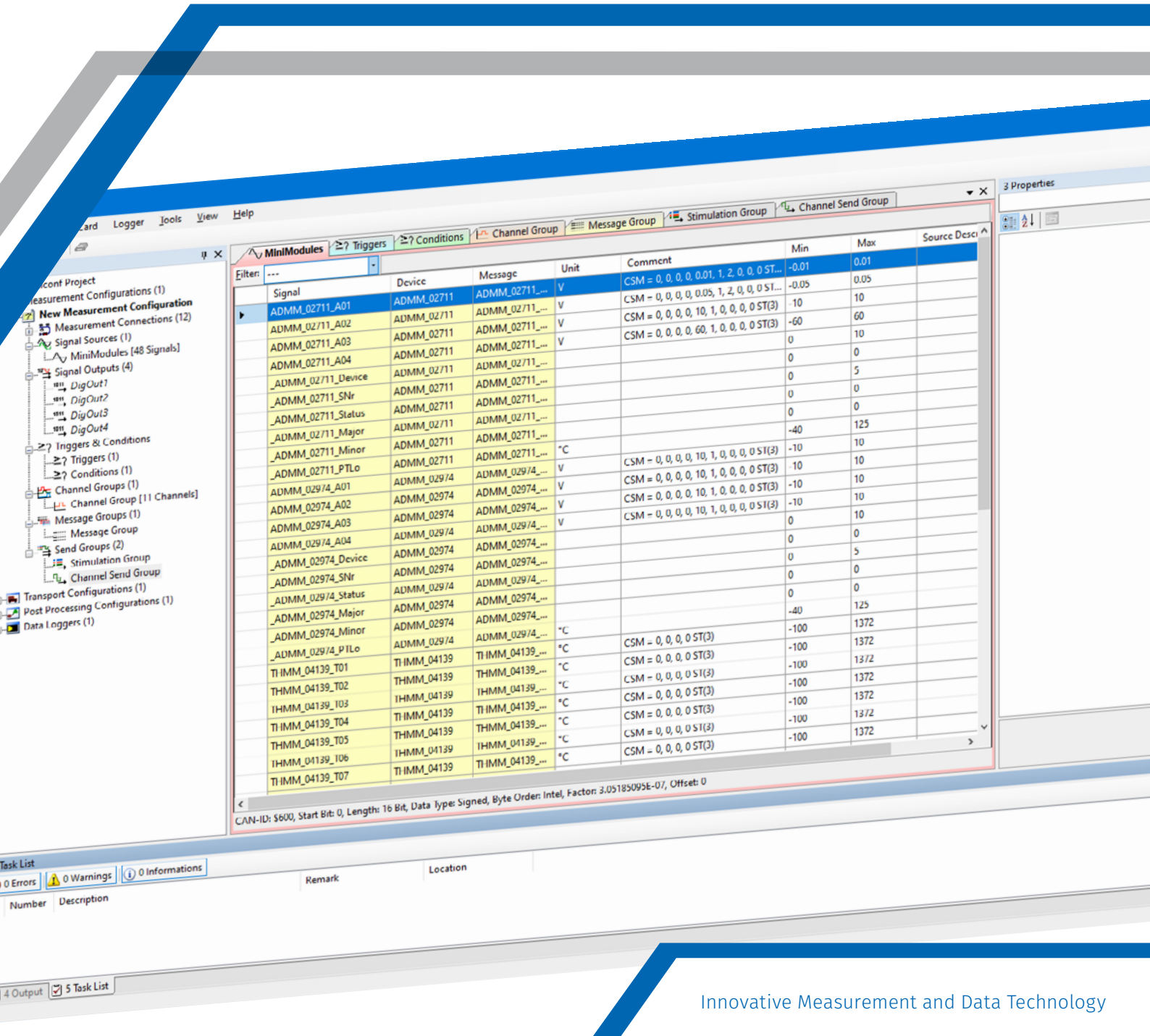
CSMuniconf

User Start Guide

Version 02.00



Innovative Measurement and Data Technology

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Product disposal/recycling

If this symbol (crossed-out wheeled bin) appears on the device, this means that the European Directive 2012/19/EU applies to this device.

The correct disposal of old equipment will protect the environment and people from possible negative consequences.

Become familiar with local regulations for separate collection of electrical and electronic equipment.

Follow local regulations and do not dispose of old equipment with household waste.

Contact information

CSM offers support for its products over the entire product life cycle. Updates for the individual components (e.g. documentation, configuration software and firmware) are made available on the CSM website. To keep up to date, it is therefore recommended that you check the download area of the CSM website for updates at least once a month.

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1 Introduction

1.1 About this user guide

This user start guide contains important information on how to use the CSMuniconf software. CSMuniconf is used to configure and administer the UniCAN 2 and UniCAN 3 data loggers from CSM. The complete document should be read carefully before installation and initial start-up.

	NOTE!
	This user start guide does not replace user guide. It gives an overview and introduces the basic functions in order to enable the user to get to grips with the first steps. The additional reading of the CSMuniconf user guide is absolutely necessary. ☞ Read the CSMuniconf user guide carefully.

For the convenience of the user the terms **data logger** or **UniCAN** are used throughout this documentation instead of the product names **UniCAN 2** and **UniCAN 3**.

1.2 Symbols and writing conventions

Symbol/note	Meaning	Example of application
☞	User instruction	☞ Click on **OK** to confirm the entry.
⇨	Result of an action	⇨ The following dialog opens.
→	Cross-reference to further information	→ *See also chapter 1.3 Directive.*
i	This pictogram refers to important notes or additional information on a specific topic.	**i** CSM offers a mounting kit for devices in standard housings. For further information please contact our sales department.
File | New Project	**Menu selection** Menu items, options and buttons are highlighted in bold. The vertical bar "|" separates the menu from the menu command. The example on the right means: Click on the **File** menu and select **New Project**.	☞ Select **File | New Project.**
(→ **File | New Project**)	A menu selection integrated in the text	A new project is created by using the **New Project** (→ **File | New Project**) dialog.

Symbol/note	Meaning	Example of application
(→ **Ctrl + N**)	**Key combination** Key names are shown bold in the text and in some cases listed in addition to the menu commands. The example on the right means: As an alternative to the menu selection, the option can also be called up by using the key sequence **Ctrl + N.**	☞ Select **File | New Project (→ Ctrl + N).**

Tab. 1-1: Symbols and writing conventions

1.3 Directive

A directive contains important information about the product described in the guide. Failure to observe a directive may result in malfunction and/or damage to property and material. A directive is indicated by the blue symbol and the signal word **NOTE**.

Example

NOTE!	
	This symbol indicates important information. Failure to observe this information can impair the function or result in damage to the data logger. ☞ Read the information carefully.

Symbols used

Symbol	Meaning
	This symbol indicates important information. Failure to observe this information can impair the function or result in damage to the data logger.

Tab. 1-2: Symbols for directives

1.4 List of abbreviations

The following abbreviations are applied in the user start guide:

Abbreviation	Meaning
A2L	Definition files for electronic control units (ECUs)
CAN	Serial bus system developed by Bosch for networking ECUs in vehicles (**C**ontroller **A**rea **N**etwork)
CAN-FD	A CAN-based bus system with an extended transmission capacity (**F**lexible **D**ata Rate)
CF card	Interface standard for storage media (**C**ompact **F**lash)
CSV	Text file for storing and exchanging simply structured data (**C**omma-**S**eparated **V**alues)
DBC	CAN database file (**D**ata **B**ase **C**AN)
DTC	Error code (**D**iagnostic **T**rouble **C**ode)
FTP	Digital transfer protocol (**F**ile **T**ransfer **P**rotocol)
SIM	Chip card (**S**ubscriber **I**dentity **M**odule)
SKB	Binary format developed by Vector for programs that enable customer-specific Seed/Key authentication on electronic control units (**S**eed-**K**ey **B**inary)
UTC	Universal Time Coordinated (**U**niversal **T**ime **C**oordinated)
USB	Serial interface (**U**niversal **S**erial **B**us)

Tab. 1-3: List of abbreviations

2 Hardware Environment

2.1 Product Description

UniCAN devices are designed for logging measurement data which are made available via CAN bus. They can be used for diagnostic purposes as well as for the long-term monitoring of systems and vehicles. The CSMuniconf configuration software creates and maintains configuration data for UniCAN devices.

i	The current version of CSMuniconf can be found in the download area of the CSM website. → *see https://s.csm.de/de-uc* Further components such as connection cables, CF cards and antenna are available as accessories. Please refer to the data sheet "UniCAN Accessories".

The CSMuniconf configuration software features the following functions:

- Creating and maintaining logger configurations
- Formatting, reading and writing of CF cards
- Setting up modem operation (SIM card, FTP server, etc.) and remote data exchange
- Fleet management
- Data conversion for further data processing using standard software
- Firmware upgrade (via USB connection, CF card or remote access)
- Setting logger real-time clock
- Importing licenses

2.2 Minimum system requirements

The following system requirements indicate the technical standards a computer has to meet in order to be able to install and run CSMuniconf.

- Microsoft Windows 32 bit or 64 bit operating system (Windows 8.1/10)
- A hard disk drive with at least 100 MB free storage capacity for the programs to be installed and free storage capacity for temporary program files.

3 Graphical User Interface

3.1 Overview

The CSMuniconf software covers all tasks for the configuration and for the post processing of the data of UniCAN Data Loggers. Additionally, the software provides options to organize the distribution of new configurations and firmware updates.

CSMuniconf consists of a main program window with a classical menu structure and further windows which can either be docked and undocked or can be freely moved as individual windows (floating windows) within the main program window.

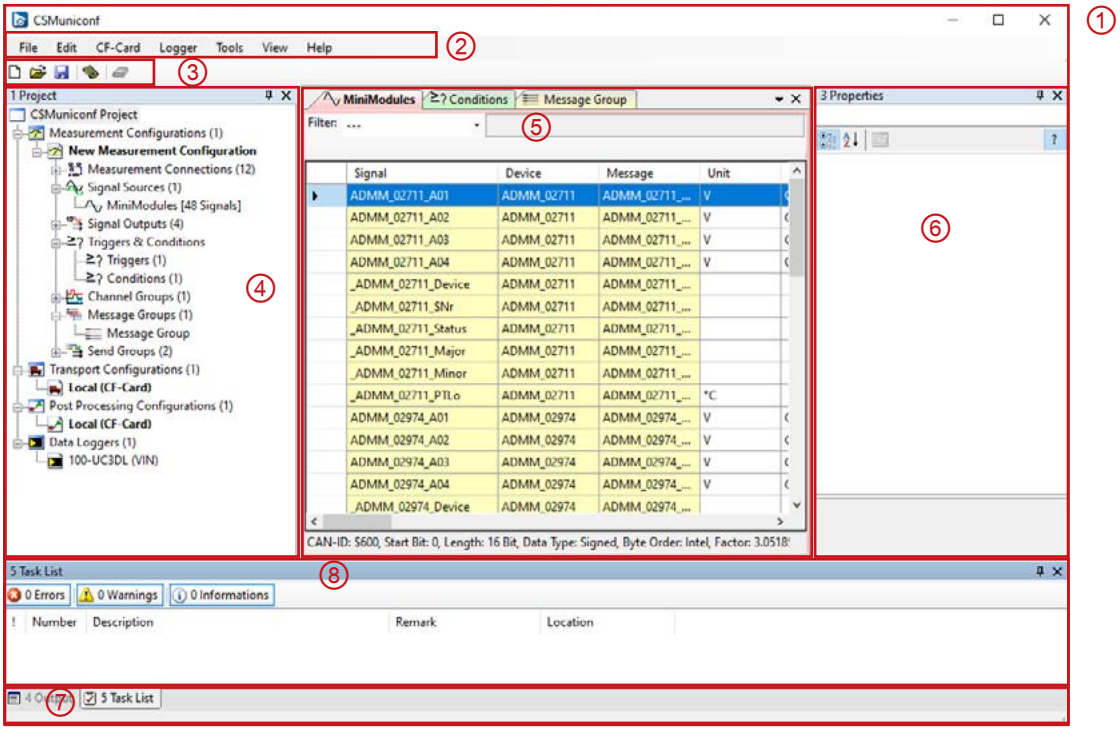

Fig. 3-1: CSMuniconf User Interface

① CSMuniconf main program window

② Menu bar

③ Tool bar

④ **1 Project** window

⑤ Detail window

⑥ **3 Properties** window

⑦ **4 Output** window

⑧ **5 Task List** window

After the program start CSMuniconf provides an overview on a project with its windows **1 Project**, **3 Properties**, **4 Output** and **5 Task List**.

