

# INCA V7.5 – What's New Changes / Extensions done in this Version



#### Overview

#### 1. Product information (Use cases, Sample applications, Customer value)

- Functionality
- Standards
- Usability
- HW support
- Add-ons
- 2. INCA Product Family
- 3. Phase out information
- 4. General Notes

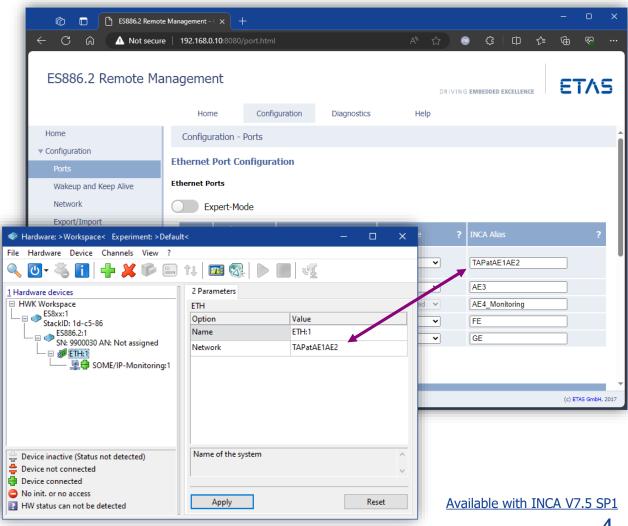


# Functionality INCA V7.5 – What's New

Functionality

#### **Ethernet Network Mapping**

- The configuration of the Ethernet Network is single source handled in the Web GUI of the Hardware (where the configuration is persisted), no more redundant configuration work
- INCA reads the configuration from the hardware and offers the INCA Alias as selection for the Network name
- Offline preparation as well as automated configuration via API supported
- Hint: no compatibility to existing workspaces



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Functionality

## ASAP2 TRANSFORMER - Support of 32bit DLL in 64bit INCA

The ASAM MCD2 MC standards defines transformer DLL for special conversion methods.

INCA as 64bit application requires 64bit DLLs. To be compatible with 32bit DLLs INCA offers a DLL wrapper that allows 32bit DLLs too.

#### **Transformer Processing**

Data representation in MC Tool

View

ECU

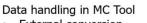
Data Processing

Byte Order

01010111

Physical

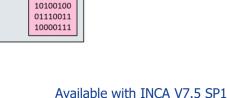
Human readable



- External conversion
- Adaption to ECU
   Byte Order

Data in ECU representation

- Binary
- Processor specific



Transformer

Conversion



Functionality

## Device column at variables configuration grid

The new column "Data Source" allows to distinguish the variables from different devices.

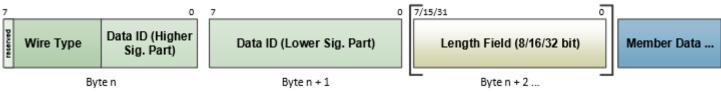
I Variable Selection					- 🗆 X
💼 🗔 - 💥 🛄 = 🛄 🔵 📕 🤄	ਤੇ L L L L L				
Variables Configuration	Measure Window [2]				
Experiment	Name	Sync Sync Sync Sync Sync Sync	Raster =?	Data Source	
Sources					
* Variables					
Display Configuration					
Variables Configuration					
	·			ОК	Cancel

Functionality



## AUTOSAR – Support of TLV encoded SOME/IP data

- Supported for AUTOSAR CP R4.4
- Data elements of SOME/IP are organized in structures.
- With the **TLV** feature:
  - The elements of the structures have a header containing Tag and Length information before the Value.
  - This allows reordering or omitting of values.
  - $\rightarrow$  Elements with TLV encoding are measured in own data groups.



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Functionality



#### **AUTOSAR – Monitoring of contained PDUs with not matching sizes**

- Predecessor INCA versions allowed only to measure Contained PDUs (PDUs inside a Container PDU) with the same size on the Bus (blue frame) as defined in the description file (filled light blue).
- Newly supported
  - Size on Bus is larger (green frame)
  - Size on Bus is smaller (orange frame); in this case the Signal 7 is not allowed to be used and INCA will stop the acquisition of all signals from this PDU if the Signal 7 is used and print a message to the INCA Monitor informing the user about the first found not received signal

