LABCAR-AUTOMATION 4.1
Release Notes

Contents

1   Introduction

LABCAR-AUTOMATION 4.1 supports the customer by implementation of a flexible, systematic and economic automation process, which can be adapted to existing development processes at the customer. With the provided well-structured test method, customer profit can be realized on a transparent and clear operation of the test system but also on a much better reuse of test cases.

This document describes the properties, prerequisites and conventions for LABCAR-AUTOMATION 4.1.

All screenshots in this document containing version information like 3.3, 3.4 or 3.5 are valid similar for the version 4.1.

1.1   Conventions

The following typographical conventions are used in this document:

`OCI_CANTxMessage msg0 =`	Code snippets are presented on a gray background and in the Courier font.
	Meaning and usage of each command are explained by means of comments. The comments are enclosed by the usual syntax for comments.
Choose **File → Open**.	Menu commands are shown in boldface.
Click **OK**.	Buttons are shown in boldface.
Press <ENTER>.	Keyboard commands are shown in angled brackets.
The "Open File" dialog box is displayed.	Names of program windows, dialog boxes, fields, etc. are shown in quotation marks.
Select the file `setup.exe`	Text in drop-down lists on the screen, program code, as well as path- and file names are shown in the Courier font.
A *distribution* is always a one-dimensional table of sample points.	General emphasis and new terms are set in italics.

2   Product Definition

2.1   Functions at a Glance

✓   Graphical user interface for test case creation

✓   Impressive graphical debugging

✓   Role-based automation of systematic ECU testing, including Test project management, execution, evaluation.

✓   Efficient handling and execution of reusable test cases

✓   Support of various test design tools and languages, including Python, C# (.NET®-based) and TestStand® by National Instruments

✓   Configuration Guidance

✓   Test Bench Connectors for HILs of ETAS, Vector and dSPACE like INCA, INTECRIO, LABCAR-OPERATOR, ODX link, CANape

✓   Offline Test Case design and test

✓   Synchronous Datalogging with INCA and LABCAR-OPERATOR

✓   Real Time Test Automation

2.2   General Description

2.2.1   Delivery

The software is delivered with an installation routine on a CD including LABCAR-AUTOMATION software, documentation, tools, utilities, and further information. All software documentation is available in the Portable Document Format (PDF), which requires Adobe® Reader®. You can download the actual version from Adobe® (http://www.adobe.de/products/acrobat/readstep2.html).

2.2.2   System Prerequisites

The following system prerequisites have to be met:

User PC	
Hardware (minimum)	■ Pentium PC 1.5 GHz (or compatible, Core2Duo recommended) ■ 1 GB RAM ■ 1 GB free hard disk space[1] ■ CD-ROM ■ 2nd Ethernet Adapter 10/100BaseT for connection to both LAN and LABCAR
Operating System	■ Microsoft® Windows XP (SP3 recommended) or ■ Microsoft® Windows 7 (3 GB RAM recommended)

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[1] Hint: Test Reports might need large amount of free disk space

2.2.3   Software Prerequisites

🔲 **LABCAR-AUTOMATION V4.1 Compatibility**

For parallel operation, the following combinations of ETAS tools are recommended. The list shows the combination of tools, which have passed through a common release test.

🔲 **Shipped with the LABCAR-AUTOMATION CD[2]:**

LABCAR-AUTOMATION Product and Add-Ons [3]	Version
Core, including Test Design Connector Microsoft .NET® (TDCNET), Connectors for LABCAR-OPERATOR, INCA, SyncDL and Offline Ports	4.1
Manuals	4.1
SuT Mapping File Editor (SMFE)	4.0
Automation Sequence Builder (ASB)	4.1
Configuration Wizard (CWZ)	4.1
Project Generator (PjG)	4.1
Test Manager ™	4.1
Test Handler (TH)	4.1
Editors Package (SDFE, TBCE, UUTE, TCFE)	4.1
Test Bench Connector dSPACE (TBCD)	1.0.0[4]
Real Time Test Tool Adapter	4.1
Diagnose ODX Link Tool Adapter	4.1
Fault Simulation (ES4440) Tool Adapter	4.1
OBD/EOBD Conformance Test System ("OCT") Tool Adapter (J1699)	4.2.2
Intecrio Tool Adapter	4.1
CANape	4.1
MLBA4 Tool Adapter for SMART® MLBA4 Simulator	4.1
MDF Tool Adapter	4.1
Excel Tool Adapter	4.1

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[2] Please note that the version numbers refer to the order information of each Product and add-on.
[3] All parts are only executable if a valid license existing
[4] LABCAR-TBCD is shipped as customer test version. ETAS has currently no possibility to stress test the API connectivity to dSPACE Simulator software.

🔲 LABCAR-AUTOMATION - Supported Test Bench Tools

ETAS Products and Applications used in Test Bench Configuration with following ports:

Port	Product	Version & Compatibilities[5]	
Model Access	LABCAR-OPERATOR[6] (using Experiment Environment)	3.2.5 (no EE)	4.1 (EE3.1) 5.0 (EE3.2) 5.1 (EE3.3) 5.2 (EE3.4)
	LABCAR-RTPC (Real-Time PC)	3.0.x	4.1 5.0 5.1 6.0
	INTECRIO (using Experiment Environment	3.1 (EE3.1) 3.1.1 (EE3.2) 3.2 (EE3.2) 4.0 (EE3.3)	
ECU Access	INCA (with LABCAR-OPERATOR)[7]	5.3.x 5.4.1 6.2.1 7.0.0	5.4.1 6.2.1 7.0.0 7.1.2
	INCA (without LABCAR-OPERATOR)	5.3.x 5.4.1 6.2.1	
Sync DL	LABCAR-OPERATOR	3.2.5	4.1 (EE3.1) 5.0 (EE3.2) 5.1 (EE3.3) 5.2 (EE3.4)
	INCA	5.3.x 5.4.1 6.2.1 7.0.0	5.4.1 6.2.1 7.0.0 7.1.2
Diagnostic Access	ODX Link (with INCA V5.3)	1.1.0	
	ODX Link (with INCA V5.4)	1.2.0	
	ODX Link (with INCA V6.2.1/V7.0.0)	1.4.2	

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[5] The two different columns indicate the versions of products, which are compatible to each other. Cells which are not split into two columns are used for product versions which are either independent from other tools or are compatible with both combinations (columns).

