ETAS INCA-RDE V1.13

Release Notes

Copyright

The data in this document may not be altered or amended without special notification from ETAS GmbH. ETAS GmbH undertakes no further obligation in relation to this document. The software described in it can only be used if the customer is in possession of a general license agreement or single license. Using and copying is only allowed in concurrence with the specifications stipulated in the contract.

Under no circumstances may any part of this document be copied, reproduced, transmitted, stored in a retrieval system, or translated into another language without the express written permission of ETAS GmbH.

© Copyright 2024 ETAS GmbH, Stuttgart

The names and designations used in this document are trademarks or brands belonging to the respective owners.

Table of Contents

1. Introduction

INCA-RDE is an add-on product to INCA, the ETAS product for measurement and calibration.

INCA-RDE (Real Driving Emissions) is a software, which is an assistant that allows test drivers to track the status of real driving emissions measurements in real time. This makes it possible to monitor whether RDE measurements comply with statutory limits.

Being seamlessly integrated into INCA, specialists can conduct RDE tests in their familiar working environment for taking in-vehicle measurements, calibrating control units and diagnostics.

INCA-RDE used to execute RDE driving tests in a controlled and reproducible manner. The INCA add-on makes it possible to efficiently determine RDE emissions and correlate them with signals from the ECU. For this purpose, it provides special display instruments that enable test engineers to monitor and evaluate RDE measurements during driving tests.

This document describes the properties of the latest version of INCA-RDE, which replaces all former versions of INCA-RDE and works together with INCA V7.5.x

1.1. Definitions and Abbreviations

Term/Abbreviation	Definition
RDE	Real Driving Emissions
EE	INCA Experimental Environment
EHI	ETAS Help Desk International
HF	Hotfix
HW	Hardware
OS	Operating System
KIR	**K**nown **I**ssue **R**eport – For severe Problem Reports which occur after a release, ETAS has introduced the Known Issue Report to inform affected customer immediately. The current Known Issues of former versions can be found on the ETAS website: http://www.etas.com/kir
PR	Problem Report
SP	Service Pack
SW	Software
VSD	Variable Selection Dialog
WB	Walkback, Inca system error

1.2. References

None

1.3. Conventions

The following typographical conventions are used in this document:

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.

1.4. User Documentation

The INCA-RDE user's documentation in PDF format can be found in the installation folder on the PC.

2. Product Definition

2.1. Functions at a glance

INCA-RDE (Real Driving Emissions) is a software which is an assistant that allows test drivers to track the status of real driving emissions measurements in real time. This makes it possible to monitor whether RDE measurements comply with statutory limits.

An ES59x universal interface module used to connect the INCA-RDE software tool to a portable emissions measurement system (PEMS) via CAN. In addition to emission measurements, INCA-RDE online evaluates likewise OBD and GPS data collected by the PEMS. To check the vehicle-dynamics conditions, INCA-RDE supports the alternative methods "moving averages" (EMROAD) and "ratings per performance class" (CLEAR). The results of analysis – the actual RDE data – displayed on the RDE-specific instruments within the INCA experiment. This data is also recorded by INCA every ten milliseconds in synchronicity with signals from the engine control unit.

Function
- Calculation of RDE data from PEMS raw signals in real-time
- Time synchronous acquisition of RDE data and ECU signals
- Connection to PEMS hardware via CAN
- RDE-specific INCA instruments displaying
  - route and time sections travelled on urban and rural roads and motorways
  - moving average emission values
  - environmental and engine conditions
  - raw signals from emission sensors
  - start of emission measurement, GPS data and PEMS status

Benefits
- Provides immediate feedback on the status of the RDE measurement to the test driver
- Estimates whether RDE requirements can be maintained during the ongoing vehicle test
- Complies to PEMS hardware of different manufacturers

2.2. General Description

2.2.1. Safety Description

Calibration activities influence the behavior of the ECU and the systems controlled by the ECU. This may result in unexpected behavior of the vehicle and thus can lead to safety critical situations.

Only well trained personnel should be allowed to perform calibration activities.

Sending CAN messages influences the behavior of the CAN bus network and the systems connected to it. This may result in unexpected behavior of the vehicle and thus can lead to safety critical situations.

Only well trained personnel should be allowed to perform CAN message sending activities.