Signal 1 Signal 2 Signal 3 Signal 4 Signal 5 Signal 6 Signal 7

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Functionality



## AUTOSAR – Allow switching between ISignal name and SystemSignal name

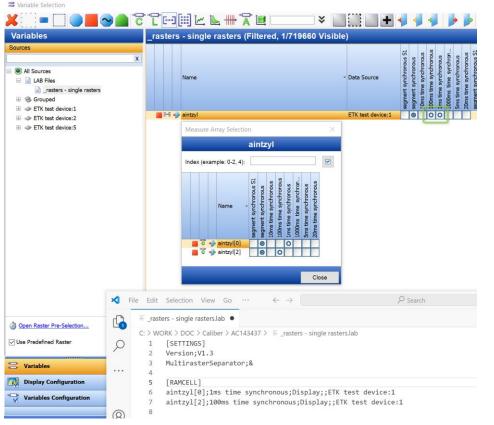
- AUTOSAR description files contain the ISignal name as well as the SystemSignal name for elements used as monitoring variables.
- INCA allows to switch between the two names to align to the tool environment for further processing for:
  - LIN-Monitoring
  - CAN-Monitoring
  - FLX-Monitoring
- Predecessor versions of INCA use in the above mentioned monitoring devices always the SystemSignal name.
- Hint: Since due to switched name experiment elements may become NoMatch signals, ETAS offers a Variable Name Converter as free Addon, see Add-on section of the slide set.

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	IM D	ata Ex	change	E-Target	Gene	eral	
HEX Files	Au	tocom	nmit	Import /	'Export		
Autostart	<b>m</b>	Expe	riment	i 🧼 Ha	ardware		
Option			Value			^	
Measure			<-Gener	al, Measure V	Vindov		
Calibration			<-General, Calibration , Tabl				
Support for big recording	data		<-General->				
Name alignmer	nt		Left				
Index alignmen	t		Left				
Index separated underscore	by	Yes					
Signal name for Monitoring			lSignal				
Adjust font in tł views if the view changed		Yes			<b>,</b>		
<					>		
The option app Monitoring bas the value editat	ed on AF	RXML	files. Rest		nake	^	

Functionality

## VSD – Improved display of measurement array raster from LAB file

For the measure arrays, the summary information about raster from LAB file is shown in the variable tab.



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Functionality

## **DoIP – Protocol Version 3 support for ProF flashing**

INCA 7.5 now supports DoIP Protocol Version 3 according to ISO13400-2 of 2019-12 for ProF flashing. The Protocol Version has to be configured in the CNF file of a ProF Configuration:

DOIP_PROT	OCOL_VER	RSION	
The keyword	DOIP_PRO	TOCOL_VERSION defines	the protocol version to be used for flashing.
DOIP_PROTO	COL_VERSI	ON:, <version>;</version>	
Parameters			
Parameters versio	on The follo	wing use cases are supported	ed with ProF:
0000000000000000000			ed with ProF: Supported with INCA version
000000000000000000000000000000000000000			

INCA 7.5 does not support other new features of ISO13400-2 of 2019-12. E.g. Transport Layer Security (TLS) is not supported.



Functionality

## **Experiment – Battery Cell Imbalance Histogram Instrument**

- The new Battery Imbalance Histogram shows quickly the distribution of the individual battery cell imbalance values
- A tooltip lists the respective battery cell signal names
- In the Properties window both number of buckets as well as their width can be defined



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Functionality

#### **Experiment – Battery Voltage Graph in INCA**

The Battery Voltage Graph can be used in INCA to measure the voltage and imbalance of the battery cells.

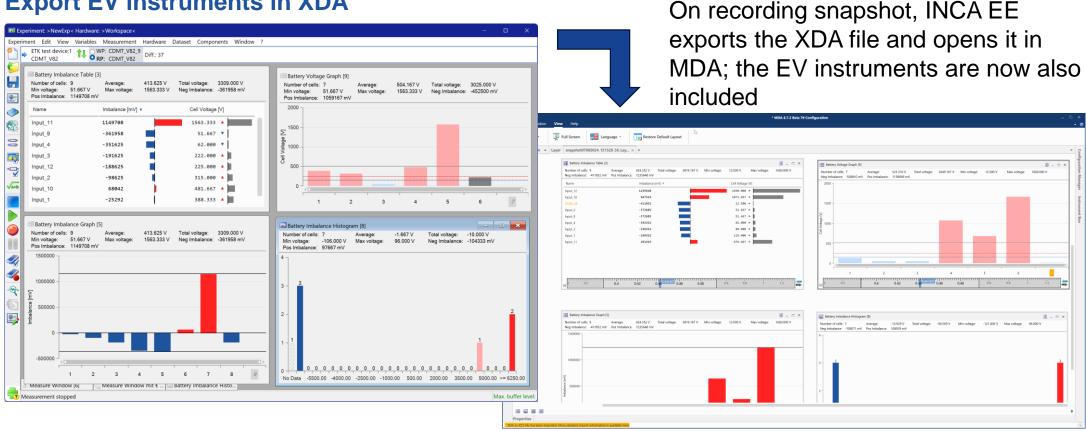
The cells with the voltage out of the ideal range (lower/upper limit) are rendered with different colors.

The average voltage is rendered as a vertical line.