The menu bar ② and the tool bar ③ are firmly integrated in the program's user interface. Size and position of the windows **1 Project** ④, **3 Properties** ⑥, **4 Output** ⑦, **5 Task List** ⑧ and the detail window ⑤ can be freely arranged in order to provide the best possible overview on the individual configuration.

→ *See also Chapter 3.3.1 Windows display modes.*

3.2 Menu bar

The menu bar is broken down into the menus **File, Edit, CF-Card, Logger, View** and **Help,** each of them with its specific options. The functions of the individual options are outlined briefly below.

3.2.1 File

Option	Function	Shortcut
New Project	... opens a dialog to create a new project.	Ctrl + N
Open Project	... opens a dialog window for opening an existing project.	Ctrl + O
Save Project	... saves the currently opened project using the present name.	Ctrl + S
Save Project As	... opens a **Save as** window in order to rename the project or to save it in a different folder.	Ctrl + Shift + S
Close Project	... closes the currently opened project. If the project has not been saved since the last modifications, a dialog opens and prompts the user to save the project.	Ctrl + W
Check Project	... carries out a plausibility check using the current configuration. The result is displayed in the **Task List** window.	F6
Exit	... closes the CSMuniconf application.	Ctrl + Q

Tab. 3-1: **File** menu

3.2.2 Edit

Option	Function	Shortcut
Undo	... undoes the last action.	Ctrl + Z
Cut	... cuts the selected content.	Ctrl + X
Copy	... copies the selected content to the clipboard.	Ctrl + C
Paste	... pastes the content that has been previously extracted by using **Cut** or **Copy** at the cursor position.	Ctrl + V
Delete	... deletes the previously selected content.	Del
Select All	... marks the complete editable content in the active window.	Ctrl + A

Tab. 3-2: **Edit** menu

3.2.3 CF card

Option	Function	Shortcut
Read Data	... opens the dialog **Read From Card And Convert** to read in new data.	–
Delete Data	... opens the dialog **Clear CF-Card** to delete the data of a CF card.	–
Copy Firmware	... opens the dialog **Open** to read the firmware file (*.csm).	–
Format CF-Card	... opens the dialog **Format CF-Card**.	–
Read Data [1]	... opens the dialog **Read Raw Data...** to read the content of the CF card.	–
Convert Raw Data [1]	... opens the dialog **Export Raw Data...**.	–

Tab. 3-3: **CF-Card** menu

1 This option is only available if CSMuniconf runs in expert mode or, alternatively, if the Shift button is pressed when selecting an option from the menu.

3.2.4 Logger

Option	Function	Shortcut
Real-Time Clock	... opens the dialog **Real-Time Clock** to verify and set the real-time clock of the connected data logger.	–
Licensed Features	... opens the dialog **Licensed Features**.	–
Mobile Data	... opens the dialog **Mobile Data Services**.	–
Send License	... opens the dialog **Send License** to update the license data of the data logger.	–

Tab. 3-4: **Logger** menu

3.2.5 Extras

Option	Function	Shortcut
OBD2 Definition	... opens the dialog **Create Specific OBD2 Definition**.	–
Check SKB	... opens the dialog **Check SKB** for testing the functionality of a Vector SKB file.	–

Tab. 3-5: **Extras** menu

3.2.6 View

This menu provides options to modify the display mode and to fade in/out individual elements of the program. Fading in/out is done by setting/removing the check mark at/from the menu column.

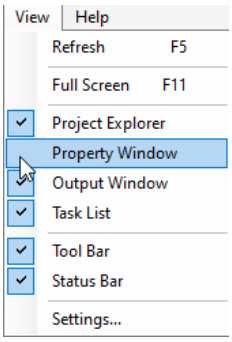

Fig. 3-2: **View** menu

Alternatively, the windows **1 Project**, **3 Properties**, **4 Output** and **5 Task List** can be faded in using the shortcuts **Ctrl + 1/3/4/5**, respectively. If the windows are visible, it is possible to switch between them by using the short cuts. The menu option **Settings...** does not feature this functionality.

Option	Function	Shortcut
Refresh	... updates the view of the program main window	F5
Full Screen	... extends the size of the CSMuniconf program main window to the physically available screen space.	F11
Project Explorer	... hides or shows the **1 Project** window	Ctrl + 1
Property Window	... hides or shows the **3 Properties** window.	Ctrl + 3
Output Window	... hides or shows the **4 Output** window.	Ctrl + 4
Task List Window	... hides or shows the **5 Task List** window.	Ctrl + S
Toolbar	... hides or shows the tool bar. This bar with its individual tool icons is arranged below the menu bar.	–
Status bar	... hides or shows the status bar. This bar is integrated into the lower section of the program main window.	–
Settings	... opens the dialog **CSMuniconf Settings**. This dialog provides options to adjust the default settings of the program.	–

Tab. 3-6: **View** menu

3.2.7 Help

Option	Function	Shortcut
About CSMuniconf...	... opens the **About CSMuniconf** dialog, containing information on the program version.	
About CSMdataconv	... opens the **CSMdataconv** dialog, containing information on the program version.	
Installation Notes	... opens the **Installation manual** (PDF file), either for UniCAN 2 or UniCAN 3.	
User Start Guide	... opens the **User Start Guide** (PDF file).	
Release Notes	... opens the **Release Notes** (PDF file) containing information on the current program version.	
User Guide	... opens the **User Guide**.	
More documentation	... opens the **Documentation** folder containing information in **further languages**.	

Tab. 3-7: **Help** menu

3.3 Further User Interface Elements

The following section describes the functions of the individual CSMuniconf windows.

3.3.1 Windows display modes

CSMuniconf provides specific options to select different view modes for its windows.

1. The window is docked to the main program window and permanently visible. In this case, the pushpin icon ① is in vertical position.

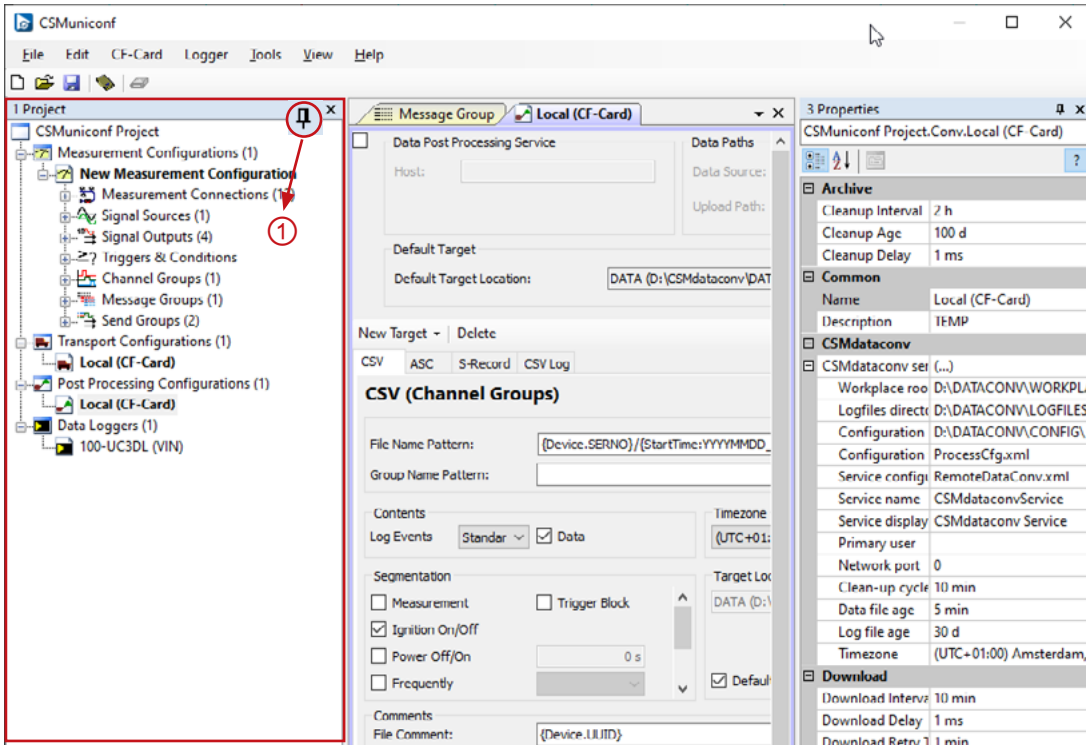

Fig. 3-3: The window **1 Project** is docked to the main program window and permanently visible.

2. The window is docked to the main program window and can be faded in, if required. The window is only visible as long as the mouse pointer points on the corresponding tab ①. The pushpin icon ② is in horizontal position.

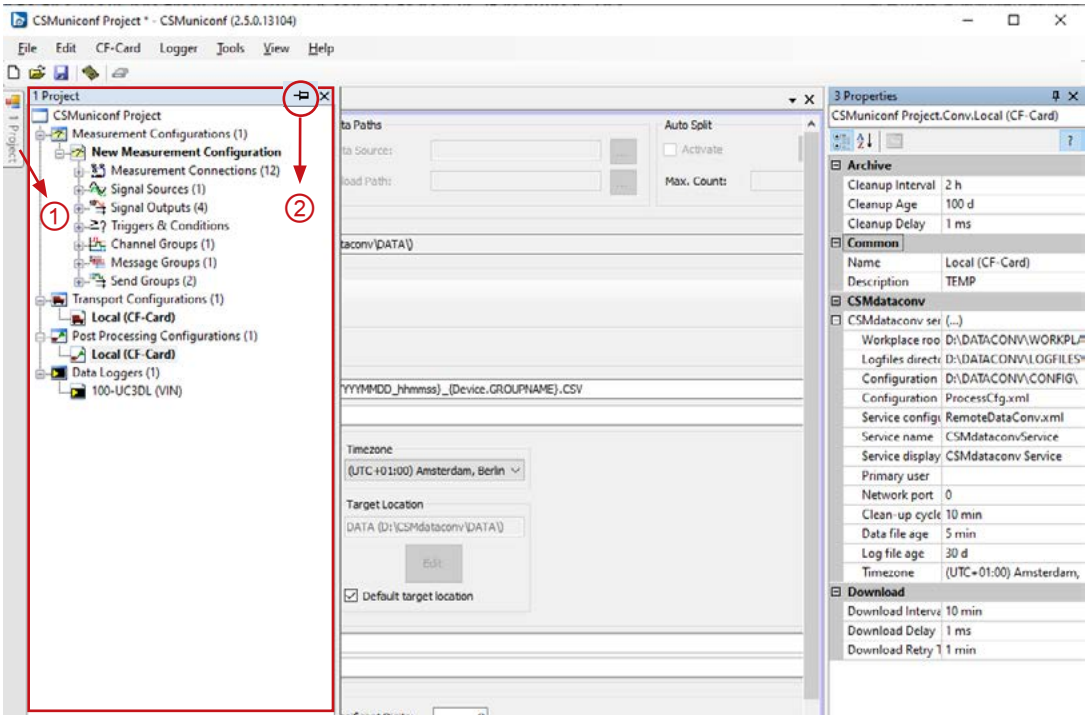

Fig. 3-4: The **1 Project** window is docked to the main program window, the status is "automatically hidden"

