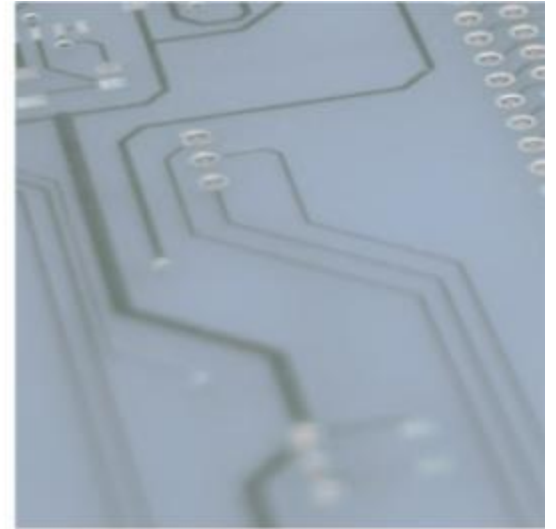
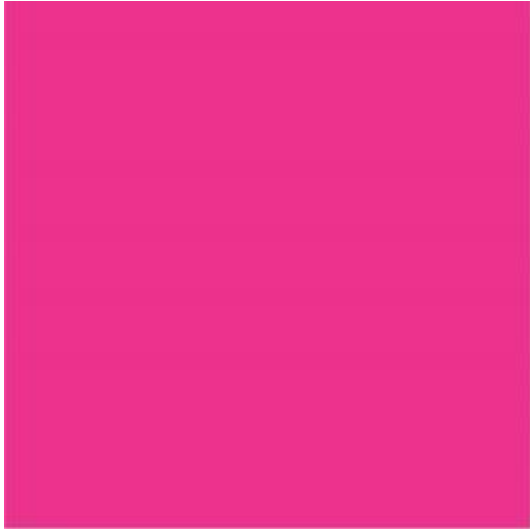


Monitoring with CanEasy



Monitoring

– Motivation –

- To analyze a target system (e.g. combi instrument) you need to monitor all outputs you can get
- CanEasy provides a huge range of plug-ins which assists you doing your job in an easy way

