INCA V7.3-SP2 – What's New

Changes / Extensions done in this Service Pack

INCA V7.3-SP2 – 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**

INCA V7.3-SP2 – What's New

Functionality

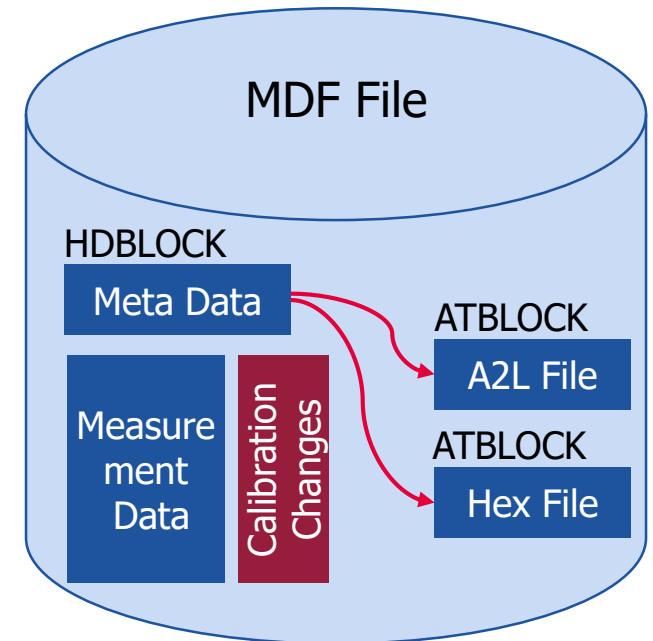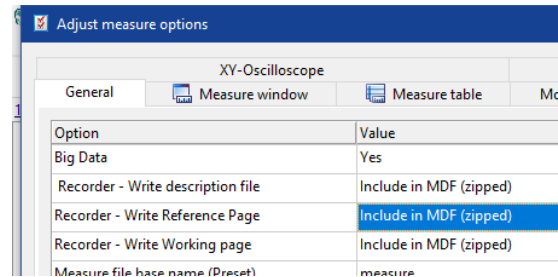## Recorder – Add Calibration Info to support Big Data

Add description files to the recorded data on which base the measurement was done

- ECU software description (A2L File)
- Data sets loaded to the ECU (Hex File)

Add calibration changes as events

With the links in the Meta Data the description files are linked to the related measurements.

INCA adds the description files optionally.
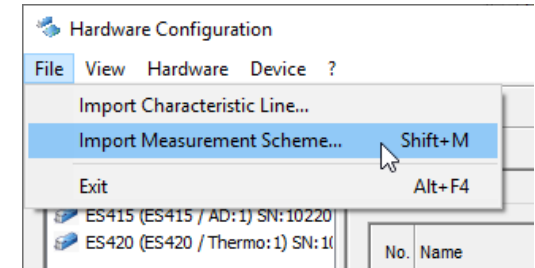
ES4xx – Import of channel parameters using a csv file

Configuring many channels for ES4xx devices can be done at once
- CSV files are used to define content
- New devices are added to the hardware configuration
- Existing devices are modified
  - Device name, serial number or alias name used to identify device

- Supported devices:
  - ES410
 - ES411
  - ES413
  - ES415
  - ES420
  - ES421

|	A	B	C	D	E	F	G	H	I	J	K	L
1	#deviceType	#HWItemName	#etasSerialNumber	#HWItemAliasName								
2	ES410	ES410 / AD:1	1236546									
3	#index	#name	#unit	#rate	#digitalFilterActive	#filterFrequency	#physMin	#physMax	#sensorMin	#sensorMax	#wantedRangeMin	#wantedR
4	1	ES410_AD1_CH1	V	0,1	0	40	0	60	0	60	0	
5	2	ES410_AD1_CH2	V	1	0	8	0	60	0	60	0	
6	3	ES410_AD1_CH3	V	10	1	4	0	60	0	60	0	
7	4	ES410_AD1_CH4	V	50	1	20	0	22,6	0	40,5	0	
8	5	ES410_AD1_CH5	V	1000	1	auto	0	60	0	60	0	
9	6	ES410_AD1_CH6	V	2000	0	8	0	60	0	20,3	0	
10	7	ES410_AD1_CH7	V	200	0	4	0	55,1	0	60	0	
11	8	ES410_AD1_CH8	V	500	1	std	0	60	0	60	0	