3. The window can be freely moved within the CSMuniconf user interface.

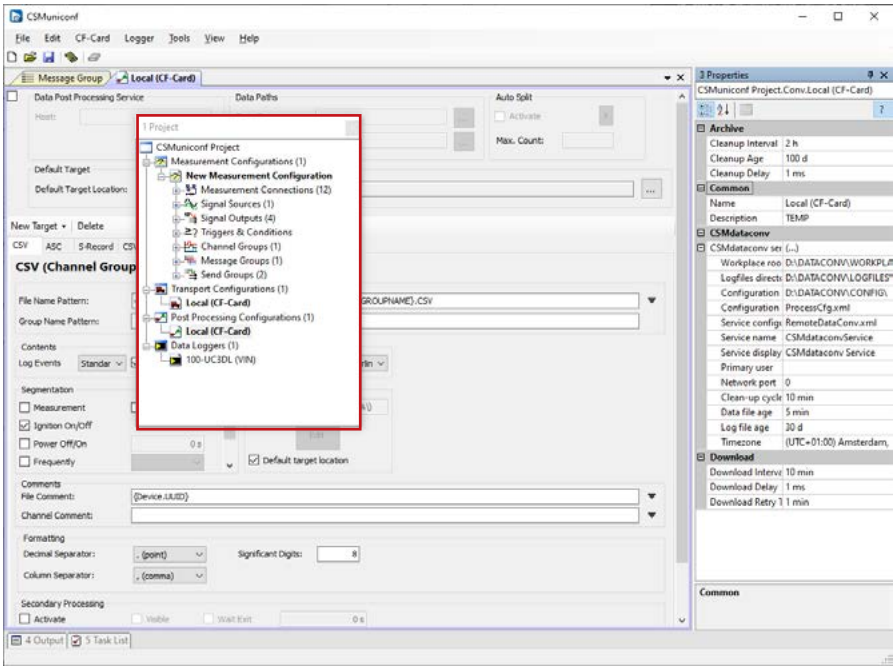

Fig. 3-5: **1 Project** window freely adjustable within the main program window.

Changing the view mode of a window

To change the view mode of the window from "docked" to "freely adjustable", the window has to be docked and permanently visible, which means the pushpin icon is in vertical position.

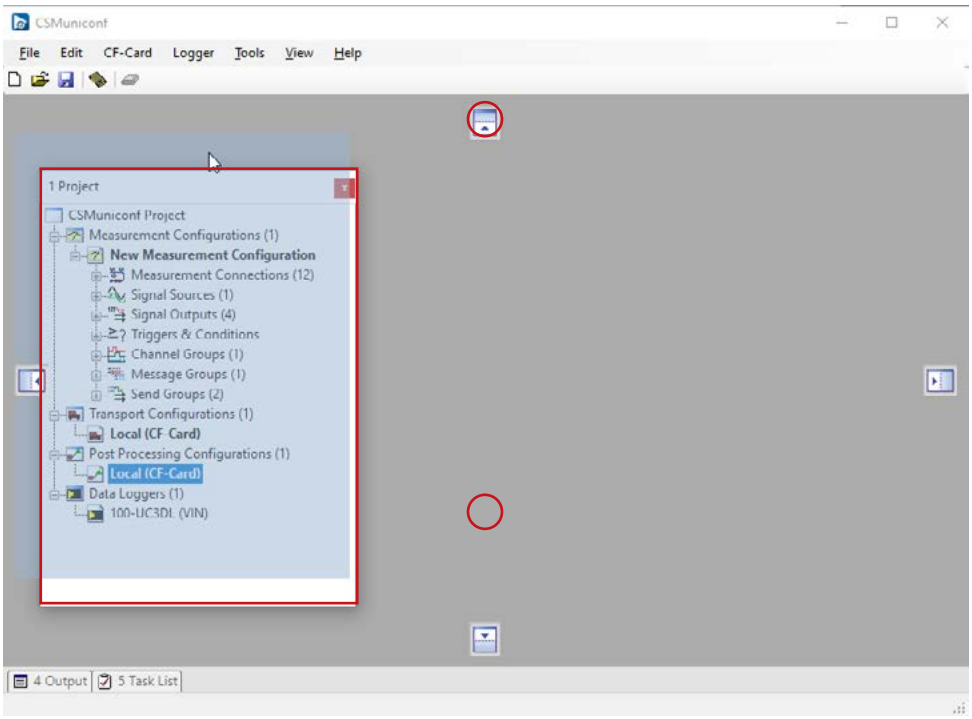

Fig. 3-6: Change the view mode of the **1 Project** window

☞ Click on the head margin of the window and keep the left mouse button pressed.
  ⇨ The window is shown shaded in blue.
  ⇨ The positioning arrows are faded in.

The following options are available for positioning a window:

☞ Keep the left mouse button pressed and drag the window to any position within the main program window and release the mouse button.
  ⇨ The window is placed at the desired position and can now be freely arranged.
  or
☞ Keep the left mouse button pressed and drag the window to one of the positioning arrows.
  ⇨ The area, the window will be placed at, is shown shaded in blue.
☞ Release the mouse button to position the window in the selected area.
  ⇨ The window will be docked at the selected position. The window status is "permanently visible".
  ⇨ The pushpin icon is in horizontal position.

3.3.2 1 Project

The **1 Project** window shows a project in a tree structure and displays the individual components used in a project as nodes. A logger can not only be used to create a logger configuration but also to administer a group of loggers.

3.3.3 Detail window

The detail window provides the means to display further setting features for nodes shown in the **1 Project** window. They are displayed as tabs which can be opened by a double-click on the corresponding option in the **1 Project** window. Various tabs can be simultaneously displayed.

Example

☞ Click on an option in the **1 Project** window, e.g. **Signal Sources | MiniModules**.

⇨ The **MiniModules** tab opens in the Detail window.

The following options are available to display an already opened tab.

☞ Click on the corresponding option in the tree structure of the **1 Project** window.
or

☞ Use the shortcut **Ctrl + Tab** to switch between the tabs.
or

☞ Click on the required tab using the mouse.

3.3.4 3 Properties

The **3 Properties** window shows parameters and documentation values to an option in the **1 Project** window in a table. A click on an option in the **1 Project** window opens the **3 Properties** window or updates the displayed content of the opened window.

Not every element in the **1 Project** window features this display option. As to transport configurations, the **3 Properties** window serves as an input mask that is used to enter configuration values.

3.3.5 4 Output window

The **4 Output** window displays feedback messages in case of input error and configuration problems, e.g. if unknown signals are used for marking via signal lists.

3.3.6 5 Task List

The tabs **Errors**, **Warnings** and **Information** contained in the **5 Task List** window display the corresponding messages, e.g. when a configuration test is carried out by pressing the **F6** key.

By default, the **5 Task List** window is automatically hidden and is faded in when the **F6** key is pressed.

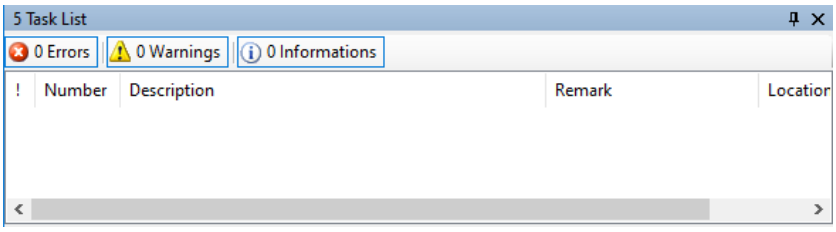

Fig. 3-7: **5 Task List** window

4 Quick Start

By means of an example, this section describes how to create a simple configuration. This configuration allows the logging of data from a CAN input according to a DBC file and saving the data to a CF card. This data can then be read from the memory card and converted.

4.1 Starting the program

☞ Select CSMuniconf from the Start menu.

⇨ The following warning notice opens:

Fig. 4-1: **CSMuniconf Warning** dialog

☞ Check the option **Don't show this again** if this notice should no longer be displayed when the program is restarted.

☞ Click on **Close** to close the dialog.

⇨ The CSMuniconf user interface opens.

4.2 Creating a new project

Fig. 4-2 shows the CSMuniconf user interface after program startup.

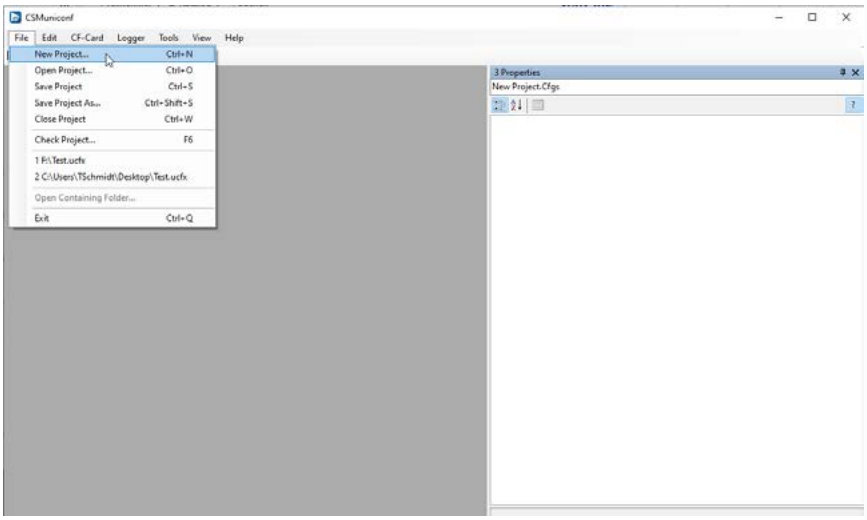

Fig. 4-2: CSMuniconf start screen

☞ Select **New Project...** from the **File** menu.
⇨ The **Define New Project** dialog opens.

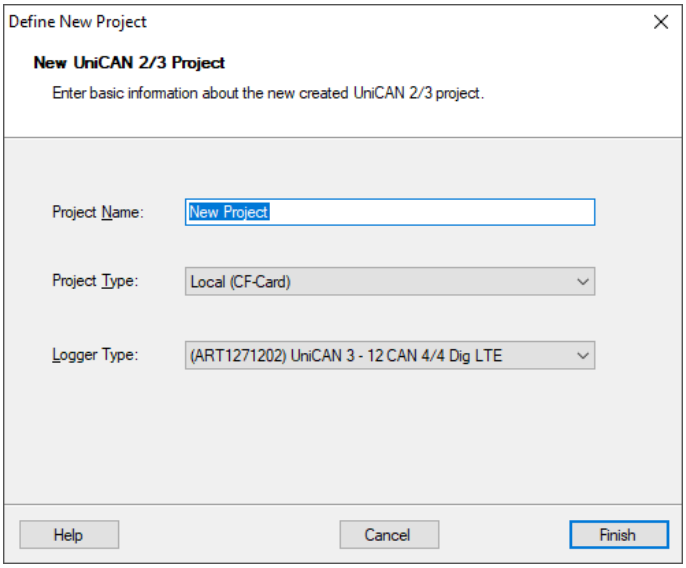

Fig. 4-3: **Define New Project** window

This dialog is used to make the basic settings for the further configuration of the project.