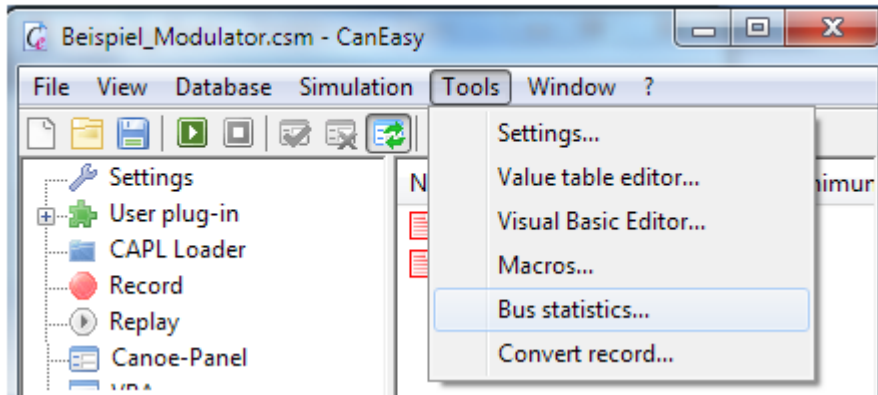
Monitoring

– Overview –

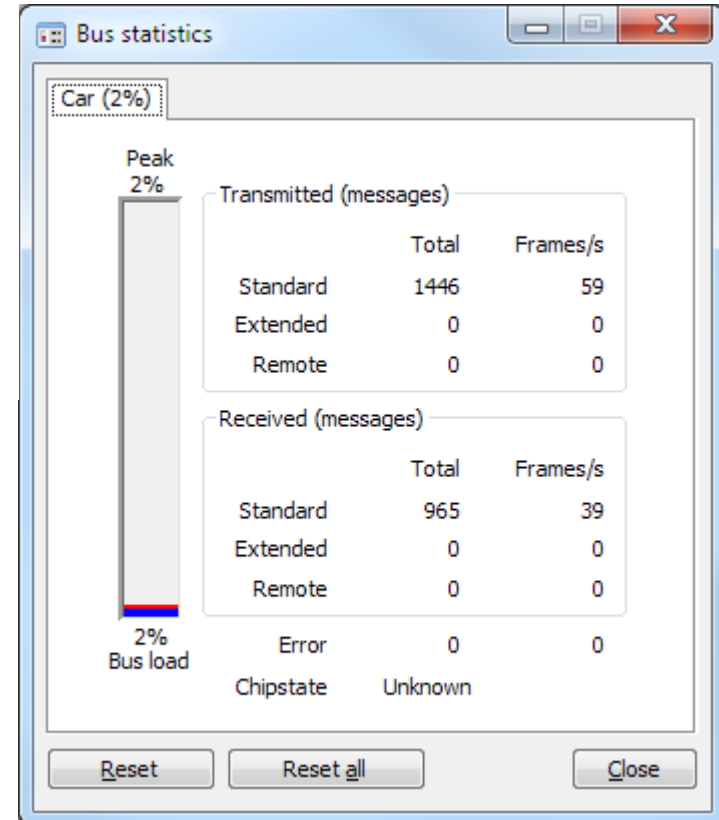
- CanEasy offers various monitoring options
 - Signal or variable values
 - Send/Received messages
 - Timeouts
 - Cycle times
 - Bus states/errors
 - Bus load
- Monitoring with
 - Bus statistic
 - Signal monitor
 - User panel
 - Rich panel
 - Trace window
 - Plot window
 - Trigger
 - Statistic plug in
 - COM (VBA / VSTA)

Monitoring

– Bus statistic–

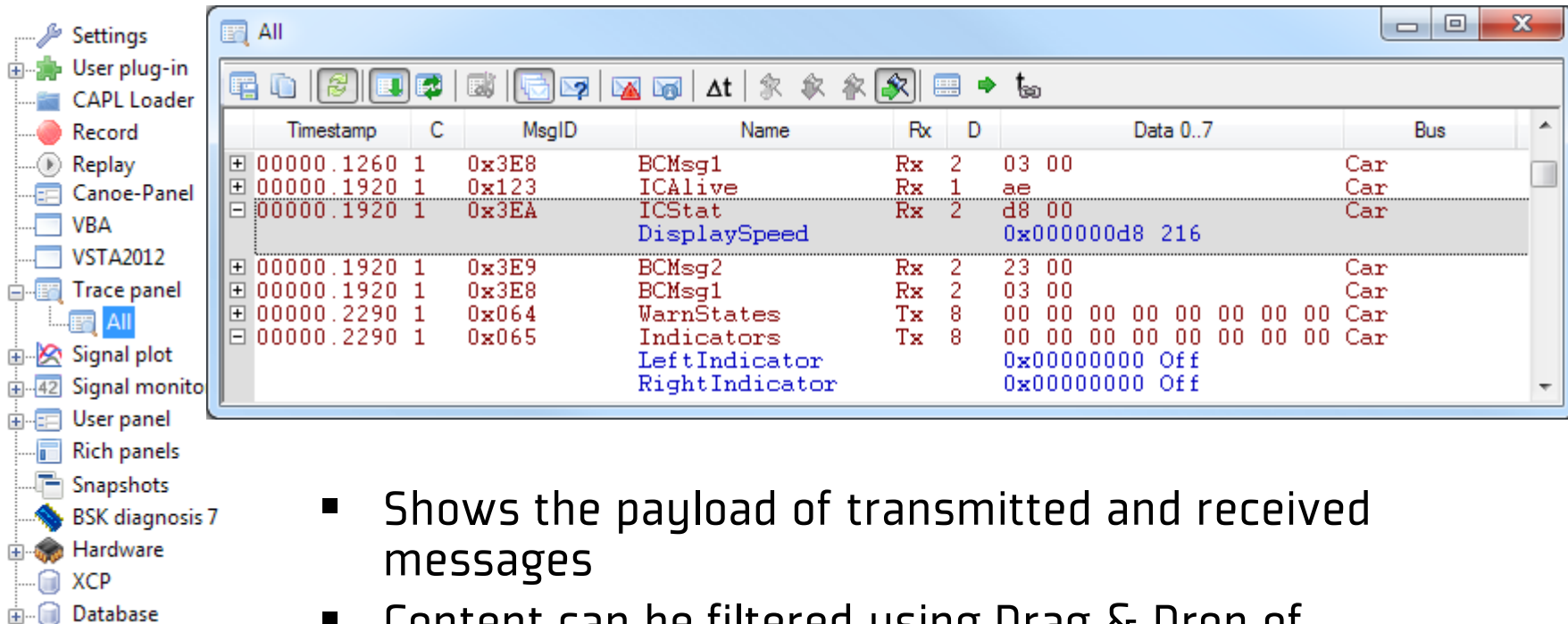


- See the traffic of each channel
- Bus load with peak shown as bar graph
- Chipstate of CAN transceiver