[6] ETAS recommends to check for latest Hotfix installations on the ETAS website.

[7] Please note, that INCA versions below V5.3.0 are explicitly not supported.

J1699	OBD/EOBD Conformance Test System ("OCT")		4.2.2	
Fault Simulation	LABCAR-PINCONTROL		2.1.0	
	or (for Real-Time): LABCAR-OPERATOR	3.2.5	4.1 (EE3.1) 5.0 (EE3.2) 5.1 (EE3.3) 5.2 (EE3.4)	

LABCAR-AUTOMATION – Third Party Tools

Product part/Add-On	Supported 3rd party tool	3rd party tool version
Test Design Connector Microsoft .NET® (TDCNET)	Microsoft® Visual Studio (incl. Express Editions)	2005 2008 2010
Test Bench Connector dSPACE (TBCD)	dSPACE Release dSPACE ControlDesk	V6.1 V3.2.1
Test Bench Connector MLBA4 (TBCMLBA)	SMART® MLBA4	MLBA4
Test Bench Connector Excel (TBCEX)	Microsoft® Office Excel	2003/2007/2010
Test Bench Connector CANape (TBCCAP)	Vector® CANape	8.0 SP3

2.2.4 Delivery

The software is delivered with an installation routine on a CD including LABCAR-AUTOMATION software, documentation, tools, utilities and further information. All software documentation is available in the Portable Document Format (PDF), which requires Adobe® Reader®. You can download the actual version from Adobe® (http://www.adobe.de/products/acrobat/readstep2.html).

2.2.5   LABCAR-AUTOMATION Packaging

To better accommodate the demand of more specialized installations of LABCAR-AUTOMATION three packages are configured for installation and licensing.

■ LABCAR-AUTOMATION Standard package

To immerse into the test automation for the first time or to implement test automation in a rather small or static test bench environment the LABCAR-AUTOMATION Standard package is the recommended package.

■ LABCAR-AUTOMATION Professional package

Additional tool connections and features, in-depth managing of configurations and units under test are the benefits of the effortless extendible LABCAR-AUTOMATION Professional package.

■ LABCAR-AUTOMATION Embeddable package

Integration of the LABCAR-AUTOMATION into an existing tool chain provides test case and test project management as well as automated test project creation. They can be configured and triggered from within customer's tool chain. This package is fully scalable to your needs.

Use the appropriate installation option to install the relevant package. The possibility to use features is fully controlled by the license keys you acquired.

The table below shows the content and required licenses[8] per package:

Components	Standard	Professional	Embeddable

Core Components
Documentation
■ Manuals
■ Samples
Basics Components
■ Executor (Engine)
■ ATCL
■ Offline TBC
■ Standard Editors:
    ■ TCD
    ■ SMF
    ■ File browser (File access)
■ Standard Tool adaptors:
    ■ LCO/EE, INCA - real/offline
    ■ SyncDL
■ Report Sink XML
	LCS_LCA_Core	LCS_LCA_Core	LCS_LCA_Core

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[8] All Licenses are provided completely as a license file, which can be received via a valid entitlement for each package. (Please refer to the documentation "How to get a license file" listed in the tool section of the Installation CD and the user's guide to LABCAR-AUTOMATION.)

Shell Components

- Automation Sequence Builder
- Test Manager
- Test Handler
- Editors package
  - SDF
  - TBC
  - TCF
  - UuT
- Project Generator
- Configuration Wizard
  - standard
  - professional

LCS_LCA_ASB	LCS_LCA_ASB	
LCS_LCA_TM	LCS_LCA_TM	
LCS_LCA_TE	LCS_LCA_TE	
	LCS_LCA_EDP	
		LCS_LCA_PJG
LCS_LCA_CWS	LCS_LCA_CWP	

Interface Components

Tool adaptors
- INTECRO (Rapid Prototyping)
- Real Time Testing
- dSPACE
- Diagnose ODX Link (acc. INCA Version)
- Fault Simulation TA (ES4440)

	LCS_LCA_TBCIRP	
	LCS_LCA_TBCRT	
LCS_LCA_TBCD	LCS_LCA_TBCD	
	LCS_LCA_TBCODX	
	LCS_LCA_TBCFS	

Add-Ons Extraneous Tool adaptors	License keys
Onboard Conformance Test (J1699)	LCS_LCA_TBCOCT
Smart® Simulator MLBA4	LCS_LCA_TBCMLBA4
Excel Tool Adaptor	LCS_LCA_TBCEX
Vector® CANape Tool Adaptor	LCS_LCA_TBCCAP

⇨ **Modular extension of package Professional and Embeddable is possible.**

3   Changes in LABCAR-AUTOMATION 4.1

This chapter describes changes of LABCAR-AUTOMATION 4.1 with respect to earlier versions.

3.1   New Functionality in LABCAR-AUTOMATION 4.1

LABCAR-AUTOMATION 4.1 main features at a glance:

✓	AUTOMATION Sequence Builder (ASB) improvements: • New Data Type concept • Label Handling • Function/Subsequence handling • Usability
✓	.New MDF Reader.

A detailed explanation of new features is available with the document "LABCAR-AUTOMATION 4.1 – Whats New.pdf" which can be found in the LABCAR-AUTOMATION's start menu group and on the installation CD.

3.2   Migration from LABCAR-AUTOMATION 3.1 to LABCAR-AUTOMATION 4.1

Data structures from LABCAR-AUTOMATION 3.1 projects must be converted to the current data structures.

