INCA V7.3-SP3 – What's New

Changes / Extensions done in this Service Pack

INCA V7.3-SP3 – What's New

Overview

1. **Product information (Use cases, Sample applications, Customer value)**
   - Performance
   - **Functionality**
   - Standards
   - Usability
   - HW support
   - Add-ons

2. **INCA Product Family**

3. **Phase out information**

4. **General Notes**

ETAS

INCA V7.3-SP3 – What's New

Functionality

XCP V1.4 – DATA SIZE in combination with CONSISTENCY EVENT LIST

- In combination with the consistency mode CONSISTENCY_NONE the DATA SIZE parameter is relevant to decide whether a signal can be measure consistently or not.
- In addition the Consistency Event List information which can be part of the a2l file is relevant.
- INCA now informs the user which signals are configured in the experiment in such a way that the samples could be inconsistent.
- e.g. 8 byte signal with an ecu which supports only a DATA SIZE of 32(bit) and CONSITENCY_NONE
    - If this signal is configure in a Consistency Event List event the signal can be measure consistently
    - If this signal is configured for any other CONSISTENCY_NONE event the samples are potentially inconsistent

INCA V7.3-SP3 – What's New

Functionality

UDS on FlexRay Flashing with AUTOSAR file

- INCA supports UDS on FlexRay flashing since INCA 7.1.3 based on FIBEX input file

- INCA 7.3.3 now also supports UDS on FlexRay flashing <u>with AUTOSAR 4.x files</u>

- Configuration:

  - Use an AUTOSAR 4.x file for the FLX controller configuration in the INCA HW Configuration
  - Use a ProF Configuration for UDS on FLX flashing
  - The .cnf file of the ProF Configuration must contain the FLX controller ID of the AUTOSAR file
  - The .cnf file of the ProF Configuration must contain the TP configuration for UDS on FLX (extracting the TP configuration from AUTOSAR is not supported)

- Updated ProF documentation available at the ETAS MCD support

INCA V7.3-SP3 – What's New

Functionality

ProF Flashing with Lua scripts

- INCA supports as ProF configurations <u>Lua script files</u> additionally to PRM files
  - Lua is a proven, robust, fast and well documented programming language used in many applications
  - Lua is powerful, but simple and easy to learn
  - Lua supports modules, functions, types, string manipulation, mathematical functions, etc.
- All known ProF flash commands are also supported with Lua
- All protocols supported by ProF are also supported with Lua, e.g. CCP, XCP, UDS, KWP, ETK
- Same INCA usability for Lua as for PRM ProF configurations
- Updated ProF documentation available at the ETAS MCD support

Note
INCA still supports existing ProF scripts

INCA V7.3-SP3 – What's New

Functionality

Support of more than 4x ES523 /ES59x devices

Maximum number of configurable modules in one hardware configuration

- 20x ES16x
- 8x   ES511, ES512, ES523, ES581.4, ES582, ES583, ES584, ES592, ES593-D, ES595, ES8xx-Stack
- 4x   ES910.3, VN1610, VN1611, VN1630, VN1640, VN7600, VN7610, VN8910
- 2x   VX1132, VX1135

Note
A combination of too many interfaces may lead to an overload of the overall bandwidth of the system

Functionality

MATLAB – Support of MATLAB 2020B

○ INCA-MIP & INCA-SIP supports the MATLAB version 2020B

INCA V7.3-SP3 – What's New

Functionality

Autosar – Release 19-11 Support in INCA

- INCA supports the new AUTOSAR schema
  - with already supported functionality
 - no additional functionality implemented