Monitoring

– Trace window –



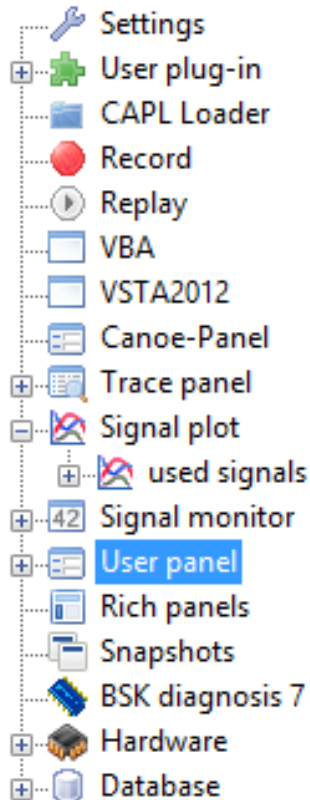
Settings
User plug-in
CAPL Loader
Record
Replay
Canoe-Panel
VBA
VSTA2012
Trace panel
All
Signal plot
Signal monitor
User panel
Rich panels
Snapshots
BSK diagnosis 7
Hardware
XCP
Database

Timestamp	C	MsgID	Name	Rx	D	Data 0..7	Bus
00000.1260	1	0x3E8	BCMsg1	Rx	2	03 00	Car
00000.1920	1	0x123	ICAlive	Rx	1	ae	Car
00000.1920	1	0x3EA	ICStat	Rx	2	d8 00	Car
			DisplaySpeed			0x000000d8 216	
00000.1920	1	0x3E9	BCMsg2	Rx	2	23 00	Car
00000.1920	1	0x3E8	BCMsg1	Rx	2	03 00	Car
00000.2290	1	0x064	WarnStates	Tx	8	00 00 00 00 00 00 00 00	Car
00000.2290	1	0x065	Indicators	Tx	8	00 00 00 00 00 00 00 00	Car
			LeftIndicator			0x00000000 Off	
			RightIndicator			0x00000000 Off	

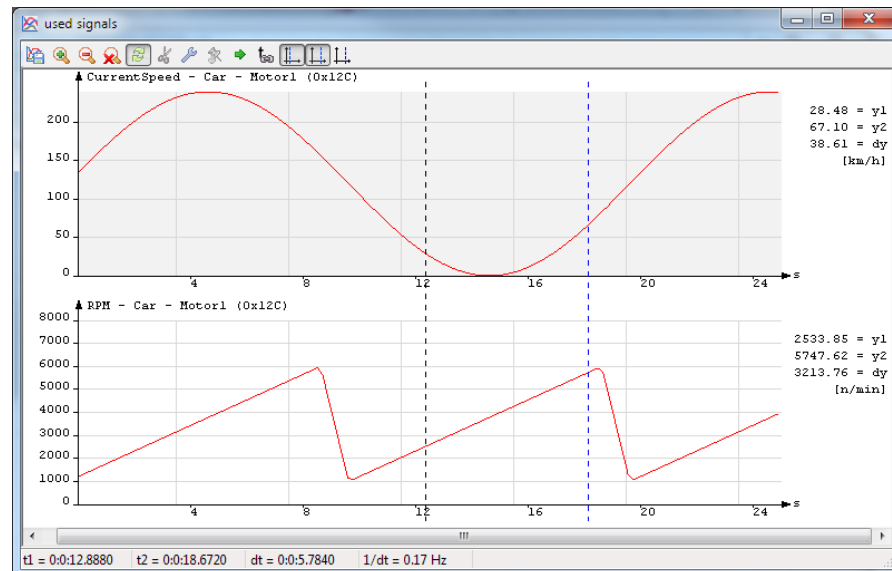
- Shows the payload of transmitted and received messages
- Content can be filtered using Drag & Drop of database elements
- Signal values are showed below the messages
- Shows also changed variable values