Please be careful that projects that shall be opened with LABCAR-AUTOMATION 3.1 may not be opened and saved with LABCAR-AUTOMATION 4.1.x.

⇨ **After opening a project with LABCAR-AUTOMATION 4.1.x the project cannot be opened with previous versions (3.1 and earlier)**

A detailed description of migration steps and hints regarding the change of version is available in the document "LABCAR-AUTOMATION - From 3.1 to 3.2.pdf" which can be found in the LABCAR-AUTOMATION start menu group and on the installation CD.

3.3   Solved Problems

The following problem reports (EHI numbers) have been addressed as of the predecessors of LABCAR-AUTOMATION 4.1

354098	LCA 3.5.0 JD: „Nested sequences" übernehmen Variablen nicht / „Nested sequences" don't take over variables
354615	LCA 3.5.0 JD: ASB V3.5 - JD - Some errors in compiler. Some errors occured. Check your Sequence, please!
354865	Nested Sequence Calls Sometimes Use Default Values
356076	Global Int Parameters in ASB Always Use Default Values, Not Parameters

356919	LCA-JD: ASB Nested Sequence aborts unexpected
360791	LCA 4.0.0 - SMF-Editor 4.0.1.3: Fehler in SMF-Editor: Zuordnungen verschwinden ohne Grund
361051	EW_LCA4.0 INVALID Device ETK nach Checksummenabgleich nach Zündungswechsel
367042	LCA4.0.0: Testmanager freezes
359278	LCA 4.0.0: Kryptische Fehlermeldung wegen falschem Toollabel im SMF
370784	LCA 3.5.1 - INCA 7.0: INCA-Größen, die eine Klammer '[' im Namen enthalten, können nicht gemessen oder verstellt werden
359897	LCA 3.5.0-JD - ASB: ERROR: Can not convert from: " to '%'
368141	LCA 3.5.0-JD - ASB: ASB viel zu langsam
369020	DA Instrument Issues - Read, Write, and Display
369157	Verify DTC stencil Issue:"ERROR: Requested Service not found"
356913	LCA-JD: ASB Nesting of blocks
354473	LCA 3.5.0 JD: ASB fängt Crash beim Einbinden fehlerhafter SMF-Dateien nicht ab
355815	LCA4.0.0: PDF Report: All links are absolute. Not possible to use report on other computer or other storage path
345038	IXXAT ECI Driver Does Not Recover from BusOff Condition; Status Flags Do Not Reset
352557	LCA: Plot Curve scaling
353718	LCA, Nested seqences

3.4   Known Issues

This section describes known problems of the released version 4.1.

3.4.1   Parallel Operation V3.1 and V4.1 and deinstallation of V4.1

In case LABCAR-AUTOMATION 4.1 has been used parallel to V3.1 and V4.1 is de-installed again, an installation of V3.1 is necessary again to continue the operation.

3.4.2   Single element access for arrays in Model Access - Datalogger

LABCAR-OPERATOR V3.2.x/4.1 cannot handle single element access of arrays in the datalogger configuration. The following signature usage does not work:

```
port.ConfigureDataLogger(AtclTypes.TypeDLConfigureRecord(
log_filename,
10.0,
```

```
[AtclTypes.TypeSelectSignalRecord("Engine[index]","AcquisitionTask")],
…


Code example for LCO 5.0:


private string LabelCompleteArray = "Internal_maDouble";
private string LabelToolLabelIndex = "Internal_maDouble_Index";
private string DataloggerIndexLabel = "Internal_maDouble[1]";
private string AcquisitionTask = "AcquisitionTask";
 // Configure the Data Logger
TypeDLConfigureRecord dlConfigure = new TypeDLConfigureRecord(
                    dataloggerFile,
                    10.0,
                    new TypeDLSignal []
                     { new TypeDLSignal ( DataloggerIndexLabel ,
Ports.ModelAccess , AcquisitionTask ),
                              new TypeDLSignal ( LabelToolLabelIndex ,
                     Ports.ModelAccess , AcquisitionTask )
                     }
                    );
```

3.4.3   Experiment Environment 3.2.0

In/Out Ports which are not connected to the model by the Experiment Environment (EE) are not possible to be switched between Modes 'Signal generator' or 'Constant' by LABCAR-AUTOMATION via EE3.2.0 and the values of these In/Out ports are not accessible.

This issue has to be solved by the Experiment Environment. The solution is solved with EE3.3

3.4.4   Parallel usage of different LABCAR-OPERATOR versions

If you like to use different LABCAR-OPERATOR Versions in parallel and use the version selector to switch between both, please re-register one common component for LABCAR-AUTOMATION after the switch. Otherwise you'll receive an exception during execution regarding logging methods (e.g. when executing GetLoggedSignals). Re-register is done via the regsvr32 command in the command line of Windows: Start->Run

Enter the following command into the prompt:

Regsvr32 "C:\Program Files\ETAS\LABCAR-AUTOMATION 4.1.0\TestTools\Bin\ EtasMdfReader.dll"

3.4.5   Measurement of INCA indexed values

Starting from INCA 6.2.1 HF17 for indexed values in INCA a new feature is available. It can be decided by the customer, where the index will be oriented in the naming:

```
Option Index Alignment = 'Left':    aaaa[1].bbbb.cccc.dddd
Option Index Alignment = 'Right':   aaaa.bbbb.cccc.dddd[1]
```

The default selection with this feature is ‚Left', while the orientation in the past was ‚Right', therefore LABCAR-AUTOMATION translates all indexed values like ‚right-oriented'.

To ensure correct operation with the datalogging of indexed values it is necessary to set the user option in INCA correctly.

Select from Menu Bar -> Options -> User options and activate the tab ‚Experiment'. Look at this tab for the entry ‚Index Alignment' and set it to ‚Right'.