INCA V7.3-SP3 – What's New

Functionality

Autosar – Support of referenced Autosar files

- Autosar offers a number of standard Autosar files which can be referenced in another Autosar file, e.g. for units (AUTOSAR_MOD_AISpecification_Unit_Standard.arxml).
- INCA allows now to read in <u>one</u> Autosar file with several of these Autosar specification files via multi select.
- INCA creates a MultipleAutosarFileContainer for that in the database that shows all supported Clusters (more than one Autosar file, new icon).
- On container level INCA shows the list of used Autosar files.
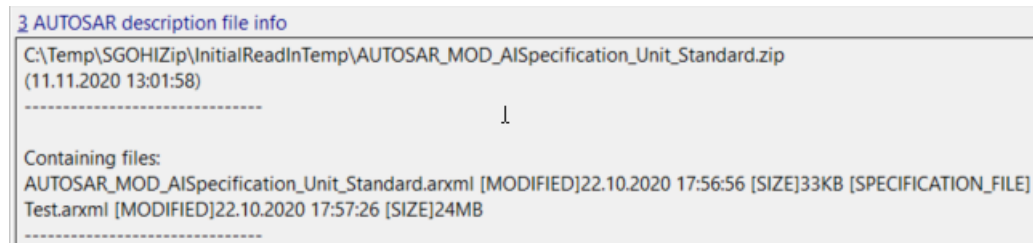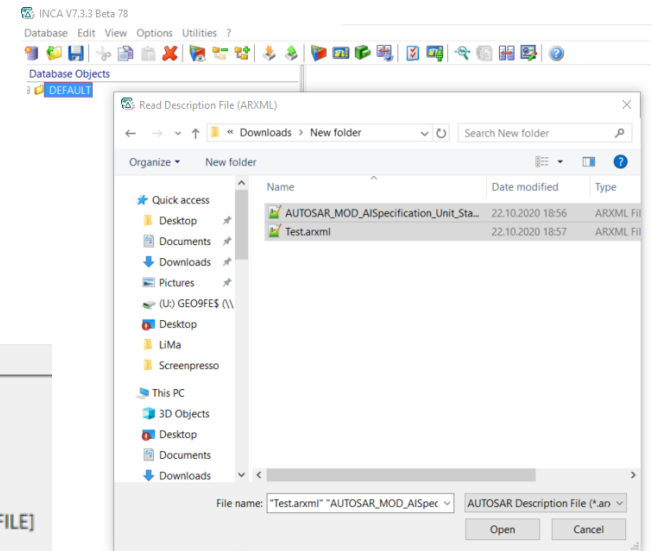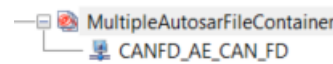
INCA V7.3-SP3 – What's New

Functionality

Autosar – Support of multiple Sub-Description Files

- INCA supports the combination of several Autosar ECU extract files
- The user can select several ECU extract files via multiselect to create an Autosar container in the INCA database
- Inca supports CAN, CAN-FD, Flexray and SecOC cluster with the feature up to now
- Only Autosar files with an Extract version can be combined in INCA to one MultipleAutosarFileContainer
- This feature can be combined with "Referenced Autosar files"
- On container level INCA shows the list of used Autosar files

- Ethernet and SOME/IP cluster will be supported in future

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Autosar - Support of multiple Byte elements for I_SIGNAL_TYPE ARRAY

- Supported for CAN/CAN-FD/FLX and Ethernet Monitoring
- Length must be a multiple of 8
- All elements are having UINT8 as base data type
- INCA creates an array of measurements for such an I-SIGNAL

```
The I-SIGNAL-TYPE is ARRAY
    <I-SIGNAL>
        <SHORT-NAME>TEST</SHORT-NAME>
        <I-SIGNAL-TYPE>ARRAY</I-SIGNAL-TYPE>
        <LENGTH>48</LENGTH>
```

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INCA V7.3-SP3 – What's New

Functionality

ODX Snapshot execution via INCA COM API

- The ODX-LINK Snapshot functionality is now available at the INCA COM API
  - `Bool IncaOnlineExperiment.PerformODXSnapshot()`
- The API function can only be used, if an ODX project is open in the Experiment
- The API snapshot will use the settings of the ODX-LINK Data Logging configuration window, which defines e.g. the filename of the snapshot and the snapshot header data
- The API function only makes sense in conjunction with the ODX-LINK OBD window, because this is the only ODX-LINK window that will refresh its diagnostic data automatically when the snapshot is triggered
- The new function is documented in "INCA7.3\cebra\INCA Tool-API Documentation.chm"