Monitoring

- Plot window -

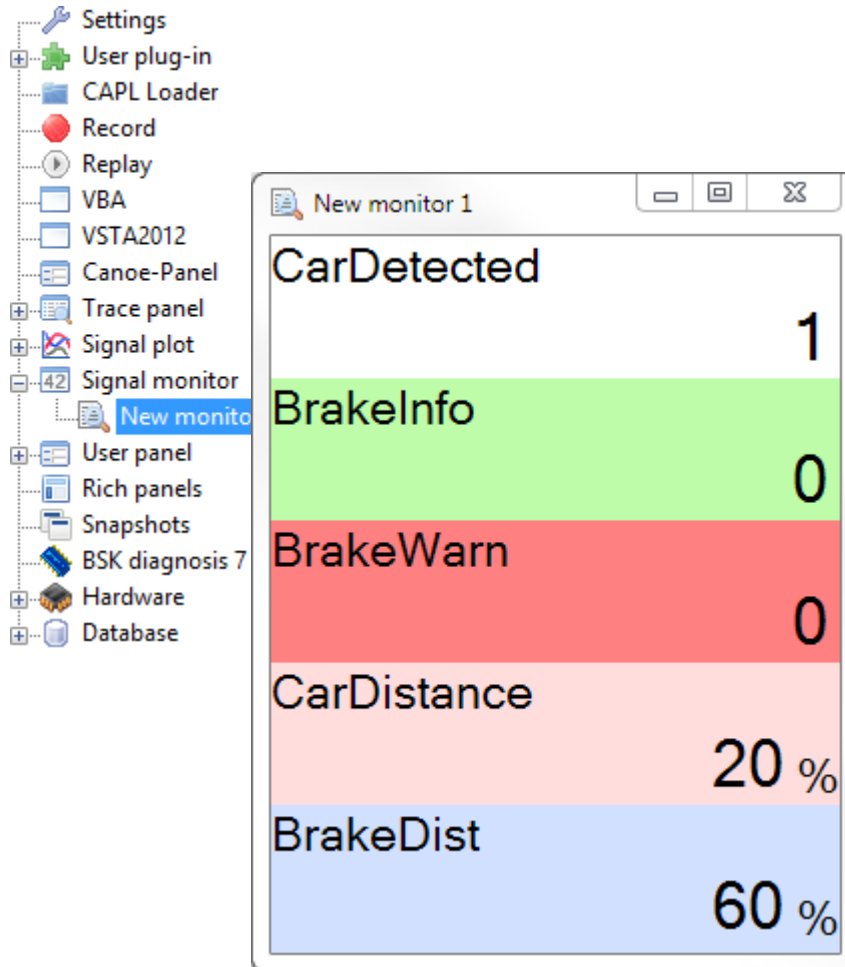


- Like the trace, the plot shows transmitted and received signals as well as recorded variables
- Supports cursors to measure time and value differences
- All signals of a plot are using the same time line



Monitoring

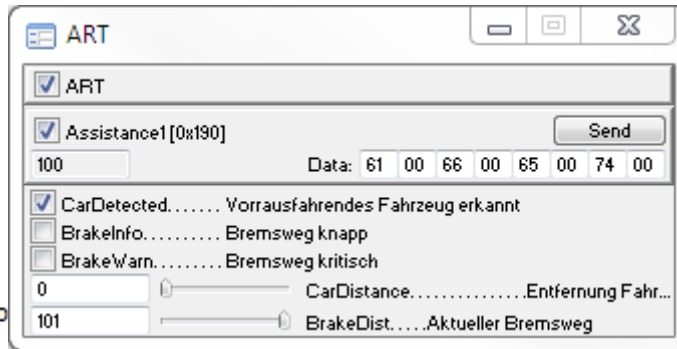
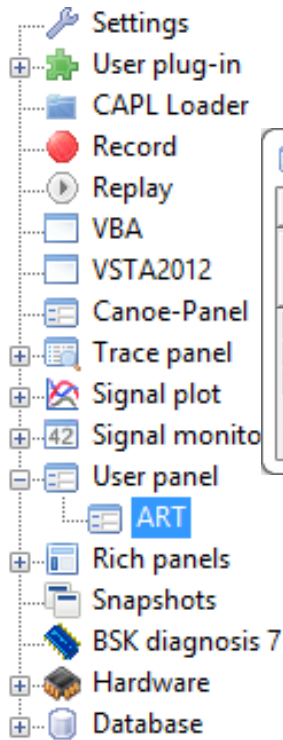
– Signal monitor –



- Perfect to monitor important signal values to users in testing or production
- The font size changes depending on the window size – making them easy to read from a distance
- Presentation can be adjusted individually