This option setting is only necessary once after the installation of the INCA Hotfix.
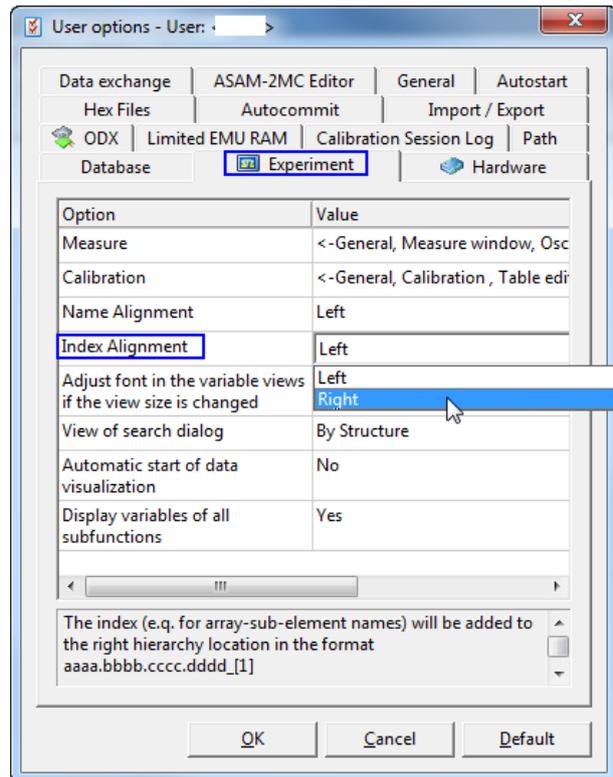
3.4.6 No calibration of TAB_VERB array parameters possible

It is not possible to set array parameters defined in INCA (.a2l) as TAB_VERB. However reads are possible.

3.4.7 Maximal path length and special characters

Windows restricts paths to a maximal length of 248 characters. This should be kept in mind when setting up LCA projects. E.g. when creating project structures with the Configuration Wizard or the Automation Sequence Builder the root directory should not be placed too deep downwards the directory tree. The resulting path lengths result from that root directory as well as the length of the project/test name given.

Further the usage of special characters should be prevented. Means no special characters should be used within path (directory and file names) used with LCA.

3.4.8 Maximal nesting depth in Automation Sequence Builder (ASB)

Due to a restriction of WPF (the .NET base technology that is used a base of ASB) there is a restriction in the maximal nesting depth of stencils in ASB. With the currently used framework version (.NET 4) this threshold is at 35 stencils nested into each other.

3.4.9 Changed behavior of Copy & Paste of hierarchies in SuTMapping Editor

With the introduction of the new SuT Mapping Editor 4.x when copying hierarchies the related test label are no more copied. This was done as hierarchies are purely seen as structural elements. It was not seen as sensible to duplicate all related lables.

3.4.10   ASB Stencil Fault Simulation

In case of selection of multiple errors in the ASB stencil Fault Simulation only the LoadFlag of the last error entry is been used. That means in case the load flag is set for the last error in the multiple error set, all errors of the multiple error set are connected with load.

3.4.11   TTCN3 no more supported

With LABCAR-AUTOMATION 4.x the usage of TTCN3 to implement test cases is no more supported. It is neither possible to build new TTCN3 based tests nor to use those ones that were built and used with older versions of LABCAR-AUTOMATION.

3.4.12   ASAM HiL Addon no more available

The ASAM HiL Addon is no more available with LABCAR-AUTOMATION 4.x. This is due to changes in the ASAM standard.

3.4.13   Debug Break in Test Handler

With LABCAR-AUTOMATION 4 the behavior of *DebuggerBreak* functionality available in the Test handler application has changed (available at the *Test Case Executor* page of the options dialog **Tools → Options...**).
When having the *DebuggerBreak* flag set to *True*, at the beginning of each test execution the "VS Just-In-Time Debugger" window appears that allows you to select a Visual Studio instance to be used for debugging. If aborting this dialog (by pressing the *No* button) the test execution will abort at all. Means the resp. test will no more be executed, but the next test case of the sequence will be started.

3.4.14   PDF Report Sink

With LABCAR-AUTOMATION 4 a new Report Sink is available. When using this report sink we need more memory in the LABCAR-ENGINE. For endurance test this could be a problem. Sometimes some links are not working.

3.5   Well known room for improvements

We are proud to deliver with this version of LABCAR-AUTOMATION a lot of new features and especially improvements of helpers to use LABCAR-AUTOMATION in an again more intuitive and easy way then in the past, without deterioration of flexibility and ability to manage the complex world of test automation.

It is well known, that new features and even tools which are established for a long time too, have to meet a challenge to improve to the actual state of the art and to satisfy all new expectations and the prospective, still unknown demands as well.

Of course we investigated all possible sources and required feedbacks from our customers and we got a quite good response to this.

Nevertheless we also know no product is really complete until it works just by guessing the right action out of the mind of the operator in front of the desk.

For continuously improvement we are pleased about feedback from every user of our software.

4   Installation

To install LABCAR-AUTOMATION please follow the guidelines described in chapter 2 "Installation" of the user's manual provided in the "Data/Documentation" directory of the installation CD.

In general the following issues should be considered for installation.

⇨   *Do not mix products and/or add-ons of different versions of LABCAR-AUTOMATION V2 or V3 software. (LABCAR-AUTOMATION V1 can be operated in parallel to LABCAR-AUTOMATION V3)*

⇨   *Shutdown all running applications (especially all ETAS applications have to be closed).*

⇨   *Uninstall previous versions of LABCAR-AUTOMATION V2 and/or V3*

 ⇨   **Please follow Chapter 4.1 of this document if you like to take over your Test Handler options (new feature since LABCAR-AUTOMATION 3.4).**

⇨   *For a convenient LABCAR-AUTOMATION installation please use the guiding html pages, opened when inserting the CD into the PC drive. If the Auto Play option of your disk drive is switched off, please start the autostart.exe from the root of the CD directly.*

⇨   *Before installation of LABCAR-AUTOMATION the installation of Microsoft .NET Framework V4.0 is required. One may find the installation of Microsoft .NET Framework V4.0 Redistributable at the Installation CD.*

⇨   *For Korean installation only: After installation of Microsoft .NET Framework a reboot of the PC is required.*

⇨   *The Report Viewer internally uses the Internet Explorer installed at your system to visualize the reports. To visualize plots present as svg files an appropriate svg viewer is necessary. At Windows 7 systems assure that Internet Explorer 9 is installed (it brings its own viewer by default). With Windows XP install the Adobe® SVG viewer. You can download it from the [Adobe download page](#) where you can also find further information on SVG.*

Special installation guidelines regarding other ETAS products and 3rd party products can be found in the chapter "Hints" at the end of this document (Chapter 5)

4.1   Test Handler options

The options of the Test Handler are managed in a configuration file. During installation these options are preset as follows:

▪   In case of a fresh installation these options are set to default values.