This dialog features the following setting options:

Project Name

☞ Enter the name for the new project.

Project Type

☞ Click on the arrow symbol to the right.
⇨ A pull-down menu opens showing the following configuration options:

- **Local (CF-Card):** Data transfer only by reading out the CF card, no remote data transmission, no fleet test operation.
- **Fleet (Network):** Fleet test configuration for data transfer via remote data transmission at a later time.
- **Fleet (CF-Card):** Fleet test configuration, data transfer by reading out CF card.

☞ Select the required option.
⇨ The pull-down menu closes again.

	The descriptions and instructions in the following sections refer to the **Local (CF-Card)** setting options.

Logger Type

☞ Click on the arrow symbol to the right.
⇨ A pull-down menu opens showing the available hardware options.
☞ Select the required part number (see logger's type label).
⇨ The pull-down menu closes again.
☞ Click on **Finish** to complete the process.

4.3 Measurement Configuration

4.3.1 Measurement connections

The following section contains descriptions as to how the interface parameters of an already existing project can be modified or completely activated/deactivated. Settings can be made via the options displayed in the tree structure of the **1 Project** window.

Fig. 4-4: **1 Project** window with tree structure containing options for setting the CAN interface parameters

☞ Click on the required CAN input in the tree structure ① (→ **Measurement Configurations | New Measurement Configuration | Measurement connections)**.

⇨ A table containing the relevant interface parameters opens in the **3 Properties** ② window.

Example:

Set the following **interface parameters** for the test project "Measurement data logging of CSM MiniModules":

☞ Set the baud rate to 500,000 Baud.

☞ Set the sample point to 66 %.

☞ Select **No** for **Listen-Only**.

ℹ	The **Listen-Only** setting controls the acknowledge handling. UniCAN sends an acknowledge if **Listen-Only** is set to **No**. Otherwise the logger behaves as a passive bus participant that does not send signals.

Activating/deactivating interfaces

The individual interfaces can be activated or deactivated.

☞ Click with the right mouse button.

⇨ The context menu opens.

☞ Select **Deactivate** to deactivate an input.
or

☞ Select **Activate** to activate a deactivated input again.

4.3.2 Signal sources

"Signal" means the allocation of CAN bus data to a specific name. This name is used to define records and conditions (triggers) to a later point in time. The complement to a signal is a "message". It can be used without any reference to the individual content.

Signals are described in so-called definition files. Currently, the file formats "A2L" and "DBC" are available.

Import signal database:

☞ Move the mouse pointer to the tree node **Signal Sources** and right-click.

⇨ The context menu opens.

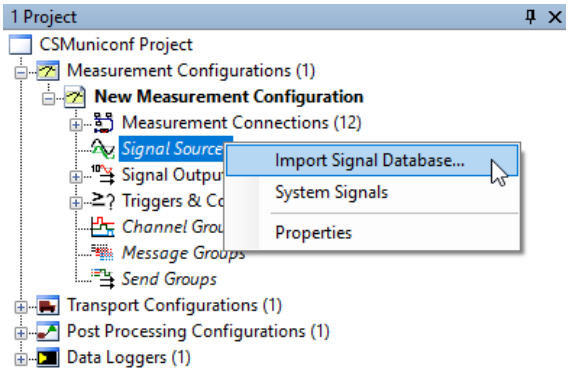

Fig. 4-5: **1 Project** window, option **Import Signal Database...**

☞ Click on **Import Signal Database...**.

⇨ The **Open** dialog opens.

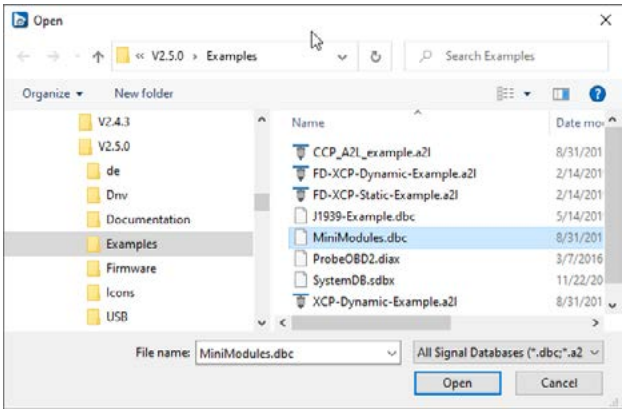

Fig. 4-6: **Open** dialog, example database **`MiniModules.dbc`**

☞ Select the **`MiniModules.dbc`** from the subfolder **Examples** in the installation folder.

☞ Click on **Open** to import the database.

⇨ The **CAN Interface** dialog opens.

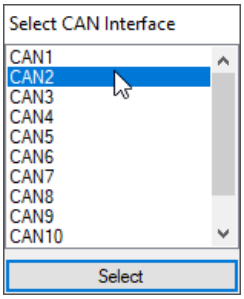

Fig. 4-7: Select **CAN interface** dialog

☞ Select the required CAN input (CAN 1 - 12).

☞ Click on **Select** to confirm the choice.

i	Any number of CAN description files can be added.

4.3.3 Channel groups

A channel group is used to arrange a selection of channels in one list. These channels can be jointly triggered and saved in one file. Signals are selected from a signal group to create a channel group. The transfer to the channel group is carried out via drag & drop. By transferring it from a signal source to a channel group, individual recording rates can be assigned to a signal. The signal turns into a channel.

A UniCAN data logger can create up to eight channel groups.

☞ Move the mouse pointer to the **Channel Group** tree node in the **1 Project** window and right-click.

⇨ The context menu opens.

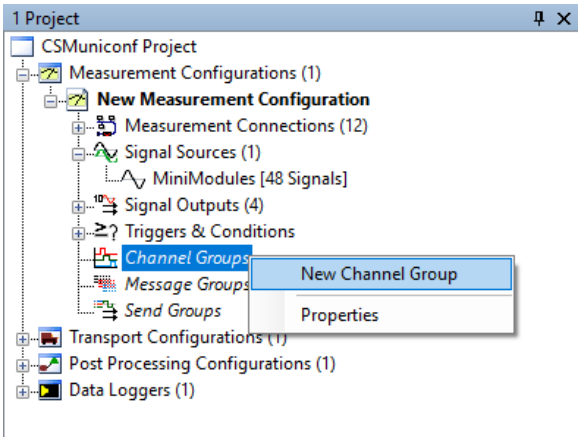

Fig. 4-8: **1 Project** window, **Channel Groups** tree node, context menu

☞ Click on **New Channel Group**.

⇨ The new channel group is inserted into the directory structure below the tree node **Channel Groups**.

Opening and editing an imported signal source

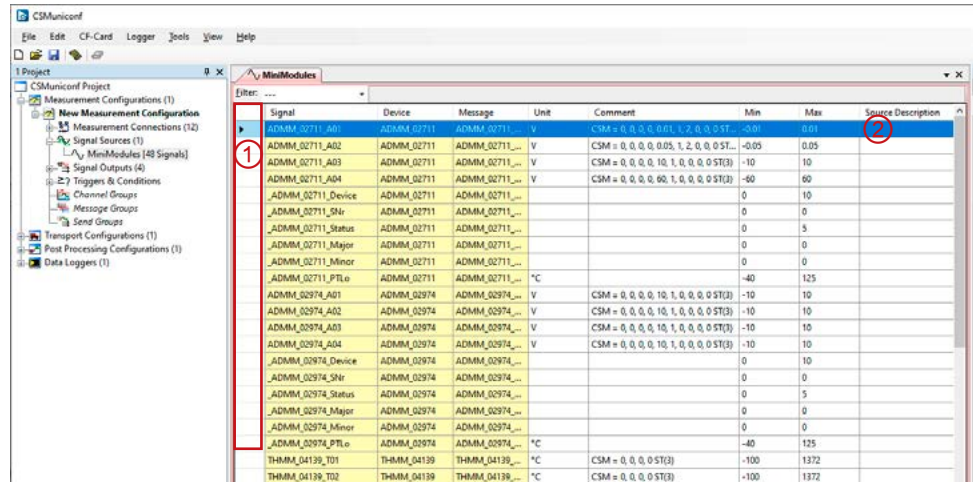

Fig. 4-9: **MiniModules** tab, channel selection

☞ Double-click on the imported definition file (e.g. MiniModules) in the **Signal Sources** section.

⇨ The corresponding tab opens in the window to the right (here: MiniModules).

☞ Select the required signal by clicking on the corresponding field in the ① column to the left of the **Signal** column.

⇨ The row with the selected channel will be highlighted in blue ②.

Edit "Channel Group" tab

☞ Double-click on the new channel group.

⇨ The corresponding tab opens in the detail window to the right, here: **Channel group**.

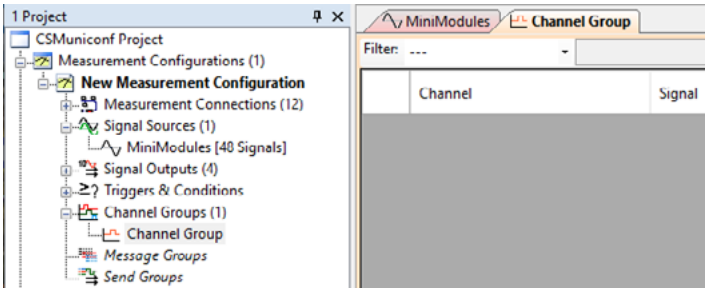

Fig. 4-10: Detail window, **Channel Group** tab

☞ Select the required signals from the table in the MiniModules tab and move them to the **Channel Group** tab by using drag & drop.

4.3.4 Message groups

Message groups arrange individual IDs belonging to a specific filtering to a group. It is possible to define several filters for one group (trace). Within a group the filterings can be used on multiple CAN inputs. In this manner, all IDs on CAN1 to CAN12 can be merged into one message group (Full Traffic Trace). A UniCAN data logger can create up to eight message groups.

☞ Move the Mouse pointer to the **Message Group** tree node in the **1 Project** window and right-click.

⇨ The context menu opens.

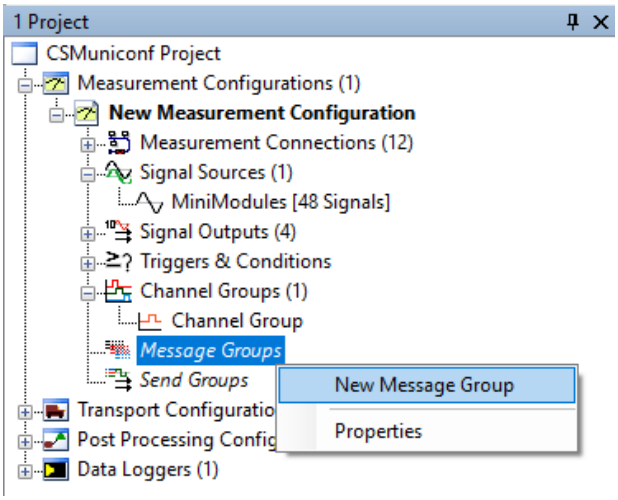

Fig. 4-11: **1 Project** window**,** option **New Message Group**

☞ Click on **New Message Group**.

⇨ The new message group is inserted into the directory structure below the **Message Groups** tree node.

Edit "Message Group" tab

☞ Double-click on the new message group.

⇨ The corresponding tab opens in the window to the right.