ASAP2 - DISCRETE

When signals are measured that have only dedicated values it makes sense that e.g. an oscilloscope displays only the discrete values and does not interpolate between two measure samples

Continuous
With interpolation between samples

Discrete
No interpolation between samples
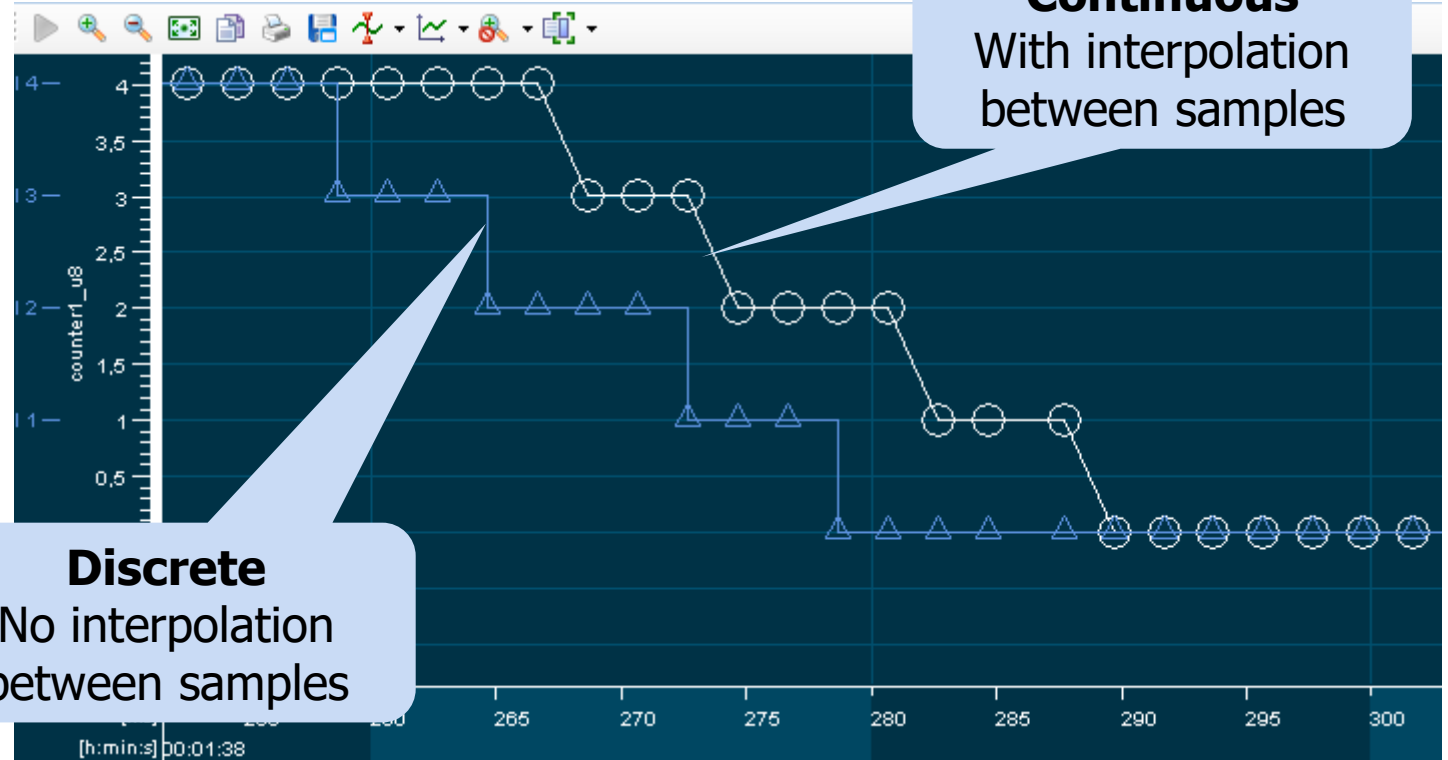
Functionality

Clustering of ECUs in the EE

- To switch multiple devices between working and reference page
  INCA supports a clustering of ECUs
- The Leading Device defines the page used at start of clustering