▪   If it is intended to use the Test Handler options from a former version (different installation folder) you can export it with the old version before uninstall the old version and then import the options into the new version after the installation.

⇨   *If you use the import function the Test Handler has to be restarted to reflect the changes resulting by the imported options file.*

▪   Starting with LABCAR-AUTOMATION 4.1: If you had formerly installed the same version (same installation folder by default), or another version in the same target folder, the Test Handler options were not deleted during uninstall or during repair installation. The saved options are taken over for the new or repaired installation.

⇨   *If you like to force an initial set of Test Handler options, please delete the corresponding file in your <installation folder>\TestTools\conf\ToolOptions.conf manually.*

4.2   Electronic Licensing

LABCAR-AUTOMATION 4.1 and its add-ons are protected by electronic licensing, i.e. separate licenses are mandatory to use the software. The use of unlicensed ETAS software is prohibited. The required license is not included in this delivery.

When you purchase LABCAR- AUTOMATION licenses, you receive a separate entitlement letter with instructions, how to activate your licenses using a self-service portal on the ETAS website (http://www.etas.com/support/licensing). During these steps you receive the necessary license files.

Depending on the license type you need to provide your user name or a MAC address. To retrieve both, please execute "License Info" included on the LABCAR-AUTOMATION installation medium (Data\Licensing) or from the "ETAS/License Management/ETAS License Manager" entry in the Windows start menu via Tools->Obtain License Info->Get License Info. You can save this information to a file and send it to ETAS.

You will need new license files if you are upgrading from a previous major version (i.e., from V3.x to V4.x). If you own a license for a previous major version and have a valid service contract, you will receive this new entitlement automatically for new license files.

⇨ *LABCAR-AUTOMATION 4.1 continues with the given licenses of LABCAR-AUTOMATION 3.3 and 3.4.*

In case you had installed a LABCAR-AUTOMATION 3.3 or 3.4 before, no new license is necessary. Thus in the License Manager the key for LABCAR-AUTOMATION 3.3 is shown instead of LABCAR-AUTOMATION 4.1.

4.2.1   Electronic Licensing of a Service packs

The use of unlicensed ETAS software is prohibited as well in case of service pack installations.

If you have a valid license for the base release, these are valid for the Service Pack as well. There is no need to require a new or separated license for a service pack.

The required license for the base release is not included in this delivery.

4.3   Common used components

4.3.1   SuT Mapping File Editor (SMFE)

The SuT Mapping File Editor (SMFE) comes with a new version 4.0 together with LABCAR-AUTOMATION 4.1. It will be automatically installed when one of the LABCAR-AUTOMATION packages will be installed on your computer.

⇨ *During de-installation of LABCAR-AUTOMATION the LABCAR-SMFEditor 4.0 is not been de-installed.*
⇨ *It has to be manually de-installed in the Windows control panel via Settings   -> Control Panel -> Add or remove programms.*

LABCAR-OPERATOR (LCO) brings the same version with its installation. If installed with LABCAR-AUTOMATION (LCA) as well as LABCAR-OPERATOR the SMFE will not be de-installed before both (LCA and LCO) are de-installed.

4.4   Installation of further components

In case you extend your system with further components there are two ways depending on the component you like to install.

All components and Tool Adaptors which are part of one of the LABCAR-AUTOMATION packages (ref. to chapter 2.2.5) are available via the setup. You just have to insert the LABCAR-AUTOMATION product CD and start installation again.

⇨   *If the installation does not start after insertion of the CD, the option to 'autostart' the media is disabled in your explorer. In this case double click the autostart.exe file at the root directory of your CD.*

As soon as the LABCAR-AUTOMATION setup was started successfully you have the choice to change, repair or remove the package. Please select Change.

The next window provides you the possibility to select the components to install additionally. All former installed parts are already selected. If it's already installed it is marked as ⊞▾, otherwise a cross ✗▾ is shown. To select a component click on this icon. In the picture below for example the FS port Tool Adaptor will be newly installed:
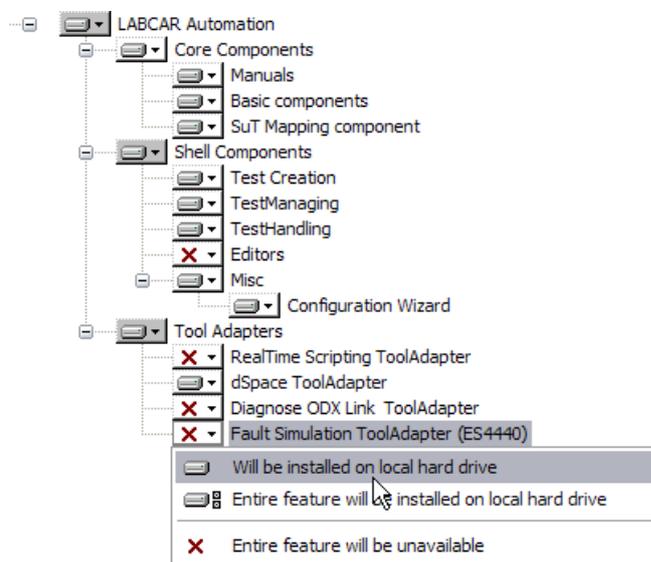
⇨   *The component Configuration wizard contains both, the standard and the professional version. If you have already installed the LABCAR-AUTOMATION Standard package and like to upgrade the Configuration Wizard to the professional level you do not need to install or re-install the component. The control about the level is realized completely by the license you've got. It is also not necessary to remove the Configuration Wizard Standard License (LCS_LCA_CWS) from your computer, your initial license file or at the license manager. The component recognizes automatically the higher level.*