Calibrate measurement (Write to RAM) activities influence the behavior of the ECU and the systems controlled by the ECU. This may result in unexpected behavior of the vehicle and thus can lead to safety critical situations.

Only well trained personnel should be allowed to perform calibrate measurements activities.

2.2.2. System Prerequisites

The following minimum system prerequisites have to be met:

Required Hardware	2 GHz Processor
	2 GB RAM
	DVD-ROM drive (for installation)
	Network adapter
	Graphics with a resolution of at least 1024 x 768, 256 MB RAM, 16bit color and DirectX 9
Required Operating System	Windows® 10 64 bit (version 1803 or higher)
	Windows® 10 64 bit Enterprise (LTSC 2016 or higher)
	Windows® 11 64 bit *)
	Windows® Server 2016 and 2019 64 bit
	(English, French, Japanese, Chinese and German OS version supported)
	Note: INCA V7.5.x supports the 64-bit operating system only.
Required Free Disk Space	5 GB (not including the size for user data; absolute min. required, but not recommended)

The following system prerequisites are recommended:

Recommended Hardware	3 GHz Quad-Core Processor or equivalent
	16 GB RAM
	DVD-ROM drive (for installation)
	Network adapter
	Graphics with a resolution of at least 1280 x 1024, 1GB RAM, 32bit color and DirectX9
Recommended Operating System	Windows® 10 64 bit
	(English, French, Japanese, Chinese and German OS version supported)
Recommended Free Disk Space	>10 GB

Recommendation on Performance	Investigation on performance showed: - More Memory improves execution time of repetitive operations - SSD hard disks improve the file access times

2.2.3. Software Prerequisites

INCA V7.5.x version must be installed before the installation of the INCA-RDE Add-on.

2.2.4. Restrictions

Refer to INCA V7.5.x Release Notes.

2.2.5. Miscellaneous

Refer to INCA V7.5.x Release Notes.

2.3. Delivery

The software is delivered via download on the ETAS Download Page.

2.3.1. Used 3rd Party Software

The 3rd Party Software used by INCA-RDE is listed in the documentation in the folder …\ OpenSourceSoftware.

2.4. Installation

For details on installation or licensing see the separate installation instructions document "Getting Started INCA-RDE" Chapter "Installing the Program" (Section "Installation of INCA-RDE Online").

2.4.1. Installation Hints

Close a running INCA before starting the installation.

2.5. Licensing

INCA-RDE is protected via electronic licensing. In order to run and use the products, a license file is required that needs to be installed via the ETAS License Manager. The license manager is opened during the installation and can be started at a later point as an external program located in the ETAS program folder in the Start menu. The license file can be obtained through a self-service portal on the ETAS website by using the software entitlement you received during the order process or your tool coordinator provides it.

3. Changes

This chapter describes changes with respect to INCA-RDE V1.12.1.

3.1. What's New with INCA-RDE V1.13

- Support of EU7 Legislation.

Please refer to the INCA-RDE V1.13 What's new presentation for more details.

3.2. Privacy notice

Please refer to INCA Handbook/Online help for processing of personal data using INCA-RDE.

3.3. Fixed Problems

- #608364 INCA-RDE Instruments are not visible

3.4. Known Issue Reports

If a product issue develops, ETAS will prepare a Known Issue Report (KIR) and post it on the internet. The report includes information regarding the technical impact and status of the solution. Therefore you must check the KIR applicable to this ETAS product version and follow the relevant instructions prior to operation of the product.

The Known Issue Report (KIR) can be found here: www.etas.com/kir

3.5. Known Issues

This section describes the general set of known problems valid for all INCA-RDE releases.

For version specific new and solved known issues see the corresponding section in the version history below, please.

3.5.1. Software related Items

None

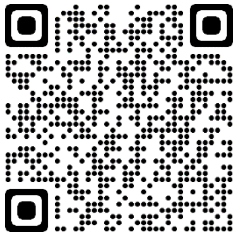### 3.5.2. Hardware related Items

None

4. Hints

None

5. Hotfix Information

None

6. Contact Information

6.1. 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 website: www.etas.com/hotlines

6.2. ETAS Headquarters

ETAS GmbH

Borsigstraße 24	Phone:	+49 711 3423-0
70469 Stuttgart	Fax:	+49 711 3423-2106
Germany	Internet:	www.etas.com