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Functionality

INCA – Switching UI Language within INCA
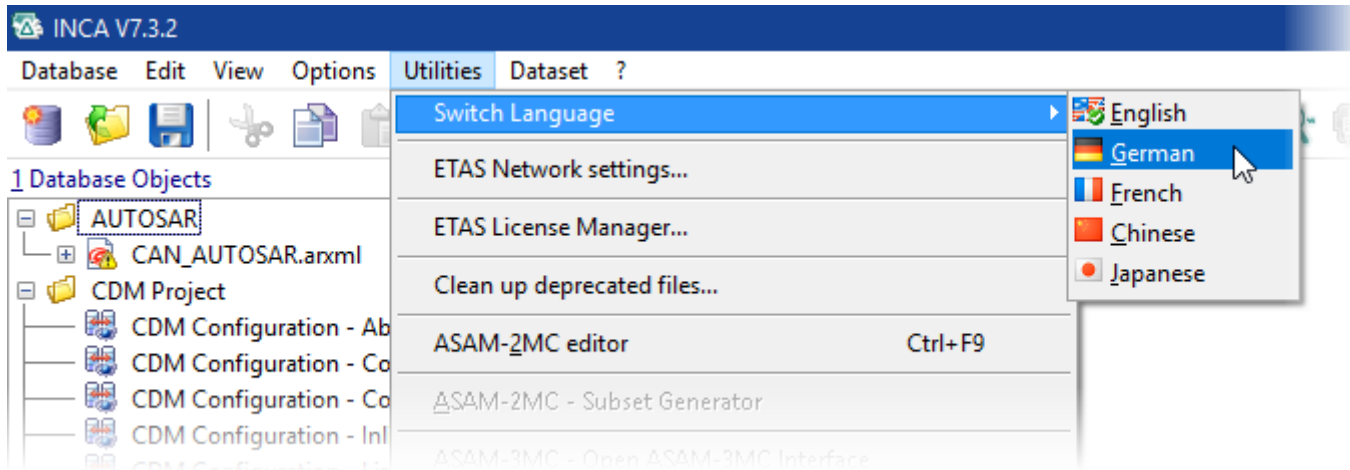
Change is taken into account after re-start of INCA

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Functionality
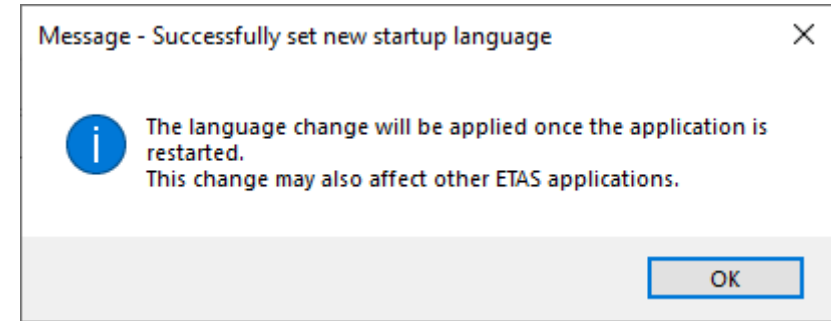
XCP – Calibration Method "Autosar Single Pointer Calibration"

- Update:
  - INCA will send the standard XCP command SET_CAL_PAGE/GET_CAL_PAGE for page switching even if the access in the ECU is implemented via a single pointer table for both pages.
  - The Ecu has to handle the SET-/GET_CAL_PAGE request consistently.
  - Additionally INCA will always download the corresponding pointer for WP or RP to this single pointer table in RAM.
  - For the time of this download the pointer table itself could be inconsistent with a mixture of WP and RP pointer. This is related to this specific calibration concept.
  - The time of inconsistency depends on Transport Layer and size of the pointer table.