Functionality

#### **Export EV instruments in XDA**



Available with INCA V7.5 SP2



Functionality

## **INCA Online Help – HTML5 as new format**

#### **Enhanced User Interface**

- modern and intuitive design
- easier to navigate and find

#### **Responsive Design**

adapting to different
 screen sizes and devices

#### **Search Functionality**

 advanced search with improved search algorithms

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#### Home

- What's New in INCA
- Getting Started
- Database Manager
- Experiment Environment
- Variable Selection Dialog
- Memory Page Manager
- Hardware Configuration Editor
- Calibration Data Manager
- ASAM MCD 2MC Editor
- ASAM MCD 3MC Interfaces
- INCA Add-On Functionality
- Troubleshooting
- Technical Information
- Data Protection
- Data and Information Security

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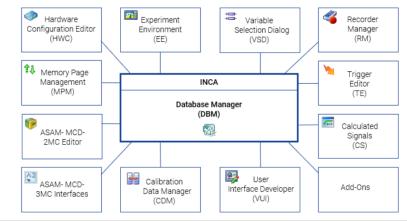
You are here: Home

## Welcome to the INCA Help

With INCA, you can perform measurements and manage configurations. You manage objects such as workspaces, experiments, projects, and devices in a database. You can manage more than one database, work with user profiles, create workspaces for different tasks, manage hardware, and create and perform experiments.

Search

INCA is a modular software that consists of a main system, the Database Manager, and its subsystems:



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Functionality

#### CDM & Experiment – Copy variable names to clipboard

INCA supports copying variable names to the clipboard. This can be done in the database browser, experiment, variable selection dialog, CDM ... If multiple variables are marked INCA copies a list of names to the clipboard.

Functionality

#### **INCA – Option to enable/disable Add-ons**

INCA supports now the possibility to deactivate add-ons by INCA option.

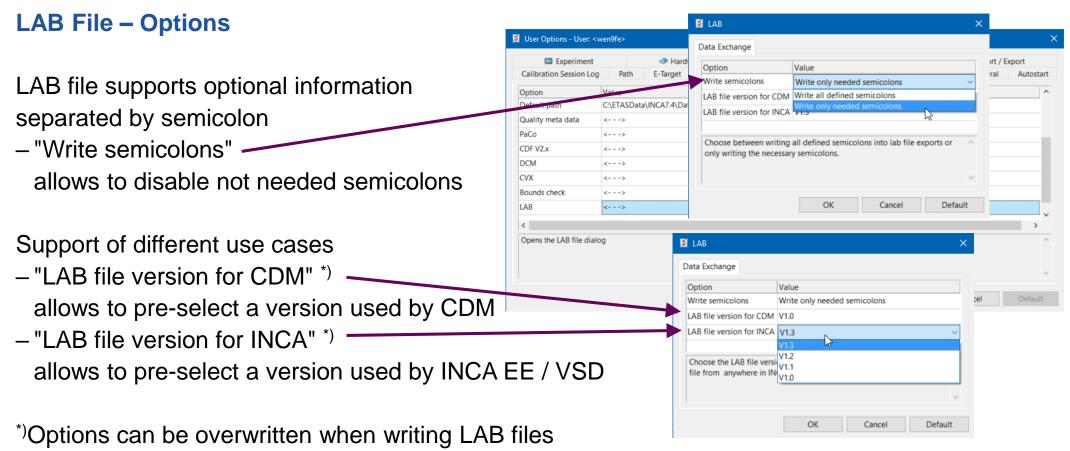
This allows to install the add-ons on many PCs but use it only on some.

This helps to prevent INCA to allocate licenses for inactive add-ons.

- Add-on QM-BASIC
- Add-on eCDM
- Add-on FLEXRAY
- Add-on LIN

Ser Options			×
Data Exchange         ASAM-2MC Editor         E-Target         Calil           General         Autostart         Image: Experiment         Image: Participant Calility		Log Path Limited	
Option	Value	General	
Check dataset code Use display identifier	No with war No	Option	Value
Use Encoding when reading the description file	<>	QM-Basic active	Yes
ASAM-MCD 3MC interface version	iLinkRT V3.		Yes
MDA version	MDA V8.6		Yes
Web browser used by INCA	Microsoft E	eCDM active	Yes
Addon activation	<>		activate the QM-Basic addon. A ^
	OK	Ol	

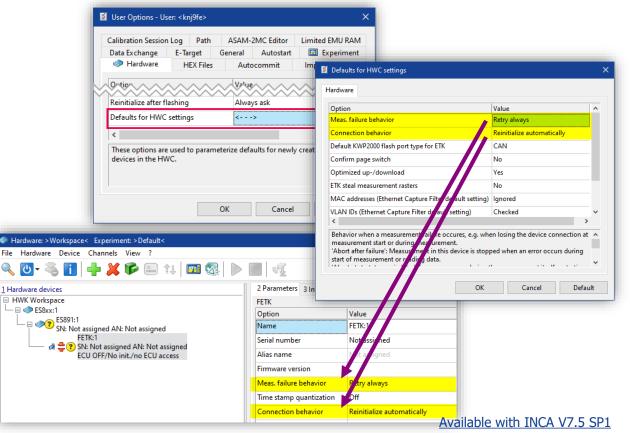
## Functionality



Functionality

## Pre-configuration of connection behavior and measure failure behavior

- The device options "Measure failure behavior" and "Connection behavior" can be preconfigured in the user options for newly created INCA native devices.
- Default for "Measure failure behavior": "Retry always"
- Default for "Connection behavior":"Reinitialize automatically"