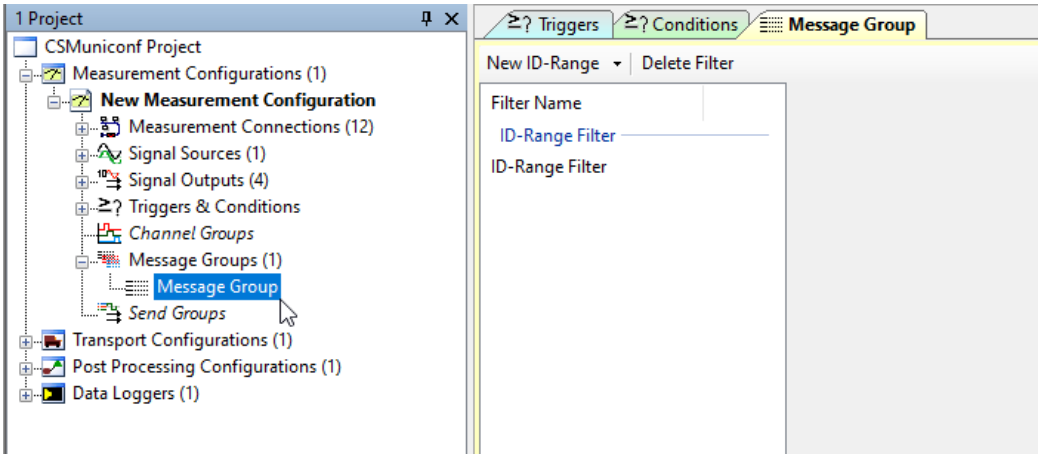

Fig. 4-12: **Message Group** tab

Create new filter

The New ID-Range mask provides options to define new filters designed to log the CAN trace.

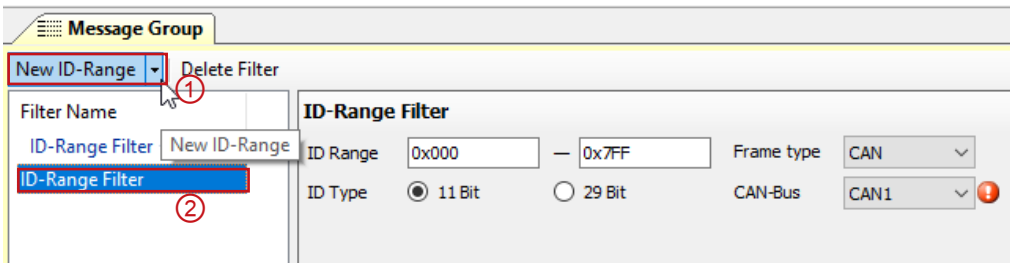

Fig. 4-13: **New ID-Range** button

☞ Click on the **New ID-Range** ① button.

⇨ A new entry is added to the **ID-Range Filter** column ②.

Fig. 4-14: **ID-Range Filter** mask

☞ Make the required settings in the **ID-Range Filter** mask.

i	A small exclamation mark highlighted in red indicates a setting conflict. ☞ Move the mouse pointer to the symbol (do not click) ⇨ A tooltip providing information on that issue is displayed.

4.3.5 Triggers & Conditions

Triggers can be individually assigned to various functions of a measurement configuration (e.g. channel group / message group). They can be used to start or to stop (i.e. to trigger) a logging process.

Example channel group / message group

One trigger can be assigned to each group. Furthermore, conditions can be linked to the corresponding trigger. This allows the logging of data with the required channel groups and message groups which become active under different conditions.

☞ Click on the **Triggers & Conditions** tree node in the **1 Project** window.

⇨ The tree node opens and the branches **Triggers** and **Conditions** are displayed.

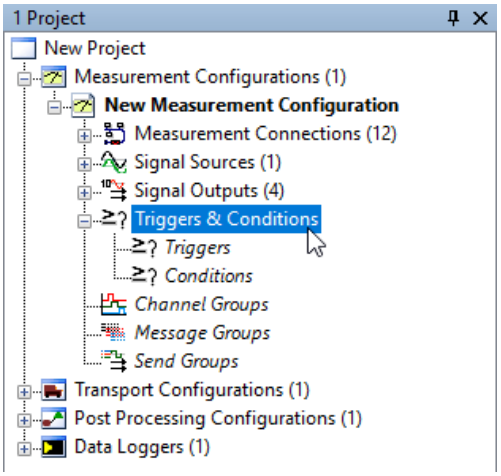

Fig. 4-15: **1 Project** window**, Triggers & Conditions** tree node

4.3.5.1 Create new trigger

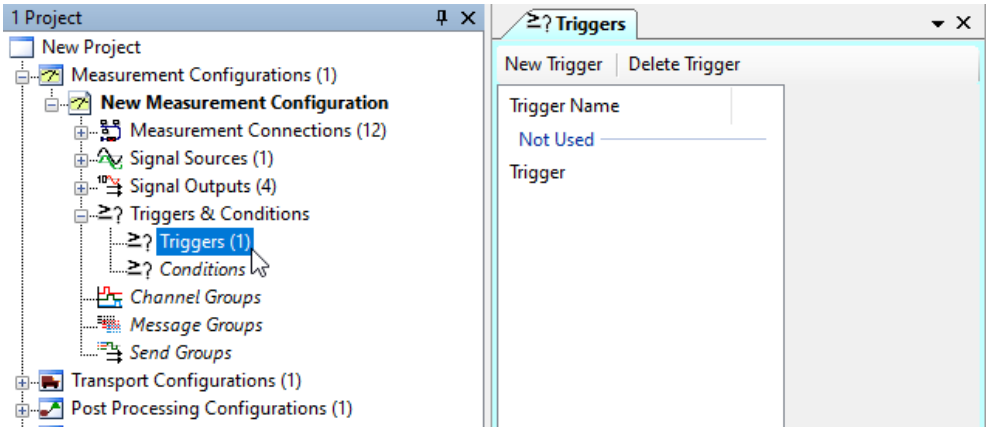

Fig. 4-16: **Triggers** tab

☞ Double-click on the **Triggers** tree node.

⇨ The **Triggers** tab opens in the window to the right.

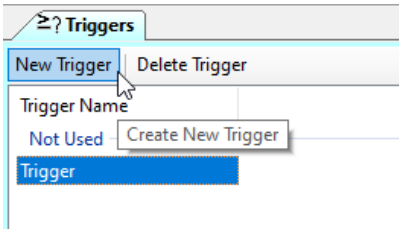

Fig. 4-17: **New Trigger** button

☞ Click on the **New Trigger** button.

⇨ The **Always On** mask opens (the trigger type **Always On** is selected by default when a new trigger is created).

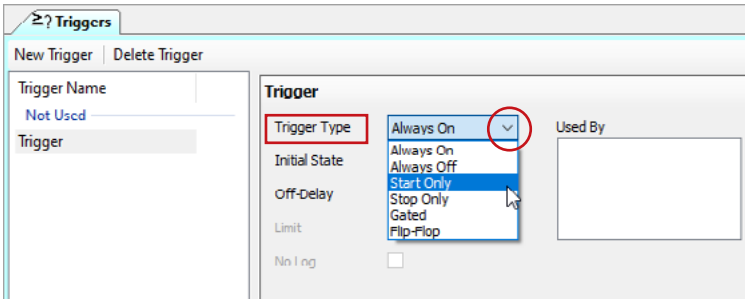

Fig. 4-18: **Trigger Type** pull-down menu

☞ Click on the arrow on the right-hand side of the **Trigger Type** field.

⇨ A pull-down menu opens showing the available trigger types.

☞ Select required trigger (e.g. **Start Only**).

⇨ Unless **Always On** or **Always Off** is selected, the **On Conditions** tab opens.

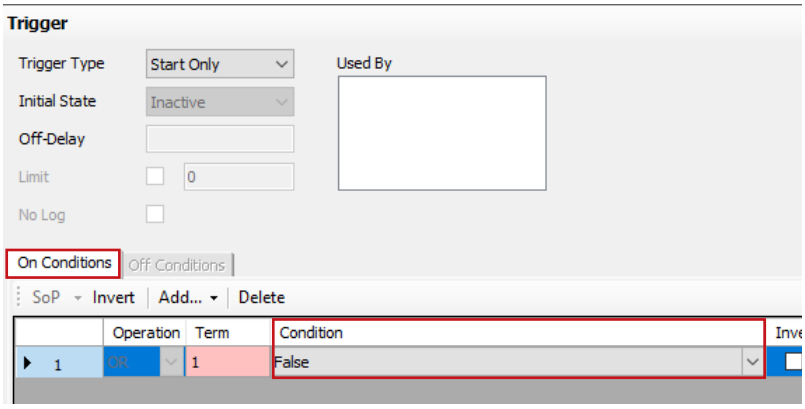

Fig. 4-19: **On Conditions** tab

☞ In the **Condition** column, entries from a list of already defined conditions (e.g. False) can be selected.

4.3.5.2 Creating condition

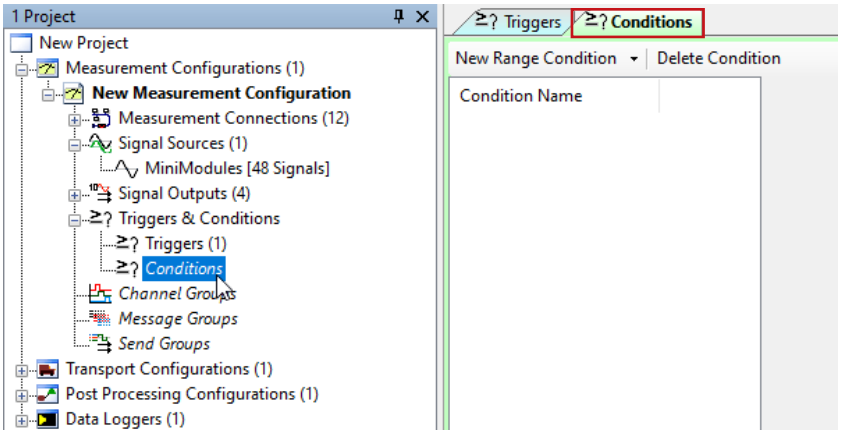

Fig. 4-20: **1 Project** window, **Conditions** option, **Conditions** tab

☞ Double-click on the **Conditions** tree node.

⇨ The **Conditions** tab opens in the window to the right.
By means of the range condition allows the triggering on values which are components of an imported CAN definition file (signal). If the signal is within the value range, the condition becomes active.

☞ Select the option **New Range Condition** from the pull-down menu.

⇨ The **New Range Condition** mask opens.

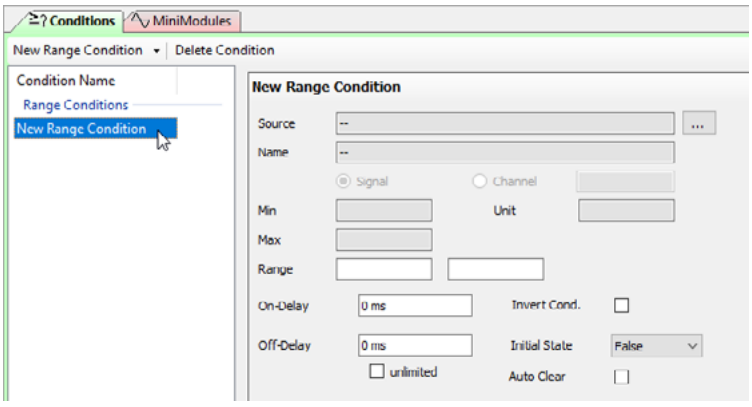

Fig. 4-21: **Conditions** tab, **New Range Condition** mask

☞ Select tab with signal sources.

⇨ Tab with signal sources is displayed (here: **MiniModules**).