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INCA V7.3-SP2 – What's New

Functionality

XCP V1.4 Support of consistency event list for measurements

The consistency event list entry for a measurement tells the XCP master
  1) All measurements which are having the identical consistency event list entry are consistent to each other if the user selects this EVENT for the DAQ configuration.
  2) The consistency event list entry overrules the default event list entry

In INCA you will not see a difference between Default or Consistency Event List settings, both will be shown as Default Event List.

```
/begin MEASUREMENT
   /* Name */          A12_D1_C2
   /* LongIdentifier */  ""
   /* Datatype */       FLOAT32_IEEE
   /* Conversion */     ident
   /* Resolution */     1
   /* Accuracy */       100
   /* LowerLimit */     -1.e+037
   /* UpperLimit */     1.e+037
   ECU_ADDRESS          27040
   /begin IF_DATA XCPplus
     0x0104
     /begin DAQ_EVENT
       VARIABLE
       /begin AVAILABLE_EVENT_LIST
          EVENT 1
          EVENT 2
       /end AVAILABLE_EVENT_LIST
       /begin DEFAULT_EVENT_LIST
          EVENT 1
       /end DEFAULT_EVENT_LIST
       /begin
          CONSISTENCY_EVENT_LIST
          EVENT 2
       /end CONSISTENCY_EVENT_LIST
     /end DAQ_EVENT
   /end IF_DATA
/end MEASUREMENT
```

Name	Data Source	Role	Address	Location	Bytes	CONSISTENCY EVENT	CONSISTENCY DAQ	CONSISTENCY ODT	CONSISTENCY NONE	Polling_100ms	Polling_500ms	Polling_1s
A12_D1_C2	XCP:1		0x69A0	Internal	0x4		◉					

XCP V1.4 Support Efficient DAQ Data Transfer on CAN (MEASUREMENT_SPLIT_ALLOWED)

- XCP Specification: With MEASUREMENT_SPLIT_ALLOWED at the CAN transport layer of the ASAM MCD-2 MC description file, the slave can indicate that for MEASUREMENT variables, that can be measured consistent within one ODT entry as defined in XCP Protocol Layer, the consistency is also guaranteed by the slave, if they are split into two consecutive ODT entries of two consecutive ODTs.

e.g. 2x Ulong measurements on CAN
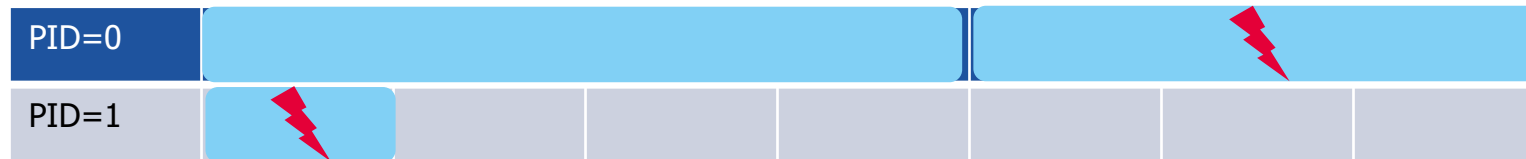
without measurement split allowed.

⚡ potentially inconsistent

with measurement split allowed

Functionality
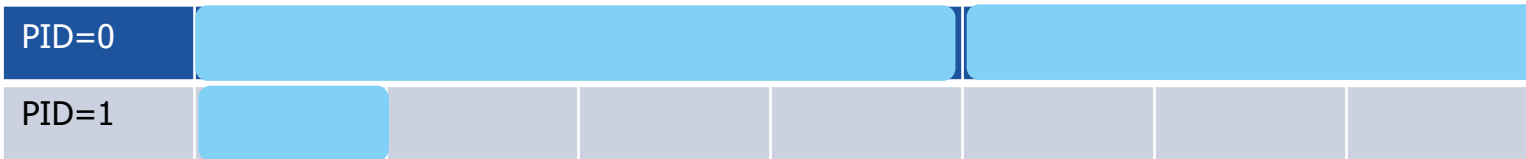
XCP V1.4 Support of Consistency NONE

- With Consistency None the is no consistency guarantee on EVENT/DAQ or ODT level.
- Only the ecu itself can guarantee the sampling of measurements up to a specific size.
- DATA_SIZE is the Asap2 keyword which defines the limit
  - All measurements which are larger are always potential inconsistent and could be cut into 2 ODT entries.
  - All measurements which are smaller or equal to DATA_SIZE are always consistent and it is not allowed to cut those measurements into two ODT entries. Only with supported XCP measurement split allowed feature by the XCP slave it exists a possibility to measure those measurements consistently with 2 ODT. See next feature.