Monitoring

– User panel –



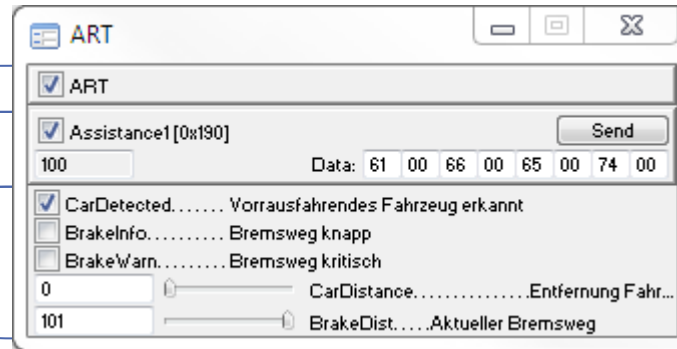
- Easy created by Drag & Drop from the database
- No time-intensive resource editor

- Monitor and change message payload, signals and variable values
- Simulated signals can be changed
- Received signals are read only
- Controls are generated automatically
- Designed to show as much information in small space

Monitoring

- User panel -

Control unit
Message
Signals



The screenshot shows a software window titled "ART" with a standard Windows-style title bar (minimize, maximize, close buttons). The interface contains several controls:

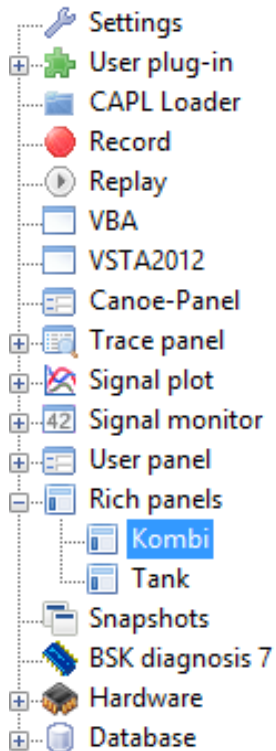
- A checked checkbox labeled "ART".
- A checked checkbox labeled "Assistance1 [0x190]" with a "Send" button to its right.
- A numeric input field containing "100" and a data field labeled "Data:" containing the hexadecimal string "61 00 66 00 65 00 74 00".
- A checked checkbox labeled "CarDetected..... Vorrausfahrendes Fahrzeug erkannt".
- An unchecked checkbox labeled "BrakeInfo..... Bremsweg knapp".
- An unchecked checkbox labeled "Brake/warn..... Bremsweg kritisch".
- A slider control for "CarDistance..... Entfernung Fahr..." with a value of "0".
- A slider control for "BrakeDist.... Aktueller Bremsweg" with a value of "101".

Three blue lines with arrowheads point from the text "Control unit", "Message", and "Signals" to the "Assistance1 [0x190]" checkbox, the "Data:" field, and the "CarDetected" checkbox respectively.

- Interaction with transmission control
- Button to send message independent to transmission mode
- Different controls for value representation
 - Checkbox
 - Slider
 - Edit
 - Combobox

Monitoring

– Rich panels –

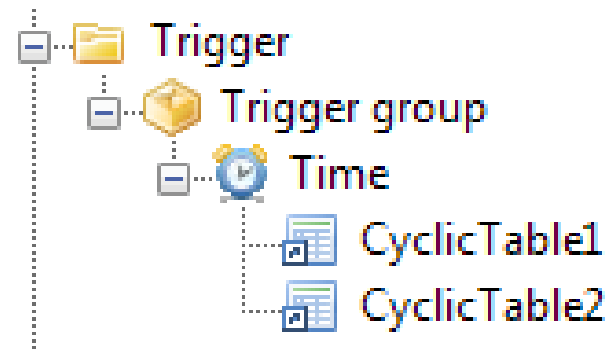


- Show and modify any database value in attractive WPF-based panels
- Integrated resource editor includes many different controls
- Create complex controls using layers, or write own controls

