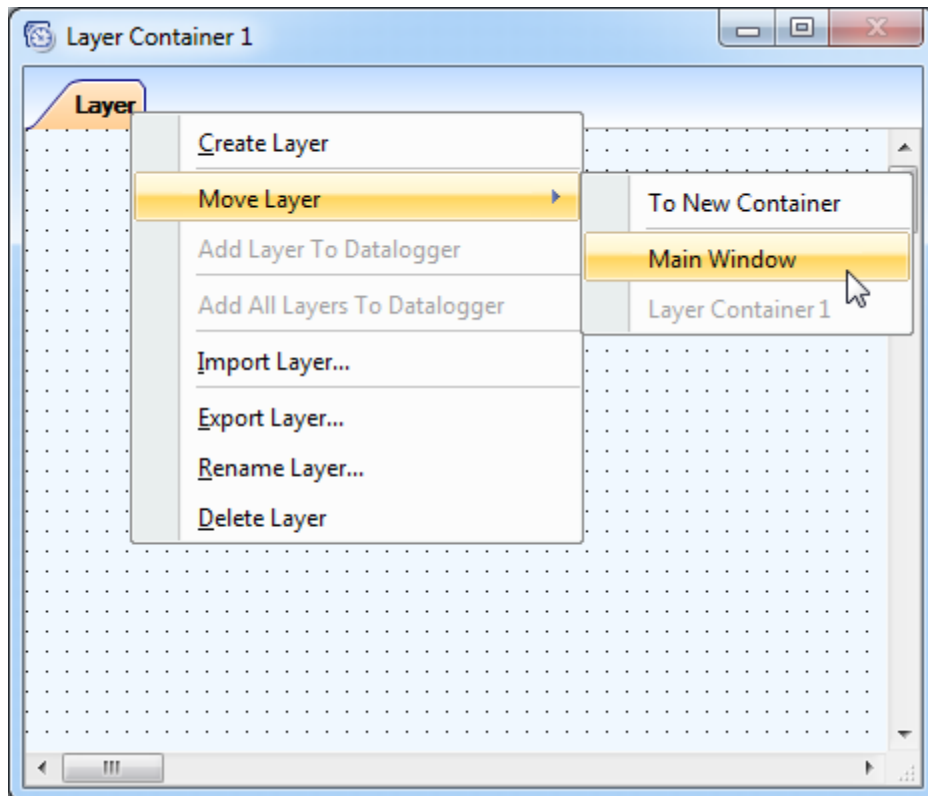
On each layer you can find a new context menu called „Move Layer". Via this context menu you can create up to 6 layer container which can be moved to any available display. The window position of each container will be stored within your experiment and will be restored while loading it. If the display is not available where the container was located the last time the

container will be moved back to the main screen during experiment load.

- Repetitions of Data Logger runs

Available Dataloggers

	Name	Active		State	Rec. Time	Automatic Restarts	Current Restart
✔	New Datalogger 1	☐	▷	Off	-	5	0

Editable Automatic Restart Count which can be set if an valid StartTrigger and StopTrigger is set. Otherwise this option is off.

Shows the current restarts. Stays at 0 for the first run

The "Automatic Restarts" feature is always coupled to a valid StartTrigger condition including a specified post trigger time or a valid StopTrigger condition. Without this the new option will be disabled and show a tooltip with further informations.

Note: We highly recommend that you use this feature only with "Auto Increment" file numbering enabled. Without this option the file will be continuously overwritten. Therefore only the last recording will be available on hard disk afterwards.

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Bugs fixed in LABCAR-EE V3.7.2

EHI #	Title
530571	LCO5.3.1/4 EE3.5.1/2 CAN GUI No Trigger color

Bugs fixed in LABCAR-EE V3.7.1

EHI #	Title
369896	MDF Channel Import breaks with error
526780	LCO 5.3.1/4: SignalMeasurement in Experiment Environment via COM-Interface > Wrong value object type

Bugs fixed in LABCAR-EE V3.7.0

EHI #	Title
312132	CEE 3.3.0: Software crash using EE 3.3.0
350605	CEE 3.3.1: CAN Configuration causes DTC instrument to spew errors
369896	CEE 3.3.2: MDF Channel Import breaks with error
388296	CEE 3.4.1: parameter files DCM 1.1 error message when using existing file name
462938	CEE 3.4.2: Connect leads to L1 interface error with EE 3.4.2
490699	CEE 3.5.1/1: Problem with Snapping in EE - Values below 1.0 no more possible
497700	CEE 3.5.1/2: Fixed Maps not usable with LABCAR-CCI - Exception: Der Objektverweis wurde nicht auf eine Objektinstanz festgelegt.