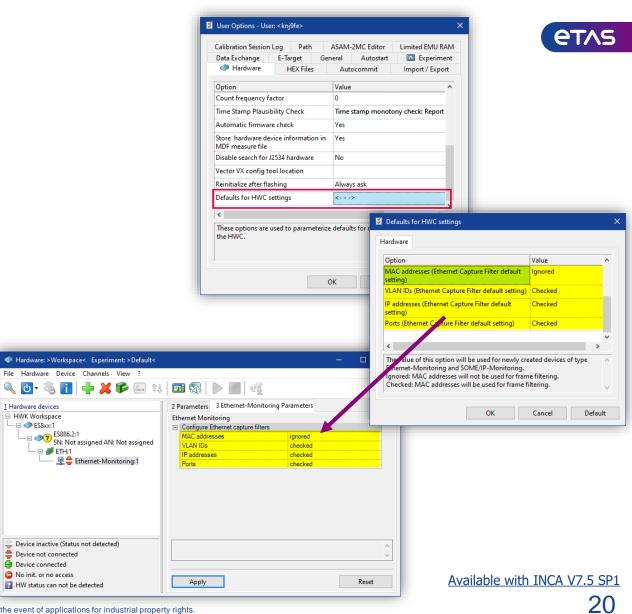


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Functionality

## Defaults for frame filtering as user option

- The filter for Ethernet Traffic received on SOME/IP-Monitoring or Ethernet-Monitoring devices can be configured individually for every device.
- The new options allow a pre-configuration for newly created devices.
- The option is stored in the INCA.ini of the user profile such that during the INCA installation the setting can be distributed.



Functionality

## CDM – Multi Column – use index as column header

- Show more columns by reducing column width
- Reference dataset name in the destination overview by index
- Show dataset name + path with mouse over index

	riables Actions Options View ?					
List Source		Action				
+ @ [Demo09\Der	mo10_2] Demo10\Demo10, 55 Variat	Action List				
No Destination for	List	Format CDF				
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				· H · · · · · · · · · · ·		
[2] 🥬 [Demo'	10 - 01 - VIRTUAL_ME#54 15	55 / 55 0				
[3] 🧆 [Demo	10\Demo10_1] Demo155 1	Behavio	or Search			
			Source		[2]	[3]
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		A3C_FW_S16	2.000000000000000000000000000000[kmh]		e= 2.0000000000000000[kmh]	Ø≠ 0.00000000000000000000000000000000000
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		A3C_FW_S64	0 2.00000000000000000000000000000000000	Ø ≠ 668.00000000000000000000000000000000000	Ø≠ 668.00000000000000000000000000000000000	Ø≠ 668.00000000000000000000000000000000000
		Can ASC FW U08	4.000000000000000000000000000000000000	Ø 000000000000000000000000000000000000		= 4.000000000000000000000000000000000000
		CAL ASC_FW_U16	2.00000000000000000000000000000[kmh]	Ø ≠ 0.0000000000000000000000000000000000	<pre>@= 2.000000000000000000000000000000000000</pre>	Q ≠ 0.0000000000000000000000000000000000
About Quality P	rocess	A3C_FW_U32	4.00000000000000000[kmh]			Ø ≠ 2.00000000000000000000000000000000000
Key	Value	A3C_FW_U64		Ø≠ 668.00000000000000000000000000000000000		Ø ≠ 668.00000000000000000000000000000000000
Address	0x8300	A3C_Map_xF32_yF64_F64	<b>○*</b> ***	0=***	0= ***	0= ***
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Groups	G ParameterDataTypes	A3C Map xU64 vS64 S64		()= ***	())= ***	()= ···
Project	Demo10	A3C_Map_xU32_yS16_S32 <map></map>	<ul> <li>[km]</li> </ul>	n] x: A3C_Map_xU32_yS16_S32/x [km	nh] y: A3C_Map_xU32_yS1	6_S32/y [kmh]
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Values format	%6.2	8.00 -2.00 -2.00 - 8.00 -2.00				
Values formula	CMP MUL BY 2	8.00 -2.00 -2.00 -2.00 -2.00				
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Values name	A3C Map xU32 vS16 S32	16.00 -2.00 -2.00 -2.00 -2.00				
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Results						
	0 Different Variables					
0 Errors	0 New Variables					
0 Warnings						
	0 Missing Variables	Start Action				
0 Warnings	0 Missing Variables	\$(EcuProjectPath)\				Browse List highli

Functionality

## **COM-API – Change device selection (A2L file) for FETK**

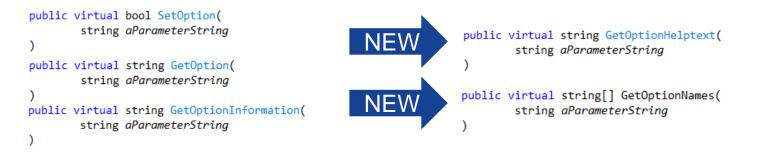
For FETK there can be multiple device types defined in the A2L file. INCA allows to select one

of it before initializing the hardware by COM API.