Monitoring

– Trigger –

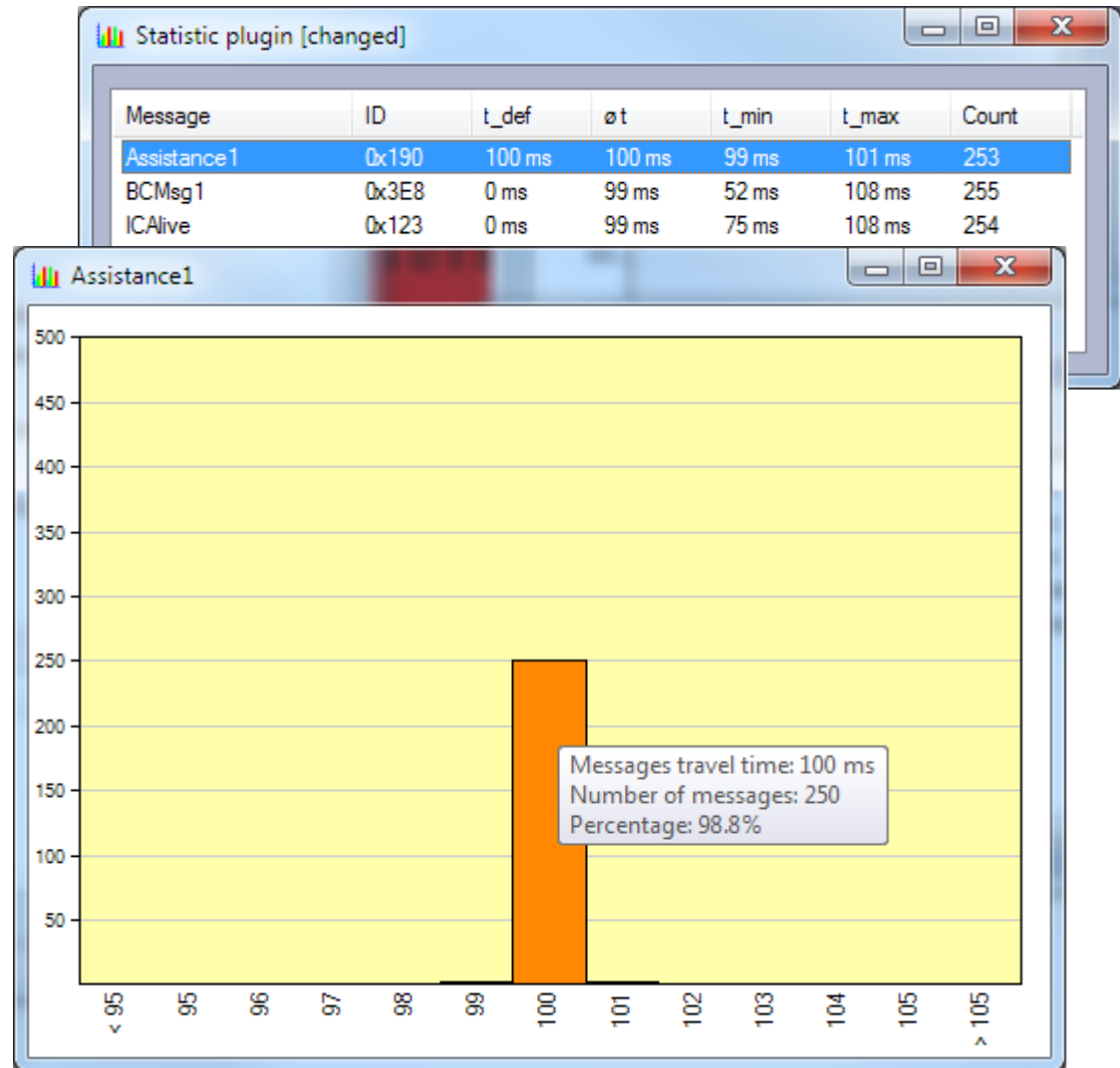
- Triggers monitors different things like the Alarm plug-in but is more generic because actions are separated
- If trigger gets active it just activates one or more scheduler tables to be executed
- Can be created under the database
- Supported are the following triggers:
 - Cyclic
 - Error occurred
 - Chip state changed
 - LIN
 - Error
 - State changed
 - Message
 - Timeout
 - Received
 - Value
 - Changed
 - Compare (smaller, larger, equal, not equal)
 - Compare range



Monitoring

- Statistic plug-in -

- User plug-in to monitor the cycle time of messages
- Shows histogram to detect bad timings
- Is working with record file of CanEasy
- Highlights detected timing errors with red color



- For more complex monitoring you can create own views using VBA or VSTA
- Using the COM interface of CanEasy you can get events for everything you are interested
 - Value changed
 - Message was received or transmitted
 - Bus error detected

Thank you for your attention!