Click Next and confirm the change at the next page. The completion will be reported in the final window:
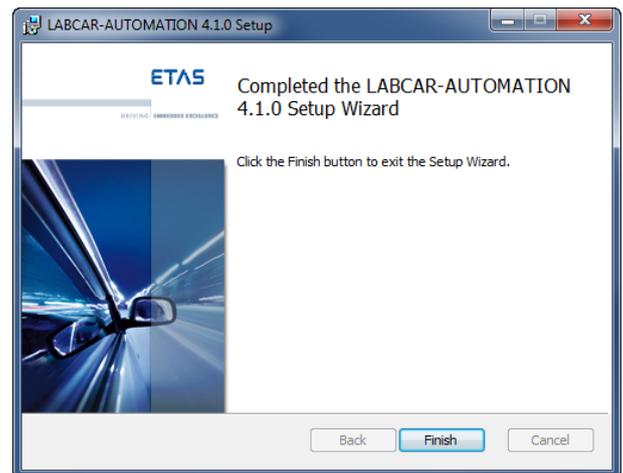
4.4.1   Extraneous components

There are some extraneous components available which are normally not installed with one of our predefined packages.

These are currently:

- Tool Adaptor for the Smart® Simulation box MLBA4
- Tool Adaptor for the ETAS OCT J1699
- Tool Adaptor for the extended MDF reader (containing the possibility to merge mdf files)
- Tool Adaptor to read and write Microsoft® Office Excel tables
- Tool Adaptor to connect to Vector® CANape

All of these components you can install via the separate tools and utilities entry in the Installation CD Menu:
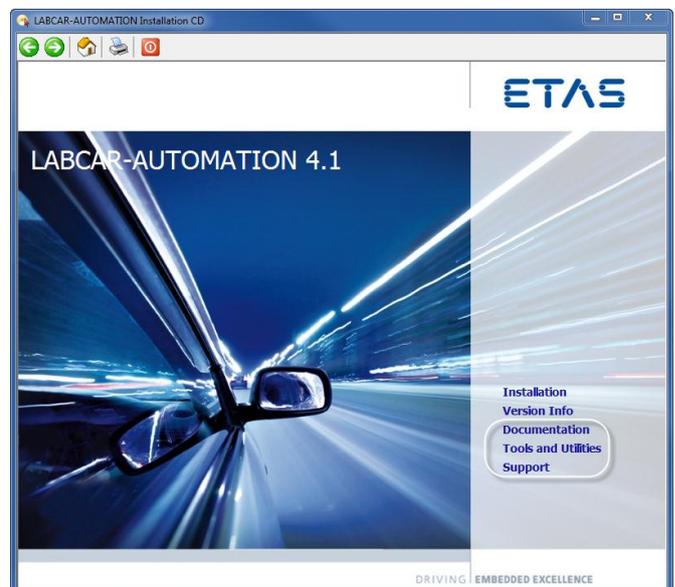
Select at the next window the ETAS Add-Ons at the right menu pane or select the first link ‚Get a list of the related LCA utilities and our Tool adaptors here.'
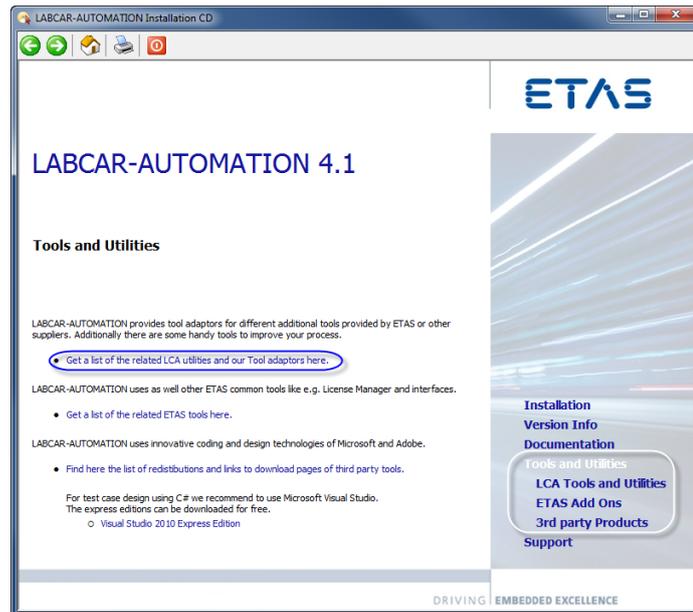
Select the Add on you like to install by clicking the appropriate link.

Depending on your security level you might get one or two security information if you allow the download of the file (from your installation CD). Please confirm this dialogue with ‚Run' and the installation will starts.
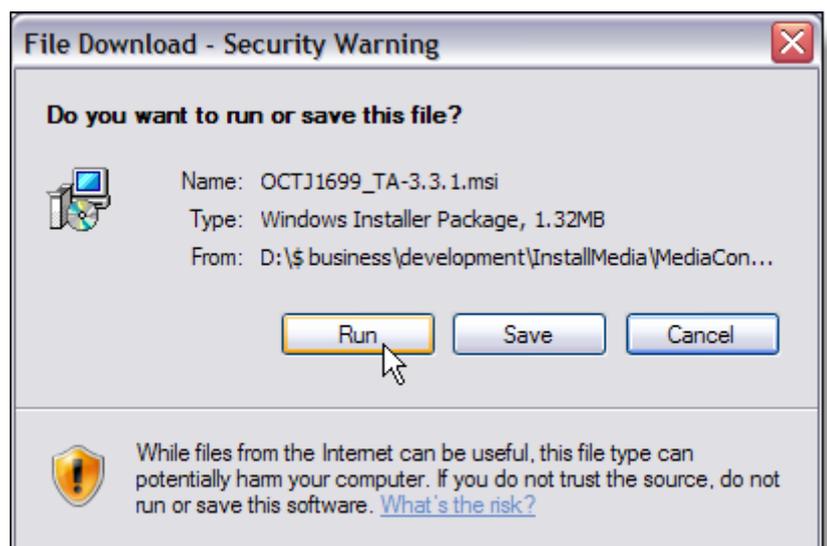
4.5   Service Pack installation

To install LABCAR-AUTOMATION please follow the guidelines described in chapter 2 "Installation" of the user's manual provided in the "Data/Documentation" directory of the installation CD.