Embedded UI of external config module

2 Parameters	3 Info	4 FETK Parameters	5 ODX Parameters							
FETK										
Device Par	Device Parameters									
Autostart B	ehavior	L	.ast Active Page							
Overload E	Frror Beh	avior S	Stop Measurement							
Multiple X0	CP Maste	r [	Disabled							
Device Sel	ection (A	2L File)	Default INCA Device Selection (Device ID '1')							
Calibration	Wakeup		Default INCA Device Selection (Device ID '1')							
			A2L Device with Device ID '1' A2L Device with Device ID '2'							

Additionally INCA offers now two more methods to handle option settings

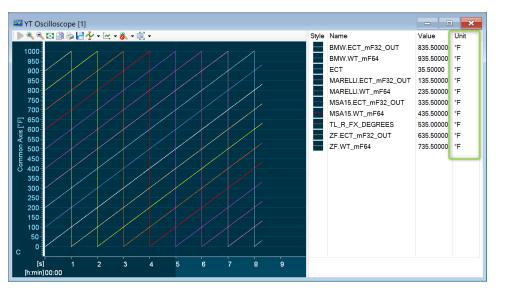


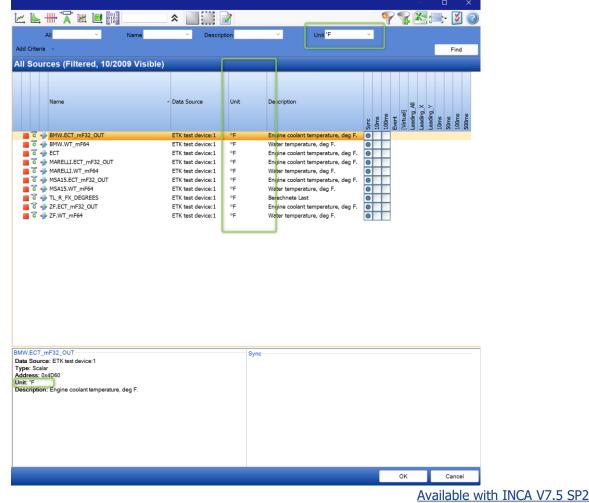


Functionality

#### Variable units in VSD and oscilloscopes

The phys unit defined in the ECU project is shown.





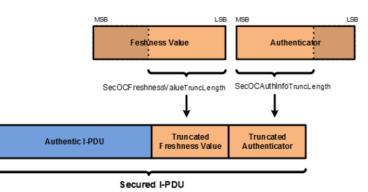
Functionality

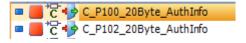
## **AUTOSAR – SecOC "Authentication Information" Signals**

A Secured I-PDU of SecOC communication consist of an optional Secured I-PDU Header and an Authentic I-PDU followed by the optional Freshness Value and the Authenticator.

This data can now be measured with INCA by providing additional scalar measurement signals for Authentication Information based on the AUTOSAR description file (supporting AUTOSAR 4.3.0 or higher).

The functionality is available for CAN-, Ethernet- and FlexRay-Monitoring. The new signals have an "\_AuthInfo" postfix.







# HW Support INCA V7.5 – What's New



HW Support

## **ES58x.2 INCA integration**

- The new ES582.2 and ES584.2 supporting CAN FD SIC and thus up to 8 MBaud are available in INCA
- New combined USB-C / USB-A plug
- Transparent INCA support: ES58x.1 and ES58x.2 share the same device type to ensure compatibility of workspaces also in mixed environments.
- If the high baud rate of 8 MBaud shall be used with an ES58x.1 the user is informed about the mismatch during the initialization.







# Add-ons INCA V7.5 – What's New

Add-ons

## ODX – SAEJ1979-DA 2023-05 – Updated OBDonCAN and OBDonUDS ODX projects

OBDonCAN:

- New mode 1 and mode 2 PIDs \$CE-\$DA
- New mode 9 InfoTypes \$81 and \$85-\$AE

OBDonUDS:

- New Service \$22 PIDs \$F4CE-\$F4DA
- New Service \$22 InfoTypes \$F881 and \$F885-\$F8AE

All new PID and InfoType response parameters are available as measurement signals in the Variable Selection Dialog for measurement and recording with INCA.