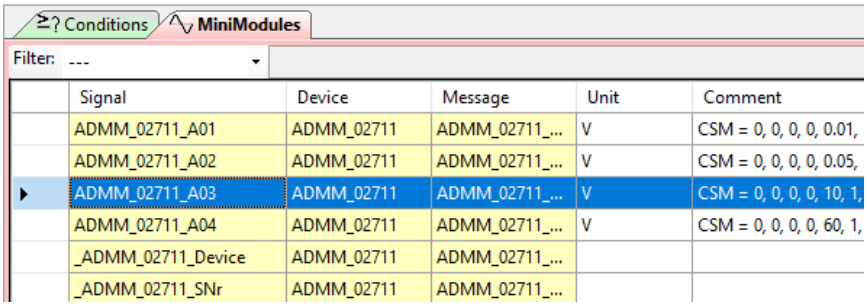

Fig. 4-22: **MiniModules** tab

☞ Select required signal and drag it to the **Conditions** tab. Insert the signal into the **Name** field of the **New Range Condition** mask.

⇨ The signal name is displayed in the **Name** field.

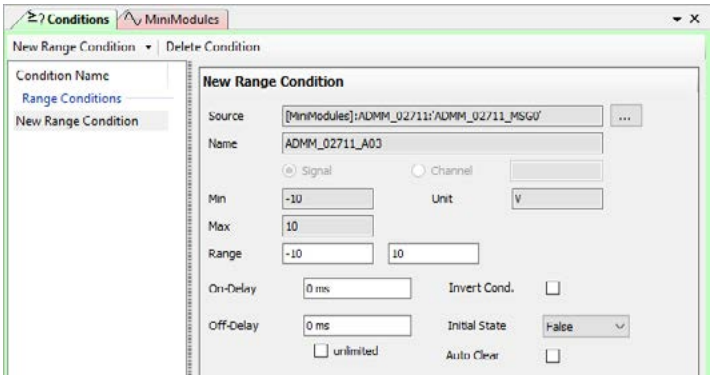

Fig. 4-23: **Conditions** tab, **New Range Condition** mask, signal source added

☞ Set the required signal-value ranges.

Further setting options

The **Condition** pull-down menu provides a list with further condition types. The condition type last selected is displayed right at the top.

☞ Click on the arrow to the right of the button.

⇨ A pull-down menu opens showing the following options:

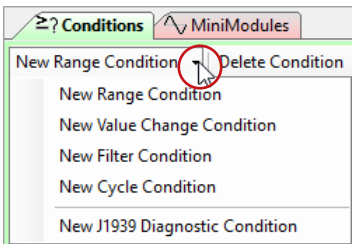

Fig. 4-24: **New Range Condition** button, pull-down menu

- **New Value Change Condition:** This option is activated for specific value change types (slowly rising or falling edges).
- **New Filter Condition:** By means of filter conditions it is possible to check on CAN ID ranges or CAN status.

- **New Cycle Condition:** Cycle Condition allows the user to check for missing channels of a channel group.
- **New J1939 Diagnostic Condition:** The diagnostic condition J1939 allows the setting of triggers on error codes (DTCs).

4.3.6 Signal outputs

Depending on the configuration level, UniCAN can provide one or more digital outputs which can be used to set conditions. The trigger specified under **Triggers** can be selected and set here.

→ *See also Chapter 4.3.5 Triggers & Conditions.*

☞ Move the mouse pointer to the required/available output (e.g. DigOut1) and right-click.
⇨ The P**roperties** context menu opens.

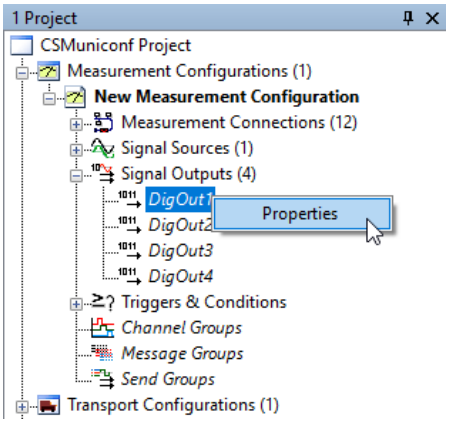

Fig. 4-25: **1 Project** window, **DigOut1** output

☞ Left-click on **Properties**.
⇨ The **3 Properties** window opens.

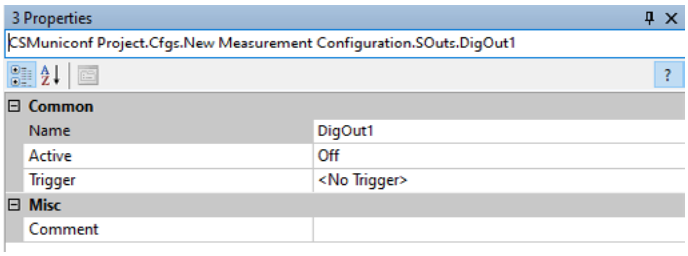

Fig. 4-26: **3 Properties** window

☞ Left-click on **Active.**
☞ Click on the arrow on the right-hand side of the **Active** field.
⇨ A pull-down menu opens.

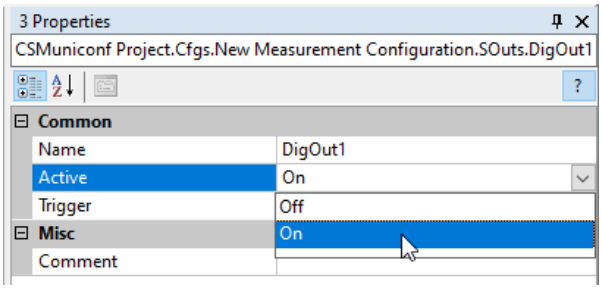

Fig. 4-27: **3 Properties** window, **Active** field

☞ Select **On.**

⇨ The Digital Output **DigOut1** is activated.

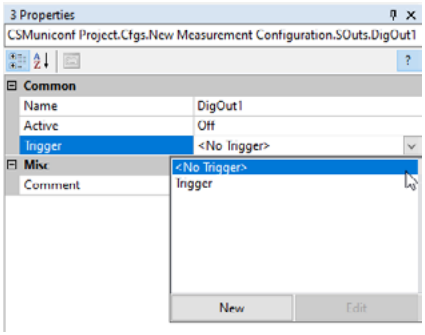

Fig. 4-28: Creating a new trigger

☞ Left-click on **Trigger.**

☞ Click on the arrow on the right-hand side of the **Trigger** field.

☞ Click on the **New** button.

⇨ The **Triggers** tab opens in the Detail window.

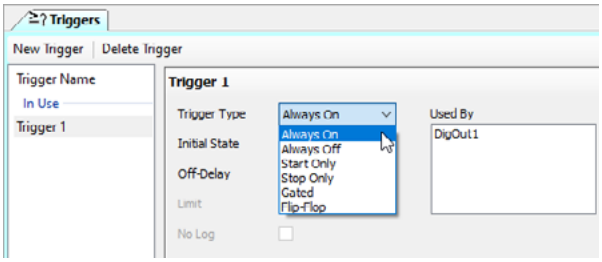

Fig. 4-29: **Trigger** pull-down menu

☞ Make the required settings in the **Trigger** pull-down menu.

4.3.7 Send groups

Data Loggers provides two options to send CAN signals:

Stimulation groups: Lists of constant messages each one having its individual ID are sent as groups (stimulation). The message content can be freely defined, no signal source is required. The sending process is defined by the trigger. When the trigger has been set the "initial" group is sent once , then the group "periodically", namely periodically in a common time grid. When the trigger drops, the group "final" is sent once. Several stimulation groups can be created.

Channel send groups: A channel group sends the channel content to a CAN interface. A group is a compilation of channels from channel groups (not from signal sources!) which also can be sent via multiplex, if required. The messages are sent periodically upon a trigger signal. Sending a group one-time only is not possible. Several channel send groups can be created.

In sum 64 send groups can be defined. Channel send groups can be included in the sum more than once if the group contains different intervals. Each interval in a group is counted, i.e. if there are 3 different intervals, the summand is 3.

4.3.7.1 Create stimulation group

☞ Move the mouse pointer to the **Send Groups** tree node in the **1 Project** window and right-click.

⇨ The context menu opens.

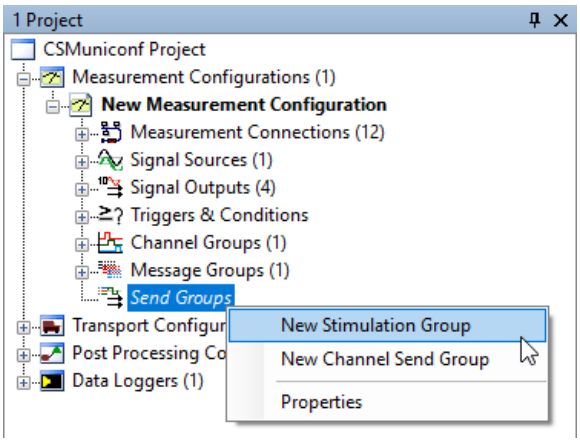

Fig. 4-30: **1 Project** window, **Send group** tree node, context menu

☞ Select **New Stimulation Group**.

⇨ The following dialog opens:

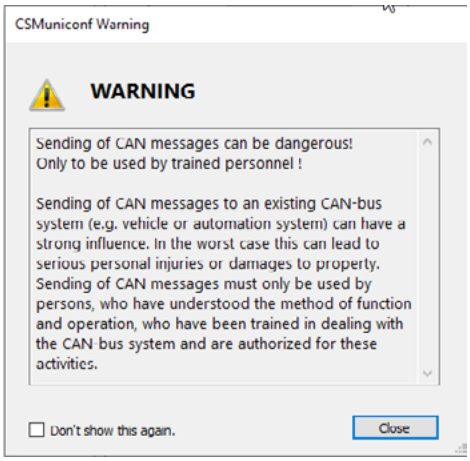

Fig. 4-31: **CSMuniconf Warning** dialog

☞ Read the warning notice and confirm by clicking on **Close**.

⇨ The new stimulation group is displayed under **Send Groups**.

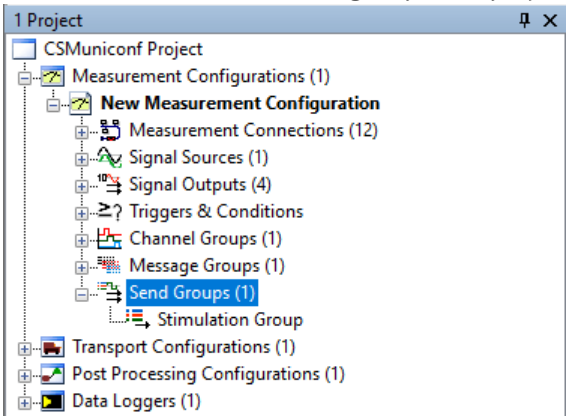

Fig. 4-32: **1 Project** window, **Send Groups → Channel Send Group**

☞ Double-click on the **Stimulation Group** tree node.

⇨ The tab **Stimulation Group** opens in the detail window to the right.

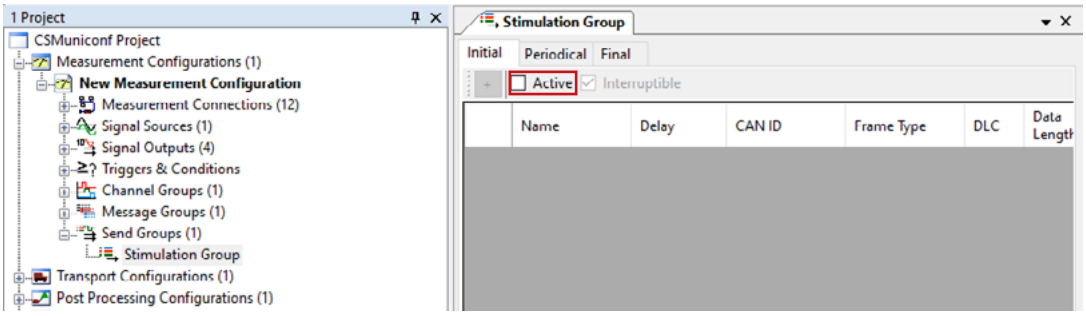

Fig. 4-33: **1 Project** window, **Stimulation Group** tab

☞ Tick the check box **Active**.