Cluster Information in the Experiment

"Leading Device" marked in **BOLD**

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4. **General Notes**

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Vector hardware support is an optional package in the installation

- The support of Vector hardware is now optional in the INCA installation
- All supported Vector devices will be available in the INCA HWC after the installation of the Add-on
- With the Add-on the new SW licensing for Vector hardware will be installed on the PC

INCA V7.3-SP3 – What's New

HW Support

Vector virtual CAN in INCA

- ○ vCAN supports the CAN and CAN-FD
- ○ vCAN supports only real time use cases
- ○ Not supported by ES820
- ○ INCA_VECTOR_HW subscription license required to use vCAN in INCA

Description	License	F-Number	Feature
Machine-named license for Vector HW Support for INCA , 1 year subscription	ISW_VHW_LIC-MS	F-00K-112-885	INCA_VECTOR_HW
User-named license for Vector HW Support for INCA , 1 year subscription	ISW_VHW_LIC-US	F-00K-112-886	INCA_VECTOR_HW
Floating license for Vector HW Support for INCA , 1 year subscription	ISW_VHW_LIC-CS	F-00K-112-884	INCA_VECTOR_HW

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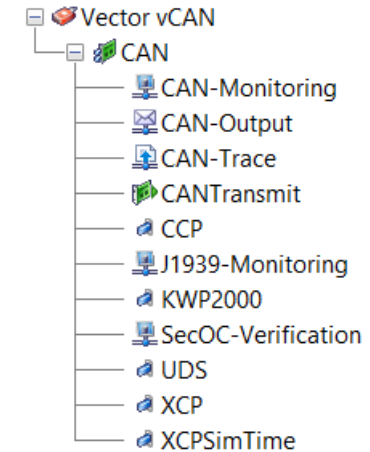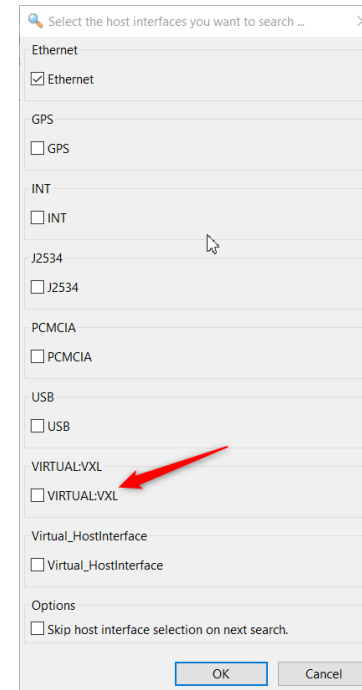
INCA V7.3-SP3 – What's New

HW Support

Vector VX113x Integration in INCA

- VX1132 – CAN Interfaces
- VX1135 – CAN/CAN-FD and FLX Interfaces
- ETH Interface behaves like a switch
- No POD integration
- Not supported by ES820
- INCA_VECTOR_HW subscription license required to use VX113x modules in INCA