The OBD Window displays all new data when using it with the new ODX projects.

The new ODX projects get installed with the INCA-ODX Addon into ETASData\ODX7.5\Projects:

- OBDonCAN\_ETAS\_SAEJ1979\_2023-05.pdx
- OBDonUDS\_ETAS\_SAEJ1979-2\_2023-05.pdx

To use the new functionality the new ODX projects have to be imported into INCA and assigned to a Workspace with an OBDonCAN or OBDonUDS device.

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Add-ons

**MATLAB – Support of MATLAB 2024A** 

- INCA-SIP & INCA-MIP



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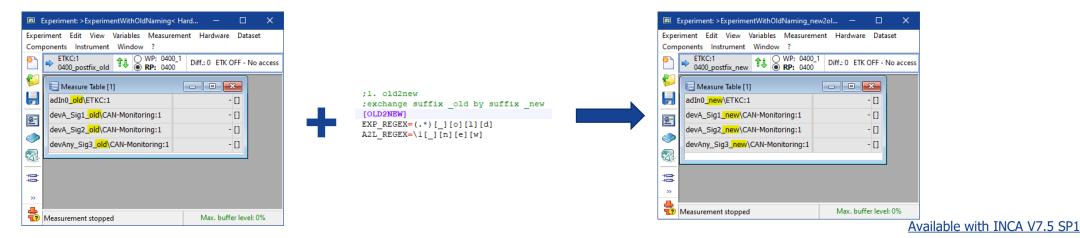
#### Add-ons

#### **VN-Converter (INCA Variable Name Converter)**

- Conversion of variable names in experiments by generic rules
- Rules are defined as regular expressions
- Supported are monitoring devices as well as ECU devices
- Documentation included in INCA help

Hints:

- 1. The converter is intended to help reusing experiments if due to the feature of switching between ISignal name and SystemSignal name experiment elements are changing.
- 2. Virtual Measurements are not supported for the conversion (RAMCal, MeasureCal, Calibration Recording) and array elements are only in experiment widgets supported for conversion





**INCA Product Family** 

#### **INCA Service Pack Installer – Update from former Minor Version**

If INCA V7.5 is installed the first time it checks whether there is a predecessor of INCA V7.4 installed.

The Service Pack Installer shows the previous installation as comment and preselects it for INCA V7.5.

The preselection can be modified.

Package	Installed Version	Package Version	Install	Status	Comment	·
TAS INCA				- Č2		
INCA	٢	V7.5.0 Beta 102	$\checkmark$	- Č2	V7.4.7 Build 97	
General AddOns (free)						
AddOn_EV-Instruments	٢	V7.5.0 Beta 69	$\checkmark$	- Č2	V7.4.7 Build 82	
AddOn_eCDM	٥	V7.5.0 Beta 71	$\checkmark$	- Č2	V7.4.7 Build 83	
AddOn_DriveRecorder	٥	V7.5.0 Beta 71				
AddOn_Video-Tutorials	٥	V7.5.0 Beta 71				
Licensed AddOns						
AddOn_MCE	٥	V7.5.0 Beta 71	$\checkmark$	- Č2	V7.4.7 Build 83	
AddOn_Vector-Hardware	٥	V7.5.0 Beta 71				
AddOn_FlexRay	٥	V7.5.0 Beta 72				
AddOn_LIN	٥	V7.5.0 Beta 71	$\checkmark$	- Č2	V7.4.7 Build 82	
AddOn_QM-Basic	٥	V7.5.0 Beta 72	$\checkmark$	- Č2	V7.4.7 Build 82	
AddOn EIP	<u> </u>	V7 5 0 Beta 72	$\checkmark$	A 1	V7.4.7 Build 84	



**INCA Product Family** 

#### **Vulnerability check**

INCA is scanned for modules that INCA requires to operate. This SBOM (Software Bill Of Material) allows to check the vulnerability of the modules (material) against public vulnerability databases.

Critical modules are exchanged if improved or alternative modules are available.





**INCA Product Family** 

#### **INCA V7.5 license**

In order to protect our software and software updates, the products shipped in the INCA V7.5 Service Pack require new licenses.

INCA base software, MDA and all Add-Ons will check for an updated version of their product license.

These license versions are required: INCA + Add-Ons: 7.5 MDA + Add-Ons: 8.7

Customers with a valid maintenance contract are eligible to receive software updates and will get new licenses.

Please consult the ETAS License Manager documentation for instructions how to update your licenses.

**INCA Product Family** 

#### **ETAS License Server Update**

The following information is relevant for customers using floating or user based licenses. Machine based licenses are not affected.

- The components used for FlexNet Publisher (FNP) licenses will be updated to FNP V11.19.4.1

- This version supports additionally Windows Server 2022 and Windows 11
- Contains important bug fixes and addresses known security vulnerabilities

This INCA version does **not** require the new version of ETAS License Server. A version of ETAS License Manager requiring it will be shipped later.