⇨ The required settings can now be made in the tabs **Initial**, **Periodical** and **Final**.

→ *Further information on the creation of stimulation groups can be found in the CSMuniconf user guide.*

4.3.7.2 Create channel send group

☞ Move the mouse pointer to the **Send Groups** tree node in the **1 Project** window and right-click.

⇨ The context menu opens.

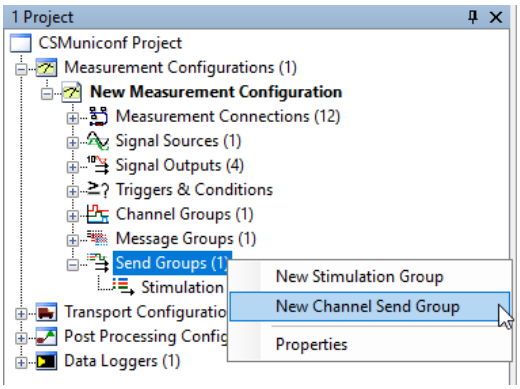

Fig. 4-34: **1 Project** window, **Send group** tree node, context menu

☞ Select the option **New Channel Send Group**

⇨ The new channel send group is displayed under **Send Groups**.

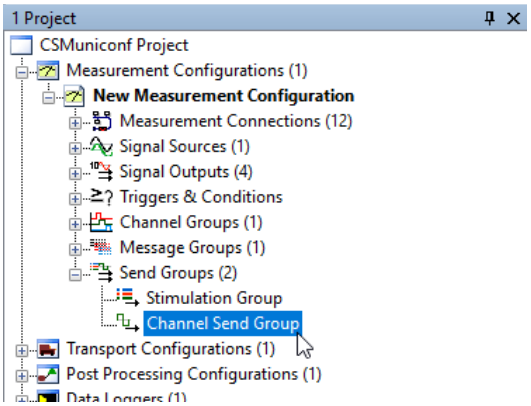

Fig. 4-35: **1 Project** window, **Send Groups** → **Channel Send Group**

☞ Double-click on the **Channel Send Group** tree node.

⇨ The **Channel Send Group** tab opens in the detail window to the right.

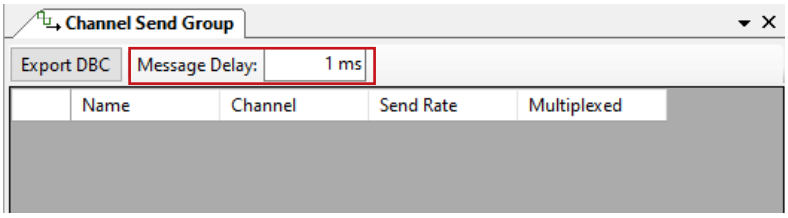

Fig. 4-36: Detail window, **Channel Send Group** tab

The table in the **Channel Send Group** tab contains one channel per row.

It is possible to set a delay before each sending process of a group. The corresponding value is entered into the field **Message delay**.

To fill a table, i.e. to create a channel send group, the tab of the channel group of which the channels are to be sent, needs to be open. The data transfer from the **Channel Group** tab to the **Channel Send Group** tab is carried out by using drag & drop.

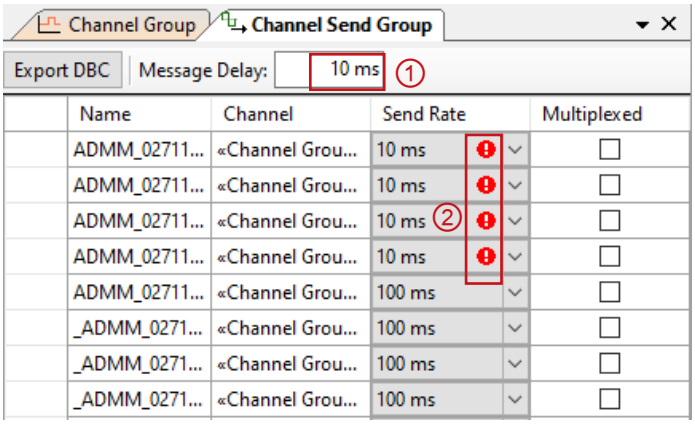

Fig. 4-37: **Channel Send Group** tab and **Channel Group** tab

The maximum value for a delay ① depends on the send rates and the number of send messages per rate. If the selected delay value is too high, the send rate that does not match the delay is marked with a red symbol ②.

☞ If this is the case, increase the send rate
or

☞ decrease the delay value.

→ *Further information on the creation of channel send groups can be found in the CSMuniconf user guide.*

4.4 Transport Configuration

As far as the project type **Local (CF-Card)** described in this chapter is concerned, transport configurations are not relevant. These settings are needed for the data transfer via network communication (mobile network communication, WLAN, LAN) .

→ *Further information on this topic can be found in the CSMuniconf user guide.*

4.5 Data Post Processing

As to the project type **Local (CF-Card)** described in this chapter, the post processing is not relevant. These settings are only needed for the project types **Fleet (CF-Card)** and **Fleet (Network)**.

→ *Further information on this topic can be found in the CSMuniconf user guide.*

4.6 Data Logger

Data loggers which are used in the current project are listed under the tree node **Data Loggers**, Data loggers which are already in use are listed in the tree structure. For each data logger the serial number and logger type need to be specified in the **3 Properties** window. In addition, it is possible to assign a measurement and transport configuration as well as a post processing to each UniCAN.

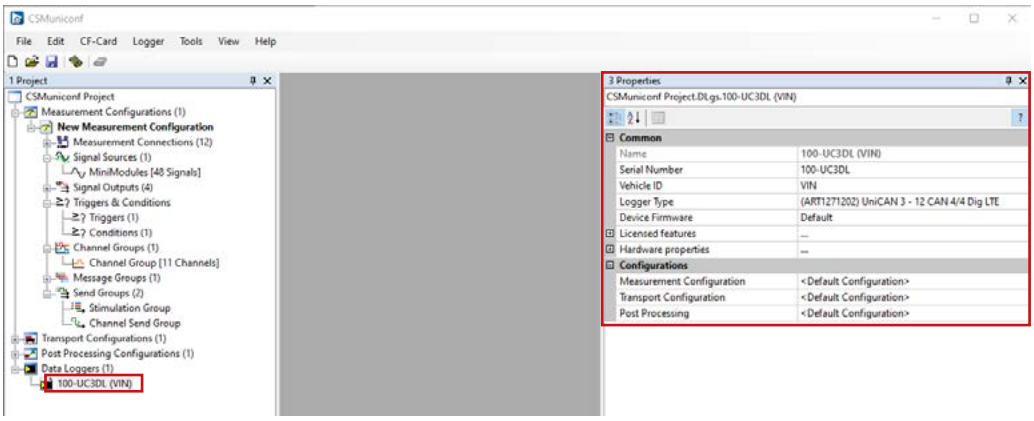

Fig. 4-38: **1 Project** window, **Data loggers** tree node and **Properties** window

4.6.1 Transferring the configuration to the logger

The finalized configuration has to be transferred to the memory card. There, the logger expects the setup. Logger operation without memory card is not possible. If the data logger features an internal modem, the configuration may also be updated by using a mobile radio connection.

For maximum operational safety the logger uses a specific file format, the so-called data container. In CSMuniconf terms, creating such a container is called **formatting**. After formatting the configuration can be saved.

4.6.1.1 Creating a data container on the CF-Card

All data logged by UniCAN is stored in the container. To create a measurement data container, the CF card needs to be formatted in the first place.

	NOTE!
	If a CSM OmniDrive is used as card reader, the OmniDrive-specific USB driver has to be installed. If this is not the case, OmniDrive will be handled as a standard card reader. Administrator rights are required to be able to format a standard card reader.

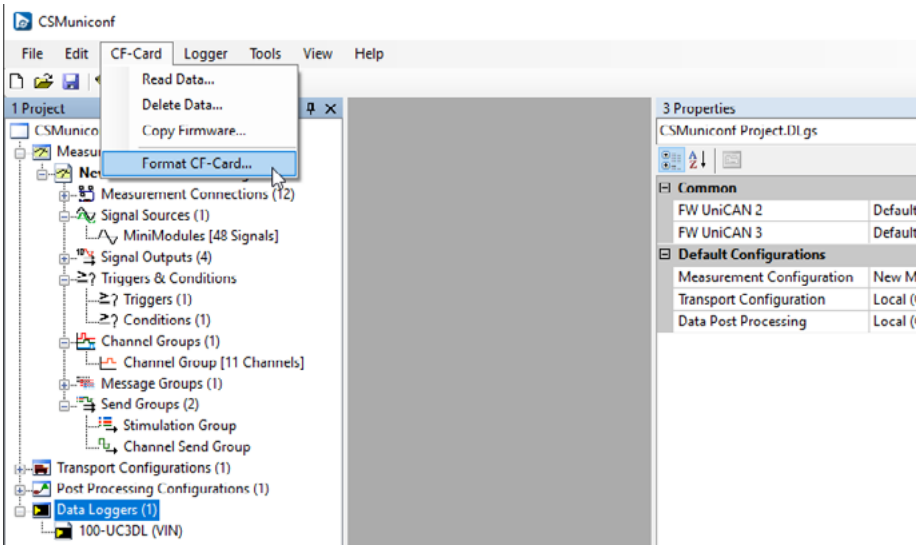

Fig. 4-39: **CF-Card** menu

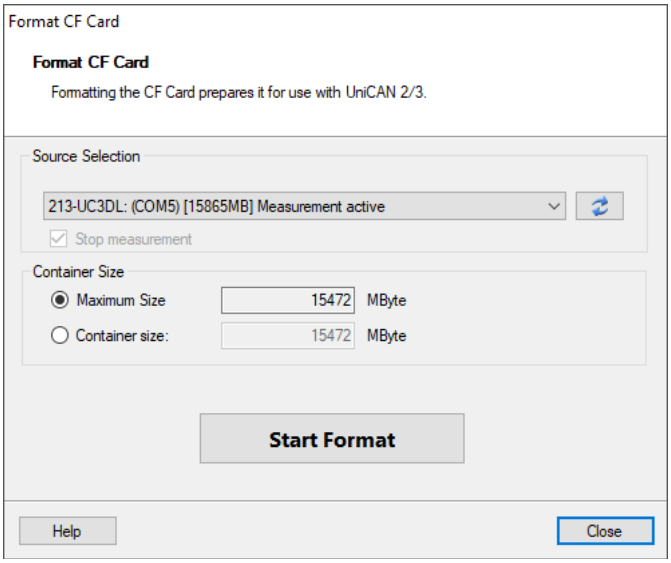

Fig. 4-40: **Format CF Card** dialog

☞ Select the required drive from the **Source Selection** pull-down menu.

☞ Specify the required value in the **Container Size** section.
For this purpose, enter the maximum value in the **Maximum Size** field or specify the exact value in the **Container Size** field.

☞ Click on **Start Format**.

⇨ CF-Card is being formatted.

4.6.1.2 Writing the configuration to the card

After the project has been completed, it is recommended to verify the current configuration by pressing the **F6** key. Any errors will be displayed in the task list. If there is no error, the configuration can be transferred to the CF card.