⇨   **Please follow chapter 4 Installation to see all relevant information of the installation**

A LABCAR-AUTOMATION Service Pack comes as a complete delivery of the LABCAR-AUTOMATION software package.

⇨   *It is required therefore to de-install the previous used version, if you have installed*
  ■ a former build or
  ■ a former service pack.

For the installation of the Service Pack please do the following:

■ Install the LCA package from this CD as usually and select the package which is the valid one for you. (Standard, Professional, ...). Follow the instructions for a normal installation. Important hints you find as well at chapter 5 Important Notes.

■ In the case you had installed up to now additional tool adaptors, *these have to be installed as well newly*, to provide them for the execution chain. Access the installation again and select through the bullet 'Custom' the appropriate adapter and start the installation. See chapter 4.4 Installation of further components for detailed information.

⇨   *Licenses are not to be changed for a service pack.*

5   Important Notes

This chapter lists information and latest issues which are important to know by the user.

5.1   Installation Hints for LABCAR Test Benches operating with LABCAR-AUTOMATION

The following information is addressed to users working with different ETAS and non-ETAS tools on a test bench.

■   When installing LABCAR-AUTOMATION it is recommended to keep the following sequence for the ETAS Software products:

1. INCA
2. ODX Link
3. LABCAR-OPERATOR
4. LABCAR-AUTOMATION

■   It is recommended to use only one LABCAR-OPERATOR Version on your PC, since frequently switches between the different versions might cause inconsistent entries in the Windows® registry.

⇨   *If you like to use different LABCAR-OPERATOR Versions in please read chapter 3.4 Known Issues.*

■   LABCAR-OPERATOR V3.x and ODX Link V1.x

ODX Link is recommended to be installed before LABCA-OPERATOR to avoid version conflicts with internal GUI components (LABCAR-OPERATOR Active GUIs may freeze in case this sequence is not followed).

■   Java Virtual Machine

The Java Virtual Machine should be installed before LABCAR-OPERATOR is installed.

5.2   Issues due to 3rd party products

■   While installing LABCAR-AUTOMATION or one of its add-ons: In case you detect an error like "*Error 1335: The cabinet file ... is corrupt and cannot be used*" and if you ignore the error message, it repeats with a different cabinet file name, this is a Microsoft® Installer issue. Please re-install the Microsoft® Installer software. You find it at the installation CD under Tools and Utilities -> 3rd party products.

■   In case you get an error like: "*invalid page fault in module MSVCRT.DLL*" or "*<any program> causes an exceptional fault in the module MSVCRT.DLL*" or similar, you see Microsoft® error reports, which are caused by several run time libraries like for C, C++ and WCF. As ETAS software bases on Microsoft® library functions this might occur as soon as you've installed e.g. the LABCAR-CCI standalone package. These libraries need a minimum version number or even the latest updates of the concerned dlls.

To prevent these errors you have to manual copy some Microsoft DLLs into your installation directory of the LABCAR-CCI standalone component or into the Windows\system32 folder. You find these libraries at the installation CD under Tools and Utilities -> 3rd party products at the chapter 'Runtime Libraries of Microsoft®'.

5.3   INCA Tool Adapter

- There exists a new tool adapter for the INCA version 5.4. ff. This adapter is named etas.eas.TA_EA_INCA5.4.dll.

- For using the synchronous data logger with LABCAR-OPERATOR and INCA together, the "Parent" flag of the test bench configuration files (tbc-files) must be set to "P_SyncDl", in case you use LABCAR-OPERATOR V3.2.5.

- There are different possibilities to use INCA as Standalone Tool Adapter with LABCAR-AUTOMATION (Please see 'How to…' document Chapter 2.4.1 for more details):

    - **INCA5.4/INCA6.2.** <u>and</u> **LCO4.1** are installed

1. Install INCA Standalone from the CD.
2. Unregister the old API. Default Installation Path: "C:\Program Files\ETAS\LABCAR-OPERATOR4.1\LABCAR-API" (regsvr32 /u /s "<LCO4.1Installation PATH>\LCO3API.dll")
    1. You will no longer be able to use synchronous data logging, though you still can log both signal sources. But you have to treat them as individual, separate data source.

    - **INCA5.4/INCA6.2.** <u>and</u> **LCO 3.2.x** are installed on your PC and you want to measure with INCA no further installation is necessary.

    - **Use INCA5.4/INCA6.2** <u>without</u> installed LCO application

1. Install INCA Standalone from the CD.
2. Copy all DLLs from installation CD folder:
    \Data\ThirdParty_AVC++7SP1.Redistributables
    to your ETAS directory of shared components:
    C:\ETAS\LABCAR-CCI-Standalone3.2\System32

## 5.4   Additional Tool Adapters

If you perform a
- repair installation or
- the installation a service pack or
- an installation into the same folder like a former installation,

all additional tool adapters (like MLBA4, OCT, Excel, CANape, …) have to be re-installed after the LABCAR-AUTOMATION installation.