As soon as this package is available, it can be found on ETAS download center





# Phase out information INCA V7.5 – What's New

Phase out information

#### **Discontinuation of Microsoft Windows 8.1**

Microsoft announced the end of the Extended Support for Windows 8.1 by January 10, 2023 <a href="http://windows.microsoft.com/en-us/windows/lifecycle">http://windows.microsoft.com/en-us/windows/lifecycle</a>

ETAS stops with INCA V7.5 the maintenance for Windows 8.1 too





# General Notes INCA V7.5 – What's New

Overview of Functionality added by Service Packs

Links to Functionality Description of Service Pack 1

- Ethernet Network Mapping
- ODX SAEJ1979-DA 2023-05 Updated OBDonCAN and OBDonUDS ODX projects
- LAB File Options
- ASAP2 TRANSFORMER Support of 32bit DLL in 64bit INCA
- Device column at variables configuration grid
- Pre-configuration of connection behavior and measure failure behavior
- Defaults for frame filtering as user option
- <u>AUTOSAR Support of TLV encoded SOME/IP data</u>
- AUTOSAR Monitoring of contained PDUs with not matching sizes
- <u>AUTOSAR Allow switching between ISignal name and SystemSignal name</u>
- VSD Improved display of measurement array raster from LAB file
- ES58x.2 INCA integration
- MATLAB Support of MATLAB 2024A
- <u>VN-Converter (INCA Variable Name Converter)</u>

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Overview of Functionality added by Service Packs

Links to Functionality Description of Service Pack 2

- <u>CDM Multi Column use index as column header</u>
- <u>COM-API Change device selection (A2L file) for FETK</u>
- Reuse of Battery Voltage Graph in INCA
- Export EV instruments in XDA
- Variable units in VSD and oscilloscopes
- AUTOSAR SecOC "Authentication Information" Signals

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**General Notes** 

#### **Compliance to General Data Protection Regulation**

Please note that personal data is processed when using INCA. As the controller, the purchaser undertakes to ensure the legal conformity of these processing activities in accordance with Art. 4 No. 7 of the General Data Protection Regulation (GDPR).

As the manufacturer, ETAS GmbH is not liable for any mishandling of this data.

#### **Data categories**

Please note that INCA particularly records the following personal data (categories), and/or data (categories) that can be traced back to a specific individual, for the purposes of assisting with troubleshooting

- Communication data: IP address, date and time
- User data: The user's Windows UserID

Further information to this topic is available in the INCA installation handbook and the INCA online help.

## **General Notes**

#### **Customer Instruments**

INCA supports the possibility to add customer programmed instruments to the INCA Experiment.

#### **INS.DK (Instrument Development Kit)**

- Quick Start Guide to setup the development environment
- Tutorial that guides you through implementing
- Instrument wizard and a C# project template for Visual Studio
- Usable examples of instruments
- Test environment for instruments
- Documentation of the INCA Instrument API

🖻 E	xperi	ment: >Expe	riment_	3< Hardy	ware: >W	orkspace	<												
Exper	iment	<u>E</u> dit ⊻iew V	ariables	Measureme	nt <u>H</u> ardw	are Data <u>s</u>	et <u>⊂</u> ompo	nents <u>W</u> in	idow <u>?</u>										
ETK te	est dev	rice:1::Demo03	*		WP 💿 RF	WP: Der RP: De		iff.: 18											
2	Bi N	AyMapInstru	ment [2]																
6		DEMO_MAP_1																	
			760	1480	2000	2480	3000	3480	4000	4480	4720	5000	5480	5920	6000	6320	6400	6480	
<b>2</b> .		▶ 1	2,25	2,25	3,75	3,75	6	6	8,25	8,25	9,75	9,75	12	12	14,25	14,25	14,25	15,75	
		2,2	0	0	0	0	0,75	0,75	3	3	4,5	4,5	6,75	6,75	9	9	9	10,5	
		3,5	0	0	0	0	0,75	0,75	3	3	4,5	4,5	6,75	6,75	9	9	9	10,5	Ξ
		4,8	0	0	0	0	0,75	0,75	3	3	4,5	4,5	6,75	6,75	9	9	9	10,5	
10		5,35	2,25	2,25	3,75	3,75	6	6	8,25	8,25	9,75	9,75	12	12	14,25	14,25	14,25	15,75	
*=		* 6,2	2,25	2,25	3,75	3,75	6	6	8,25	8,25	9,75	9,75	12	12	14,25	14,25	14,25	15,75	
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t	Measu	urement stoppe	d														Max	. buffer level:	0%

The INS.DK is available in the INCA Service Pack Installer under "\01\_INCA\_V7.5.x\INCA-INS.DK\INCA-INS.msi"

#### **General Notes**

#### Seminars offered at ETAS Locations Worldwide or at Customer Site

Deep skills and sound knowledge are essential prerequisites for handling software tools of ever-rising complexity. Our trainers are highly experienced engineers in the field of engineering and support, who relish sharing knowledge on ETAS products and development processes. Target groups for the trainings are beginners, advanced users and those who wish to expand their existing knowledge. All trainings are offered at the ETAS Academy or on site at the customer's. INCA Application is offered as presence or online training.