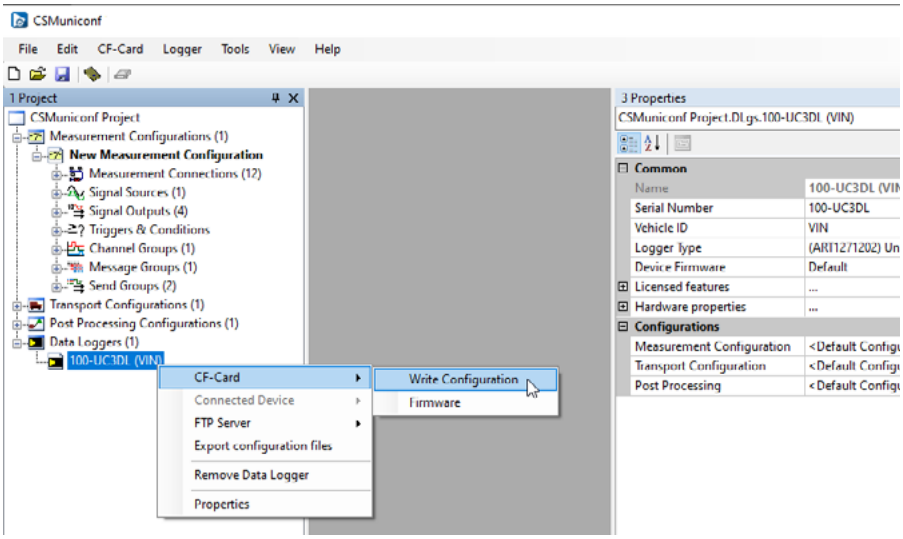

Fig. 4-41: Writing configuration to CF card

☞ Right-click on the required **Data Logger** in the project tree.

⇨ The data logger context menu opens.

☞ Select the option **CF-Card** → **Write Configuration**.
If the data logger is connected to the computer via USB, you may also select the option **Connected Device | Write Configuration**.

⇨ The current configuration is transferred to the container created for this purpose.

	The function key **F6** provides the option to verify the set parameters at any time and to modify them, if required.

5 Logging and evaluating

5.1 Starting/stopping a logger

The start of the logger is triggered by a specific voltage level (typically at least 6 V) on the yellow wire of the power cable.

The operating status of the logger can be read from the LED and status indicators.

→ *Information on this topic can be found in the corresponding installation manuals.*

5.2 Reading data from a logger

Data stored on the memory card can be read out via a card reader (PC) or via a mobile network connection. For a quick introduction, the access via reader will be described in the following section.

	NOTE!
	Windows Explorer cannot display the data from the CF card container. ☞ Do use CSMuniconf for reading the container data.

☞ Select **Read Data...** from the **CF-Card** menu.

⇨ The following dialog opens:

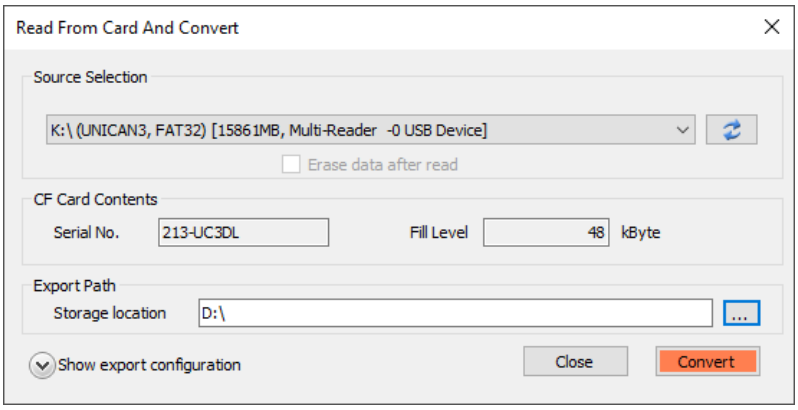

Fig. 5-1: **Read From Card And Convert** dialog

☞ Select the required drive or storage media from the **Source Selection** pull-down menu if required.

⇨ The **CF Card Contents** section displays the following information:

- **Serial No.:** The serial number of the data logger containing the CF card.
- **Fill Level:** The data volume (in kB) that is currently stored on the CF card.

☞ Click on the button in the **Export Path** section to select the folder in which you wish to store the data.

⇨ The following window opens:

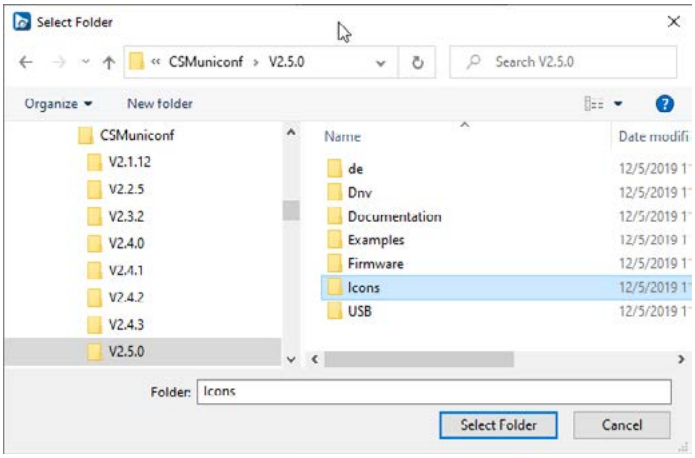

Fig. 5-2: Target folder **Data**

☞ Select folder and confirm selection with **Select folder**.

⇨ The **Read From Card And Convert** dialog is displayed again.

☞ Click on **Convert** to start the conversion process and to save the data to the target folder.

⇨ The following dialog opens:

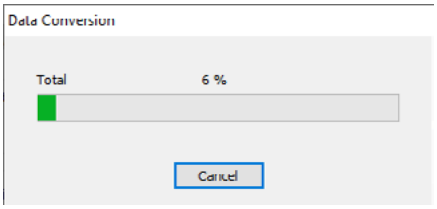

Fig. 5-3: Data conversion process progress

⇨ After a successful conversion process, a Windows Explorer window opens, displaying the converted data.

⇨ In addition, the following dialog opens:

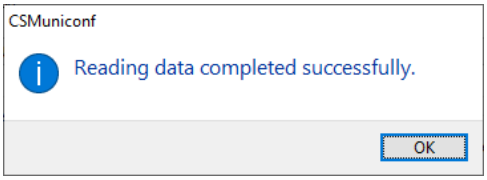

Fig. 5-4: Reading successfully completed

i	In order to avoid the unintended overwriting of data in case of multiple reading, a counter is added to the file name.

Data export configuration

For data import the following default settings apply:

- Channel groups: CSV (Comma-Separated Values)
- Message groups: ASC (Vector-specific ASCII format)
- Log book entries: CSV

Clicking on the button **Show export configuration** extends the window and displays further configuration options for data export.

→ *Further information on this topic can be found in the CSMuniconf user guide.*

5.3 Delete data from CF-Card

The original data on the CF card will not be automatically deleted during the reading process. This step has to be carried out manually.

☞ Select **Delete Data...** from the **CF-Card** menu.

⇨ The data on the CF-card will be deleted.

6 Checking and setting the clock via USB connection

A connection to the PC using the USB interface is needed for this function. The interface is parameterised automatically by CSMuniconf.

The set time is crucial for the time that is used for the time stamps assigned to data and groups. Internally, the data logger is using the UTC time setting (Universal Time Coordinated). The time will be logged independent of the location. The time zone will be assigned at a later time during the data read-out.

→ *See CSMuniconf user guide.*

6.1 Checking and setting the clock

☞ Remove the CF card from the data logger's card slot.
☞ Switch on the data logger.
☞ Start up CSMuniconf on the PC.
☞ Connect the data logger to the PC using the USB cable.
⇨ The following dialog opens:

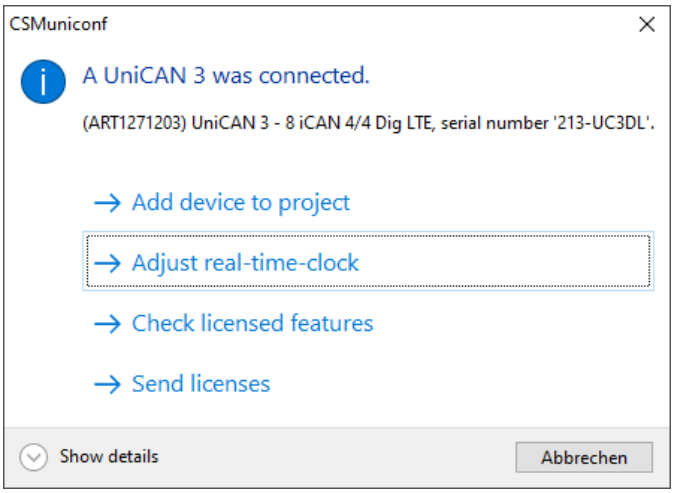

Fig. 6-1: **CSMuniconf** dialog

	NOTE!
	If the **CSMuniconf** dialog is not displayed automatically, an outdated firmware version may still be installed on the logger. → *See CSMuniconf user guide.*

☞ Select the option **Adjust real-time-clock**.
⇨ The following dialog opens:

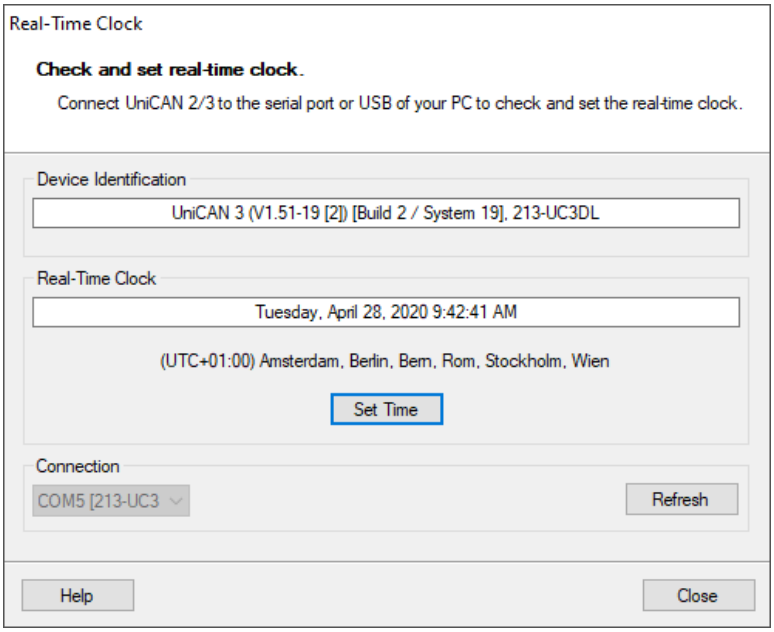

Fig. 6-2: **Real-Time Clock** dialog

⇨ The device name and the firmware version that is currently installed on the logger is displayed in the **Device Identification** field.

⇨ The date and time currently set on the logger are displayed in the **Real-Time Clock**. The display converts the UTC time of the data logger to the time zone that has been set for the PC under Windows.

Checking the settings

☞ If the fields in the **Real-Time Clock** dialog remain empty, check the following:

- Does the selected connection work properly?
- Is the USB cable properly connected?
- Is the data logger switched on?

☞ Then click on the **Refresh** button.

Setting the clock

By clicking on the **Set Time** button, the time that has been set for the PC will be set on the logger.

☞ Click on **Set Time** to apply the time that has been set for the PC to the logger.

7 Appendix

7.1 List of figures

7.2 List of tables

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