	XCP Version	OM_Default	OM_ODT_TYPE_16	OM_ODT_TYPE_32	OM_ODT_TYPE_64	OM_ODT_ALIGNMENT	OM_MAX_ENTRY_SIZE
CONSISTENCY EVENT	1.0	V7.1.0	V7.2.1	V7.2.1	V7.2.1	V7.2.0	V7.2.1
CONSISTENCY DAQ	1.0	V7.2.0	V7.2.1	V7.2.1	V7.2.1	V7.2.1	V7.2.1
CONSISTENCY ODT	1.2	CM_EVENT*	V7.2.0	V7.2.0	V7.2.0	V7.2.1	V7.2.1
CONSISTENCY NONE	1.4	V7.3.2	V7.3.2	V7.3.2	V7.3.2	V7.3.2**	not supported

* only without Measurement Split Allowed ==> mapping to CM_EVENT(old behavior)

** ignores Measurement Split Allowed

INCA V7.3-SP2 – What's New

Functionality

XCP V1.4 DAQ Packed Mode with Predefined DAQ lists

- Predefined DAQ lists are preconfigured/static DAQ lists which can only be activated in total or not.
- The configuration is part of the a2l file and can not be modified on the fly.
- DAQ Packed Mode is a special measure mode to optimize the interrupt/throughput for fast EVENTS.
- For special use cases it can now be used in combination.

  ➔ High Speed measure modules via Ethernet interface

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4. **General Notes**

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HW Support

ES160, ES162 and ES165 Integration in INCA - AE Media Converter

- Configuration of speed 100/1000/Auto
- Configuration of link Master/Slave/Auto
- Supports alias name
- Supports replace system
- Support serial number mapping
- Supports EthernetPortConfiguration device
  This device is a dummy device to be able
  to configure the Ethernet port without
  configuring a XCP or DoIP device if Auto-
  configuration is not sufficient for the use case.
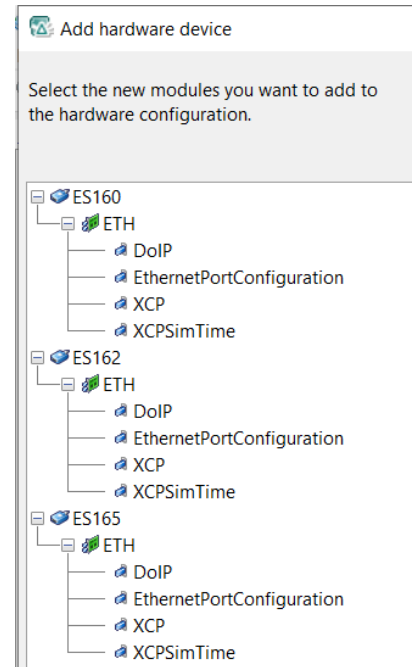
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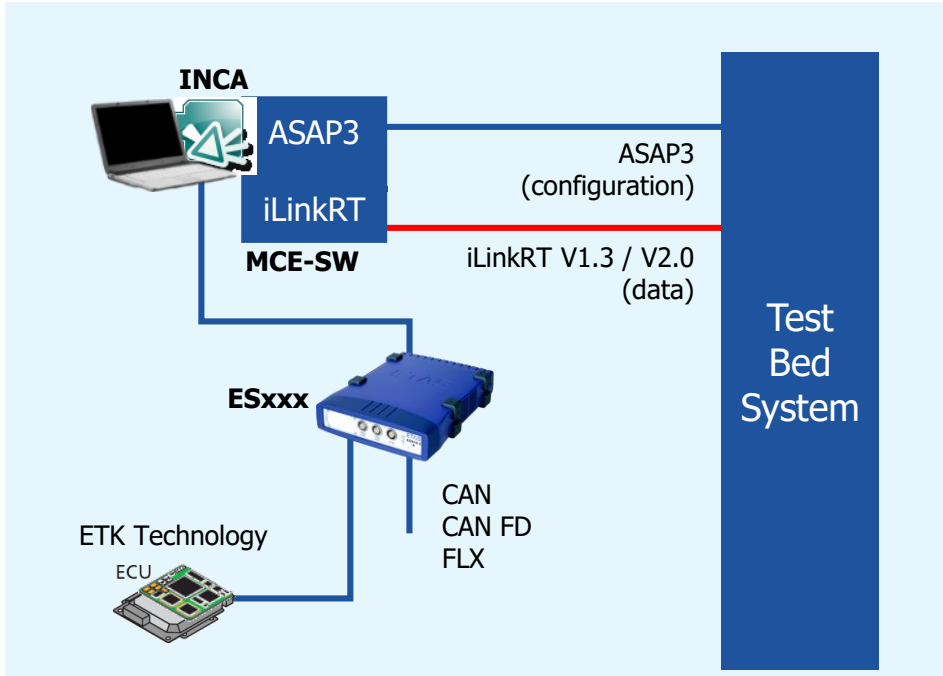3. **Phase out information**