Description	License	F-Number	Feature
Machine-named license for Vector HW Support for INCA , 1 year subscription	ISW_VHW_LIC-MS	F-00K-112-885	INCA_VECTOR_HW
User-named license for Vector HW Support for INCA , 1 year subscription	ISW_VHW_LIC-US	F-00K-112-886	INCA_VECTOR_HW
Floating license for Vector HW Support for INCA , 1 year subscription	ISW_VHW_LIC-CS	F-00K-112-884	INCA_VECTOR_HW
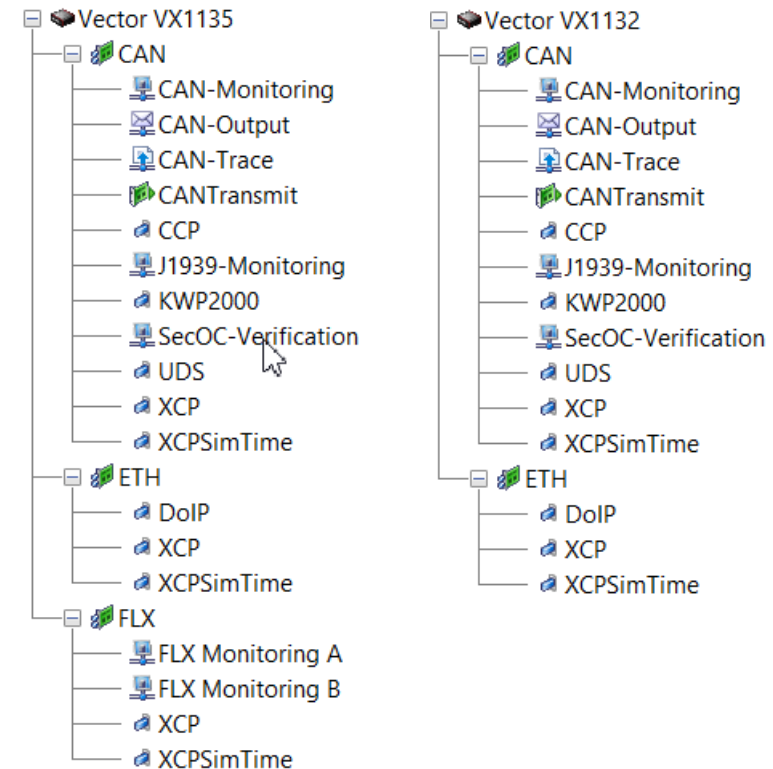
Note: New Vector hardware needs now a license instead of Enable Bit

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INCA V7.3-SP3 – What's New

Phase Out Information

Announcement concerning "HW Enable Bits"

- The ETAS enable bits functionality for Supported Vector hardware will be phased out
- QA5 Sales stop is planned for Q1/2022
- QA6 Service stop is planned for Q1/2025

For already supported Vector devices and all newly integrated Vector devices INCA supports now a SW license (Machine-Based, User-Based and Floating)!

All Vector devices with active Enable Bit will be supported by INCA at least till QA6 of the hardware.

- INCA checks for the enable bit first
- If no enable bit is available INCA will check for the SW license

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INCA V7.3-SP3 – What's New
Multi-Dimensional Measurements - ASAP2 LAYOUT

Change of INCA default Behavior

INCA will change its default behavior for measurement arrays without LAYOUT from COLUMN_DIR to ROW_DIR to be conform to ASAP2 standard.

If the ASAP2 measurement description contains the LAYOUT info INCA respects the given memory orientation.
If LAYOUT is missing INCA interprets multi-dimensional measurement arrays by default dependent on INCA version and ASAP2 version.

INCA / ASAP2	V1.5	V1.6.1	V1.7
V7.2.x	COLUMN_DIR	COLUMN_DIR	COLUMN_DIR
V7.3.2	COLUMN_DIR	COLUMN_DIR	COLUMN_DIR
V7.3.3 ff.	COLUMN_DIR	COLUMN_DIR	ROW_DIR

[Further information](#)

Recommendation
The creators of A2L files shall use always the optional ASAP2 keyword LAYOUT to describe the orientation exactly!

INCA V7.3-SP3 – What's New

General Data Protection Regulation

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.

INCA V7.3-SP3 – What's New

INCA Training

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.

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
- Workshop part, bring in your own problem statement

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: https://www.etas.com/en/trainings.php

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Virtual Machines

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.

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System Requirements

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 *)
○ 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 8.1 64Bit
○ Windows 10 64Bit (version 1803 or higher)
○ Windows 10 64Bit Enterprise (LTSC 2016 or higher)

*) Needed for installation via DVD only
Not necessary when installing via network

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General Notes

Additionally Installed Components	INCA V7.3
.Net-Runtime-Environment	V4.8[1]
VCxRedist (Vcredist_x86 / Vcredist_x64)	VC9+VC10 +VC14
JAVA SDK Version j2sdk1.4.2_11	X[2]
Perl V5.30.0	X
ETAS Certificate	X
Direct X	V9 (or higher)
ETASShared	13
Windows 8.1 64 bit	X[3]
Windows 10 64bit	X[3]

[1] 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 a Microsoft installation routine.
[2] This component is installed only with ODX LINK
[3] For hardware driver support see release notes

Thank you