#### **INCA – Calibration (3 days)**

- Practical operation of the software and the knowledge of the INCA fundamentals
- Get to know the advantages and disadvantages of various calibration concepts

#### INCA - Advanced Calibration Techniques (2 days)

- Advanced functionalities in INCA, Tips & Tricks. INCA experience is required
- EHANDBOOK Navigator, INCA Flow

#### **INCA - FLOW Coaching**

- Using your own calibration tasks to see the benefits of INCA-Flow in your daily work

Some ETAS local offices have their own training programs which are specialized for the local needs. Please contact our local office of your area for the details: <u>https://www.etas.com/en/trainings.php</u>



#### **General Notes**

#### **Usage of virtual PC Machines**

The usage of INCA on a virtual machine (VM) is restricted and not recommended:

- The VM needs sufficient working memory (RAM), otherwise the performance of INCA goes down
- Access to sufficient graphic card memory (Direct X) is necessary, otherwise the oscilloscope representation of measurement signal is not possible
- Access to hardware interfaces Ethernet, USB, PCMCIA, ... is necessary, otherwise INCA cannot use the connected hardware
- Measure samples may be lost and the accuracy of time stamps is not guaranteed as the higher task priority for hardware access (Target Server) is not given
- ETAS does no special tests concerning VM machines
- ETAS recommends to use real PC hardware.

#### **General Notes**

#### **Minimum System Requirements**

- 2 GHz Processor, 2 GB RAM, and DVD-ROM drive \*)
- Graphics: at least 1024x768, 256MB RAM, 16bit color and DirectX 9

#### **Recommended System Requirements**

- 3 GHz Quad-Core Processor, 16 GB RAM, and DVD-ROM drive <sup>\*</sup>)
- Graphics: at least 1280x1024, 1GB RAM, 32bit color and DirectX 9
- Windows 10 64Bit
- Investigation on performance showed
  - More Memory improves execution time of repetitive operations
  - SSD Hard disks improve the file access times

#### **Supported OS**

- Windows 10 64Bit Pro / Enterprise
- Windows 11 64Bit Pro / Enterprise
- Windows Server 2016 64Bit / 2019 64Bit / 2022 64Bit
- See also https://learn.microsoft.com/en-US/lifecycle/



#### **General Notes**

JAVA SDK Version j2sdk1.4.2_11     X <sup>2</sup> )       Perl V5.30.0     X       ETAS Certificate     X       Direct X     V9 (or highe       ETASShared     14	VC9+VC10+VC14         VC14.38.33130.0 (or higher)           X <sup>2</sup> )         X <sup>2</sup> )           X         X           X         X           V9 (or higher)         V9 (or higher)           14         15           X <sup>3</sup> )         X <sup>3</sup> )           X <sup>3</sup> )         X <sup>3</sup> )	INCA V7.4	INCA V7.5
VCxRedist (Vcredist_x86 / Vcredist_x64) VC9+VC10+V0 JAVA SDK Version j2sdk1.4.2_11 Perl V5.30.0 ETAS Certificate Direct X V9 (or highe	VC9+VC10+VC14         VC14.38.33130.0 (or higher)           X <sup>2</sup> )         X <sup>2</sup> )           X         X           X         X           V9 (or higher)         V9 (or higher)           14         15           X <sup>3</sup> )         X <sup>3</sup> )           X <sup>3</sup> )         X <sup>3</sup> )		
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	X <sup>3) 5)</sup> -       X <sup>3)</sup> X <sup>3)</sup> X     X	V9 (or higher)	V9 (or higher)
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	X <sup>3</sup> )         X <sup>3</sup> )           X         X	14	15
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Windows 11 64Bit X		Х	Х
Windows Server 2016 64Bit / 2019 64Bit X	X X	Х	Х
Windows Server 2022 64Bit X <sup>6</sup>	X <sup>6)</sup> X	X <sup>6)</sup>	Х
This component is installed only when no or an older version is installed. If a newer version is already installed, it will not be touched. This is checked by This component is installed only with ODX LINK			
Vindows 10 64Bit Vindows 11 64Bit Vindows Server 2016 64Bit / 2019 64Bit	eady installed, it will		V4.8 <sup>1)</sup> VC9+VC10+VC14 X <sup>2)</sup> X X V9 (or higher) 14 14 X <sup>3) 5)</sup> X <sup>3)</sup> X X X X

5) .NET V4.8 needed (available from Microsoft Support .<u>NET V4.8</u>)

<sup>6)</sup> beginning with INCA V7.4 SP2





# Thank you!