4. **General Notes**

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INCA V7.3-SP2 – What's New

Add-ons

MCE – ASAP3 with iLinkRT V1.3 / V2.0

New
- PC based iLinkRT solution
- Beside ECU interfaces additionally measurement and monitoring devices are supported

Performance attributes and key features
- Down to 100 millisecond latency for measurement of 100 ECU measurement variables
  (a 2 Byte) in running experiment
- Down to 60 millisecond calibration performance for single map (16x16, 512 Bytes) flat calibration
- Supported ECU-Interfaces: CCP, XCP, ETK, XETK, FETK, Measure Modules

Products and services required
- INCA V7.3, INCA MCE

Major prerequisites
- Test bed system with support of ASAP3 (for system configuration) and iLinkRT V1.3 / V2.0 (for ECU measuring and parameter exchange)

INCA V7.3-SP2 – What's New

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INCA V7.3-SP2 – What's New

INCA Product Family

INCA – Support of FlexNet Embedded licenses for machine based licenses

ETAS introduces a new license technology called FlexNet Embedded.
In a first step new machine based licenses will use this technology.
Existing licenses can still be used during a migration phase.

FlexNet embedded offers modern, future-proof technology.
New machine based licenses can be activated online using the
ETAS license manager.

Offline activation is also
possible for those PCs
without internet connection
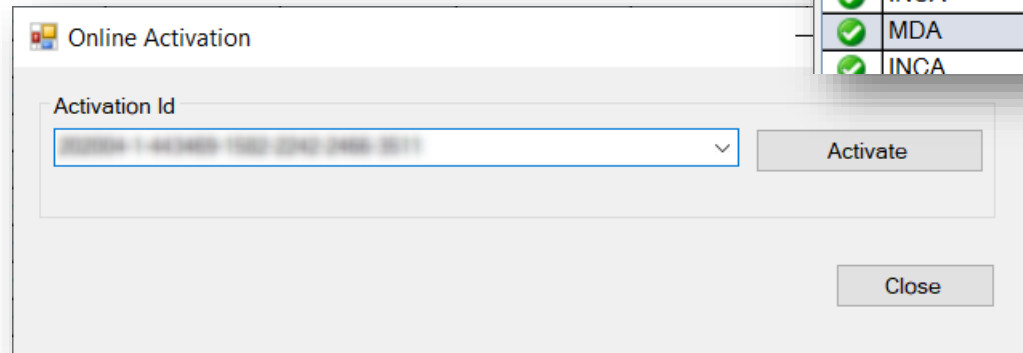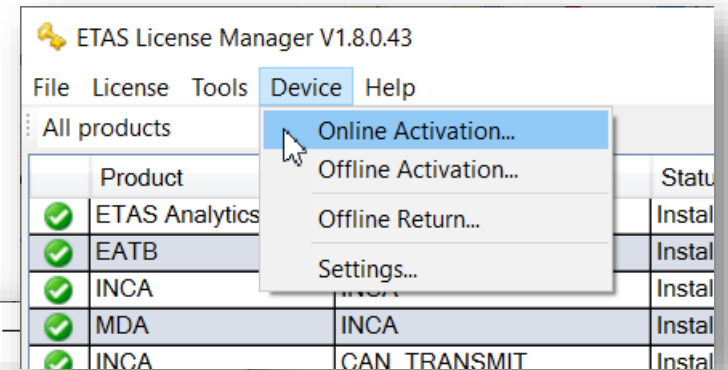
INCA V7.3-SP2 – What's New

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INCA V7.3-SP2 – 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-SP2 – 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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INCA V7.3-SP2 – What's New

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