5.5   Customer-Specific Tool Adapters

Customer-specific tool adapters should be migrated to the new ATCL version of LABCAR-AUTOMATION. LABCAR-AUTOMATION performs an automatic redirect in case of referencing an old ATLC. Nevertheless a better performance might be reached when referencing the actual ATCL (C:\Program Files\ETAS\LABCAR-AUTOMATION 4.1.0\PublicAssemblies\Etas.Eas.Atcl.Interfaces.dll). Please contact ETAS for support.

Another practicable method is to set inside the Visual Studio Project for the reference to the ATCL the option 'Specific Version' to 'False'. This enables VS as soon as the project is built to adapt the ATCL version to the actual one, registered in the global assembly cache.
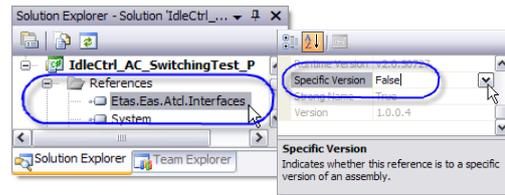
5.6 General Hints

Since LABCAR-AUTOMATION V3.2.x a LABCAR-AUTOMATION engine log file will be created (instead of an SAR log file).

You can find the actual logfile(s) directly via the Test Handler Menu at
- Tools -> View SAR Log
- Tools -> Add In… -> Test Handler Log
- Tools -> Add In… -> LABCAR-AUTOMATION engine Log

Selecting one of the log files opens the latest file which is been filled by the last Test Handler run.
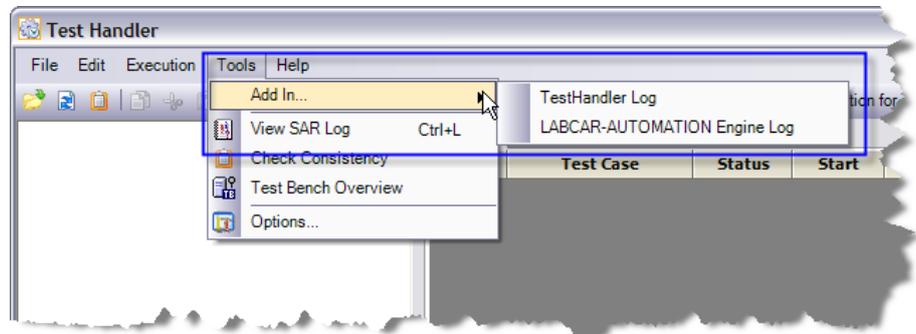
Additionally you can find the files in your folder structure at following location:
C:\Program Files\ETAS\LABCAR-AUTOMATION 4.1.0\TestTools\Bin\logging
Filenames:
- easSAR.log
- TestHandler.log
- LABCAR-AUTOMATION Engine.log

Any file with the extension .log.# (#=1…n) covers the history of the appropriate log file to avoid too big log files. Typically the actual log file is sufficient for problem analysis.

5.7 Windows 7 restrictions for test case execution

This information completes chapter 2.1 Support of Windows 7 of the Whats_New.pdf document.

⇨ *All test cases which are compiled at a Windows 7 System have to use the compile option: 'Compile for x86'.*

6 Error list

In this chapter you find information and hints when LABCAR-AUTOMATION throws exceptions. This list is not exhaustive. It is an assortment of exceptions caused by test cases' design or test bench configuration issues.

Exception	Possible causes	Remedy
AtclConnect Exception	Thrown if there was a problem connecting the test case and the SARHost (execution host), e.g the SUT-Mapping file mentioned in the test bench configuration file is missing. Check the 'ErrorCode' for more information.	Read exception message and log-file and fix the problem mentioned there, e.g. give the right SUT-Mapping file as named in used the .tbc file or adapt the .tbc file
Atclfactory Exception	Indicates a problem in the AtclFactory, e.g. the library Etas.EAS.Atcl.Interfaces in version 1.0.0.2 is referenced, but the Sar-Host still requires version 1.0.0.1	An error within the Factory class cannot easily be provoked from within a test case. If ATCL in wrong version is referenced in test case compared to version expected by the factory. Reference the right ATCL version in your solution before re-build.
IllegalVerdict Exception	The IllegalVerdictException indicates an illegal state transition within the Verdict class. The state transition of the Verdict is limited to the verdict transitions of TTCN-3. Cannot be provoked from within a test case	Trial to set a verdict from error or failed to pass is invalid and therefore ignored (that means no exception), if done in the test case. Only if for some reason (e.g. manipulated verdict class) a transition within the verdict class itself goes wrong, an exception is thrown.
Parameter Manager Exception	This exception is thrown if there was any error in the IParameterManager, e.g. when test case tries to load a parameter that has not been registered.	Register the parameter in the test case before loading.
ToolAdapter PortStatus Exception	Used to indicate an abnormal tool adaptor status to the ATCL API user/program. It contains the TypePortStatusRecord to enable the user to react on the invalid state of the tool adaptor. It may occur on every call to a tool adaptor port. It is thrown e.g. when a test case tries to configure a port, that is not in the state ‚ToolConfigured'.	Set the tool into the right state before starting the test or include a tool configuration into your test case. Information can be found inside ATCL referential and the examples, came with the installation of LABCAR-AUTOMATION.
TypeMissMatch Exception	Indicates a problem on the type conversion inside the TypeSutBase	This is an internal error and can therefore not be

Exception	Possible causes	Remedy
	classes. The conversion problem can either occur during the transformation to the SAR internal types or on the way back from the SAR internal data type to the TypeSutBase types.	provoked from within a test case. Call LABCAR hotline to get support on this.
ETAS.LCA.SAR. Core.Interfaces.Ex ceptions. PortMissing Exception	Arises if you try to create a port which instance name is not declared in the test bench configuration file.	Correct the name inside test case or add the port into the test bench configuration file or correct its name therein.

7   ETAS Contact Addresses

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ETAS Subsidiaries and Technical Support

For details of your local sales office as well as your local technical support team and product hotlines, take a look at the ETAS website:

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ETAS technical support   WWW: www.etas.com/en/hotlines.php